

Invitation for Commercial Proposals PROJECT # 400-170-09-11

Interpretation of 2-D Seismic Reflection Data, Petroleum Play & Prospect Identification and Resource Assessment of the Georges Bank, Offshore Nova Scotia

for the

OETR Association (Offshore Energy and Technical Research)

1.0 OETR ASSOCIATION and SITUATION OVERVIEW

1.1 Mandate:

The OETR Association (Association) was established in March 2006 with government funding to fund research and development and to diffuse that knowledge on offshore energy issues with respect to research that will enhance petroleum exploration and development in offshore Nova Scotia. The Association will fund research work that builds geoscience knowledge about Nova Scotia's offshore oil and gas potential as well as research that reduces the technical and engineering barriers to development of discovered reserves. Where consistent with these goals, it will build research capacity in Nova Scotia.

1.2 Situation Background:

The purpose of this Invitation for Commercial Proposals (ICP) is to solicit proposals for interpreting approximately 6832 km. of 2-D seismic data for the purpose of undertaking a play and prospect analysis and resource assessment of the Georges Bank area, offshore Nova Scotia (see **Appendix 1** for location of the program). This data was acquired by JEBSCO Seismic L.P. (JEBSCO) in 1984 and access will be guided by a confidential licensing agreement between OETR and JEBSCO. OETR is in the process of requesting bids for the processing of this data. It is expected that the successful consultant for this interpretation work will be provided processed data beginning in January 2010, with the complete processed dataset available in March 2010. All interpretation of this data and subsequent analysis will be done at the OETR office in Halifax, Nova Scotia, Canada. The results from the interpretation of the 2-D seismic data will be integrated with geologic models and limited well data to do an evaluation of the plays and the resource potential of the Canadian side of the Georges Bank area. The results of the interpretation and analysis will be summarized by the contractor in a final presentation and in a final report. Interim Progress Reports are also required.

2.0 Requirements

2.1 Time-Frames

The following schedule is presented for guidance:

- (a) **Deadline for Submission:** November 26, 2009
- (b) **Preferred commencement date:** December 1, 2009 or on signing of contract*
- (c) **Preferred completion date:** April, 2010

** Note: We are anticipating some processed data will become available for interpretation starting in December 2009.*

2.2 Objective

The objective of this ICP is to secure bids for **petroleum play and prospect identification and resource evaluation based on the interpretation of the JEBCO seismic data and geologic integration of Georges Bank, Offshore Nova Scotia**. The results of this work will provide insight into the petroleum potential on Georges Bank, offshore Nova Scotia by understanding the geology and the potential size of the resource.

2.3 Scope of work

- 2.3.1 The seismic data and well data will be loaded into a PC based geophysical package. OETR has a preference for Petrel, although other PC based geophysical software will be considered. OETR will be providing the consultant with a PC workstation.
 - 2.3.1.1 Once data is incorporated into a project, it will be ensured that it is complete, correct and organized.
- 2.3.2 Key seismic reflection markers will be interpreted and tied to well data in the area (see **Appendix 2** for details on key reflectors).
 - 2.3.2.1 With the stratigraphic framework established from existing data, identify a geologic model and undertake a stratigraphic facies interpretation with emphasis on potential reservoir and source rock.
- 2.3.3 Identify hydrocarbon plays and prospects (structural, stratigraphic etc.) and any limiting factors for trapping or timing of hydrocarbon migration.
 - 2.3.3.1 Identify leading indicators from seismic reflection data for hydrocarbon prone reservoir and tie back to offsetting well data, established geologic model and/or direct observations.
- 2.3.4 The submission will outline how the applicant has the experience and expertise to make hydrocarbon evaluations, models and interpretations.

2.3.5 The work flow and final results must incorporate the latest understanding of the geology and the interpretation of the JEBCO seismic reflection data. The OETR Association is prepared to assist the successful contractor with an understanding of the geology of the area.

2.3.5.1 A literature review will be summarized and cited by the contractor in the final results.

2.3.6 Deliverables under this contract shall include:

A detailed report on the hydrocarbon potential of the Georges Bank area offshore Nova Scotia, which will include:

Digital maps of the following:

- Structural maps on each key reflector identified;
- Interpretation demonstration of the geologic model;
- Regional map identifying Play and Prospect locations;
- Lithology distribution maps on each sequence;
- Generalized source rock distribution maps;
- Generalized reservoir distribution maps; and
- Basement structure map.

Resource Assessment:

- Resource estimates from volumetric calculations of prospects; and
- Compilation of plays with pertinent information and observations

Please note that it is OETR's intention to have a public document released which will have certain information removed from it that is proprietary to JEBCO.

2.4 Assessment of Contractor Performance and Deliverables

Completion and delivery of all work outlined in Section 2.3 above will be required for the contractor to be successful.

