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Canadian Marine Energy Research Network

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OREG Spring Symposium
Quebec City, April 22, 2008

Canadian Marine Energy Research Network

- The Rationale
- What Should it Look Like
- How Will We Build it
- Establishing the Network
- Developing the Network

The Rationale

- A tremendous wave and tidal resource exists off Canada's three coastlines
- Marine energy technology and site developers are eager to deploy devices in Canadian waters
- A strong and coherent global marine energy research base is underdeveloped
- There is an opportunity to develop the Canadian marine energy resource using Canadian researchers and Canadian technology
- The first logical step.... establishing the Canadian Marine Energy Research Network

What Should it Look Like ?

- A virtual Centre of Marine Energy Research
 - ▶ Canadian researchers collaborating with other researchers in Canada, the EU, UK, and US
 - ▶ Conducting research on issues associated with marine energy development – technical, environmental, socio-economic, policy and regulatory.
 - ▶ Developing and refining the science and engineering of marine energy conversion while training the next generation of marine energy researchers
- Reducing risk and uncertainty for government and industry stakeholders
- Building research capacity through education of highly qualified personnel
- Modeled after the SuperGen Marine Energy Research Consortium?

Supergen Marine Energy Research Consortium

- Phase 1: October 2003 – September 2007 (~ £ 2.6M)
 - ▶ 5 UK Universities
 - ▶ > 35 academics and researchers
 - ▶ 13 PhD students
 - ▶ > 30 collaborating organisations (industry, government)
- Phase 2: October 2007 – September 2011 (~ £5.5M)
 - ▶ 5 UK Universities
 - ▶ 38 PhD students
 - ▶ > 30 collaborating organisations (industry, government)

The Materials to Build it

- Research community

- ▶ Universities, National Research Council, Federal Institutes of Oceanography, international research consortia, industry researchers
- ▶ Research infrastructure, fundamental and applied research, graduate student training

- Governments

- ▶ Federal, Provincial, and Municipal
- ▶ Stable and sustainable funding, incentives, policy and regulatory delivery, knowledge and guidance

- Industry Stakeholders

- ▶ Input from technology and site developers, power producers, system operators
- ▶ Industry perspective on research needs

Establishing the Network

- Organizational workshop – May 23-24, 2008
 - ▶ 2 day meeting of 20 – 25 invited stakeholders to:
 - establish governance
 - define research needs
 - determine research capacity and infrastructure
 - Identify the gaps
 - identify funding mechanisms
 - draft a strategic research and education plan
- Research proposal workshop – Fall, 2008
 - ▶ Research, develop, and prepare funding proposals
 - based on the outcomes of the organizational workshop
 - funding for sustainable operation of the network
 - funding for short, medium, and long term research programs

Establishing the Network

Potential Canadian Participants:

- UVic, UBC, U Manitoba, McGill, UNB, U Moncton, Acadia, Dalhousie, Memorial, and ?
- NRC Institute for Ocean Technology (NRC-IOT)
- NRC Canadian Hydraulics Centre (NRC-CHC)
- NRCan – CANMET
- Canadian Oceanographic Institutes

Establishing the Network

Potential International Collaborators:

- Supergen Marine Energy Research Consortium – Edinburgh
- EMEC – Orkney
- Wavehub – Cornwall
- Wave Energy Centre – Portugal
- France ?... Italy ?...
- United States ...
 - ▶ Tidal Energy Device Evaluation Centre – Maine
 - ▶ University of Rhode Island
 - ▶ University of Massachusetts – Dartmouth
 - ▶ Massachusetts Institute of Technology
 - ▶ Others?

Developing the Network

- Network operational funding potential
 - ▶ NSERC – Strategic Workshops Program
 - ▶ Natural Resources Canada
 - ▶ Atlantic Canada Opportunities Agency
 - ▶ Western Economic Diversification Canada
 - ▶ NS Energy offshore research associations (OEER and OETR)
- Developing International Collaboration
 - ▶ Foreign Affairs and International Trade Canada
 - ▶ Natural Resources Canada
 - ▶ UK Trade and Investment

Developing the Network

- Network Research Funding
 - ▶ Canada ecoTrust
 - ▶ NSERC – Collaborative Research and Development Grants
 - ▶ NSERC – Industrial Research and Canada Research Chairs
 - ▶ NSERC – Strategic Grants
 - ▶ NRC-IRAP
 - ▶ SDTC, ACOA, WED ...
 - ▶ Provincial government ministries
 - ▶ Industry

Conclusions

- There is an opportunity to share in the development of the global marine energy resource using Canadian researchers, Canadian technologies, and Canadian manufacturers
- Canada needs a comprehensive and collaborative marine energy research network that works closely with international consortia
- Secure, dependable, and sustainable research and operational funding is critical
- Academia, research institutes, governments, and industry are interested and supportive of a Marine Energy Research Network
- Let's not let the opportunity slip away!

Thank you

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