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Testimony
In support of SB 285
Before the Senate Committee on Environment and Natural Resources

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Senator Dembrow and members of the Committee, my name is Belinda Batten, and I am the Executive Associate Dean for the College of Engineering at OSU, and the Project Lead for the Pacific Marine Energy Center South Energy Test Site (PMEC-SETS), a project that will serve, when completed, as the world's premier test facility for wave energy converter arrays.

It is my honor and pleasure to appear before you today in support of SB 285 which would provide a state match for a federal Department of Energy grant that would provide $40 million in funds to develop the test facility we are seeking on the Oregon coast. I want to first thank Senator Roblan and members of the Coastal Caucus for their leadership and support of our efforts to build the world's premier test facility for wave energy technologies in Oregon.

I have been leading the effort at the Northwest National Marine Renewable Energy Center (NNMREC) at Oregon State University (OSU) to develop this facility for the last five years. NNMREC is a collaboration between OSU, the University of Washington, and the University of Alaska Fairbanks to advance understanding of marine renewable energy. Our strength derives from our integrated research, development and testing activities in collaboration with industry partners and the national research laboratories to serve as a "one stop shop" for technology developers; regulatory and resource agencies; and community stakeholders interested in marine energy.

We are developing the workforce for this emerging renewable energy sector, and have placed more than 40 graduates in industrial positions since 2009.

We are blessed with the abundant renewable resources from ocean waves and marine currents. The U.S. Department of Energy (DOE) estimates that the marine renewable energy resource for the continental United States, dominated primarily by ocean waves, can meet 25% of current electricity demand. In particular, DOE estimates that Oregon, Washington and California can meet up to 20% of their electricity requirements from wave energy. The same study estimates that Alaska and Hawaii can meet nearly all of their power loads from marine energy.

To leverage this potential, the technologies that harvest marine energy must be tested, especially in how these resources work alongside other generating resources on an integrated energy grid. NNMREC has been a key player in serving the testing needs of the industry.

NNMREC has developed world-class test facilities, under the "brand" Pacific Marine Energy Center (PMEC). In 2012, NNMREC established the PMEC North Energy Test Site (PMEC-NETS), a non-grid connected facility in Newport, Oregon, and tested the WET-NZ wave energy converter. With support from DOE and other non-federal sources of cost match, NNMREC is developing the PMEC-SETS to serve as the United States' utility scale grid connected test facility for wave energy technology. At this facility, we will test commercial scale wave energy converters and arrays.

When completed, PMEC-SETS will be the US equivalent to the European Marine Energy Centre (EMEC) in Orkney, Scotland that has been operational for 10 years and was constructed with the support of 40M in British pounds. To understand the economic development that can be expected from PMEC-SETS, a recent report from the Highlands and Islands Enterprise in Scotland "estimates that EMEC has generated a GVA[1] to the UK economy of 194 million British pounds with the creation of 149 full time jobs in the Orkney economy".

Experts in the Orkney marine energy community see a strong similarity between the communities of Orkney, Scotland and Newport, Oregon and believe that the payoff to the local community will be similar. The European Ocean Energy Industrial Vision Paper in 2013 states: "Co-investment [in EMEC] from Europe, the Scottish and UK governments has created a self-financing hub for learning and technical advancement - and leveraged millions in private finance into the sector and the local economy."

Oregon has the added benefit of a strong manufacturing sector and supporting supply chain that can build the wave energy converters that will be tested at this facility. When PMEC-SETS is completed, we expect that testing clients will manufacture their designs using the expertise and proximity of Oregon companies. This expectation is borne out by the experience with clients at the smaller scale wave energy converter testing facility at the Marine Corps base in Kaneohe Hawaii: they are manufacturing their wave energy converters in Oregon and shipping to Hawaii.

[1] Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom. GVA is used in the estimation of Gross Domestic Product.

All of these jobs will increase tax revenues in Oregon, whether directly from PMEC-SETS, with testing clients who come to Oregon, or with companies that support the supply chain and manufacture these technologies. All of these activities will increase tax revenues in Oregon. And Oregon will be seen globally as the U.S. leader in this new technology sector.

To date, the PMEC-SETS project has received $6.25M from the DOE. In December, 2016 I was notified that DOE selected NNMREC's proposal to receive up to $40M in additional funding over the next five years to complete design and construction of the facility, and to begin testing.

DOE will require that the remaining $10M be funded through cost match, funded by state, philanthropic, and industry support. We appreciate the legislature's support during the 2016 legislative session in providing $800K to OSU to help secure this grant. Of the remaining $9.2M, we are working to raise at least half of these funds from industry and philanthropy. We are hopeful that the state will provide the other half -- $4.6M. This investment from the state would garner a 9 to 1 match in federal and other funds for a facility that will bring economic development to the entire state.

Ocean energy can play a significant role in our nation's renewable energy portfolio. With the right support, Oregon can be a global leader in the early stage development of this technology. I am pleased to offer my support for S.B. 285, and I will be glad to respond to any questions that you may have about NNMREC's activities or the marine energy industry. Thank you.