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Avangrid Renewables Comments on AB 525 Offhsore Wind Goals

Additional submitted attachment is included below.

OFFSHORE WIND | AVANGRID RENEWABLES

Friday, 11 March 2022

California Energy Commission
Docket Unit, MS-4
Docket No. 17-MISC-01
715 P Street
Sacramento, California 95814

RE: IN THE MATTER OF CALIFORNIA OFFSHORE RENEWABLE ENERGY
DOCKET NO: 17-MISC-01
ASSEMBLY BILL 525 – OFFSHORE WIND PLANNING GOALS

Dear California Energy Commission,

Avangrid Renewables, LLC provides the enclosed comments for consideration in the California Energy Commission's (CEC) requirement under Assembly Bill 525 (AB 525, Chiu, Chapter 231, Statues of 2021) to establish megawatt offshore wind planning goals for 2030 and 2045. These comments reflect the extensive experience of Avangrid Renewables and its affiliates in developing, operating, and maintaining a global offshore wind portfolio. Below we provide our perspective on the purpose of goal setting, the state of the industry, and necessary considerations in AB 525's findings and criteria. Avangrid Renewables supports planning goals of 3 GW by 2030 and 18 GW by 2045.

I. The purpose of goal setting

To begin, we emphasize that AB 525 is planning legislation. The requirements of state agencies enacted are all to be driven by the planning goals established by the CEC this June. AB 525 was not a "study bill" which might warrant a bottom-up process for goal-setting. Instead, the intention of the legislation is for state planning to respond to top-down goals.

Avangrid Renewables further contends that the purpose of the goal-setting required under AB 525 is to establish a vision, and a state government leadership role with an outcome of clear and transparent market indicators. California has long been a visionary in clean energy and climate mitigation and should continue this path in creating a nation-leading vision for the future of floating offshore wind.

State goal-setting will send a market signal to developers and industries throughout the supply chain. Without a goal, industry and investors are left speculating on the quantity and pace of offshore wind development which might materialize in the state, based on disparate or conflicting indications from various state processes or trends. Establishing a market signal creates a reasonable basis for short- and long-term competitive investment.

However, it should be clear to all stakeholders that a goal is not a mandate. It does not tie the hands of regulators at the California Public Utilities Commission (CPUC) or state permitting agencies regarding the decisions they have under their unique authorities. A goal may inform but will not dictate these decisions. Thus, the risk of setting an ambitious goal is very small, but the opportunities are significant. While offshore wind developers will incur some substantial risk before a market fully materializes, there are few risks to the state. Conversely, there is substantial risk in setting conservative goals and later determining the needs and objectives of the state are much greater.

II. State of the industry

Since California began contemplating offshore wind several years ago, the industry has matured considerably. The International Renewable Energy Agency (IRENA) has called for 2,000 GW of OSW by 2050 to maintain a 1.5 degrees global warming pathway.[1] That includes 360 GW potentially in North America. [2] The United Kingdom, South Korea, Japan, and Norway have set or are contemplating Floating OSW targets - with the Global Wind Energy Council[3] forecasting 16.5 GW of FOSW operational by 2030. In early 2022, the Crown Estate Scotland announced the results of the "ScotWind" seabed tender, with 15 GW (out of the total 25 GW) capacity to be developed with floating offshore wind technology. In France off the coast of Brittany, 250 MW floating OSW is in permitting phase. Internationally, floating offshore wind is moving forward and can no longer be considered a "pilot" or "pre-commercial" technology. Moreover, President Biden's Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, includes a commitment to deploy 30 GW of offshore wind by 2030, and pathway for 110 GW by 2050. This national goal requires significant progress in seven offshore wind lease sales through 2025, four of which will potentially leverage floating offshore wind technology.[4]

On the east coast, offshore wind developers and state governments are proving the potential of fixed-bottom offshore wind to create good-paying jobs and opportunities for local communities and businesses. After rigorous federal and state coordination, construction commenced on the 800 MW Vineyard Wind I project, the first commercial project in the U.S.[5] To date, east coast states have successfully procured over 17 GW of commercial-scale offshore wind capacity. To date, BOEM has conducted eight competitive lease auctions for offshore wind, resulting in 24 active leases, with an estimated capacity potential of 30 GW on the east coast.

