

EXPRESSION OF INTEREST (EOI)

Acid Gas treatment unit for CO₂ Capture and Sulphur recovery.

1. INTRODUCTION

ONGC Uran Plant processes approximately 9.5 MMSCMD of hydrocarbon gas received from the Mumbai Offshore fields. This gas contains about 3% acid gas, equivalent to nearly 0.3 MMSCMD, primarily consisting of more than 98% carbon dioxide (CO₂) and around 0.5% hydrogen sulphide (H₂S).

The hydrocarbon gas is treated in the Gas Sweetening Unit (GSU) using Shell Sulfinol process to remove these acidic components, and the acid gas is separated. This acid gas exits the GSU plant from the reflux vessel of Regenerator column and will be the feed to the acid gas treatment unit.

2. Acid Gas Treatment plant at ONGC Uran

ONGC Uran is seeking methodologies for treating the acid gas generated at the plant for removal of H₂s and to reduce CO₂ emissions, aiding ONGC in meeting its Net-Zero targets. The captured CO₂ can be converted into liquid CO₂ or any other product and H₂S can be converted into safe disposable or marketable byproduct.

Table-1: Technical Specification:

S. No.	Description	Value									
1	Capacity	Installed capacity of 24 TPD liquid CO ₂ or any other product with provision of further expansion.									
2	Quality	Liquid CO ₂ or any other product Safe disposable or marketable byproduct of H ₂ S Returned hydrocarbon gas must contain <4 ppm H ₂ S and <5 ppm CO ₂ .									
3	Inlet Parameters (Acid Gas generated in the plant)	Flow rate: nominal 0.3MMSCMD (range 0.2-0.4 MMSCMD) (560 TPD CO ₂ capture plant) Pressure: 0.38-0.42 bar Temperature: 30-50 °C									
Feed acid Gas composition (%mol/mol)											
	C ₁	C ₂	C ₃	iC ₄	nC ₄	iC ₅	nC ₅	C ₆₊	CO ₂	H ₂ S	N ₂
%	0.21-1.5	0.01-0.5	0-0.25	0-0.1	0-0.1	Nil	Nil	Nil	97-99	0.3-1	0.3-0.5

Deployment of the project: The deployment of the project will be on a **pilot scale**, with a capacity to produce 24 TPD of liquid CO₂ or any other product and H₂S as Safe disposable or marketable byproduct.

Key Features of the Proposed Solution:

- The proposed plant will be modular skid mounted to facilitate easy expansion of plant in future.
- The treatment unit will capture of CO₂ from acid gas stream at the Uran plant and convert it into liquid CO₂ or any other product.
- The treatment unit will facilitate conversion of trace H₂S into safe disposable or marketable byproduct.
- The treatment unit will facilitate return of associated hydrocarbon to Uran plant for further processing.

Key points of the Proposal:

- Along with commissioning, the vendor will be awarded the O&M of the proposed plant for initial period of 5 years with subsequent renewable depending upon the performance of the contractor or ONGC requirement.
- Marketing & evacuation of liquid CO₂ or any other product & safe disposal or marketable H₂S byproduct will be done by vendor as per procedure offered by the vendor in the contract, while ONGC will supply power and utilities to the plant. ONGC will enforce strict regulations to prevent the release of CO₂ and sulfur into the atmosphere.
- The right of ownership of the all the data will remain with ONGC.

3. KEY INFORMATION AND DATES

EOI Reference Number: URN/PLANT/OPS/MARKET/2025/acidgas/2654333

Date of Issue: 14.11.2025

Last Date for Submission of EOI: 04.12.2025

Contact Email: saikia_ashapura@ongc.co.in

Contact Phone Number :9969228986/8928047085

Address: ONGC Uran Plant, Navi Mumbai

Date/Venue for EOI Meet: 16.12.2025, Conference Hall, 1st Floor, Dronagiri Bhavan and virtual mode

4. OBJECTIVE

The primary objective of this Expression of Interest (EOI) is to identify and collaborate with qualified partners who possess the expertise and experience in Treatment Technology for Acid Gas which can be installed at ONGC plant. ONGC aims to implement this technology as a pilot project to capture CO₂ & H₂S generated from the processing of natural gas, representing one of the most significant decarbonization opportunities in India's upstream oil & gas sector, also this project aims to comprehensively align with the ONGC commitment of reducing scope-1 emission.

