## **INDUSTRIALIZATION DETAILS**

1,000 or more wind turbines.

800- to 1,000-foot tall turbines, taller than any building in Boston.

12.9 miles from RI and 8.2 from MA.1

1,400 square miles of ocean, 1.5 times the size of RI, will be industrialized.



Pile driving into the seabed, heavy diesel vessel traffic, sediment plumes, and detonations of ordinances will harm whales, kill plankton, and reduce fishery stocks.2

# **CLIMATE CHANGE**

"No measurable influence on climate **change"** will result from these projects, according to the Bureau of Ocean Energy Management (BOEM).3

CO<sup>2</sup> emissions from construction front loads the carbon cost. None of the projects' websites claim they will help reduce CO2 emissions or help climate change.4,5,6

Wind power without battery storage requires 100% backup and will therefore never reduce our dependency on fossil fuels.

SF<sup>6</sup>, a greenhouse gas 23,500 times more potent than carbon dioxide, and millions of gallons of oil and lubricants are contained on site and may leak.7,8

Biodiversity loss threatens human **health** and contributes to climate change. One project alone will imperil fourteen endangered species. 9, 10

## ADVERSE ENVIRONMENTAL IMPACT

Significant, irreversible environmental damage to the marine ecosystem will result. 11, 12, 13, 14

Cod, squid, tuna, and shellfish fisheries will all suffer.15 16, 17, 18

Major Longterm adverse impacts on commercial fishing will result from the developments according to the Final Environmental Impact assessment for Revolution Wind.

The North Atlantic right whale may become extinct. Sean Hayes, division chief of NOAA's Northeast Fisheries Science Center, stated that "impacts from installed and operating turbines cannot be mitigated."19

Over 700,000 marine mammals may be harmed. NOAA has or is in the process of granting offshore wind companies permission to harm and/ or disturb 716,978 marine mammals, including over 23,000 whales.20

EMFs and temperature elevations from the high-voltage cables and substations will adversely affect marine animals from plankton to apex predators.<sup>21, 22</sup>

**410+ whales** have died along the eastern seaboard since 2016, when offshore wind companies began their seismic surveys in the region.23, 24, 25

Microplastics will contaminate the marine food web from blade erosion.<sup>26</sup>

Forever chemicals (PFOAs), toxic metals and bisphenols (BPAs) will be resuspended by jet plowing for the cable installations. No sediment samples have been tested for PFOAs.

## **ECONOMIC CONCERNS**

**Major Adverse impact on Employment** according to the Revolution Wind Final Environmental Impact statement.<sup>27</sup>

**Decommissioning** has not been factored into either total expense or environmental impact and may cost 70% of the installation price.<sup>28</sup>

Reduced fishing, tourism, property values, and elevated electricity costs will decrease state tax revenues and cause economic hardship while foreign-owned wind companies will profit (Ørsted, Avangrid, Equinor, Shell).29,30

Wind developers have donated **\$millions** to environmental groups, universities, and research organizations.31

1,000 turbines will cost \$50 billion. US taxpayers are currently expected to shoulder 30% of this cost.

**Destruction of natural beauty** in our public spaces. These 873-1000 foot structures will be visible from nearly every public beach in RI.32

**Hidden Impacts and Costs.** The developers of Revolution Wind will not allow the public to access 25 out of 51 appendices, including the emergency response plans.33

**Navigation safety and radar** will be compromised. The projects will deter search and rescue operations within the 1,400 square miles of development.