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[1] IRENA, 2021 https://www.irena.org/publications/2021/Jul/Offshore-Renewables-An-Action-Agenda-for-Deployment
[2] GWEC Market intelligence at https://gwec.net/offshore-wind/
[3] GWEC Global Offshore Wind Report 2021, https://gwec.net/market-intelligence/resources/
[4] US Department of the Interior Leasing https://www.doi.gov/pressreleases/secretary-haaland-outlines-ambitious-offshore-wind-leasing-strategy
[5] Vineyard Wind 1 at https://www.vineyardwind.com/press-releases/2021/11/19/vineyard-wind-breaks-ground-on-first-in-the-nation-commercial-scale-offshore-windfarm

East coast offshore wind progress started with a few states looking at their long term decarbonization goals and their access to clean resources, and realizing OSW had to be a big part of the future. East coast offshore wind targets now total 40 GW. Louisiana joined with a 5 GW goal in the Gulf of Mexico. These goals have been pivotal to the successful launch of the industry in the U.S., encouraging investment in fixed-bottom supply chain, port infrastructure, project development, and localization. Floating offshore wind is at a pivotal inflection point pending an ambitious state planning goal in California to open the next chapter of the US offshore wind industry.

III. AB 525 findings and criteria

In establishing the offshore wind goals for 2030 and 2045, the CEC should strongly consider the overwhelming support for the bill in the legislature, as well as the list of dozens of supporters for the legislation,[6] which include labor, industry, environmental, and other civic organizations. These organizations and legislators actively supported AB 525 and several contributed to the final language reflected in statute. Notably, the Findings and Declarations for AB 525 (provided in Appendix 1 of this letter) provide a very strong framing for how the CEC should approach its assignment to establish offshore wind planning goals. These findings and declarations (referenced by letter, below) acknowledge, with wide stakeholder and policymaker agreement:

- the importance of scale to achieving the environmental and economic benefits of offshore wind (a);
- offshore wind's role in advancing California's climate and air quality goals (b, g), the enormity of the clean energy California will need to procure to achieve SB 100 (d), and the substantial savings afforded by offshore wind in terms of total resource costs of an SB 100 compliant portfolio (c, e);
- the economic and workforce development opportunities provided by offshore wind in California (g);
- the goal-setting, data-synthesis, and development preparations conducted by state agencies and the federal government to date (j,k,l); and
- the environmental standards and review processes embedded in California policy which provide mechanisms for ensuring protection of marine and coastal ecosystems (m).

[6] *See list in Senate floor analysis, 9/7/2021 https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202120220AB525#*

This is a strong foundation upon which the CEC can stand in establishing offshore wind planning goals.

IV. Criteria for goal setting

AB 525 established a set of criteria (provided in Appendix 2) for CEC to consider in establishing offshore wind goals for 2030 and 2045. These criteria point CEC in the right direction for establishing bold offshore wind goals. Avangrid Renewables offers the following interpretation of these considerations.

Criteria (1), the results of SB 100 analysis, is arguably the most important and best starting place for goal-setting as it reflects the first attempt by the state to consider the portfolio of resources needed to achieve electric system decarbonization. We note that while the RESOLVE model selected 10 GW of offshore wind as part of the "core" 2045 portfolio, the inputs provided to the model meant that no more than 10 GW could have been selected. As a result, 10 GW by 2045 is a reasonable floor for an offshore wind target, but the ultimate goal should be higher. SB 100 also illuminated the importance of total resource cost evalutation. While stakeholders and planners tend to consider LCOE as the exclusive indication of whether a technology is affordable, under increasingly stringent decarbonization standards, the cost of a full portfolio will have the greatest impact on customers. Resource diversity and time-of-day benefits from offshore wind allow California to reduce the additional solar and batteries that would need to be "over-built" to adequately serve load.

