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Item 6

Staff Memo
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Offshore Wind in California

Justine Kimball, PhD, Senior Climate Change Program Manager

LOCATION: Statewide

STRATEGIC PLAN GOAL AND OBJECTIVE: 4: Support Ocean Health Through a Sustainable Blue Economy, 4.1: Guide Sustainable Renewable Energy Projects

PURPOSE OF DISCUSSION:

California is committed to carbon neutrality by 2045, which will require unprecedented changes to our energy portfolio and infrastructure. To meet these bold renewable energy targets, California's offshore waters are quickly emerging as a prime location for new floating offshore wind (OSW) projects. The purpose of this discussion item is to update Council members on the emerging role of OSW in waters off the coast of California, and discuss potential opportunities for OPC investments and policy action to advance collective state efforts towards Renewable Energy Projects (Strategic Plan Objective 4.4.) This discussion item also provides an opportunity to hear from members of the public who are interested in this issue.

BACKGROUND:

Climate change is one of the most pressing threats to our coast and ocean. The world's oceans absorb roughly one-third of the total carbon dioxide emitted by human activities each year. Simultaneously, they have absorbed over 90 percent of the warming caused by humans since the 1970s. As a result, scientists have observed biological, chemical, and physical changes that include sea-level rise, coastal erosion, ocean acidification, warming seas, changing ocean currents, and shifting species distributions.

The only long-term solution to climate change is decarbonization of our society. Based on a joint analysis by the California Energy Commission, the California Public Utilities Commission, and California Air Resources Board, an estimated 6 GW of renewable energy and storage resources need to come online annually to meet the State's 2045 carbon neutrality goal. OSW has been identified as a key emerging component of California's renewable energy strategy.

Boasting some of the best wind resources in the country, areas off the north and central coasts are being further evaluated for feasibility and economic impacts. However, siting in

state waters is complicated because such projects have a high potential to impact fisheries and other uses; therefore, the federal government is focusing its analysis on the waters beyond three nautical miles. Siting floating wind infrastructure in deeper federal waters requires advanced floating wind turbine technology that is still in its infancy. Additionally, upgrades to ports and energy delivery and storage infrastructure will also be required.

Despite some of the challenges that OSW presents, recent federal administration policy has signaled continued support.[1] Previously in California, BOEM published a Call for Information and Nominations (2018)[2] to obtain nominations from companies interested in commercial wind energy leases within proposed federal areas off the central and northern coasts. In addition to nominations, BOEM sought public input on the potential for wind energy development. More recently, two unsolicited floating OSW projects were proposed in state waters off Lompoc, California. State Lands Commission is currently undergoing initial evaluation of these applications with expected preliminary environmental assessment in summer 2021.[3] The recent joint federal-state announcement to open a 399-square mile area off the Central Coast and a separate area on the North Coast for lease sale, will continue to spur interest in the near future.

In California, the May Revision of the Governor's Budget identifies $20 million to spur environmentally responsible development of offshore wind energy. For OPC, $2.1 million is identified to support research on impacts to marine life, habitats, the fishing community, and cultural resources. These funds, if approved in the final budget, could enable the state to: invest in critical research to understand the impacts of OSW development on marine life and habitats, the fishing industry, and cultural resources; engage with key stakeholders; accelerate the planning and permitting of projects; and upgrade port infrastructure needed to build out the OSW supply chain. Recently introduced bills (i.e., AB 525 and SB 413) also reflect the legislature's interest in supporting efficient and coordinated evaluation and development of OSW.

ESSENTIAL PARTICIPATION IN ENVIRONMENTAL REVIEW AND FEASABILITY ASSESSMENT

Despite the potential of OSW to support California's ambitious renewable energy portfolio, it is important to take a precautionary approach to planning. Because floating OSW technology is relatively new, particularly at commercial scale, environmental review will be critical for shaping the State's understanding of its potential for impacts to marine life and habitats, and how such impacts might best be mitigated. OSW could also impact Tribal cultural resources if not carefully designed, as well as existing industries (such as commercial fishing) and coastal communities.