To contact us: info@green-oceans.org

To donate: https://greenoceans.org/donate We are a 501(c)3 nonprofit



Petition

## **REFERENCES AND CITATIONS:**

- BOEM, "Revolution Wind Farm and Revolution Export Cable Project Final Environmental Impact Statement." Department of the Interior, 2022, <a href="https://www.boem.gov.">https://www.boem.gov.</a>
- BOEM, "Revolution Wind Farm Construction and Operations Plan and Appendices," <a href="https://www.boem.gov.">https://www.boem.gov.</a>
- BOEM, "Revolution Wind Farm and Revolution Export Cable Project Draft Environmental Impact Statement." Department of the Interior, 2022, p. 3.8-12, <a href="https://www.boem.gov.">https://www.boem.gov.</a>
- 4. Jorgenson, A.K., "Analysing fossil-fuel displacement." Nature Climate Change, 2012, https://www.nature.com.
- York, R., "Do alternative energy sources replace fossil fuels?" Nature Climate Change, 2012, https://www.nature.com.
- Blackman, D., "Biden's offshore wind dreams face rising controversy, opposition." Forbes, 2023, <a href="https://www.forbes.com">https://www.forbes.com</a>.
- 7. McGrath, M. "Climate change: Electrical industry's 'dirty secret' boosts warming." BBC News, 2019, <a href="https://www.bbc.com">https://www.bbc.com</a>.
- BOEM, "Revolution Wind Farm and Revolution Export Cable Project Draft Environmental Impact Statement." Department of the Interior, 2022: 3.19-8, reads "A total of approximately 18 million gallons of coolants, fuels, oils, and lubricants could be stored within WTG foundations and OSSs across all projected offshore wind projects along the Atlantic coast," <a href="https://www.boem.gov">https://www.boem.gov</a>.
- Patil, R.R. et al., "Biodiversity loss: Public health risk of disease spread and epidemics." Annals of Tropical Medicine and Public Health, 2017, <a href="https://www.proquest.com">https://www.proquest.com</a>.
- CSA Ocean Sciences Inc., Revolution Wind Farm Construction and Operations Plan, Appendix Z1, Assessment of Impacts to Marine Mammals, Sea Turtles, and ESA-listed Fish Species, revised 2022, <a href="https://www.boem.gov.">https://www.boem.gov.</a>
- 11. Daewel, A. U et al., "Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea." Communications Earth & Environment, 2022. 3(1), https://www.nature.com.
- 12. Christiansen, N. et al., "Emergence of Large-Scale Hydrodynamic Structures Due to Atmospheric Offshore Wind Farm Wakes." Frontiers in Marine Science, 2022, <a href="https://www.frontiersin.org">https://www.frontiersin.org</a>.
- 13. Dorrell, R.M., et al., "Anthropogenic Mixing in Seasonally Stratified Shelf Seas by Offshore Wind Farm Infrastructure." Frontiers in Marine Science, 2022, <a href="https://www.frontiersin.org">https://www.frontiersin.org</a>.
- 14. Huang, S-L., "Unstated impacts of the green energy industry on the habitat of a coastal delphinid: Turbid-turbulent wakes induced by offshore wind turbine foundations." Aquatic Conservation: Marine and Freshwater Ecosystems, (32) 11, 2022, <a href="https://onlinelibrary.wiley.com">https://onlinelibrary.wiley.com</a>.
- 15. Chiarella, L.A., assistant regional administrator for Habitat and Ecosystem Services, U.S. NOAA, to James Bennett, Chief, Office of Renewable Energy Programs, BOEM, RE: BOEM's Response to NOAA EFH Conservation Recommendations for the South Fork Project, October 25, 2021, he states, "Based on our Northeast Fisheries Science Center's fisheries science expertise and supporting peer-reviewed publications, this project has a high risk of population-level impacts on Southern New England Atlantic cod," https://green-oceans.org/letter-from-noaa.
- Jones, I.T., et al., "Changes in feeding behavior of longfin squid (Doryteuthis pealeii) during laboratory exposure to pile driving noise." Science Direct, 2020, <a href="https://www.sciencedirect.com">https://www.sciencedirect.com</a>.
- 17. Puig-Pons, V. et al., "Monitoring of Caged Bluefin Tuna Reactions to Ship and Offshore Wind Farm Operational Noises."

