

ORPC eyes province's test sites for tidal power projects

by Lora Whelan

Tidal energy developers working in the Bay of Fundy received some surprising news in late June when Irving Oil Ltd. announced that it would be ending its tidal research initiative in the bay. In 2008 the company entered a two-year lease agreement with New Brunswick for 11 Crown sites. Irving Oil was working with the Huntsman Marine Science Centre in St. Andrews to conduct tidal energy studies of the sites. The New Brunswick Department of Natural Resources is accepting applications for leases from any company that is interested in the tidal test sites.

One tidal energy company with an interest in the recent development is Ocean Renewable Power Company (ORPC). The tidal energy company has headquarters in Portland and a satellite office in Eastport where work is progressing on a tidal generating unit test placed in Cobscook Bay. ORPC is developing in-stream tidal turbine technology that can be used in ocean and river applications. John Ferland, vice president of ORPC Project Development, says that while Irving's decision definitely represents a change, his company has always been interested in the possibility of working in New Brunswick. "We've often thought New Brunswick would be a great place to branch out because of its proximity to Eastport." However, he explains that Maine has a clear policy and regulatory pathway for companies to follow, whereas in New Brunswick policy is still evolving. From the private sector standpoint, the Maine pathway for tidal energy development may be new and untested, but it's there to use and "has clarity."

If ORPC were to pursue tidal energy development in New Brunswick, Ferland says that the company would use the same strategy it uses elsewhere. "If we end up working in New Brunswick, our philosophy is like wherever we work we would initiate a partnership with a local company."

Ferland recently attended an Eastport City Council meeting to present a report on the company's economic impact on the area over the course of the last two years. A little over \$2 million has been spent by ORPC in Eastport and the neighboring area. ORPC has three Eastport-based employees and a number of local contractors who in turn hired about three dozen people to work on specific projects. The company expects that as they reach a critical mass of research and data collection by the end of this year, those financial numbers will begin to increase as the tidal project expands to generating power to the electric grid. ORPC expects to "embark on a \$7 million project to install its first grid-connected tidal generator system in the fall of 2011."

The Kitty Hawk of tidal energy

"What we're doing in Eastport," Ferland says, will have broad implications for tidal energy research the company is conducting in Alaska. But beyond that, he says, it could have the same kind of impact on tidal energy in general that the Kitty Hawk had on air travel.

"We get excited by what we do we love the technology." Ferland cautions that the turbine generator unit presently out in Cobscook Bay is not a museum piece. After the unit was launched in April, a short was discovered in the generator. In the process of conducting maintenance, the technical team realized there was a better way to have the technology work. This kind of discovery, Ferland says, is exactly the point of the testing of the unit. The generator will be reattached to the turbine by the end of July. In the meantime, the turbine foils continue to spin in the bay and are being tested along with the continuance of environmental sampling.

Once the generator is back in place, a pilot project for the U.S. Coast Guard will resume "in early August and will run for at least 60 days." The power generated will be used for the Coast Guard's 40' search and rescue vessel located at the Eastport breakwater. The generator is expected to provide two to four hours of power per day and will supplement the existing supply powering the vessel's electrical systems. The project is a U.S. Coast Guard Research and Development Center (RDC) Broad Agency initiative to meet goals of reducing greenhouse gas emission by three percent annually through the year 2015. The agency had \$100,000 in federal funds to award to the winning tidal proposal.

By the end of 2011, ORPC hopes to have a Federal Energy Regulatory Commission pilot license to operate a grid-connected tidal generator unit located in Cobscook Bay. "We're at just the beginning and looking to bring a modest amount of energy" to the grid, Ferland says. He does not anticipate that transmission hook-up will be a big issue with this early work in the United States or even if the company were to begin pursuing tidal development in New Brunswick. "We have an opportunity to become grid connected without creating stresses to the grid."

A neighboring tidal demonstration project in the Bay of Fundy's Minas Passage off Nova Scotia, comprised of a 400-ton one-megawatt commercial-scale tidal energy unit, has proven problematic. In early June two of the in-stream unit's blades were damaged. Nova Scotia Power Inc. and its Irish partner, OpenHydro Group Ltd., plan to make repairs and evaluate the design. The unit has an acoustic modem meant to transmit data during the unit's operation. However, the modem has not been transmitting and only a limited amount of data has been recorded on video. The "open-centre" turbine design is by OpenHydro.