

Monday, October 22, 2007

Last modified Sunday, August 12, 2007 11:24 PM PDT



## Wave energy a gold mine

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*OSU a leader in the field; Beaver test buoy to be deployed in September*

Oregon is poor in fossil fuels, but powerful waves keep crashing at the coast, one after another.

On Friday at Oregon State University, about 200 scientists, politicians, policy experts and energy-company representatives talked about how to harness the power of the ocean for electricity.

"It's kind of like a gold rush right now to see who can come up with the best system," said Gregg Kleiner, director of marketing and communications for OSU's College of Engineering.

OSU is the leading American university in the wave energy field, with more than \$1.5 million for research so far this year, said Professor Annette von Jouanne. That's up from zero funding in 1998, when faculty first started discussing wave energy, she added.

The university's latest test buoy, which will be placed in the ocean in mid-September about two miles from Newport's Agate Beach, uses magnets to generate electricity. No other buoys in North America now employ magnets as a way to tap wave energy.

At about that same time, a Canadian company will place a test buoy nearby that employs hydraulics, which most wave energy systems use.

Some systems float on top of the waves, while others sit below the surface of the breakers and tap the heaving motion of the ocean.

"No superior technology has been determined," von Jouanne said. "Research and development will be key."

Four companies are looking at permits to start wave energy facilities in Oregon, including at Reedsport and Bandon, and more could be on the way because of the strong waves off the state's coast.

One East Coast company aims to start producing Oregon wave electricity in 2009.

"We have a tremendous opportunity to develop this industry" and keep dollars and job growth in Oregon, said Justin Klure of the non-profit Oregon Wave Energy Trust.

Diana Enright, assistant director of the Oregon Department of Energy, told the audience about several bills passed regarding renewable energy, including incentives for wave energy producers.

The state has approved \$3 million to start a wave energy demonstration site near Newport, which OSU will oversee, von Jouanne said.

Still, there is a mix of excitement and concern regarding wave energy, said state Rep. Deborah Boone of Cannon Beach.

"Renewable energy is an excellent idea, and we need to pursue it, but not to the exclusion of existing ocean uses," said Nancy Fitzpatrick, administrator of the Oregon albacore and salmon commissions.

Commercial fishermen worry about their traditional grounds disappearing for fields of buoy batteries, she added.



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Annette von Jouanne, the professor who is leading Oregon State University's wave energy program, shows off a prototype of a buoy that uses magnets to generate electricity from the heaving of the ocean. 'It's an untapped resource, and there are a lot of challenges,' von Jouanne said.

"Fishermen are not opposed, but we need to be at the table. We need to be part of the discussions," Fitzpatrick said.

Besides von Jouanne, the university has another faculty member devoted full-time to wave energy and 12 graduate students in the field, with several more to join in the fall. Another staff member soon could be assigned to wave energy.

OSU's renewable energy lab has been renamed the Wallace Energy Systems and Renewables Facility, after Professor Alan Wallace, who died last summer. The lab was created in 1996 thanks to Wallace, a pioneer in wave energy.

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