2.5 Enquiry Contacts

Proponents requiring further information on this Invitation for Commercial Proposals should contact:

Name: Jennifer Matthews
Research Manager
Address: OETR Association
5151 George Street, Suite 400
PO Box 2664
Halifax, NS B3J 3P7
Telephone: 902-424-2493
Fax: 902-424-0528
Email: j.matthews@offshoreenergyresearch.ca

2.6 Contract

Standard OETR contract to be used.

3.0 Evaluation Criteria

The following criteria, shown in order of importance, form the basis upon which evaluation of proposals will be made.

3.1 Mandatory Criteria

The following are mandatory requirements. Proposals not meeting them, or not clearly demonstrating that they meet them in a substantially unaltered form will receive no further consideration during the evaluation process:

- All information requested in this Invitation for Commercial Proposals must be provided.
- The consultant must be able to demonstrate satisfactory experience with the requirements identified in Sections 2.2 and 2.3.

3.2 Desirable Criteria

The following criteria will be evaluated for all proposals that satisfy the mandatory criteria. **All items listed below are critical to a successful bid and a minimum score of 80% must be achieved in order for a proposal to be considered compliant.** Please insert references to the appropriate pages or sections of your Proposal that deal with the subjects under evaluation.

Factor	Weight	Reference Proposal Page/Section
<u>Timeline:</u> Proponent demonstrates the ability to complete the work on or before the desired completion date. Early completion is preferred where possible.	Max: 25 Min: 15	
<u>Experience and Knowledge:</u> Proponent has direct experience and knowledge in the interpretation of 2-D marine seismic reflection data and resource assessment especially in the Scotian Basin.	Max: 20 Min: 10	
<u>Approach and Methodology:</u> Proponent outlines the methodology in undertaking this project with details on how to best interpret the data along with play and prospect recognition and provide details on undertaking a resource assessment of the area.	Max: 20 Min: 10	
<u>Project Management:</u> Proponent has outlined a clear and effective workplan and demonstrates an understanding of the project scope. The proponent has proposed a strong project team.	Max: 20 Min: 10	
<u>Cost:</u> The project will offer very good value for the proposed budget. The budget is complete and well described.	Max: 20 Min: 10	
<u>Overall Quality:</u> Overall quality and completeness of the proposal.	Max: 10 Min: 5	
<u>TOTAL</u>	Max: 115 Min: 60	

*** Please note: A minimum score of 92/115 (80%) is required for a proposal to be considered compliant.**

4.0 **General Proposal Content and Response Guidelines**

In order to receive full consideration during evaluation, proposals should include the following:

4.1 **Submission Deadline and Required Copies**

The deadline for submission of one electronic copy of all documents is **4:00 p.m. Atlantic Standard Time November 26, 2009**. Electronic copies must be submitted by the deadline to **Jennifer Matthews** at oetr@offshoreenergyresearch.ca.

Subcontractors

Attach a list of any subcontractors (name, address, services provided), if applicable, who are proposed for work on this project. The absence of such a list will be interpreted as only "own forces" will be used.

4.3 **References**

Attach references for any work of a similar nature done by your firm in the past 3 years. Provide a contact name and phone number, and also a fax number and email address where available. Please provide three (3) references.

5.0 **Proposal Pricing (Do not include Sales Tax in costs)**

	Item	Cost
a)	Interpretations and assessments (staff cost)	\$
b)	Travel/ Accommodation (if applicable)	\$
c)	Support data	\$
d)	Report	\$
e)	Miscellaneous office expenditures	\$
f)	Geophysical Software Lease Cost (if applicable)*	\$
Grand Total		

* Please note that the PC workstation will be provided by OETR.

- a) The financial information should include the above along with the time and cost to be charged for each phase of the project described above including output to final media and final report preparation and reproduction thereby arriving at a total cost which will apply to any agreement entered into as a result of the proposal; also included should be the anticipated timing for invoicing if other than at the end of the project.
- b) The contract entered into between the Proponent and the Association will contain a provision whereby the Association will hold back a portion of the total contract price no less than 15% of each invoice or of the total invoice or require some other form of performance assurance until all the requirements of the contract have been satisfied.

6.0 Proposal Content and Response Guidelines

Technical and Management Information Section

Introduction

- a) Title Page showing Request for Proposal Title, Proposal Number, Proponent's name and address, closing date and time, Proponent's telephone number and a contact person.
- b) One page letter of Introduction identifying the Proponent and signed by the person or persons authorized to sign on behalf of, and bind the Proponent to, statements made in the Proposal.
- c) Table of Contents including page numbers.

Technical

- a) A short one or two page summary of key features of the proposal including a statement demonstrating understanding of the project and outlining the results to be achieved.
- b) The body of the Proposal which must include a description of the proposed methodology to achieve all identified objectives, identifying the component tasks of the work including a schedule of their duration and completion dates for each task identifying milestones.
- c) The Proponent's proposed project organization; the Proponent will clearly demonstrate how the designated personnel comprising the Project Team will be organized.
- d) Past relevant experience of only designated "key" professionals with projects of similar size and scope; personnel biographies shall emphasize an individual's particular professional and technical qualifications or expertise to justify assignment to any project position in this project.
- e) Any other additional information such as brochures, etc. can take the form of appendices and be added to the proposal.