Criteria (2) and (3) concerning the opportunity to "attract supply-chain manufacturing for offshore wind components throughout the Pacific region" and to "create a skilled and trained workforce" are a call to action. The CEC must set planning goals that are ambitious enough to attract major port, infrastructure, and manufacturing investments. This is a threshold issue for the future of the floating offshore wind industry: a large enough goal will drive investment to position California at the center of this burgeoning industry in the Pacific rim. Conversely, an overly conservative goal will likely direct certain supply chain investments to other regions. The UC Berkeley Labor Center[7] and the USC-Schwarzenegger Institute[8] studies provide critical feedback on the relationship between scale of offshore wind deployment, potential to stimulate local industry clusters, and job creation.

Related to criteria (4) and (5), we note that offshore wind would provide energy when it's needed most. Coastal winds peak between 4 and 8pm –right when the sun goes down and air conditioners kick on —making offshore wind a critical part of a reliable, cost-effective clean

[7] California Offshore Wind: Workforce Impacts and Grid Integrationhttps://laborcenter.berkeley.edu/offshore-wind-workforce-grid/

[8] USC Schwarzenegger Institute, "California's Offshore Wind Electricity Opportunity," 2021 http://schwarzeneggerinstitute.com/images/files/OSW_Report.pdf

energy system.[9] During a time when California and its neighbors in the Northwest and Southwest are all experiencing capacity constraints due to the combination of changing weather, retiring baseload and dispatchable resources, and increasing clean energy goals, the potential capacity contribution of a resource like offshore wind should not be underestimated. While wind by nature is variable, a portfolio of diverse wind resources from the southwest, great plains, and offshore, each with high average capacity factors but with different production profiles, will in combination enhance reliability.

Regarding criteria (7) on transmission planning, we are grateful that the CAISO has begun the process of determining offshore wind interconnection and deliverability requirements through the recent Transmission Planning Process (TPP) offshore wind sensitivity study and the 20-year outlook. Thus, this component of resource planning is already underway. For the Central Coast, the potential to interconnect 5-6 GW of offshore wind relatively affordably (at an estimated cost of $100 Million) should be acknowledged as a cost-effective solution to support an SB 100 compliant future. We also note that setting offshore wind goals at the right scale will enable the CAISO to plan properly, both in the relative near-term as part of the next TPP cycle and as it creates bridges between the 20-year outlook findings and authorization of new transmission in the TPP.

Criteria (6), (8), and (10) regarding economies of scale, the investment tax credit for offshore wind, and the President's offshore wind goals, respectively, are especially relevant for informing California's 2030 offshore wind goal. The 2030 target, which occurs in only eight years, is more challenging to "get right" than a 2045 target. However, Avangrid Renewables encourages the CEC to consider these three criteria as the primary basis for establishing the 2030 target. We can't start too small to limit economies of scale. We can't start too late to miss out on an investment tax credit that stands to save ratepayers billions.[10] And finally, California should plan to participate meaningfully in the federal government's offshore wind goal for 2030. The state should communicate its commitment to offshore wind development back to its partners in the federal government with a sufficient 2030 goal.

Finally, criteria (9), regarding the technical potential for offshore wind, and criteria (12), regarding potential impacts from offshore wind to ecosystems and ocean-users, should be considered together as part of setting a 2045 goal. The right long-term goal for California lies somewhere between the known technical potential (200 GW) and our understanding of competing human uses and sensitive species and habitat. We note that the first 3 GW of offshore wind will very likely occur in the existing Wind Energy Area established by BOEM in consideration of various boundaries and limitations on development in California waters,

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[9] NREL 2020, Offshore Wind Resource Assessment for the California Pacific Outer Continental Shelf; https://www.nrel.gov/docs/fy21osti/77642.pdf

[10] Offshore wind response to CPUC questions, https://static1.squarespace.com/static/5d87dc688ef6cb38a6767f97/t/60ac16f66758be3683a03e75/1621890812295/CPUC+Responses+Final+%28Mar-15-2021.2%29.pdf

including marine sanctuaries, shipping activity, nearer-shore areas of biodiversity, and Department of Defense restrictions. Setting an ambitious offshore wind goal for 2045 will allow California to properly plan for the next phases of offshore wind development by focusing on a targeted quantity of developable sea-space and determining the best locations for future development based on environmental, human use, national defense, and grid-infrastructure constraints. Ocean-spatial planning for future phases of offshore wind will be most useful if oriented around solving for a specific and sufficient quantity of offshore wind to be developed and the priorities, compromises and mitigation solutions associated with that task. Thus, ambitious, achievable, offshore wind goals are complementary to natural resource goals.

