

# Blue Power

## The OREG Newsletter

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### Message from the Executive Director Chris Campbell

Well, 2008 arrived with a great big shot in the arm for ocean energy in Canada and even perhaps the world. On January 8, the Premier of Nova Scotia led the announcement of the partners in the tidal testing facility in Minas Passage.

We are very encouraged by the engagement of one of the region's major industrial companies, the utility, the Province and three technologies, one being Clean Current Power Systems whose Race Rocks project vaulted them among the world leaders in tidal energy. Open Hydro, one of OREG's Ocean Energy Leaders, is Nova Scotia Power's partner.

The fact that much of the community of Parrsboro and other Bay of Fundy community leaders turned out for the announcement is an indication of the reaction "Why have we not done this before?", which we are seeing right across the country.

We believe the community of support for ocean energy is attracting political leadership in many regions, OREG has three local governments as members.

To update further on the growth of OREG's membership means thanking those who have renewed so promptly and to acknowledge that January brought us 12 new members. With all of the renewals we should surpass the 100 mark.

More than a dozen are European and US based and

another half-dozen are Canadian subsidiaries, underlining the international nature of developments in ocean energy.

OREG is actively working to support a network of Pacific coast interests that extends from Alaska to California. We are working toward more formal relationships with UK's BWEA-Marine other national associations. With our friends at Industry Canada and NRCan we will have a Canadian evening at OREG's Global Marine Renewable Energy conference.

With renewables and the low-carbon energy future rapidly becoming "the new thing", OREG will be working even more to have ocean energy included in broader renewables and climate change events and discussions. This will mean participating in many international events this year, including Washington DC and Aberdeen.

We will be trying to draw in the power and marine engineering, project development, financial, legal and insurance communities; groups we need as the sector moves to pioneer power projects.

We will post notices of events at which OREG board, staff or members are speaking or exhibiting; to train and encourage others to present on behalf of the sector.

The feedback we get on the Bi-Weekly News and the website is always positive and Jessica is now finding complete strangers approaching to thank her for the

News! The website now attracts around 3,000 unique visitors per month and around 300 hit the site in response to each notice of Bi-Weekly News.

With a growing interest in the application of in-stream energy approaches in rivers, canals and other freshwater applications, OREG is bringing the tidal and freshwater interests together in Quebec City on April 21 & 22.

The timing is good (springtime in Quebec City as it celebrates its 400<sup>th</sup> birthday!) as member New Energy has installed a turbine in a Manitoba Hydro facility, Verdant Power moves ahead with its Ontario project and Service d'actions entrepreneuriales de Manicouagan and partner SPG Hydro look for Quebec opportunities.

Fall will bring OREG back to British Columbia to look beyond the 2007 Energy Plan and review progress with almost three dozen investigative permits.

As OREG works with federal and provincial governments, and with utilities, our priority will be creation of a supported marketplace for electricity from ocean energy. If electricity prices enable project planning we will need the *learn by doing* approach to ocean energy permitting that we have seen advanced by FERC in the US.

We look forward to meeting you during 2008. We hope you all will be bringing new members aboard this year.

#### Inside this issue:

Canadian Industry Update 2

Member Company Updates 2

Member Company Updates Cont. 3

Upcoming OREG Event 4

OREG Membership 4

## Canadian Industry Update

The Nova Scotia Department of Energy has moved one step closer to developing the immense tidal energy in the Bay of Fundy.

In the beginning of January they announced the successful bidders for construction of tidal testing facility and three technology candidates.



**Chris Campbell at the BC Chamber of Commerce Energy Summit.**

Minas Basin Pulp and Power will build the common-user facility, which will connect all the devices to the

Nova Scotia electricity grid.

The three technology candidates for first occupancy at the facility are: Clean Current Power Systems; Minas Basin Pulp and Power with the

UEK Hydrokinetic Turbines; and Nova Scotia Power with the OpenHydro Turbine.

The Nova Scotia government is partnering with the Offshore Energy Environmental Research and Offshore Energy Technical Research Associations to host an R&D Forum in Halifax on May 21 and 22nd. The ocean energy session will kick off the event, including a presentation from OREG Executive Director Chris Campbell.

OREG continues to develop international relationships to accelerate the global ocean energy industry through collaboration.

