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**Request for Proposals**

**Acoustic Survey to Determine Noise Signature at the Fundy Ocean  
Research Center for Energy Demonstration Site**

**Release date: April 21, 2011**

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**Fundy Ocean Research Center for Energy (FORCE)**

[fundyforce.ca](http://fundyforce.ca)

902-406-1166

## **1. Invitation**

Full Proposals are invited from consultants or consulting firms (hereafter referred to as "consultants") to conduct an acoustic monitoring program at FORCE's facility in the Minas Passage, Bay of Fundy.

As outlined in the FORCE Environmental Management Plan (EMP) dated October 16, 2009 and as noted below, there is a requirement for the assessment of the acoustic environment to identify the noise signatures of the turbines.

The objectives of this project of the acoustic monitoring program are to:

### **Phase 1:**

- Establish the existing background noise levels at one reference site and four berth sites so that noise levels can be compared to levels measured during turbine operation at the four berth sites.
- Investigate noise monitoring approaches and recommend the best method/instrument.
- Select method(s) and instrument(s) based on the appropriate frequencies that will minimize impact on mammals and fish that use the Minas Passage. The frequency range selected must be supported by existing literature and/or existing standards i.e. European experts suggest 5- Hz to 120 KHz (either Hz by Hz or by third octave).
- Identify data analysis and interpretation approach, including spatial distribution of noise around turbine. Calculated noise at 1 metre from turbine (to match with international standards, and to allow comparison to other sources such as boats).
- Design and build a monitoring platform if required and relevant.

Design and cost a survey for one reference site and four berth sites in FORCE demo area and indicate whether 1 or 2 measurement locations are required at each proposed turbine site for Phase 2 and/or Phase 3.

### **Phase 2:**

- Undertake an acoustic survey based on the above design before the installation of cables in August 2011.
- The purpose is to capture noise omitted by the turbines as well as noise emitting objects identified in the vicinity of the turbines, such that they can be identified in later analysis. Examples include recordings of tidal turbulence around the structures and vessel traffic.

Note that the complete work package to the end of Phase 2 must be completed including a final report no later than October 31, 2011.

Phase 3: Phase 3 will be contingent on the outcomes from the previous two phases.

- Design and undertake acoustic survey at the reference site after the deployment of one or more turbines, using the above demonstrated technology and procedure.
- Prepare a report within 1 month of completion of the survey.

All three phases of this project are considered turn-key and must include all deployment and operational costs including ship time.

## **2. Background**

FORCE is building Canada's leading centre for tidal energy technology research and demonstration. FORCE collaborates with developers, regulators, and researchers to study the interaction between tidal turbines and the Bay of Fundy environment.

When construction is completed in September 2011 FORCE will provide a shared observation facility, submarine cables, grid connection, and environmental monitoring at its pre-approved test site. The site is well suited to testing, with water depths up to 45 meters at low tide, a sediment-free bedrock sea floor, straight flowing currents, and water speeds up to 5 meters per second.

The Province of Nova Scotia selected the three initial berth holders – Nova Scotia Power (with OpenHydro), ALSTOM (using a Clean Current design), and Minas Basin Pulp and Power (with Marine Current Turbines). In 2009, NS Power deployed the first commercial scale device in North America at the FORCE test site and successfully recovered it in December 2010. The Province recently selected a fourth berth holder, Atlantis Corporation. At the present time, all four berth holders are anticipating the deployment of their turbines sometime in 2012.

More information is available at [fundyforce.ca](http://fundyforce.ca)

FORCE's Environmental Monitoring and Advisory Committee (EMAC) is charged with the task of reviewing and advising FORCE on the proposed Environmental Effects Monitoring Program (EEMP), as outlined in Section 6 of the Environmental Management Plan (EMP) dated October 16, 2009. The EMP was approved by the Nova Scotia Department of the Environment (NSE) and Fisheries and Oceans Canada (DFO), with the understanding that EMAC would provide advice on the adequacy of the EEMP to FORCE, and FORCE would adjust the EEMP as appropriate. It has been recognized by all parties involved that the Minas Passage presents unique challenges for environmental monitoring and that an "adaptive

management” approach should be utilized for ongoing advice in regard to environmental effects monitoring.

In an effort to monitor background underwater noise levels in the FORCE demonstration area as part of the environmental assessment review, and to determine if a noise signature could be measured near an operating turbine, three surveys were conducted in the Minas Passage area. After a detailed review, the data was considered to be inconclusive, which is believed to mainly due turbulence and no further analysis was undertaken. In consultation with DFO, it was agreed that FORCE should organize a more detailed noise survey after the removal of the NSPI/OH turbine.