California must also consider its conservation, climate and offshore wind goals within the context of the land and ocean-use requirements for west-wide decarbonization of the electric system. While California does not face the same challenge of access to renewable energy resources as east coast states do, it must not rely on exclusive access to the best solar and land-based wind across the west when our neighbors will and should be depending on those same resources. Given the scale of renewable development needed to achieve decarbonization in the west, California must balance its ocean protection goals, land-based ecosystem protection goals, and desire to lead and support all states in the western interconnection toward shared decarbonization and ecosystem protection. This is a process that will require both ambition and compromise.

V. Proposal for 3 GW by 2030 and 18 GW by 2045

Avangrid Renewables supports an AB 525 planning goal of 3 GW by 2030 and 18 GW by 2045, which assumes a minimum average pace of deployment of 1 GW/year. As explained above, a 3 GW by 2030 goal provides a reasonable but meaningful market and policy signal to launch the industry. The minimum average pace of 1 GW/year is a feasible, steady rate of deployment that will foster long-term investments in supply chain and infrastructure, leverage synergies and economies of scale to support cost-effective commercial-scale deployment, allow for progress along the technology learning curve, and reflect the practicalities of installing large, engineering-intensive facilities. 18 GW by 2045 is an ambitious but achievable goal that will drive the market for floating offshore wind on the Pacific Coast. The CEC setting AB 525 planning goals of 3 GW by 2030 and 18 GW by 2045 will cement California's leadership in the field, put California on the path to meet its climate and clean energy objectives, and meaningfully contribute to national and global climate-driven offshore wind objectives.

Sincerely,

ERIC THUMMA

VICE PRESIDENT, NEW BUSINESS – OFFSHORE WIND – AVANGRID RENEWABLES

About Avangrid Renewables: Avangrid Renewables, LLC is a subsidiary of AVANGRID, Inc. and part of the IBERDROLA Group. It is a leading renewable energy company in the United States, owning and operating a portfolio of renewable energy generation facilities. IBERDROLA, S.A., is an energy pioneer with the largest renewable asset base of any company in the world. Avangrid Renewables is headquartered in Portland, Oregon. For more information, visit www.avangridrenewables.com.

About AVANGRID: AVANGRID, Inc. (NYSE: AGR) aspires to be the leading sustainable energy company in the United States. Headquartered in Orange, CT with approximately $40 billion in assets and operations in 24 U.S. states, AVANGRID has two primary lines of business: Avangrid Networks and Avangrid Renewables. Avangrid Networks owns and operates eight electric and natural gas utilities, serving more than 3.3 million customers in New York and New England. Avangrid Renewables owns and operates a portfolio of renewable energy generation facilities across the United States. AVANGRID employs approximately 7,000 people and has been recognized by JUST Capital in 2021 and 2022 as one of the JUST 100 companies – a ranking of America's best corporate citizens. In 2022, AVANGRID ranked second within the utility sector for its commitment to the environment and the communities it serves. The company supports the U.N.'s Sustainable Development Goals and was named among the World's Most Ethical Companies in 2021 for the third consecutive year by the Ethisphere Institute. For more information, visit www.avangrid.com.

APPENDIX 1

AB 525 Findings and Declarations

SECTION 1.
The Legislature finds and declares all of the following:

(a) If developed and deployed at scale, the development of offshore wind energy can provide economic and environmental benefits to the state and the nation.

(b) Offshore wind energy can advance California's progress toward its statutory renewable energy and climate mandates.

(c) The 2021 SB 100 Joint Agency Report issued pursuant to Section 454.53 of the Public Utilities Code conducted portfolio modeling that selected at least 10 gigawatts of offshore wind energy developments to achieve the state's climate goals, finding a total reduction in total resource costs by an estimated one billion dollars ($1,000,000,000).

