

OREGON WAVE ENERGY TRUST UTILITY MARKET INITIATIVE

TASK 4: GRID INTEGRATION TOOLS



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The Utility Market Initiative was prepared by *Pacific Energy Ventures* on behalf of the Oregon Wave Energy Trust.

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About Oregon Wave Energy Trust

The Oregon Wave Energy Trust – (OWET) - with members from fishing and environmental groups, industry and government - is a nonprofit public-private partnership funded by the Oregon Innovation Council in 2007. Its mission is to serve as a connector for all stakeholders involved in wave energy project development - from research and development to early stage community engagement and final deployment and energy generation - positioning Oregon as the North America leader in this nascent industry and delivering its full economic and environmental potential for the state. OWET's goal is to have ocean wave energy producing 2 megawatts of power - enough to power about 800 homes - by 2010 and 500 megawatts of power by 2025.

TASK 4.0 GRID INTEGRATION

Objective

The result of this task will establish a set of effective tools and guidelines that will facilitate the future integration of wave energy projects into the grid.

Background

Integrating wave energy into the regional power grid requires analysis and study. As the wind integration issues in the Northwest has highlighted, integration of a variable renewable energy resource has several considerations for the planning and operation of the electrical grid. The Northwest utility community has been responding to new issues as thousands of intermittent MWs of wind have been added to the Northwest system. These issues provide a roadmap for areas to evaluate and anticipate prior to large scale implementation of the wave energy resource. Key integration elements to be considered include the interconnection guidelines required by the jurisdictional utilities, the existing transmission capability, and the scheduling, forecasting and other operational considerations.

Approach

Using the PEV team's industry expertise, to assimilate existing information and engage with Transmission Owners and Balancing Authorities to create a comprehensive summary of Integration Tools for wave energy. The effort will focus on synthesizing existing information, working with regional partners to answer key questions related to wave energy integration, and forecasting future needs for integration of a robust wave energy industry in Oregon.

Sub-Tasks	Summary of Deliverables
4.1 Interconnection Guidelines	4.1 Interconnection Guidelines
4.2 Integrated Systems Analysis	4.2 Integrated System Analysis
4.3 Forecasting Tools	4.3.1 Forecasting Requirements 4.3.2 EPRI Review of WaveWatch III Forecast Tool <i>and</i> EPRI Recommended Implementation Plan
4.4 Scheduling Parameters	4.4 Scheduling Requirements and Challenges
4.5 Utility Considerations	4.5.1 Technical and Operational Barriers 4.5.2 Integration and Balancing of Wave Energy
4.6 Telemetry	4.6 Telemetry