- Sensors (Basel), 2021, https://www.ncbi.nlm.nih.gov.
- 18. Solé, M., et al., "Marine invertebrates and noise." Frontiers in Marine Science, 2023\* this does not discuss wind turbines per se, but details the effect of anthropogenic noise, <a href="https://www.frontiersin.org">https://www.frontiersin.org</a>.
- 19. Hayes, S. (National Marine Fisheries Service) to Hooker, B. (BOEM) on the threat to NARWs, May 13, 2022. He writes, "oceanographic impacts from installed and operating turbines cannot be mitigated for the 30-year lifespan of the project" and that "Disturbance to right whale foraging could have population-level effects on an already endangered and stressed species," <a href="https://green-oceans.org/sean-hayes-letter">https://green-oceans.org/sean-hayes-letter</a>.
- 20. NOAA Fisheries, https://www.fisheries.noaa.gov.
- Nyqvist, D., et al., "Electric and magnetic senses in marine animals, and potential behavioral effects of electromagnetic surveys." Mar Environ Res, 2020, <a href="https://www.sciencedirect.com">https://www.sciencedirect.com</a>.
- Keller, B.A., et al., "Map-like use of Earth's magnetic field in sharks." Curr Biol, 2021. 31(13): p. 2881-2886 e3. NOAA Fisheries, 2017-2022 Minke Whale Unusual Mortality Event along the Atlantic Coast, Office of Protected Resources, 2022, <a href="https://www.fisheries.noaa.gov">https://www.fisheries.noaa.gov</a>.
- 23. NOAA Fisheries, "2016-2022 Humpback Whale Unusual Mortality Event along the Atlantic Coast." Office of Protected resources, 2022, https://www.fisheries.noaa.gov.
- 24. NOAA Fisheries, 2017-2022 North Atlantic Right Whale Unusual Mortality Event, Office of Protected Resources, 2022, <a href="https://www.fisheries.noaa.gov">https://www.fisheries.noaa.gov</a>.
- NOAA Fisheries, 2017-2022 Minke Whale Unusual Mortality Event along the Atlantic Coast, Office of Protected Resources, 2022, <a href="https://www.fisheries.noaa.gov">https://www.fisheries.noaa.gov</a>.
- Solberg, A. et al., "Leading edge erosions and pollution from wind turbine blades." 5th edition, 2021, <a href="https://docs.wind-watch.org">https://docs.wind-watch.org</a>.
- 27. Governor's Office, <a href="https://www.ri.gov.">https://www.ri.gov.</a>
- 28. Jadali, A. et al., "A multi-attribute review toward effective planning of end-of-life strategies for offshore wind farms, Energy Sources, Part B: Economics, Planning and Policy, 2021, <a href="https://www.tandfonline.com">https://www.tandfonline.com</a>.
- Mordue, T., Moss, O., Johnston, L., Environment, Landscape, and Place in the Windfarm-tourism "Conflict," Council for European Studies, EuropeNow, 2020, <a href="https://www.europe-nowiournal.org">https://www.europe-nowiournal.org</a>.
- 30. Rhode Island Commerce Corporation, Economic Impact of Visitors in Rhode Island 2020, Tourism Economics, 2020, <a href="https://assets.simpleviewinc.com">https://assets.simpleviewinc.com</a>\*this does not talk about wind impacts per se, but stresses the importance of tourism on the economy. BOEM, "Revolution Wind Farm Construction and Operations Plan," <a href="https://www.boem.gov.">https://www.boem.gov.</a>
- Coalition, Save Right Whales, "Conflicts of Interest Environmental Organizations Take Offshore Wind Industry Money," 2022. <a href="https://drive.google.com">https://drive.google.com</a> and presentation by SouthCoast Wind developers, Portsmouth, 2023.
- Environmental Design and Research, Landscape Architecture, Engineering & Environment, Technical Report, Visual Impact Assessment Revolution Wind Farm, Appendix U3, DEIS, <a href="https://www.boem.gov">https://www.boem.gov</a>.
- 33. BOEM, "Revolution Wind Farm Construction and Operations Plan," <a href="https://www.boem.gov.">https://www.boem.gov.</a>