

RECHARGE

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'Not talking science fiction': California's floating wind gold rush sparks to life

The US flag onboard the aircraft carrier USS Ronald Reagan off California Photo: Official US Navy/Flickr



Offshore wind's California dreaming is suddenly much closer to reality after the Biden administration's cleared two deep waters areas for development off the Golden State

By [Richard Kessler](#)

US President Joe Biden's launch last week of plans to award leases to build the first gigawatts of floating wind power off California will start a sea-change for federal regulators, project developers and state officials bullish over the sector's potential to deliver huge potential economic and environmental benefits from the gusts blowing over the Pacific.

The White House's [long-awaited announcement](#) of a mid-2022 target for lead-off lease sales in an area near Morro Bay off the central coast that can support 3GW of installations, and another facing the state's rugged far northern coast with a further 1.6GW capacity. The move effectively put all federal agencies on the same page for the first time in broad support of California offshore wind as part of intensified US efforts to tackle climate change, a policy the previous administration opposed. During four years the industry and state were left treading water with energy development on the federal outer continental shelf (OCS) regulated by the Bureau of Ocean Energy Management (BOEM), an arm of the Department of Interior (DoI).

"Finally, we have unlocked the potential for California," Neco Sumait, chief of renewable energy in the Pacific region at BOEM, told a recent conference. "Now we have a path forward to allow offshore wind to play a role in the goals that California has for clean and carbon-free electricity, [including carbon neutrality and 100% clean electricity by 2045 as specified in Senate Bill 100]," she said.

Mike Olsen, senior director of business development at Equinor Wind US, lauded the "tremendous amount of support" for offshore wind by the Biden administration, and California state legislators and officials, along with work done by Sumait's team and new political appointees at DoI. "We're at the point where the stars have aligned and we're ready to go commercial scale," he said, asserting that floating technology the state will require because of deep coastal waters is proven. "Floating wind in California is more real than ever. We're not talking science fiction, about something that is out there that maybe will happen."

Next key federal steps

BOEM in October 2018 issued a "call" for developers to submit expressions of interest for commercial leases in Humboldt, Morro Bay and another proposed area to the south called Diablo Canyon, not part of the upcoming round, while at the same time seeking public input on the potential for wind energy development in all three. Six months later, the agency said 14 American, Canadian, and European companies and joint ventures were "legally, technically and financially qualified" to bid in future lease sales in any or all the Call areas. While all three drew interest from Avangrid Renewables, Cierco Corporation, Equinor, Mainstream Renewable Power, Northland Power, RWE Renewables and Wpd, most attention was focused on Diablo Canyon and Morro Bay.

"Clearly the central coast is very attractive because of the existing transmission infrastructure that is there. The north coast has really good wind, but it is also transmission constrained," said Sumait. "We will pursue the central and north coasts on a parallel track. We will merge them at the right point in the BOEM process which is a proposed sale notice [PSN]."

Before then, BOEM will further engage with multiple stakeholders including coastal communities, commercial and recreational fishing groups, and tribal governments. That outreach will seek to provide and inform on the concerns and issues they have so that it can move forward and continue the leasing process. "We've held a lot of meetings and engagement just to get to this point but going forward I think we will need even more," she said, with the BOEM California Intergovernmental Renewable Energy Task Force to meet [on 24 June] to discuss the latest sector developments. "They will become more focused conversations. We need to do that efficiently if we're to meet the proposed timelines for getting offshore wind on the grid."

Sumait cautioned that BOEM has not yet identified so-called 'wind energy areas' for lease sales and the outreach process and other feedback from the public and state will play a key role in determining if Humboldt and Morro Bay are suitable. If so, then the agency will conduct environmental reviews of both, and this would lead to a PSN.

While Humboldt's configuration is unchanged from 2018, Morro Bay was partially re-drawn and enlarged to 399-square-miles (642km²) from 310-square-miles in 2018. Sumait said BOEM will partner with the state on permitting export cables from future projects as these will be buried beneath both federal and state bottomlands.

State-level legislated 'road map'

Meanwhile, on 27 May, the Californian state assembly passed legislation by a 71-1 vote that would require the state to establish a "road map" on how it will build an offshore wind industry at scale – a process that the California Energy Commission (CEC) would lead – and provide the funding. The bill now moves to the Senate where Democrats also have an overwhelming majority.

"We all know we need to scale with a likely 10GW or more to not only signal to the rest of the world that California is open for business, but to ensure we have planning, the workforce, reliability and greenhouse gas benefits of offshore wind and to maximise that," assembly member David Chiu, a Democrat representative for San Francisco, who introduced the bill, told the webinar.

"The challenge is there are a lot of stakeholders, a lot of process and a lot of bureaucracies that have to be aligned in the same direction," he added.

The bill also asks the CEC to establish a state-wide offshore wind target. Developers contend it must be ambitious to both reflect the size of California's offshore wind resource, \$3trn economy, and electricity market, the second largest among states after Texas, and also send a signal to the supply chain to jumpstart investment.

"Ten gigawatts by 2040 is certainly an ambitious goal. It's a great starting point," said Paula Major, vice president for US offshore wind at Mainstream Renewable Power. Still, she noted that 10GW would be a fraction of the state's 112GW of technical offshore wind resource potential and conservative versus the UK which set a 30GW initial target by 2030 and has a smaller coastline than California.

"We have to remember the technical benefits of offshore wind. It's relatively consistent, complements solar production and the demand curve, and has the added benefit of wildfire de-risking if we build transmission offshore," she said.

California suffers from a grid supply-demand imbalance from solar, its main renewable energy source. Supply often greatly exceeds demand in late morning through early afternoon. The opposite is true later in the day when residents return home from work and electricity demand ramps as solar generation declines.

The 2020 wildfire season was the worst in state history with 9,639 fires burning more than 4% of California's land and damaging both local and long-distance power lines and other system infrastructure.

On 14 May, Governor Gavin Newsom presented a [California Comeback Plan](#) that proposes \$100bn in budget funding aimed at helping the state recover from Covid-19, combat climate change and wildfires, and other initiatives such as rebuilding infrastructure. The package includes funding for planning to set a pathway for California to achieve its 2045 clean energy and climate ambitions.

"That's the kind of analysis that will help us understand the value proposition of offshore wind in different quantities and how it may fit with other scenarios and other technologies in achieving those broad goals," said commissioner Karen Douglas, who has been involved with offshore wind-related issues since 2016 at the CEC.

The plan also proposes \$20m for offshore wind that will enable state agencies to build staffing as the BOEM processes advance toward leasing and to expand CEC outreach to stakeholders beyond what the Intergovernmental Task Force will do. Another \$11m would match private funds that the Port of Humboldt could apply for to help with upgrades necessary to stage offshore wind projects.

Douglas said CEC is encouraged that both fixed-bottom and floating offshore wind costs are coming down. Its initial assessment showed that if 10GW of offshore wind was on the system, the state could save "a lot of money in avoided build out of other technologies that would be less efficient because of lower capacity factors."

"Offshore wind is a value proposition that definitely helps justify the fact it will have a higher cost. The issue is going to be to look at what the costs might be compared to alternatives and at what scale," she said.

Douglas, who called the White House announcement "amazing" and a threshold in California "we were really able to cross," said the state has not taken a position on whether the offshore wind industry should start big with 800MW to 1GW projects as some developers want, or small such as the 150MW Redwood Coast array off Humboldt proposed by a consortium that includes Aker Solutions.

"We'll see how it all plays out. I do understand the arguments behind scale but think there are some particular benefits to the potential proposal in the north. We are really committed to doing our part as both of those concepts seek to inform."