As a part of these efforts, OREG Project Director Jessica McIlroy attended the BWEA Marine conference in Edinburgh in February. She will also be

presenting at the All-Energy Aberdeen conference again this year in May, and maintaining an OREG booth as part of the Canadian pavilion.

We continue to promote our member companies for investment and development project, Canada as a place to do business, and opportunities for collaborative research.

On July 20 - 24 Vancouver will host this year's PWNER Annual Summit. OREG is currently forming the agenda for the ocean energy session and assisting with the development of a clean technology showcase.

We encourage ocean energy interests to participate in this event, which provides a rare opportunity to present issues to legislators and policy makers. ([www.pwner.org](http://www.pwner.org))

*“which will connect the devices to the Nova Scotia electricity grid”*

## OREG Member Updates

**Marine Current Turbines Ltd** has announced a new round of investment totaling £4.8million. ESB International, part of Ireland's national electricity company, is the major contributor with an investment of £3million in Marine Current Turbines Ltd.

In addition, ESB's retail subsidiary, ESB Independent Energy has

signed a five year Power Purchase Agreement to buy all of the electricity output from the SeaGen tidal facility which will be sold as part of its green energy offering to its customers. ESB will be one of

the first utilities in the world to provide tidal energy to its customers.

**Lunar Energy** announced an agreement with Korean Midland Power Co, for a 300-turbine field in the Wando Hoenggan Water Way off the South Korean coast. Fabrication and installation of the tidal turbines will be carried out by Hyundai Samho Heavy Industries, while Rotech Engineering provides design optimisation and specialist components.

It is intended that full resource research and feasibility be completed by July 2008 with the installation of a 1MW pilot plant by March 2009. Each 1MW unit has a turbine diameter of 11.5 metres and a fully ballasted weight in excess of 2500 tons.

**New Energy Corp.** has installed a 5 kW turbine at Point du Bois, Manitoba, and plan to install a 25 kW system this spring. Building on testing completed at the Bonnybrook Wastewater Treatment Plant in Calgary, they will be installing 2 and 5 kW turbines, also this spring.

**Devine Tarbell & Associates, Inc.** (DTA) was selected by Natural Resources Canada to perform a study to provide information on Canada's ability to compete in marine energy technology development.

The study will include a technical overview of tidal current and wave energy technologies in addition to the assessment of Canada's related R&D capabilities and capacity.



**The New Energy Corp. EnCurrent turbine ready for shipping.**

## OREG Member Updates Cont.

The **National Research Council's Canadian Hydraulic Centre** is continuing to expand on their ocean energy atlas and provide testing opportunities at their Ottawa facilities.

They have recently completed model test of the **Wave Energy Technologies** "WET Engine: 1:10 scale prototype. They will be presenting the results of a global wave energy assessment at ISOPE-2008 in Vancouver this coming July. Their current resource assessment activities include a study of the Bay of Fundy, the St. Lawrence River, and parts of the BC Coast.

Australia's **BioPower Systems Pty Limited**, has commenced work on a renewable energy project to test its two unique ocean power technologies in Tasmania, Australia.

Preferred deployment sites have been identified on the west coast of King Island for the bioWAVE wave power system and near Flinders Island for the bioSTREAM tidal power system.

They aim to have both systems connected to the distribution grids with preliminary discussions already held with Hydro Tasmania, which provides power on both islands.

**SAIC** has pursued the concept of marine renewable energy as a logical extension of the company's work in naval undersea and ocean observation applications. SAIC's Neil Rondorf conceived of and led the effort to establish the Virginia Coastal Energy Research Consortium (VCERC) at Old Dominion University, in Norfolk, Virginia.

VCERC examines a diverse set of maritime renewable energy sources. The most well-known is wind, but VCERC research priorities also include tidal and wave energy, and the cultivation of marine algae for conversion to biodiesel and other fuels.

**Solar Inspired Energy Inc.** is now preparing for pre commercialization testing. The NRC-IOT facility at Memorial University in St. John's Newfoundland provides us with a choice of towing tank or offshore-basin. The testing will provide SIE Inc. with actual values and measure all relevant operating conditions.

SIE-Inc. plans to produce, then test a multi stage SIE-CAT™ Wave Energy Accumulator platform (or mini-farm) consisting of five (5) sets of compressor / floatation assemblies.