5. SCOPE OF WORK

Under the proposed project, the selected technology provider(s) will be required to **design, commission, operate and maintain the plant.**

The proposed Acid Gas treatment plant scope shall include (but not be limited to):

- **Raw Gas Handling:** Raw acid gas is available as per composition mentioned in Table-1. The flow to the plant will depend on the capacity of the plant and rest of the gas will be bypassed from the upstream of plant. Liquid CO₂ or any other product & the byproduct of H₂S to be disposed or marketated as mentioned in the contract, and hydrocarbon gas will be returned for further processing (stream specification for integration with existing system will be given by ONGC). Effluent produced to be routed to the ETP (the effluent details to be shared by vendor to ONGC).
- **Process Technology:** Vendor will provide techonolgy used for the plant, detailed process flow and all the systems like desulphurization system, CO₂ compression system, dehumidification & purification system, liquefaction system, storage, and product & by-product evacuation system or any other system that will be required for the complete plant.
- **Skid mounted plant:** The vendor shall propose the skid mounted plant to facilitate scaling up of the plant as per ONGC requirement.
- **Electrical & Instrumentation:** Power supply, PLC-based controls, instrumentation, safety systems, fire & gas (F&G), firefighting, lighting, DCS system, CCTV and SCADA monitoring to be provided by vendor. Any integration with the existing system to be done by vendor.
- **Mechanical Scope:** Process & utility piping, valves, instruments, fittings, insulation, safety valves, drains, vents with flame arrestors, and nitrogen purging arrangements.
- **Utilities & Power:** Only utilities & power will be provided by ONGC for commissioning and operations.
- **Expansion possibilities:** The plant to be designed in a way that it is easily expandable beyond mentioned capacity of 24 TPD upto treatment and capuring of entire CO₂ and H₂S available in total acid gas generated, if ONGC plans to expand the plant in future. The plant life should be minimum 25 years.

Scope of Operation & Maintenance (O&M) by Vendor:

The vendor shall initially provide **5 years of O&M services and spares** for the plant. The O&M services will be renewed depending on the performance of the contractor or based on ONGC requirement.

O&M responsibilities include (but are not limited to):

- Vendor will supply all spares, chemicals, refrigerants, tools etc required for commissioning & operation of the plant during contracted period.
- Marketing & evacuation of liquid CO₂ or any other product & safe disposal or marketing of H₂S byproduct will be done by vendor as per procedure offered by the vendor in the contract.

- The vendor must ensure that the plant operates with an annual uptime of at least 95% throughout the contracted period.

6. DELIVERABLES

Interested parties are invited to submit their EOI documents, encompassing:

- **Detailed Proposal:** Detailed proposal of the skid mounted plant along with relevant PFD & O&M proposal, based on the requirement outlined in section 5.
- **Estimated Cost:** Estimated phase wise cost to be quoted by the vendor for the proposed 24TPD Co₂ capture plant along with the O&M cost of 5 years.
- **Supporting Documents:** Relevant cases, certifications, and any other pertinent documentation.

Submission Deadline:

Submission Format: Electronic copies in PDF/PPT format (& additional documents), submitted via email to saikia_ashapura@ongc.co.in

7. EVALUATION CRITERIA

Interested parties shall be asked to present a proposal/submission before a committee. Submissions will be assessed based on:

- **Technical Competence:** Proven capability and completed jobs in carbon capture technology.
- **Regulatory Acumen:** Understanding of and experience in HC industry, CO₂ & H₂S handling & transportation.