

DEVELOPMENT OF WAVE ENERGY IN OREGON USA

PANEL

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Keyword(s): wave energy, hydrokinetic energy, FERC, coastal zone, comprehensive planning, marine spatial planning, stakeholder outreach, ecosystem based management, permitting and licensing, state territorial sea

A wave environment considered attractive for development features an average energy flux of 50 kW/m. Oregon's coastal wave environment is considered high quality. Current wave energy technologies achieve efficiency from 15% to the 95% reported by Oregon State University's (OSU's) Wave Energy Linear Test Bed at the generating level of 19 kilowatts.

Oregon's goal is to generate 50% of its energy from renewable sources by 2025; wave energy experts believe hydrokinetic energy could provide half—up to 700 megawatts (MW)—based on current consumption. Four wave energy installations off of Oregon hold FERC preliminary permits. One company has applied for the next step: the five-year FERC license to scale up to a 200-device array, connected to the grid. It is estimated that at peak capacity one proposed wave park project could power 60,000 households.

Wave energy depends on large capital investment and working toward becoming cost effective. The technologies must withstand the extremes of wind, corrosive saltwater, and weather in order to provide reliable power. Impacts to the ocean environment must be assessed before any permit may be issued. Comparatively little is known about the ocean and its diverse ecosystems. Scant preliminary studies to determine environmental impacts are inconclusive. A report containing initial scientific discussions on ecosystem impacts from wave energy was recently published by Hatfield Marine Science Center and NOAA.

The ocean and its uses are governed by multiple laws, regulations and agency jurisdictions. The legal/regulatory community has demonstrated interest in adapting progressive, expedited processes to regulating wave energy through investments in state expertise and outreach, tax incentives, legislation, settlement discussions and agreements with ocean spatial users, and programs/staff dedicated to public outreach and stakeholder dialogue. Oregon has shown itself to be a leader in supporting wave energy by making progress on all of these strategies since the early 2000s.

A series of recent actions at the state and federal levels portend a cohesive, programmatic approach to wave energy development. This interdisciplinary panel will describe developments from the following perspectives: Holly V. Campbell will provide brief

history and jurisdictional overview and serve as moderator. Paul Klarin will talk about Oregon's developing comprehensive ocean management plan and revised territorial sea plan to include new uses such as wave energy. Pete Stauffer will discuss Surfrider's role in bringing ocean users together in the Reedsport settlement process. Cathy Tortorici will provide the perspective of a federal fisheries scientist. Kaety Hildenbrand will describe Oregon Sea Grant's structured outreach activities with coastal communities including fishermen who land \$421 million (2006) for the state's economy.

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