**BC Tidal Energy Corporation** and **Marine Current Turbine Ltd** are currently investigating potential sites for installing and operating underwater tidal current turbines in the southern portion of Discovery Passage, BC, from Race Point to Cape Mudge. As part of this investigation, **ASL Environmental Sciences Inc.** was contracted to provide model simulations of flows in the area.

The objective of this study by ASL is to provide some preliminary 3D numerical modeling simulations of the currents, which can be used to investigate the feasible sites for installing tidal current turbines.

ASL Environmental Sciences carried out current measurement transects for Tollhouse Energy Company to identify the best place to put a run-of-the-river hydro turbine in

the Great Bear River, in the Northwest Territories. The nearby Dene village depends on diesel generators and would like to extract their power from the river. The lake and parts of the river freeze up but the upper section of the river remains ice free all year and should be suitable for a run-of-the-river turbine installation.

**SyncWave Energy** has been deploying their wave buoy off the coast of Tofino since November 2007. They completed two months of trials, and then made minor modifications in January.

**Powertech Labs Inc.** has completed Phase-I of the BPA Technology Innovation project on ocean energy (tidal current and ocean waves).

The final report, "An Assessment of Variable Characteristics of the Pacific Northwest Region's Wave and Tidal Current Power Resources, the Their Interaction with Electricity Demand and Implications for Large Scale Development Scenarios for the Region - Phase I", is available [online](#).

The project was funded by the Bonneville Power Administration (BPA), BC Hydro, and the BC Transmission Corporation.



**SyncWave Energy's AXYS Technologies' TRIAXYS™ Wave Buoy off the coast of Tofino.**

**"3D numerical modeling simulations of the currents"**



**Pelamis device at the dockyards in Leith, Scotland.**

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## Upcoming OREG Event

Join OREG and industry leaders in Quebec City on April 21 and 22nd for the OREG 2008 Spring Symposium: Canada's Ocean Future, New Partnerships and Wider Opportunities.

We will look at the expanding technology development and project opportunities for ocean energy technologies, with a focus of using in-stream tidal technologies in all in-stream water flow applications.

Another focus will be the increasing international connections being made to advance ocean energy. There will be a number of speakers from France, whom have been increasing connections with Quebec. As well, they will speak to the next International Ocean Energy Conference which will be held in France in October.

We will be joined by: Thierry Maitre and Ali Tourabi from the Institut National

Polytechnique Grenoble; Georges-Henri Gagne from CITECH; Frederic Jouve and Cyrille Abonnel from EDF; Alain Clement from L'Ecole Centrale de Nantes; Michel Paillaird from Ifremer; and Philp Rafals from Centre Helios.

Technology developers that will be speaking and updating on progress include Verdant Power, Ocean Renewable Power Co., New Energy and Tidal Sails.

To ensure sector support and expansion we do our best to broaden the engagement of the ocean energy supply chain. Joining us will be speakers from Jacques Whitford, Minas Basin Pulp and Power, SPG Hydro, Garrad Hassan, and Devine Tarbell & Associates.

Academic activity in ocean energy continues to increase as we focus our attention on R&D support and the development of highly qualified people for our emerging sector. Andrew Henry from Dalhousie

University will provide an overview of the Canadian Marine Energy Research Network. Graham Daborn from Acadia University will speak to environmental assessment and ecological issues.

Sponsors current include:

- Quebec Ministry of Economic Development, Innovation and Export
- Quebec Ministry of Natural Resources and Wildlife
- Service d'actions entrepreneuriales de Manicouagan
- SPG Hydro
- Devine Tarbell and Associates
- Nova Scotia Department of Energy
- BC Hydro

Becoming a sponsor and register today!

[More Information](#)

## JOIN OREG TODAY!

OREG's Board invites you to join them in making the wave and in-stream tidal energy an economic, energy and environmental win.

### OREG offers:

- Communication, meeting and collaboration opportunities for those working on development of renewable ocean energy;
- A voice for the sector in creating an enabling regulatory, innovation, development and financing environments;
- Growing visibility for the emerging energy and economic opportunity;
- Access to information, resources and business opportunities in the world of ocean energy.

### [ONLINE MEMBERSHIP FORM](#)

*The Ocean Renewable Energy Group (OREG) aligns industry, academia and government to ensure that Canada is a leader in providing ocean energy solutions to a world market.*