



In the Matter of:
SB 100 JOINT Agency Report

DOCKET No. 19-SB 100
WORKSHOP RE:
Joint Agency Report
Charting a Path to 100% Clean Energy

**Comments of Offshore Wind California on the SB 100 Modeling Inputs and Assumptions
Workshop, February 24, 2020
March 6, 2020**

Offshore Wind California (OWC), a California based coalition of industry partners promoting policies and public support for responsible development of offshore wind power in California, submits these comments in response to information provided and issues raised at the SB 100 Joint Agency Report workshop held at the California Energy Commission (CEC) on February 24, 2020.

OWC formed in 2019. The organization's members currently include Aker Solutions, Avangrid Renewables, Equinor, Magellan Wind, Mainstream Renewable Power, Northland Power, Orsted, Principle Power, and Pacific Ocean Energy Trust. OWC strongly supports California's clean energy and greenhouse gas (GHG) reduction paths as both environmental and economic imperatives.

However, OWC is concerned that some of the CEC's analytical approaches and underlying assumptions will create a narrower path to 100% renewable energy/zero carbon electricity and a longer path to achieve critical GHG and other emission reductions. In addition, OWC is concerned that the assumptions do not take into account the full benefits of all technologies available to generate electricity in California. This could have the effect of excluding early development of offshore wind, which would enhance reliability, safety, resource adequacy, diverse energy portfolio, and environmental protection. Offshore wind can also be easily integrated into California's grid while creating significant economic development opportunities and long-term, high-wage jobs. Furthermore, the resource can accelerate the achievement of a 100% Renewable Portfolio Standard (RPS) and broader GHG reductions.

Analytical Requirements and Modeling Scenarios Need to be More Robust

OWC believes that the combinations of analyses and assumptions explored and the related scenarios outlined by the CEC and other agencies need to be more robust to provide assessments of all technologies and their short- and long-term benefits and costs. For example, the analytical approach described in CEC staff member Mark Kootstra's presentation set a quantitative and qualitative outline that modeled various resource scenarios and an evaluation framework for their costs, benefits and impacts. It also looked at technology trends, system benefits, energy equity and affordability, environmental implications and interactions with other sectors. This approach fed into the modeling scenarios also outlined for resource eligibility, demand values, resource availability, and SB 100 requirements. The narrowness of each of these approaches leads to a focus on a high electrification scenario, but in all scenarios (including high biofuels and high hydrogen) presumes that offshore wind is

not available, and that out-of-state transmission is not available. Especially in a high electrification scenario, the omission of a scalable resource like offshore wind will complicate California's ability to meet rising electricity demand and ensure reliability.

With adequate planning commencing now, offshore wind could be available in California within the next 7-8 years to help meet GHG and RPS goals for 2030 and, most critically, for 2045. Offshore wind is the type of resource the California Independent System Operator (CAISO) has described in the February 24 workshop and in other settings as a planning measure for the future as essential to address reliability and resource adequacy. Offshore wind is flexible and dispatchable. If deployed at adequate scale for California, offshore wind's cost will also decline and address portfolio cost concerns better than many other combinations of resources, including existing costs of solar plus storage at a comparable capacity factor and load profile. A diverse portfolio combining multiple resources is essential to ensuring reliability and affordability, while contributing to grid resilience and reducing fossil fuel reliance across sectors.

OWC is concerned that the SB 100 analysis and modeling presented by the CEC staff presumes that offshore wind is not available due to current transmission constraints. In fact, there are existing transmission interconnection spots in key coastal areas to bring offshore wind power onto the grid. The 2024-25 closure of Diablo Canyon nuclear power plant will free up significant transmission capacity, as will the scheduled closure of once-through cooling (OTC) coastal plants. Furthermore, with transmission and distribution modernization and upgrades, which will be essential to any reliable long-term clean energy scenarios, offshore wind power can meet 10 gigawatts (GW) or more of demand. Ten GW of available, dispatchable renewable power with declining costs will address reliability and affordability needs. It will also help the state address the myriad issues associated with siting new onshore resources since ocean space has already been proposed for high capacity factor offshore wind generation. The CEC is leading study efforts that will conclude later this year with findings on the scope of ideal ocean space, strategies to minimize environmental impacts, and other criteria that will further define the high value of offshore wind to California.

Narrow modeling for SB 100 that assumes offshore wind is not available will foreclose the opportunity for early development and planning for this valuable resource and will inhibit the state's efforts to deploy a robust, diverse portfolio of renewable energy and storage options. Offshore wind is a proven, deployed technology with fixed bottom and floating platform projects currently operating in different parts of the world. There is now a growing pipeline of projects on the U.S. East Coast and, worldwide, numerous floating projects are in various stages of development. California's strong demand for clean energy and accelerated carbon reduction should drive a strong market for offshore wind here, where multiple technologies will compete to meet that massive demand. A limited assessment of options going forward under SB 100 could dry up that market and all of the investment that comes with it.

Broaden Analysis and Modeling to Ensure All Viable Technologies are Considered

OWC recommends that the CEC broaden its criteria on what would be required to ensure offshore wind is available among the resource options to develop and deploy since offshore wind clearly meets the key criteria to achieve deep de-carbonization alongside a reliable, affordable and resilient, long term electricity supply. OWC also recommends that the CEC examine transmission planning in light of best resource fits for various regions in the state, including the capability to bring wind power in from offshore where ocean floor transmission would be much less disruptive than land-based solutions for

this volume of generation, and would avoid creation of additional wildfire risks caused by terrestrial transmission systems. OWC also encourages a broader focus on cost-benefit analysis and recommends that costs be assessed not just on a commodity or resource basis but on all broader costs associated with each resource. As CAISO pointed out in its presentation on February 24, weather uncertainty will impact all resources. But it will impact resources like onshore wind, solar and storage more heavily, and fuel and resource substitutions may be limited, costly or more carbon intensive. Planning forward for flexibility and reliability across technologies and ensuring that multiple scenarios for demand, fuel availability, transmission, generation, storage and other siting is essential. It is highly risky to develop resource plans that are too narrow or too expensive or that may ultimately result in less reliable electricity for California, and that will slow the progress across sectors for deep de-carbonization while hampering the state's economic growth.

OWC would be pleased to serve as a resource to the CEC and other agencies to provide additional data. We can work with the state to demonstrate the current performance of offshore wind technologies and to help ensure that California has the best information upon which to model and set policy for its clean energy future.

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