

A Strategic Relationship between EMEC and FORCE

INTRODUCTION

Scotland and Nova Scotia are bound by ties of history, kinship, culture and values. Our peoples are shaped likewise by the sea, appreciate its power and bounty, and have long maritime traditions. As a result of our common past and concern for the future we each identified the need for technologies and techniques that beneficially harvest energy from the sea. Our shared culture prompts us to seek economic opportunities in successfully addressing the many environmental, engineering, scientific and financial challenges that must be met if marine renewable power is to contribute to the energy mix the world needs.

We recognize that the challenges and opportunities are so great that they can and must be shared.

THE PARTICIPANTS

The European Marine Renewable Energy Centre (EMEC) and the Fundy Ocean Research Center for Energy (FORCE) ("the Participants") support the development of marine energy devices and the progression of the technology from the prototype stage into the commercial market place, in addition to supporting research related to marine renewable energy and its effect on the environment.

Established in 2003 EMEC is the first centre of its kind to offer developers the opportunity to test full scale grid connected prototype devices in addition to non grid connected scale devices harnessing the power of the sea, and remains the only test centre to offer developers of both wave and tidal stream devices the opportunity to test in the world class wave and tidal conditions of Orkney, Scotland.

FORCE was incorporated in 2009 and is building a facility that will offer developers the opportunity to test full scale, grid connected tidal turbines singly and in small arrays in the Bay of Fundy, Nova Scotia, known to have the highest tides in the world.

Both share the goal of supporting informed decision making in marine renewable energy, undertaking research and providing a safe and technologically advanced setting for the deployment of prototypes. Until now each has enjoyed an informal and collegial relationship, yet both understand the time is right to form a relationship which shall be utilised to further research, enable the sharing of data and forming a testing partnership.

EMEC's objectives are to:

- Provide independent testing, assessment and data collection in a world class wave and tidal location
- Facilitate research into the interaction of devices and their potential impacts on their surrounding environment
- Ensure a fast, safe and clear path for developers who wish to test a device in real world conditions
- Collect and disseminate data backed by our accreditation as a measurement laboratory with the UK Accreditation Service (UKAS) for measurement of wave and tidal energy conversion systems, electrical energy output (as voltage and current) and for meteorological data including temperature, barometric pressure and rainfall.

FORCE's objects are to

- Provide facilities for the testing, demonstration, and study of in-stream tidal turbines;

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- Support interdisciplinary research into
 - turbines,
 - the interaction of turbines with the natural environment,
 - techniques and technologies related to turbines,
- Serve as a catalyst for economic opportunities associated with the development and deployment of this new suite of marine renewable energy technologies and associated services.

FORCE is neutral as to the technologies but is founded in the belief that instream tidal turbines have the potential to bring clean, reliable and affordable energy to consumers throughout the world.

THE MESSAGE

Together EMEC and FORCE recognize that collaboration between the world's premier ocean energy test facilities and research environments will enable them and their clients to solve problems across traditional professional boundaries and competences. Training and education as well as innovative activities are naturally integrated with their respective research activities. A strategic relationship will provide an enabling mechanism to validate and enhance the basis of customer-driven activities including advice to the business community, institutions and authorities.

SCOPE AND OBJECTIVE

A Strategic Relationship between EMEC and FORCE affirms their collaborative intent and provides a basis for strengthening collaboration in order to better achieve their respective goals.

The Participants recognize that the formation of this Relationship will require continual dialogue between them and, accordingly, expect to modify and amend this agreement as technologies, policies and program goals change over time.

This Relationship is intended to focus on tidal energy simply because that is the area of shared activity. However, the participants anticipate that much of EMEC's experience with wave technology is relevant to tidal operations and, additionally, will be of interest to Canada and Nova Scotia as they begin to examine other marine renewable energy opportunities along the world's longest coastline.

COLLABORATIVE ACTIVITIES

This Relationship is the basis for focused collaboration. During the first two years the participants will work to develop direct personal relationships between key members of their respective organizations through site visits, conference calls, and other means of communication and emphasis will be placed on exploring opportunities for collaboration on research and operational matters.

If the Participants agree to undertake a joint project they will develop a separate written agreement for each project with defined specific goals and setting out each party's contribution, deliverables, responsibilities, and intellectual property rights and obligations.

Collaborative activities under this Relationship may include, but are not limited to, activities in the scientific and technical areas of mutual interest. The initial area of includes the following areas of mutual interest, such as but not limited to:

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- Fish surveys – evaluation, netting, and sonar including
 - Acoustic monitoring techniques and results
 - Measurement and validation techniques
- Benthic habitat assessment
- Submarine power cable deployment, maintenance, retrieval, and redeployment
- Submarine power connection

The Participants shall bear their own expenses for collaboration under this Relationship including all administrative costs, overhead expenses, labor costs, insurance costs, travel expenses and similar costs, unless a separate agreement between the Participants provides otherwise.