6.1 Proponent Checklist

This checklist has been provided solely for the convenience of the proponent. Its use is not mandatory and it does not have to be returned with the proposal.

- The requirements of the Request for Proposal have been read and understood by everyone involved in putting together the proposal.
- The proposal explicitly addresses everything asked for in the Request for Proposal.
- The proposal meets all the mandatory requirements of the Request for Proposal.
- The proposal clearly identifies the proponent, the project, and the Request for Proposal number.
- The proponent's name and the Request for Proposal number appear on the proposal envelope.
- The appropriate numbers of copies of the proposal have been made. (Proposals without the correct number of copies may be rejected.)
- Every care has been taken to make sure the proposals are at the closing location in plenty of time, as late proposals will be rejected.

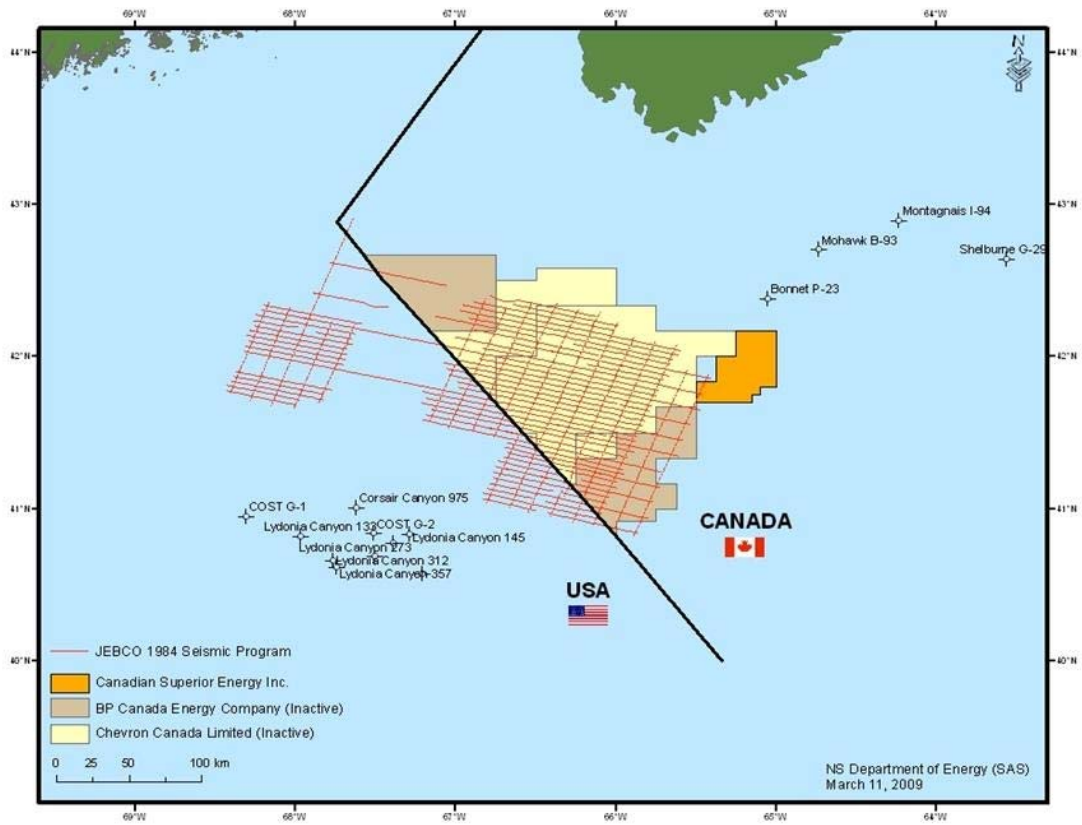
7.0 Appendices

Appendix 1 – Location of the Georges Bank 2-D Seismic Reflection data and offsetting well locations (*attached*)

Appendix 2 – Key seismic reflectors recognized regionally and tied to the local and regional deposition stratigraphy and or sequences. May not all be present on Georges Bank and are meant as general guidelines. Key seismic stratigraphy will be a result of this seismic interpretation and any available biostratigraphic review. (*attached*)

Appendix 1

Location of the Georges Bank 2-D Seismic Reflection Data and offsetting well locations



Appendix 2

Key seismic reflectors recognized regionally and tied to the local and region deposition stratigraphy and or sequences. May not all be present on Georges Bank and are meant as general guidelines. Key seismic stratigraphy will be a result of this seismic interpretation and any available biostratigraphic review.

Guideline regionally recognized Key Seismic Reflections:

Wyandot
Petrel
"O" Marker
Mississauga
Top Jurassic
Middle Jurassic
Lower Jurassic
Basement