

ECONOMIC VITALITY

Alternative Energy: Harvesting the Ocean's Potential

Impacts Exploring the ocean for alternative energy to strengthen U.S. energy security

One way to reduce carbon emissions is to replace carbon-based fuels with an alternative energy source. OAR's Sea Grant Program is putting a menu of possibilities on the table.

At Oregon State University, Sea Grant engineering researchers have been developing wave energy extraction devices for the past two years with funding from NOAA and the National

Science Foundation (NSF). They have created prototypes for three types of buoys for generating electricity from wave energy and have scoped out a site for a pilot wave power plant.

Researchers also are exploring use of a wave energy device currently used off the coast of Scotland. Deployed off Oregon's coast, researchers predict that 200 buoys could potentially power something comparable to the demands of Portland's business district. Oregon State Sea Grant researchers are not alone in considering energy harvested from the ocean. Other coastal states, including Washington, Hawaii, California, Massachusetts, Rhode Island, and Maine, also are exploring ocean energy technologies.

In the mid-Atlantic, Delaware Sea Grant completed a survey looking at Delaware residents' opinions on offshore wind power. Ninety percent of the 949 residents surveyed favor placing wind turbines as high as 40 stories off the Delaware coast, even if their electric bills increased up to \$30 per month. The survey reflects OAR's support for social science research to improve our understanding of the true impact of NOAA research on human lives.

About Sea Grant...

OAR administers the National Sea Grant College Program, a nationwide network of 32 university-based programs that conduct scientific research, education, training, and extension projects designed to foster science-based decisions about the use and conservation of our aquatic resources.

Image: Oregon Sea Grant supports new wave energy research at Oregon State University.

One only needs to watch the rhythmic rolling of ocean waves to see their potential as an energy source. The density of ocean water—about 1,000 times that of wind—also is significant to its potential for generating electricity.