#### **4. Purpose of this Full Proposal**

Consultants are invited to submit to FORCE a Full Proposal that contains at a minimum the relevant information outlined in section 7.

***Please note that response to this Request for Proposals should not be seen as placing any obligation on FORCE to fund or any respondent to carry out any work.***

#### **5. Conflicts of Interest**

It is the responsibility of consultants to identify all possible conflicts of interest that may affect services.

#### **6. Guidelines for Submission of Full Proposals**

**Format:** Submissions are to be made as outlined in section 8. The document must be submitted in Word document format as follows: single spaced, single sided, font size 12-point, Times New Roman, 1” margins on all sides, and 20 pages maximum (not including the title page) and contain the contents outlined in section 7.

The submission will be evaluated according to the criteria in Schedule A.

#### **7. Full Proposal Contents**

The Full Proposal shall clearly address all of the information requested in this section.

Since the objective is to produce documents that are easily understood the Full Proposal should demonstrate exemplary communication skills, be complete, and make a convincing case that the consultant can perform high quality work. The Full Proposal shall be organized with the subject headings in the sequence indicated:

- **Introduction** including a description of your firm and its areas of concentration and expertise.

- **Experience and Past Performance** in the energy and marine renewable energy sectors developing methodologies, using passive and/or fixed hydrophone techniques for acoustic monitoring program(s).
- **Organization and Personnel** include a profile of the project team who and identify who be the primary contact and any personnel proposed to be involved in services to FORCE.
- **Location** of your office or offices and from which office the work will be conducted.
- **Availability:** it is important this work get underway spring in 2011.
- **Hourly rate(s)** and other fees associated with providing services for each person expected to be involved on behalf of the consultant.
- **Estimate of total cost to complete the project including ship time**
- **Safety Record:** In the proposal please identify that you have all the safety processes and procedures in place to complete this work in a safe manner.
- **References.** You may provide three (3) letters of references for which similar work has been provided. Please note that the three references are in addition to the maximum 20 page submission.
- **Signature.** The Full Proposal must be signed by an authorized official.

**8. Submission**

You may respond electronically or by hard copy.

Please submit your Full proposal to:

<p><i><b>In writing or on disc/memory stick</b></i></p> <p><b>FORCE          C/O Jennifer Matthews          P.O. Box 2573          Halifax, NS          B3J 3N5          Attention: Jennifer Matthews          Re Acoustic Survey RFP</b></p>	<p><i><b>Electronically</b></i></p> <p><a href="mailto:Jennifer.Matthews@fundyforce.ca"><u>Jennifer.Matthews@fundyforce.ca</u></a>  <b>Re Acoustic Survey RFP</b></p>
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Full Proposals must be submitted no later than **4PM AST, May 6, 2011**. Full Proposals received after that time will not be considered. All Full Proposals received by the deadline will receive an acknowledgement by email.

## **9. Enquiries**

Enquiries regarding FORCE or the selection process should be directed to:

**Jennifer Matthews**  
**FORCE**  
**E-Mail: Jennifer.Matthews@fundyforce.ca**

FORCE will respond to requests for clarification as soon as is reasonably possible. FORCE will respond in writing or orally as deemed appropriate in the circumstances. FORCE reserves the right to make any or all questions and answers to enquiries available to all other proponents. Generally, only substantial answers that clarify the process will be distributed.

## **10. Full Proposal Modification and Withdrawal**

Addenda will be accepted until the closing date. Full Proposals may be withdrawn on written request of the proponent any time.

## **11. Full Proposal Changes and Amendments**

FORCE may issue addenda and/or clarification to the Full Proposal as necessary. FORCE, will notify all proponents in writing if any changes are made to the Full Proposal. The closing date may be extended.

## **12. Principal Contact**

Each Full Proposal should include the name and title of one individual who may be contacted in the event that further clarification of the Full Proposal is required.

## **Schedule A EVALUATION CRITERIA**

### **Evaluation Criteria for Assessment of Full Proposals**

The following are mandatory requirements. Full Proposals not meeting them will receive no further consideration during the evaluation process:

- All information requested in this Full Proposal is provided;
- Demonstrated experience with the requirements identified in the Full Proposal.

Full Proposal will be evaluated according to FORCE's procurement criteria and their completeness, content, and evidence of successful implementation and management of similar programs for similar organizations, and the abilities of the Proponent and its staff.

### **The criteria for evaluating Full Proposals are:**

- **Experience and Past Performance** in the energy and marine renewable energy sectors developing methodologies, using passive and/or fixed hydrophone techniques for acoustic monitoring program(s). **40 points**
- **Full Proposal content and completeness** **30 points**
- **Budget** **30 points**