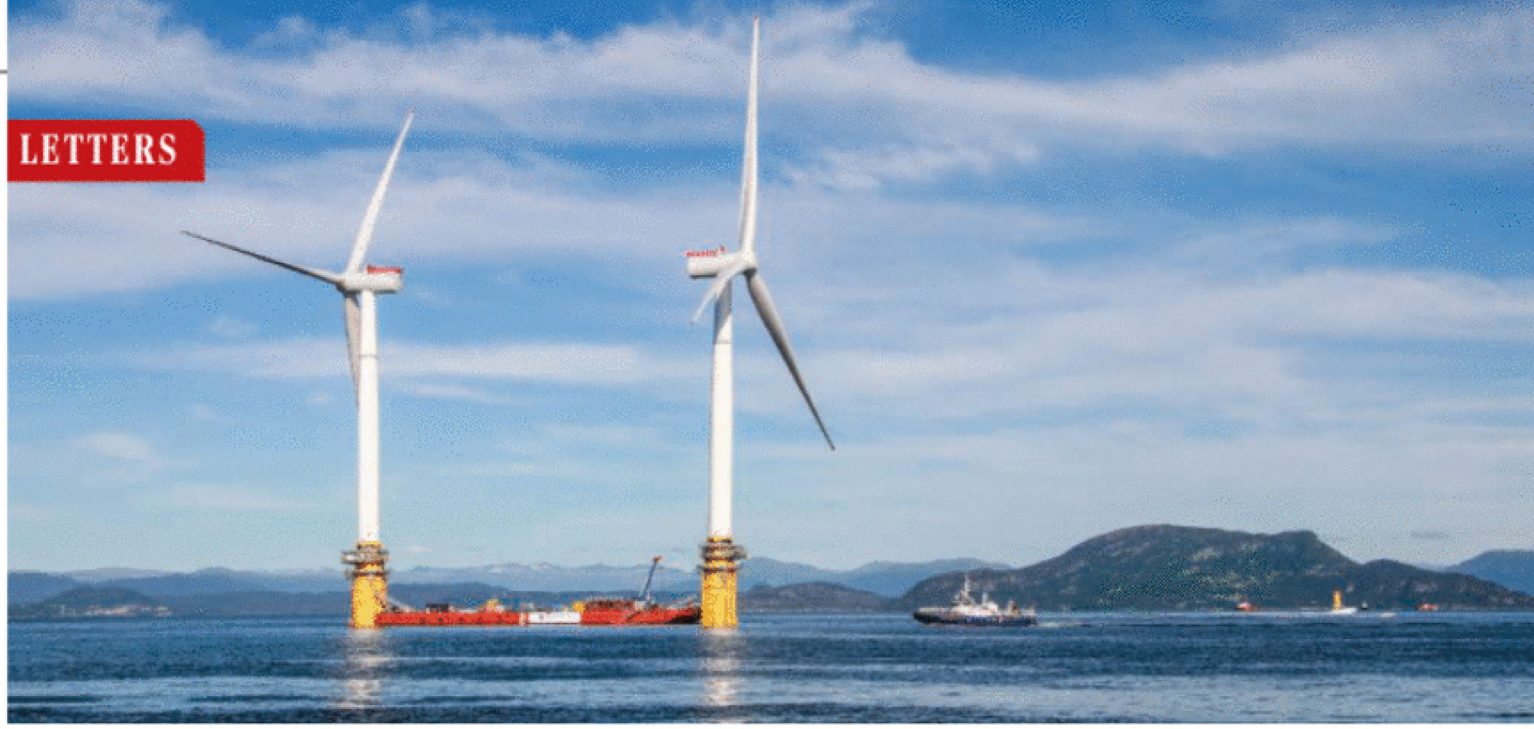

Floating wind turbines, such as these two en route to the world's first floating wind farm, could affect the environment in ways that have not yet been identified.

PHOTO: TIBLE.A.SE/SHUTTERSTOCK

Edited by **Jennifer Sills**

Offshore renewables need an experimental mindset

The development of floating wind turbines that can operate in deep, offshore waters has unlocked tremendous energy generation potential (*1*). Existing floating offshore wind turbines, however, are still in demonstration phases. Because only about 10 turbines exist worldwide (*2*), their short- and long-term environmental impacts are still largely unknown. Floating wind turbines are likely to come with their own set of unique risks (*3*), which could include secondary entanglement of marine life in debris ensnared on stabilizing mooring lines (*4*), increased collision potential due to three-dimensional turbine movement (*5*), and benthic habitat degradation from turbine infrastructure such as anchors and buried interarray cables (*6*).

Despite potential impacts, countries are rapidly moving toward full commercial installations. The United States is advancing toward a lease sale for two areas in central and northern California and proposing floating wind turbines as a primary technology for the Gulf of Mexico (*7*). Floating wind turbines are also planned for the Gulf of Maine (*8*) and likely for New York (*9*). European and Asian countries have similar expansions planned (*2*).

Countries need robust plans to prevent, monitor, and mitigate the environmental impacts of floating wind turbines. We urge energy authorities and lawmakers to treat each installation as an experiment to gather information about the costs and benefits of this fledgling technology (*10*). Like any experiment, a comprehensive monitoring scheme is required to collect data, ideally for several years before turbines are first placed and then through the construction, lifetime operations, and decommissioning of the turbines (*11*). A robust monitoring plan with funding secured across all phases will help distinguish effects of floating wind development from other factors, such as climate change. Although it is tempting to focus only on the positives of clean energy, it is crucial to think preemptively about the longer-term impacts of floating wind turbines and use adaptive management practices to minimize impacts accordingly if necessary (*12*). Prevention rather than cure will be essential for the long-term sustainable success of this exciting, yet unknown, new sector.

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COMPETING INTERESTS
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Green energy threatens Chile's Magallanes Region

On 2 December 2021, Chile's minister of energy and mining announced the country's largest green hydrogen project, to be developed in Chile's southernmost Magallanes Region (*1*–*3*). The project is intended to help achieve Chile's stated goal of generating 25 GW of green hydrogen by 2030 (*1*, *4*). However, enthusiasm for clean energy projects obscures their environmental and cultural impacts.

Despite the potential benefits, the large scale of this green hydrogen megaproject,