(d) California may need to build at least 48 gigawatts of new renewable energy and energy storage developments by 2030 and at least 145 gigawatts of new renewable energy and energy storage developments by 2045 to achieve the goals established in SB 100 (Chapter 312 of the Statutes of 2018).

(e) Diversity in energy resources and technologies lowers overall costs. Offshore wind can add resource and technology diversity to the state's energy portfolio.

(f) Offshore wind energy development presents an opportunity to attract investment capital and to realize community economic development and workforce development benefits in California, including the development and preservation of a skilled and trained construction workforce to carry out projects, long-term job creation, and development of an offshore wind energy supply chain.

(g) Offshore wind energy can contribute to a diverse, secure, reliable, and affordable renewable energy resource portfolio to serve the electricity needs of California ratepayers and improve air quality, particularly in disadvantaged communities.

(h) Subsea electricity transmission could reduce transmission congestion.

(i) With existing technology, each 1,000 megawatts of offshore wind energy will require between 100 and 120 square miles of sea space for development.

(j) The Ocean Protection Council's strategic plan for 2020 to 2025, inclusive, sets an objective for development of a commercial scale offshore wind energy project in California that minimizes impacts on marine biodiversity and habitat, currents and upwelling, fishing, cultural resources, navigation, aesthetics and visual appeal, and military operations by 2026.

(k) In 2016, California initiated a collaborative process with the federal government through the formation of the Bureau of Ocean Energy Management California Intergovernmental Renewable Energy Task Force, which includes a broad public outreach process to examine potential wind leasing areas in federal waters. The federal Bureau of Ocean Energy Management identified areas in Humboldt, Morro Bay, and Diablo Canyon as the first three potential offshore wind "call areas" and issued a call for nominations of interest in 2018.

(l) The Bureau of Ocean Energy Management California Intergovernmental Renewable Energy Task Force has developed and collected important data and information relevant to the assessment of potential offshore wind energy resources, including the creation of the California Offshore Wind Energy Gateway, which assembles geospatial information on ocean wind resources, ecological and natural resources, commercial and recreational ocean uses, and community values and makes this information publicly available.

(m) Offshore wind should be developed in a manner that protects coastal and marine ecosystems. The State of California should use its authority under state programs and policies to ensure (1) avoidance, minimization, and mitigation of significant adverse impacts, and (2) monitoring and adaptive management for offshore wind projects and their associated infrastructure.

(n) The President of the United States and federal Departments of Interior, Energy, and Commerce have announced a shared goal to deploy 30,000 megawatts of offshore wind energy by 2030, employing tens of thousands of workers, protecting biodiversity, and promoting ocean co-use.

APPENDIX 2

AB 525 Goal-setting criteria

(b) In establishing the goals pursuant to subdivision (a), the commission shall consider all of the following:
(1) The findings of the 2021 joint report issued pursuant to Section 454.53 of the Public Utilities Code.
(2) The need to develop a skilled and trained offshore wind workforce.
(3) The potential to attract supply-chain manufacturing for offshore wind components throughout the Pacific region.
(4) The need for reliable renewable energy that accommodates California's shifting peak load.
(5) The generation profile of offshore wind off the coast of California.
(6) The need for economies of scale to reduce the costs of floating offshore wind.
(7) The need to initiate long-term transmission and infrastructure planning to facilitate delivery of offshore wind energy to Californians.
(8) The availability of federal tax incentives for offshore wind investments.
(9) The National Renewable Energy Laboratory report finding that California has 200 gigawatts of offshore wind technical power potential.
(10) The opportunity for California to participate in the federal government's intention to deploy 30,000 megawatts of offshore wind by 2030 and to create a pathway to unlocking 110,000 megawatts by 2050.
(11) Any executive action from the Governor regarding offshore wind.
(12) Potential impacts on coastal resources, fisheries, Native American and Indigenous peoples, and national defense, and strategies for addressing those potential impacts, and promoting ocean co-use.