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AWEA California comments on next generation wind energy technologies

Hello,
Attached please find comments of the American Wind Energy Association California regarding next generation wind energy technology research.

Many thanks,
Danielle Mills

Additional submitted attachment is included below.



November 7, 2018

California Energy Commission
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Filed Electronically

Subject: AWEA California Comments on Next Generation Wind Energy Technologies and their Environmental Implications. Docket No. 19-ERDD-01

The American Wind Energy Association California¹ (“AWEA California”) provides the following comments on the October 25, 2018 Staff Workshop on Next Generation Wind Energy Technologies and their Environmental Implications. Importantly, AWEA California supports the Energy Commissions efforts to facilitate innovation while ensuring affordability and reliability and believes that research to advance utility-scale wind energy development will hasten California’s notable transition to a low-carbon future. We appreciate this opportunity to offer comments on the proposed scope of future research topics related to next generation wind energy technologies.

Summary of Comments:

1. Utility-scale wind energy presents an enormous opportunity to grow the economy through job creation (manufacturing, construction, and operations) and reduced electricity generation costs.
2. California’s desire to attract additional manufacturers should be met with a series of signals to the industry that indicate a robust and sustained market for development of utility-scale wind.
3. The Energy Commission should acknowledge the significant innovations and associated cost reductions of current utility-scale wind technology and should consider potential trade-offs between in-state wind development, which may be constrained due to a variety of factors, and regional wind development with upgraded or repurposed transmission.
4. Transmission – both for land-based and offshore wind – is an area ripe for additional research.

Discussion

1. Utility-scale wind energy presents an enormous opportunity to grow the economy through job creation (manufacturing, construction, and operations) and reduced electricity generation costs.

¹ Members of AWEA California include global leaders in utility-scale wind energy development, ownership, and operations, and many members also develop and own other energy infrastructure such as transmission lines, utility-scale solar, and energy storage. We are committed to the need for—and widespread economic benefits derived from—a diverse and balanced portfolio in California to reliably and affordably meet state energy demands and environmental goals. AWEA California strives to direct the economic and environmental benefits of utility-scale wind energy to California.



During the October 25th Workshop, Energy Commission staff cited the 2017 Wind Technologies Market Report², which noted a lack of wind turbine manufacturers in California. Based on industry data, however, and noted in the NREL market report, California has 13 wind-component manufacturers that produce various components of wind turbines, including resins and coatings, generation seals and connectors, power transmission hydraulics, switches and control systems, converters, and construction equipment.

These facilities currently employ over 3,000 people in California, in addition to construction and operations jobs associated with existing wind generation projects. Furthermore, California's manufacturing output can increase as wind energy development increases throughout the region or country, so these facilities can serve project developers and build turbines that may be installed outside of California's boundaries. California can increase both its manufacturing output and attract new manufacturing facilities by demonstrating interest in utility-scale wind growth in and around California.

Creation of a robust California market for offshore wind, in particular, presents an enormous opportunity to retrain and hire employees from soon-to-be retired Diablo Canyon Nuclear Power Plant and other aging or retiring facilities throughout the state.

2. California's ability to attract additional manufacturers will require a series of signals to the industry that should indicate a robust and sustained market for development of utility-scale wind.

Attracting manufacturers to California would likely require strong market signals indicating significant and sustained development potential in and around California. The recent Bureau of Ocean Energy Management (BOEM) Call for Information and Nominations (Call) to identify companies interested in commercial wind energy leases confirms initial interest at the federal and state level but is merely the first step in attracting significant new investments, including a manufacturing and supply chain presence in California. Other important elements (e.g. incorporation into long-term planning/IRP and collaborative siting efforts) will ensure economic growth through offshore wind energy.

A 2017 study from UC Berkeley, "High Road for Deep Water: Policy Options for a California Offshore Wind Industry,"³ noted "...if state policymakers send clear signals that a multi-year sequence of many contracts is in the offing, private manufacturers and investors are more likely to build factories and other facilities in California for turbines, blades, towers, and foundations. This, in turn, could lower costs and make the electricity produced more competitive with other power sources."⁴ In consideration of

² U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. *2017 Wind Technologies Market Report*. https://emp.lbl.gov/sites/default/files/2017_wind_technologies_market_report.pdf. Footnote 16 on p. 12 of the report notes: "The data on manufacturing facilities presented here differ from those presented in AWEA (2018a) due, in part, to methodological differences. For example, AWEA includes data on a large number of smaller component suppliers that are not included in this report; the figure presented here also does not include research and development and logistics centers, or material suppliers. As a result, AWEA (2018a) reports a much larger number of wind-related manufacturing facilities."

³ <http://laborcenter.berkeley.edu/pdf/2017/High-Road-for-Deep-Water.pdf>

⁴ Collier, Robert. High Road for Deep Water: Policy Options for a California Offshore Wind Industry. 2 November 2017. <http://laborcenter.berkeley.edu/high-road-for-deep-water/>



the economic growth potential of wind energy manufacturing and development, the CEC should also consider workforce development and employment as major drivers of success for clean energy policies in California.

AWEA California supports additional research in the use of California's ports to facilitate development of utility-scale wind. We anticipate an effort at the federal level to assess the capacity of various ports to accommodate offshore wind logistics and development⁵, and believe that the Energy Commission's research should supplement this research with a California lens, focusing on air quality and greenhouse gas reduction. More specifically, given California's clean energy and electrification goals, we suggest consideration of the role of electrification at ports in the assembly and logistics of offshore wind components. This could reduce manufacturing costs if California keeps energy costs low through development of a low-cost, low-carbon portfolio.

3. The Energy Commission should acknowledge the significant innovations and associated cost reductions of current utility-scale wind technology and should consider potential trade-offs between in-state wind development, which may be constrained due to a variety of factors, and regional wind development with upgraded or repurposed transmission.

While AWEA California appreciates the enthusiasm for studying innovations in wind energy technology that can be tailored to a specific wind resource, we must acknowledge the inherent challenges associated with siting utility-scale renewables in California. Many of the state's most productive wind resource areas have either already been developed or are not eligible for development due to the federal, state, or local siting policies. During the workshop, several presenters noted that wind shears and costs are dictated by the nature of the wind resource. It is therefore worth considering whether wind resources might be more productive in other areas of the interior west, where opportunity remains to serve California with flexible, low-cost, utility-scale wind energy.

4. Transmission – both for land-based and offshore wind – is an area ripe for additional research.

Finally, and to this last point, the Energy Commission should consider optimal transmission pathways and configurations for transmission of land-based and offshore wind to serve California. Such a study can be completed separately from other regulatory proceedings, such as the Integrated Resource Plan (IRP) and the California Public Utilities Commission (CPUC) or the Transmission Planning Process (TPP) at the California Independent System Operator (CAISO), but should ultimately feed in to future cycles of both proceedings to enable more utility-scale wind to serve California, bringing with it a host of economic benefits.

Conclusion

AWEA California appreciates the initiative of the California Energy Commission to investigate opportunities to improve the cost, reliability, and economics of utility-scale wind both for land-based

⁵ Water Resources and Development Act, Sec. 1207. Study on Innovative Ports for Offshore Wind Development.



and offshore wind and looks forward to continued participation in facilitating clean energy development in California.

Sincerely,

A handwritten signature in black ink that reads 'Danielle'.

Danielle Osborn Mills
Director, AWEA California
danielle@renewableenergystrat.com
(916) 320-7584