

Offshore wind farms could disturb marine mammal behavior

May 26 2022



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When an offshore wind farm pops up, there is a period of noisy but well-studied and in most cases regulated construction. Once the turbines are operational, they provide a valuable source of renewable energy while emitting a constant lower level of sound.

Frank Thomsen, of DHI, will discuss how this constant noise may impact wildlife in his presentation, "Operational underwater sound from future offshore wind turbines can affect the behavior of marine mammals."

The session will take place May 26 at 4:25 p.m. Eastern U.S. as part of the 182nd Meeting of the Acoustical Society of America at the Sheraton Denver Downtown Hotel.

Thomsen and colleagues reviewed published sound levels from operational wind farms to identify trends with [turbine](#) size. In general, the larger the turbine, the higher the noise emissions.

However, newer wind farms using quieter driving technology can to a certain extent cancel out the impact of larger turbines. Older gear box technology reaches disruptive levels for marine mammals up to 6.3 kilometers away. In contrast, newer direct drive turbines are expected to only impact animal behavior within a 1.4-kilometer radius.

"It is very unlikely that operational noise will lead to any injury or even hearing impairment, but [behavioral changes](#) could be a concern, as our study shows," Thomsen said. "It's possible that impact zones of individual turbines overlap, but that still does not mean that the wind farm is a no-go area for marine life. We see harbor porpoises frequently swimming in the vicinity of turbines."

The long-term consequences of this noise on wildlife are still largely unknown. The impact could depend on the number of turbines and their overlapping affected areas.

In theory, the sound can lead to behavior changes in marine mammals and mask calls from whales, but harbor porpoises are frequently seen swimming in the vicinity of [wind](#) farms in Europe, so it may not be as simple as it seems.

"Since [offshore wind farms](#) have a relatively long lifespan, and there will be many of them, the potential impacts should not be overlooked," said Thomsen. "The point of our work is to raise awareness."

More information: [Acoustical Society of America](#)

Provided by Acoustical Society of America

Citation: Offshore wind farms could disturb marine mammal behavior (2022, May 26) retrieved 25 April 2024 from

<https://techxplore.com/news/2022-05-offshore-farms-disturb-marine-mammal.html>

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