

Tidal power firm explains pilot project

by Marie Jones Holmes

A status report on an innovative new technology designed to harness the energy-generating potential of ocean tidal currents was discussed at an open house held January 16 at Ocean Renewable Power Company's (ORPC) Eastport office. ORPC President Chris Sauer described the informal meeting as a good opportunity to explain what the company is doing. More than three years in development, the \$1 million demonstration project will test the effectiveness of a prototype of its patented Ocean Current Generation (OCGen) technology.

The key component is a turbine-generator unit (TGU). The TGU contains two horizontally mounted cylindrical water turbines with a generator placed between the turbines. It is submerged 30 feet below a barge in the channel between Eastport and Deer Island. The testing site is within the site boundaries of the preliminary permit that ORPC has received from the Federal Energy Regulatory Commission (FERC). The barge will be held in place by a standard mooring system as the tidal currents move through the turbines, and electricity is generated, metered and then dissipated on the deck of the barge. The barge and TGU are 65 feet below water in Western Passage.

The company anticipates that the pilot unit — to be tested over a three-week period — could generate as much as 15 to 25 kilowatts of power in a six-knot current. Testing of the demo unit will begin in the next two weeks.

The TGU is just part of a much larger power-generation platform that will contain several "stacked" TGUs that are combined with buoyancy/ballasting and other modular components to create an OCGen module. The generating capacity of an OCGen module could be as high as 1,000

kilowatts in a six-knot current. This could be enough electricity to power over 200 average U.S. households.

Sauer says the demo project was conceived a year ago. "With a start-up company, we need to raise money, and investors want to see a demonstration before they are willing to invest." To date, ORPC has raised nearly \$2 million to fund the development of the technology and the company.

Eastport ORPC Site Manager Robert Lewis noted that one million dollars has already been spent on the Eastport project, and half of that amount has been spent in Eastport and Washington County. Lewis noted that Gilbert Murphy of Murphy's Electric, Ryan Newell of Newell Construction and Don and Steven Cox of Woodland Machine Works are ORPC Maine's primary contractors for the pilot project. He said the support from the contractors and the suppliers, in addition to that of the Eastport Port Authority, city council, administration and public works, has made this project very rewarding. Also, ORPC Maine has received exceptional support from Phoenix Salmon, as David Morang and staff have shared their experience working the local marine environment. Gerald Morrison of Morrison Manufacturing and Butch Harris have also provided technical assistance and support. The TGU was assembled at the Boat School in Eastport.

The demonstration project was launched December 8 at Deep Cove, marking the first time a tidal device like this was placed in Maine waters. Sauer says the proposed schedule calls for securing venture capital funding during the summer of 2008, testing a full scale TGU with power electronics in the spring of 2009, and installing a full-scale prototype in 2010.