Is offshore wind development harmful to whales and other marine life?

What The Science Says:
Wind turbines generate far less low-frequency sound than ships do and the main causes of mortality for right whales are vessel strikes and entanglements in fishing gear.

Climate Myth: Offshore wind development is harmful to whales and other marine life
"Record numbers of endangered whales [are] being killed by windfarms off America's East Coast" (Express)

When properly sited, offshore wind farms need not pose a serious risk of harm to whales or other marine life. During installation, the impact from construction noise can be mitigated by implementing seasonal restrictions on certain activities that coincide with whale migration. Once operational, wind turbines generate far less low-frequency sound than ships do, and there is no evidence that noise from turbines causes negative impacts to marine species populations (Tougaard et al. 2020).

There has been considerable attention to how offshore wind development, including noise from pile-driving during construction, affects the critically endangered North Atlantic right whale, which has a total population of roughly 360.[1] But the main causes of mortality for right whales are vessel strikes (75% of anthropogenic deaths) and entanglements in fishing gear—not anything related to offshore wind development.[2] Critically, the National Oceanic and Atmospheric Administration (NOAA) has also found no link between offshore wind surveys or development on whale deaths.[3]

Moreover, any impacts to the North Atlantic right whale can be avoided or greatly minimized through proper planning. For example, in 2019, the developer of the 800-MW Vineyard Wind project entered into an agreement with three environmental organizations, which established seasonal restrictions on pile-driving during construction (to avoid excessive noise when right whales are present), as well as strict limits on vessel speeds during the operational phase (to avoid vessel strikes), among other measures.[4] In the final environmental impact statement for the project, the U.S. Bureau of Ocean Energy Management (BOEM) found that, "[g]iven the implementation of Project-specific measures, BOEM anticipates that vessel strikes as a result of [the project] alone are highly unlikely and that impacts on marine mammal individuals . . . would be expected to be minor; as such, no population-level impacts would be expected."[2] BOEM also found that project installation would be unlikely to cause noise-related impacts to right whales, due to the time of year during which construction activities would take place.[2]

Offshore wind development can have benefits for other marine species. For example, the base of an offshore wind turbine may function as an artificial reef, creating new habitats for native fish species (Degraer et al. 2020 and here).

By contrast, offshore oil and gas drilling routinely harms marine life, while posing a persistent risk of catastrophic outcomes. Sonar used for offshore oil and gas exploration emits much stronger pulses of sound than sonar used for wind farm surveying. The 2010 Deepwater Horizon oil spill killed millions of marine animals, including as many as 800,000 birds.[5] More broadly, carbon dioxide emissions from fossil fuel use are making the ocean increasingly acidic, which inhibits shellfish and corals from developing and maintaining calcium carbonate shells and exoskeletons.[6] Finally, climate change is expected to have "long-term, high-consequence impacts" on whales and other marine mammals, including "increased energetic costs associated with altered migration routes, reduction of suitable breeding and/or foraging habitat, and reduced individual fitness, particularly juveniles."[2]

Footnotes:

General: While outside the scope of the Sabin report, it bears noting that journalists have uncovered financial connections between fossil fuel interest groups and certain groups alleging that offshore wind development leads to considerable negative impacts on whales. See Pearl Marvell, Wind Opponents Spread Myth about Dead Whales, Yale Climate Connections, Sept. 19, 2023.

[1] North Atlantic Right Whale, NOAA Fisheries (last visited March 25, 2024).

[2] Vineyard Wind 1 Offshore Wind Project Final Environmental Impact Statement Vol. I, March 2023, at 3-95.

[3] Frequent Questions – Offshore Wind and Whales, NOAA (last visited March 25, 2024).

[4] Vineyard Wind – NGO Agreement, Jan. 22, 2019.

[5] Martha Harbison, More Than One Million Birds Died During the Deepwater Horizon Disaster, Audubon, National Audubon Society (May 6, 2014).

[6] National Ocean Service, What is Ocean Acidification?, National Oceanic and Atmospheric Administration (last visited March 25, 2024).

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