REVENUE GENERATING ACTIVITIES

EMEC has eight years experience in the design, implementation and operation of a marine test centre. In the process it has developed proprietary Intellectual Property (IP) which is the basis of its consultancy practice.¹ FORCE has not engaged in a commercial consultant practice; never the less it too is acquiring experience in the operation of a marine test centre.

The Strategic Relationship shall enable the rapid and effective utilization of both parties' skill bases for the purpose of revenue generating activities by providing:

- An effective fast track method for one party to access the other's IP and services as and when necessary on terms the parties will establish as required; and
- A two way exchange of proprietary IP and services that will create a powerful shared resource for internal and external uses.

THE CONSORTIUM APPROACH

The combined knowledge and capability of both enterprises may provide for an expanded skill and personnel reservoir with which to offer revenue generating services to prospective clients around the world.

FORCE AND EMEC COMBINED RESEARCH FOCUS

The combination of data collection and manipulation, modeling and research priorities will produce a substantially greater wealth of expertise and ability to participate in a wider scope of research topics and funding opportunities. In the event that external funding is or might be available for selected projects, the Participants may either develop a separate written agreement for such projects or join forces in order to provide a more cohesive approach and solution. In such cases, the terms of funding will be agreed by both Participants before the commencement of activities and will be described in a separate written agreement.

REPORTS, DOCUMENTS AND RELEASE OF INFORMATION

Each participant intends to facilitate exchanges of nonproprietary information. The Participants intend that information, data and reports of collaborative activities carried out under this Relationship may be released by either Participant with the written concurrence of the other Participant.

¹ See Appendix

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Activities that may involve sharing of proprietary information and transfer of rights and interest in intellectual property are excluded from the purview of this Relationship. In the event it becomes necessary to share proprietary information, separate nondisclosure agreements shall be established.

REVIEW OF ACTIVITIES

The Participants shall formally review collaborations established under this Relationship to ascertain their effectiveness, recognize participating personnel, and identify promising areas for future collaboration.

WRITTEN AGREEMENTS

Specific activities derived from the collaborative activities under this Relationship, including as appropriate details concerning financial arrangements and the allocation and protection of property rights, including intellectual property rights, will be confirmed in a separate written agreement between Participants. Such separate written agreements will set forth as appropriate a work plan, staffing requirements, cost estimates, funding sources, a plan for the adequate and effective protection of intellectual property rights and other arrangements or conditions that are not within the purview of this Relationship.

CONTACTS AND AMENDMENTS

All notices, communications and coordination shall involve, at a minimum, the following individuals, their successors and/or designees as follows:

FOR EMEC

Neil Kermode

Old Academy

Back Road, Stromness

KW16 3AW, Orkney

FOR FORCE:

Douglas J Keefe QC

Executive Director

Fundy Ocean Research Center for Energy (FORCE)

P.O. Box 2573

Halifax, NS

B3J 3N5

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EFFECTIVE DATE, AMENDMENT AND TERMINATION

This agreement takes effect on the later date of the Participants' signatures. It shall continue in effect for five (5) years, or until it is terminated, upon written agreement between the Participants, or by either party upon 90 days written notice to the other. It may be amended or extended upon written agreement of the Participants.

MISCELLANEOUS

This Relationship does not affect the right of each of the Participants to participate in any activity, relationship, or contract with any other public or private organization.

Nothing in this Relationship authorizes or obliges the Participants to expend, exchange, or reimburse funds, services, or supplies or transfer or receive anything of value. It is for internal management purposes for each of the Participants. It does not create any legal obligation on the part of either party.

FOR THE PARTICIPANTS

Date:

(Signatures)

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APPENDIX

The main services **EMEC** offers to the Marine renewable industry are:

- **Provision of Wave and Tidal testing capabilities:**
 - Independent assessment of devices' energy conversion capabilities, structural performance and survivability
 - Assistance with Grid connection and ROCs (Renewable Obligations Certificate) accreditation
 - Real-time monitoring of meteorological and marine resource conditions
 - Extensive assistance with consent & regulatory issues
 - Opportunity to join EMEC's Monitoring Strategy
 - Extensive local research and engineering support
 - Nearby access to sheltered water and harbours
 - Office and data centre support
- **Consultancy and Service provision**
 - Provision of off-site testing validation
 - Provision of consultancy on all aspects of design and operation of marine test centres
 - Provision of data and marine services
- **Projects and Research**
 - Provision of specialist resources for all projects related to Marine Renewable research specifically related to a Marine Test site.

EMEC operates within a UKAS accredited integrated management system, which incorporates Quality Health & Safety and Environmental standards. This means we can offer independent, internationally recognised verification of the performance of devices which come to test at EMEC.

The main services **FORCE** offers to the Marine renewable industry are:

- **Provision of Tidal testing capabilities:**
 - Four berth sites in the Minas Passage, Bay of Fundy, pre-approved by both provincial and federal regulators
 - 11 kilometers of 34.5 KV cable in total, servicing each berth with a capacity of up to 16MW
 - Preferred test conditions: sediment free bedrock floor, straight flowing currents, water speeds up to 5 m/s
 - Environmental monitoring
 - Onshore infrastructure: observation/research facility, control building