OIL AND NATURAL GAS CORPORATION LIMITED

Mehsana Asset, KDM Bhavan, Palavasana, Mehsana- 384003, Gujarat, India

Expression of Interest (EOI)

Notification of Expression of Interest (EOI) for carrying out detailed analysis and Pilot scale Electrostatic Dehydration Testing of the North Gujarat crude and recommend most suitable Desalter Technology

Introduction

Oil & Natural Gas Corporation Ltd is the flagship Integrated Energy Company of India with interest in entire hydrocarbon value chain in upstream, midstream & downstream sectors. Formed on August 14, 1956 by Government of India as the Oil & Natural Gas Commission with objective of ensuring India's energy security and incorporated on June 23, 1994 as Oil and Natural Gas Corporation Ltd **(ONGC)**, a company incorporated under the Companies Act of India, having its registered office at Pandit Deendayal Upadhyaya Urja Bhawan, 5, Nelson Mandela Marg, Vasant Kunj, New Delhi-110070, India.

ONGC was awarded the 'Maharatna' status in the year 2010 for its consistently impressive performance in the oil & gas sector and strong financial fundamentals, ONGC is the largest Public Sector Undertaking and the highest dividend paying company of the country. Additionally, ONGC is in production and marketing of value added petroleum products, refining and downstream activities.

1. Brief of EOI

Ahmedabad Asset and Mehsana Asset (collectively North Gujarat) has cumulatively produced 3.637 MMT in 2025-26. Mehsana Crude and Ahmedabad Crude is delivered at Nawagam CTF for final processing to bring crude quality up to acceptable refinery intake limit. Subsequently, the processed crude is dispatched through 18" x 80 km pipeline from Nawagam CTF storage to IOCL, Koyali refinery. Similarly, Ankleshwar Asset and Cambay Asset (collectively South Gujarat) produced 0.505 MMT and 0.303 MMT respectively in 2025-26 and its crude is also delivered to IOCL, Koyali refinery.

It has been decided to transport the processed Crude of North Gujrat (Mehsana and Ahmedabad) using Cairn Vedanta 24" heated pipeline, for which a new pipeline is proposed to be laid from ONGC Mehsana CTF to Viramgam terminal of Cairn Vedanta pipeline.

To achieve the crude quality at Mehsana CTF, for transporting the Crude, suitable technological solution are to be commissioned at ONGC Mehsana Asset. ONGC is evaluating pretreatment and dehydration technologies for crude feed to achieve a treated product specification of less than 0.2% BS&W and < 10 PTB of salt. The feed is expected to contain emulsified water, dissolved salts, and fine solids that may affect downstream processing and product quality.

To support technology selection and optimize the design basis, ONGC intends to carry out an Expression of Interest from technically competent companies to understand probable solutions, so that the same may be incorporated in final design parameters for execution of technological solution.

2. Objective of the EOI:

The objective of this EOI is to identify and assess qualified technology providers with proven capability in:

- Electrostatic dehydration testing
- Emulsion stability evaluation
- Supplied Desalter technology in the past
- Operation and Maintenance support for Desalter operation

The EOI will help the Company to understand the technical capabilities, facilities, methodologies, and relevant experience of interested parties before issuing a formal Request for Proposal (**RFP**).

It is expected that companies participating in EOI process will carry out analysis to assess emulsion treatability, electrostatic separation performance, and operating envelopes under simulated process conditions. The companies are required to submit the technological solution based on Pilot-scale oil and water separation studies and Process simulation of electrostatic treaters.

3. Following the EOI process, ONGC may issue an RFP. The selected bidder shall be required to undertake the Scope of Work, appended at Annexure 1.

4. Information Sought from EOI Participants

Interested organizations are requested to provide:

1. Company Profile – Overview of laboratory and pilot testing capabilities
2. Proposed technology write-up
3. Experience – Similar dehydration or electrostatic separation studies completed
4. Testing Facilities – Description of EST and pilot - scale equipment
5. Technical Expertise – Key personnel and domain expertise
6. Sample Handling Capability – Storage, Safety, and disposal procedures
7. Indicative Schedule - Availability and typical turnaround times

5. Submission Guidelines:

Interested parties/bidders are invited to submit their EOI including any details/queries/ clarifications required on the objectives and scope of the work in the subject EOI within 21 days to:

Head MIND, ONGC
Deendayal Urja Bhawan,

5, Nelson Mandela Marg, Vasant Kunj
New delhi-110070,
Tel- (011) - 26752010 / 26752035
Email: sanghi_sanjiv@ongc.co.in / mishra_sb@ongc.co.in

6. General Information

- This EOI is for information gathering only and does not constitute a commitment to award a contract.
- The Company reserves the right to shortlist parties based on technical suitability.
- Mehsana Asset will provide the crude oil sample with quantity as specified by the interested organization.

Annexure - 1

Brief Scope of Work

i. Receiving, handling, and safely managing crude and water samples
ii. Conducting laboratory testing as outlined above
iii. Performing electrostatic susceptibility testing
iv. Operating pilot-scale electrostatic dehydration units
v. Providing weekly progress updates during testing
vi. Issuing a comprehensive final technical report including:

- Test methodology
- Results and analysis
- Performance trends
- Operational recommendations
- Recommended Desalter Technology for treating crude feed to the desired outlet specification
- Desalter sizing data and performance guarantees

The program is expected to be executed in three main phases:

Phase 1 – Physical and Chemical Characterization

Detailed analysis of crude and water properties including:

- Viscosity at multiple temperatures
- Specific gravity
- BS&W
- Interfacial tension
- Conductivity
- Salt content
- Solids content
- Vapor pressure

Water analysis shall include pH, salinity, conductivity, and total dissolved solids.

Phase 2 – Electrostatic Susceptibility Testing (EST)

Bench-scale electrostatic testing will be conducted to evaluate emulsion treatability and to screen demulsifier chemistries. The scope includes:

- EST pre-screening of multiple feed conditions
- Controlled emulsion generation
- Testing under electrostatic fields up to standard EST operating conditions
- Measurement of separation efficiency and residual water content
- Identification of suitable demulsifier types and dosage ranges

The EST program will guide pilot-scale operating conditions and chemical selection.

Phase 3 – Pilot Scale Electrostatic Dehydration Testing

Pilot testing shall simulate field operating conditions using a continuous electrostatic treating unit. The pilot program shall:

- Replicate realistic operating temperatures and flow conditions
- Test a range of demulsifier dosages
- Evaluate different electrostatic field modes such as modulated dual polarity systems
- Measure treated oil quality, water removal efficiency, and operational stability
- Generate data for process scale-up and equipment sizing
- Identification of suitable Desalter technology for treating the crude to the desired outlet specification
- Process guarantees to be provided with the specified Desalter Technology

Testing matrices will be updated based on EST outcomes.

Deliverables

- Detailed test plan prior to execution
- Periodic progress reports
- Raw and processed test data
- Final analytical report with engineering interpretation
- Recommendations for process design and risk mitigation
- Desalter technology recommendations
- Process guarantees with the recommended technology.

Sample Requirements : Capability to handle and test:

- Multiple drums of hydrocarbon feedstock
- Entrained water samples
- Chemical additives and demulsifier

Facilities must comply with applicable HS&E standards and confirm any restrictions such as handling of hazardous components.