[1] https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/

[2] https://www.boem.gov/california#:~:text=The%20Bureau%20of%20Ocean%20Energy%20Management%20%28BOEM%29%20published,the%20proposed%20areas%20off%20central%20and%20northern%20California

[3] https://www.slc.ca.gov/renewable-energy/offshore-wind-applications/

OPC has made recent, targeted investments of more than $1 million to support a comprehensive planning approach and science-based decision-making and policy. The results of these projects will provide essential information to guide OSW planning and decisions. Additional information, studies, and assessment will still be needed to ensure OSW development proceeds in such a way that eliminates, minimizes, or mitigates significant impacts to marine life, fisheries, Tribal cultural resources, and the economy.

INTERAGENCY COORDINATION WILL BE CRUCIAL

With a complex interplay of issues and considerations, efficient interagency coordination will be essential for success. OPC initiated the Marine Energy Resources Work Group over a decade ago to provide a forum for such collaboration. Participants include, but are not limited to, the California Energy Commission, State Lands Commission, California Department of Fish and Wildlife, California Coastal Commission, and the Governor's Office of Planning and Research. Additionally, the state coordinates with federal partners through the Bureau of Ocean Energy Management (BOEM) California Intergovernmental Energy Task Force.[4]

STAKEHOLDER INVOLVEMENT WILL SHAPE EQUITABLE AND FAIR SITING OF OSW

In addition, and at this early stage in planning, it is also critical that ocean stakeholders engage in this issue and support a coordinated and equitable planning and implementation process. OPC can play a critical role in convening and facilitating such participation, particularly for communities that are disadvantaged or have historically been left out of such conversations.

EXISTING OSW TECHNOLOGY WILL INFORM DESIGN CONSIDERATIONS

California's offshore deep waters cannot support fixed-bottom structures which are limited to depths shallower than about 165 feet, so floating wind turbines are currently being considered. This technology relies on attaching a wind turbine to a floating structure that is tethered to the seabed. The technology was pioneered by Norway in 2009, followed shortly by other European countries and Japan in the early 2010s. In 2017, Scotland unveiled the world's first commercial floating OSW project (30 MW), and Europe has several other floating OSW projects in its pipeline for the early 2020s, including an 8.4 MW floating turbine that began operation in 2020 off Portugal's coast. Currently, the world's largest commercial floating OSW project (88 MW) is planned for completion in 2022 off Norway's coast. In the U.S., Maine has a 10-12 MW demonstration project on track to finish construction by 2023 and plans for a floating turbine research array announced in fall 2020. California's proposed GW-scale floating OSW goals are currently unprecedented; however, technology is advancing rapidly to support these projects.

[4] https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/CA/BOEM-Offshore-Renewables-Factsheet--02-22-17.pdf

OPC INVESTMENTS WILL HELP SHAPE ENVIRONMENTAL REVIEW

OPC has made recent, targeted investments of more than $1 million to help prepare for an OSW future. These projects are:

- Analyzing the feasibility of offshore wind development in the North Coast region of California in four key areas (environmental impacts, coastal infrastructure, stakeholder benefits and impact, policy analysis);
- Mapping the ocean fishing grounds west of the California coastal counties of Del Norte, Humboldt and Mendocino for the purpose of defining areas of importance to coastal fishing communities relying on the economic contribution from local fishing fleets;
- Identifying offshore wind energy least-conflict areas and incorporating the marine environment into the existing California Energy Infrastructure Planning Analyst (http://ceipa.databasin.org/) created for the state of California; and
- Analyze the existing body of information on the marine environment to evaluate key data sets in relation to OSW "Call Areas" previously identified by BOEM, and identifying additional candidate areas for potential OSW energy development.

Together the results of these projects will provide critical information on ecosystem impacts and use conflicts to support siting assessment. OPC expects to continue to play a key role in coordination and supporting best available science to inform environmental considerations in the siting and development of OSW projects.

COUNCIL DISCUSSION:

- Information gaps still exist around potential impacts to marine life, fisheries, Tribal cultural resources, and economics. Development of mitigation strategies for significant impacts will also need to be explored. What are the highest priority considerations that OPC should be focused on related to OSW?
- How should OPC prioritize future investments?
- What role should OPC take in supporting stakeholder engagement?