

DOCKETED

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Submitted On: 7/12/2019
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Comments on Utility Scale Preliminary Research Roadmap

Additional submitted attachment is included below.



July 12, 2019

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 19-ERDD-01
1516 Ninth Street
Sacramento, CA 95814-5512

Delivered via email to: docket@energy.ca.gov

RE: Docket No. 19-ERDD-01
Comments on: Preliminary Draft Utility Scale Renewable Energy Generation Research Roadmap

On behalf of the Business Network for Offshore Wind we are providing comments on the research and development opportunities identified for the Electric Program Investment Fund (EPIC) research roadmap on renewable energy generation technologies for utility-scale applications.

The Business Network for Offshore Wind is a 501(c)(3) national nonprofit organization founded in 2011 solely focused on the development of the U.S. offshore wind industry and advancement of its supply chain. We are not a trade association of many voices; we are one leading voice for the offshore wind business community. We bring together developers, policymakers, academia, global experts and more than 300 member businesses for critical discussions and unprecedented networking opportunities. The Network has played an instrumental role in Northeastern states on offshore wind development. Since 2015 we have worked with California policy leaders and we look forward to further advancing California's efforts by providing further research and education, creating partnerships and developing the industries to create a U.S. offshore wind supply chain.

Recent commercial advancements in floating technology mean California's offshore wind resource is truly an awakening goliath. We are very pleased to see the CEC focusing greater attention on this utility scale renewable opportunity and we provide the following comments on the current proposed Offshore Wind Initiatives listed below and also propose several other issues for consideration.

Initiative 5.1: Cost Reduction of Offshore Floating Systems with a Focus on Platform and Anchoring Systems

Initiative 5.2: Establishment of Local Manufacturing Capabilities for Offshore Tower Components

Initiative 5.3: Ensuring that Port Infrastructure can Handle Large Wind Turbine Components

Initiative 5.4: Improve Offshore Energy Interconnection through Development of Offshore High-Voltage Cables

We believe 5.1, 5.2 and 5.3 should not be considered in isolation but should be brought together as one proposal. 5.4 can be a stand alone project but should be developed with consideration of current European research already taking place.

In addition, we would like to propose consideration of some new ideas that build on federal research on Hydrogen and that incorporate Big Data and the Internet of Things (IoT) which is an expansive field and complex to comprehend but becoming increasingly important in many industries including offshore wind.

5.1-3: Focus on California Specific Offshore Wind Platform Design, Components including Towers, Assembly, Logistics, Mooring Lines and Anchoring for Reducing Costs and Meeting California's Clean Energy Needs.

- Rather than California adopting existing pre-commercial Floating OSW structures, start with Registry of existing California based businesses and their capabilities to supply to a California specific F-OSW design.
- Survey the global 55 different floating OSW platform designs to learn which are suitable for CA wind and wave and rank in suitability to meet existing California port infrastructure.
- Match the ranked designer with local suppliers of the components and identify as well as quantify where minimal port infrastructure grades are required.
- Forecast the capabilities required to produce the platform components, assemble, including locally manufactured tower and offshore wind turbine blades (possibly combines with onshore blade production).
- Examine logistics of mobilizing assembled floating platforms away from ports and harbors for deployment in the OSW areas mindful to avoid busy shipping lanes fisheries, and environmentally sensitive habitats and to match mooring line types with anchor types suitable for the Californian ocean floor and seaweed growth.
- Review port infrastructure, component providers and repair specialists (composites and specialty metals) and maritime experience for 30 year operations and maintenance.

Initiative 5.4: Improve Offshore Energy Interconnection through Deployment of Offshore High-Voltage Cables

- Build upon Europe's sub-sea cable development and not duplicate but focus more on where the High Voltage Direct Current (HVDC) should be deployed to bring offshore wind generated electricity from the areas of high wind resources to the areas of high load

NEW Idea which we are available to further develop

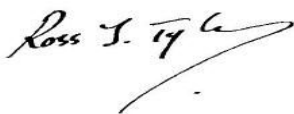
Initiative 5.5 Floating Offshore Wind Energy value add project optimizing power output incorporating Big Data, AI research and Hydrogen production

- Build upon Europe's R&D for Hydrogen production by electrolysis for Hydrogen
- Build upon DoE and NREL's present programs in developing commercially efficient ways to electrolyze salt water at the point of the floating offshore wind turbines powered by its generated electricity.
- Use 5.1-3 above to establish the first US based floating offshore wind test facility to validate production of Hydrogen.
- Given that California's Hydrogen market is estimated by NREL to require the equivalent of 12,400 X 10 MW turbines, determine cost effective supply chain for offshore wind produced Hydrogen to reach the State's existing hydrogen users.
- Incorporate Big Data and the Internet of things research that includes technology advancement in recording more data and the ability to affordably capture, process, store, manage and report useful findings from the data. Further, artificial intelligence is able to detect 'patterns' and to enhance the data in a manner that is far more sophisticated than humans. Big Data is being discussed in Europe in nearly all aspects of the offshore wind arena along with claims that it could enhance efficiency and offshore wind farm power output by an additional 20%. This is the time to understand how Big Data, IoT and AI can be incorporated into California's offshore wind sector.

The implementation of SB 100 has positioned the Golden State to reap the benefits of this growing industry. California's offshore wind resource is the perfect balance to the state's massive solar program, because it provides peak power in the winter and in the late afternoon/early evening, when electricity demand is high and solar production is less strong.

Thank you for the opportunity to comment. We are happy to provide further details and look forward to working closely with you to advance offshore wind clean energy production for California. Nancy Kirshner-Rodriguez, our California Policy Director, is available to follow up with your staff and connect you with our research experts. You may reach Nancy at 916-715-3037 or Nancy@synergypublicaffairs.com.

Sincerely,



Ross Tyler
Executive Vice President