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June 6, 2017

### MEMORANDUM

**TO: Council Members**

**FROM: Mike Starrett, Analyst**

**SUBJECT: Panel on Ocean Energy Technologies**

#### **BACKGROUND:**

**Presenter:** Michael Starrett, energy policy analyst; Jason Busch, Oregon Wave Energy Trust/Pacific Ocean Energy Trust; Ted Brekken, Oregon State University; and Kevin Banister from Principle Power.

**Summary:** A panel of ocean energy technology experts will present to the Council.

- **Ted K.A. Brekken** is an Associate Professor in Energy Systems at Oregon State University. He received his B.S., M.S., and Ph.D. from the University of Minnesota in 1999, 2002, and 2005 respectively. He studied wind turbine control at the Norwegian University of Science and Technology in Trondheim, Norway in 2004-2005 on a Fulbright scholarship. His research interests include control and modeling of renewable energy systems and electrical system resilience. He is co-director of the Wallace Energy Systems and Renewables Facility (WESRF). He has received an NSF CAREER award, the IEEE Power and Energy Outstanding Young Engineer award, and numerous teaching awards.
- **Kevin Banister** is Director of Business and Government Affairs for Principle Power, Inc., the owner/designer of the proprietary WindFloat technology, a floating foundation for offshore wind turbines. In his position, he leads Principle Power's business development activities around the world, which include interactions with utilities, developers, government officials, stakeholders and

policy makers in Europe, Asia and the United States. Based in Portland, Oregon, USA, Kevin is a graduate of the University of California at Santa Barbara and the London School of Economics.

- **Jason Busch** is Executive Director of Oregon Wave Energy Trust (OWET) and the Pacific Ocean Energy Trust (POET). Both organizations are nonprofits that support the responsible development of marine energy in Oregon and West Coast, respectively. Mr. Busch is also a co-chair of the Marine Energy Council, the national trade group for the marine hydrokinetic energy sector.

OWET and POET serve as connectors for proponents of marine renewable energy development, including offshore wind, wave, tidal, ocean currents, and ocean thermal exchange – with a primary focus on improving regulatory matters, coordinating with the energy sector, and seeking a social license to use the ocean for renewable energy generation.

Mr. Busch was closely involved in the Oregon Territorial Sea Planning process and is currently assisting with the development of a grid-connected test site in Oregon. He continues to serve on various advisory bodies as a liaison between the state, stakeholders, and marine energy developers to ensure that marine energy develops expeditiously and appropriately. He continues to lead the effort to create a streamlined, yet protective, statutory and regulatory structure that facilitates ocean energy projects.

Prior to joining Oregon Wave Energy Trust, Mr. Busch was Principal at Sustainable Legal Solutions LLC, where he provided legal services specializing in renewable energy company start-ups and project development. Previously, he was an attorney for Ater Wynne and Stoel Rives in Portland, Oregon.

Mr. Busch holds a B.A. in Political Science from Texas A&M University and a M.A. in Philosophy from the University of Southern Mississippi. He received a Doctor of Jurisprudence degree in 2006 from the University of Oregon School of Law, graduating with honors and admitted to the Order of the Coif.

Mr. Busch is actively involved in both business and community organizations. He is on the Energy Trust of Oregon Renewable Energy Advisory Committee, Oregon Department of Land Conservation and Development Territorial Sea Plan Rulemaking Project Committee, and the Northwest Marine Renewable Energy Center Mobile Ocean Test Berth Advisory Committee. Mr. Busch also served as the Secretary of the Ocean Renewable Energy Coalition, and is currently a co-chair the Marine Energy Council at the National Hydropower Association. He has multiple publications, including most recently a chapter in *Climate Change Impacts on Ocean and Coastal Law*, published by Oxford University Press.

Mr. Busch can speak on the following topics:

- State of the wave energy industry
- Governmental programs and incentives for renewable energy development
- Permitting and regulatory environment for wave energy development
- Legal complexities of wave energy
- Environmental and economic benefits of renewable energy development

Relevance: This is related to action items ANLYS-14 (Monitor and track progress on the emerging technologies that hold potential in the future Pacific Northwest power system) and ANLYS-16 (Scope and identify ocean energy technologies and potential in the region, determine cost-effectiveness, and develop a road map with specific actionable items the region could collaborate on should development be pursued.)

Workplan: C.4.1 Prepare for 8<sup>th</sup> Plan, Generating Resources