



Sunday, February 26, 2023 (Front page)

On with the Wind

Floating 'farms' are key to powering California's clean-energy future

Olivia Wise | The Examiner

By Jessica Wolfrom | Examiner staff writer



A new kind of gold rush is underway on the West Coast – but this time, it's not underground.

A short distance off California's wild and rugged coastline, nearly 600 miles of ocean have been designated for the development of sprawling wind farms, a sign that the Pacific is fast becoming the next frontier of California's clean-energy economy.

While installing large turbines to harness the power of the wind whipping across the ocean is not a new concept, it's increasingly seen as a key part of California's energy future as it looks to wean itself off fossil fuels and achieve carbon neutrality by 2045.

Last summer, the [state set a goal to bring 25,000 megawatts](#) of offshore wind energy online by mid-century, enough to power 25 million homes every year. That will require rapidly ramping up the state's electricity generation from wind and solar to power cars, homes and buildings.

"We're talking about potentially 20% of California's electricity supply" coming from offshore wind, said Adam Stern, executive director of Offshore Wind California, a trade association. "To have a planning target like that to shoot for, it's the kind of thing that got humans on the moon."

"We're seeing the electrification of almost everything in California," said David Hochschild, chair of the state's Energy Commission, during a recent webinar.

"We basically need to triple clean energy generation by 2045."

A single, slicing rotation of a turbine's blade can power a home for an entire day, noted Hochschild, illustrating the untapped potential of this burgeoning industry. "After rooftop solar, offshore wind is the lowest impact form of electric generation in the world," he said.

But until now, two-thirds of America's wind power potential has been located in water too deep for the traditional fixed-bottom turbines, the pinwheeled structures bolted to the sea floor near the shoreline. That's why states are ramping up efforts to install floating turbines up to 40 miles offshore, where winds blow stronger and faster.

"We see floating offshore wind as one of the most promising clean energy technologies of the 21st century," said U.S. Secretary of Energy Jennifer Granholm at a summit this week — a technology, she said, that will enable the country to meet its 100% clean electricity target by 2035.

In December, the Biden administration held the first offshore lease sale in the Pacific, resulting in over \$757 million in bids for five lease areas off California's [Morro Bay and Humboldt County](#). Taken together, the projects have the potential to power over 1.5 million homes, the Department of Energy estimates.

Wind power also complements solar generation as it tends to kick up in the late afternoon and early evening as the sun goes down and solar energy wanes. This is also the period known as peak load because it's the time of day when demand on the grid is greatest.

Generating power in the ocean may also free overburdened communities from the polluting proximity of oil and gas plants. "Forty percent of our gasoline in California is in low-income and disadvantaged communities, and to ultimately shut down those polluting power plants, we have to have an alternative," said Hochschild.

Workers at Blount Boats build vessels that will carry workers to perform maintenance on wind turbines in Warren, R.I. Currently, there are just two operational offshore wind projects in the United States, both on the East Coast. *James Estrin | The New York Times*



Still, for all its potential, there are significant hurdles ahead. First, the industries needed to construct, manufacture and maintain these floating turbines do not exist at scale. Right now, there are only two operational offshore wind projects in the United States, both on the East Coast, with many more under development or permitting in both the Atlantic and Pacific.

"We shouldn't sugar coat the challenges ahead; it's building an entirely new industry from the ground up," said Stern. "There has to be a tremendous amount of investment in infrastructure to upgrade the ports, assemble the towers, to manufacture the blades and build cables."

Then there are questions of connecting the energy generated at sea to the land. The North Coast site near Eureka largely lacks the transmission infrastructure needed to transfer energy across the state, but it does have a deep-water port critical to the turbines' buildout, assembly and placement. In contrast, the Central Coast site, near Morro Bay, has the transmission capacity thanks to the Diablo Canyon nuclear power plant but not the accompanying port infrastructure.

"If you think of it as a poker hand, nobody has the exact card to complete their hand," said Eddie Ahn, executive director of the San Francisco environmental justice nonprofit Brightline Defense.

Then there's the matter of cost. Right now, offshore wind remains pricier than its onshore equivalent and other forms of energy, including solar. But on Wednesday, the Department of Energy [announced that it's aiming to slash the cost of floating offshore wind](#) by more than 70% by 2035. "That's a huge goal," said Granholm. But "we've got to bring the price down."

On top of all that, fishing groups and environmental groups have sounded the alarm over the floating platforms' impacts on marine life. Many are concerned about the platforms disrupting the migratory pathways of whales, turtles, fish and other aquatic species. And fishing groups are worried the turbines will elbow them out of valuable ocean space, forcing them to search farther a field for the day's catch.

"We need to balance our need to address climate change and not create more problems in the ocean and along the coast," said Kristen Hislop of the Environmental Defense Center.

That also includes a need to consider how the state will support communities now at the heart of the rush for wind. "I go to bed with this question on my heart and mind every night, and that question is how do we transition our energy system without exacerbating inequality?" said Shalanda Baker, director of economic impact and diversity at the Department of Energy. "How do we do this work without making things worse for the households that are already bearing the worst environmental and economic burdens of our energy system?"

Still, many see the state's nascent phases of wind development as an opportunity to right past wrongs while creating jobs, protecting the oceans and fighting climate change. "Offshore wind presents an opportunity to hopefully create a new clean economy in these regions," said Ahn. "The window of change is now."