

Request for Proposals – Study of Accumulation Mechanism of Methane Hydrate in Natural Sediments

23rd October, 2009

Executive Director Akira Suzuki

Oil & Gas Upstream Technology Unit

Japan Oil, Gas and Metals National Corporation

Japan Oil, Gas and Metals National Corporation (“**JOGMEC**”) invites proposals for a "Study of Accumulation Mechanism of Methane Hydrate in Natural Sediments" (the “**Study**”). Contractors who wish to reply to this request for proposals (“**RFP**”) shall submit proposals in accordance with the following instructions.

1. Title of Study

Study of Accumulation Mechanism of Methane Hydrate in Natural Sediments

2. Objective of Study

The Research Consortium for Methane Hydrate Resources in Japan, which JOGMEC is registered as a member of, has investigated the abundance and distribution of gas hydrate in Eastern Nankai Trough area as a model field.

We found that the occurrence of methane hydrate filling pore spaces of sand layers was revealed through the drilling of an exploratory well. Those sand layers were also confirmed to be turbidite sand and mud alternation layers.

There are many factors affecting the accumulation of methane hydrate, particle size, mineral composition, pressure, temperature, gas composition and availability, etc. However, further studies are still needed.

The objective of the Study is to elucidate accumulation mechanism of methane hydrate in natural sediments.

3. Scope of Study

The Contractor shall research the particle-size effect of the hydrate saturation in sediments by the combination of various particles and mineral compositions in the experimental samples.

The Contractor also needs to conduct the experiment of the natural samples (preferably Eastern Nankai Trough samples) for evaluating the consistency between the experimental results and those of the natural sediments.

The details of this Study are stipulated in “Study Specifications” (the “**Exhibit**”) and the proposed contract for the Study is the document titled and hereinafter referred to as “**Agreement**”.

4. Qualification Requirements

Contractors should have the following qualifications and features:

- (1) Research experience and good knowledge with regard to the experiments of gas hydrate formation

- using experimental or natural sediments,
- (2) Research experience to apply above measurements to the natural sediments of Eastern Nankai Trough, [This is the most important requirement],
 - (3) Experimental skill to evaluate the physical properties such as hydrate saturation rate, effective porosity, and permeability by several tools,
 - (4) Necessary experimental equipment, facility, and organization to operate the study, and
 - (5) Robust system to keep confidential any information which is concerned with this study.

5. Implementation Structure

- (1) With a view to effective and efficient implementation of the Study, the contractor is permitted, subject to prior written approval from JOGMEC, to carry out the work through the following:
 - (a) An alliance with other company(-ies); and
 - (b) The sub-contracting of part(s) of the work to other company (-ies);Provided always that the contractor will pay the fees for any companies in an alliance or any sub-contractor from the contractor's own budget.
- (2) A partnership of more than one company is entitled to bid for and carry out this Study, provided that responsibility for the various parts of the Study shall be clearly set out.

6. Outline of Contract

- (1) Term of Contract
Date of Contract Conclusion ~ 31st March, 2010
- (2) Amount of Budget
US\$100,000 (JPY 9,500,000) - including direct expense, expense of an alliance with other company (-ies), consumption tax.
(Your quotation must be equal or less than the above mentioned budget, and the cost performance will be one of the evaluation criteria.)

7. Proposal Requirements

Contractors shall prepare the proposals in accordance with this RFP and the Exhibit. Proposals shall include and satisfy at least the following items:

- (1) Cover page with work title and signature of the representative;
- (2) Objective;
- (3) Work scope satisfying the Exhibit;
- (4) Proposed work and investigation methods;
- (5) Timetable for the Study;
- (6) Implementation structure (who will carry out the Study);
- (7) Final materials/deliverables;
- (8) Total cost and cost breakdown;
- (9) Outline/background of the Contractor's company;
- (10) CV of personnel to be involved in this Study;

(11) Records of previous investigations/work related to this Study;

Proposals shall be submitted in Microsoft Word or PDF format and JOGMEC will use the above items solely for the purpose of the contractor's selection process for this Study.

8. Submission of Proposals

(1) The deadline shall be 18:00 11th November, 2009 (Japan time).

(a) Proposal should arrive at JOGEMC Technology Research Center before the above deadline.

(b) Contractors shall submit their proposals by e-mail to the contact person.

(c) Proposals shall be sent in one electronic file or in a zipped electronic file.

(d) Any proposals submitted other than by e-mail shall not be accepted or reviewed.

(2) Contact Person:

Toshiyasu UKITA (Mr.)

Senior Researcher, Methane Hydrate Research Project Team

Technology Research & Development Department

Japan Oil, Gas and Metals National Corporation

E-mail: ukita-toshiyasu@jogmec.go.jp

Copied to:

Tadaaki SHIMADA (Mr.)

Senior Geologist, Methane Hydrate Research Project Team

Technology Research & Development Department

Japan Oil, Gas and Metals National Corporation

E-mail: shimada-tadaaki@jogmec.go.jp

(3) Proposal treatment

(a) Proposal documents will only be used for the purpose of the selection process of the contractor.

(b) Submitted proposal will not be returned.

9. Evaluation of Proposals

(1) Evaluation Criteria

The qualified proposals submitted in response to this RFP by the deadline shall be evaluated with a focus on the following criteria:

(a) Consistency with the objective of this Study and JOGMEC's intentions;

(b) Concreteness and superiority of proposal;

(c) Adequacy of work plan and work implementation structure;

(d) Track record and experience in study;

(e) Cost performance.

(2) Result of Evaluation

The result of the evaluation will be informed to Contractors by e-mail immediately after evaluation. JOGMEC shall not be liable for any costs or expenses incurred by Contractors in the process of

preparation and/or evaluation of proposals.

10. Inquiries

All questions regarding this RFP shall be directed to the Contact Person by e-mail. Contractors are kindly requested to understand that any inquiries about the evaluation process shall not be accepted.

End of “Request for Proposals”