



Dated: 03, Nov 2025

Expression of Interest (EOI) notification

1. Background

The VSEC platform, located in the B&S Asset, of 16 wells. Of these, one is a water injection well while the remaining 15 wells are currently operating on gas lift.

Presently, gas lift optimization is a manual process, wherein the wellhead operating teams visit each platform to monitor well performance. They adjust gas lift injection rates based on flowing parameters and production rates after well testing. This manual method, though functional, is time-consuming, dependent on human intervention, and does not permit real-time optimization, leading to sub-optimal utilization of gas lift and potential loss in production efficiency.

To enhance operational efficiency and production optimization, it is proposed to implement an Autonomous Gas Lift Control System for well optimization on VSEC platform on a pilot basis. If successful, the system may be incorporated in the neighboring VSEA and VSEB platforms. The objective is to establish a centralized, remotely operated system capable

of adjusting gas lift flow rates in real time based on live well data, thus eliminating the need for manual intervention.

2. Objective of the EOI

The objective of this EOI is to invite technically competent and experienced vendors to express their interest in designing, supplying, installing, and commissioning an autonomous gas lift control and optimization system for the VSEC platform.

This system should integrate with the existing control and communication infrastructure and provide a reliable, safe, and real-time automated solution for gas lift management and optimization.

3. Scope of Work

The broad scope of work includes, but is not limited to, the following activities:

- **System Design and Engineering:**

The vendor shall carry out a detailed study of the existing wellhead control and gas lift facilities on the VSEC platform to develop a comprehensive automation solution. The work shall include preparation of system architecture, control philosophy, I/O list, P&IDs, and engineering drawings. The design shall ensure compatibility with existing instrumentation, control systems, and communication networks. The control logic shall be designed to optimize gas lift performance, ensure process safety, and support future scalability.

- **Automatic Adjustment of Gas Lift Injection Rate Based on Current Parameters:**

The control logic should dynamically regulate the gas lift flow to each well in response to real-time well conditions and production targets. The system should automatically fine-tune valve openings to maintain optimal lift gas utilization and oil production without manual intervention.

- **Maintaining Safe Operating Limits with Alarms and Interlocks:**

The system should continuously monitor all operating parameters and ensure they remain within defined safe limits. All alarm and trip events should be recorded, timestamped, and displayed in the SCADA interface for operator review and audit trail compliance.

4. Information Sought from Interested Parties

- Interested vendors are invited to submit their proposal in PDF format within 21 calendar days from the date of EOI publication in newspapers/ ONGC website. Proposals must include:
 - Executive Summary
 - Detailed Technical Proposal and Methodology
 - Relevant experience – Past work in similar projects
 - Case studies, performance reports from past deployments
 - Certifications (if applicable)
 - Client references
 - Details of company profile and relevant experience
 - Limitations or boundary conditions of the technology, if any.

5. Submission Guidelines

Contact Information: 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 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. Confidentiality

All information received by ONGC as a part of this EOI, will be ONGC's property and will be kept strictly confidential and utilized for its internal purpose only.

7. Disclaimer

This EOI is intended for market exploration and does not constitute a commitment to award any contract. ONGC reserves the right to modify or cancel this EOI process at any stage without assigning any reason and without incurring any liability.

Scope of Work

The broad scope of work includes, but is not limited to, the following activities:

- **System Design and Engineering:**

The bidder shall carry out a detailed study of the existing wellhead control and gas lift facilities on the VSEC platform to develop a comprehensive automation solution. The work shall include preparation of system architecture, control philosophy, I/O list, P&IDs, and engineering drawings. The design shall ensure compatibility with existing instrumentation, control systems, and communication networks. The control logic shall be designed to optimize gas lift performance, ensure process safety, and support future scalability.

- **Supply of Equipment:**

The bidder shall supply all required equipment and components necessary for the complete functioning of the automated gas lift system. This includes but is not limited to smart gas lift control valves, pressure and temperature transmitters, flowmeters, Remote Terminal Units (RTUs) or Programmable Logic Controllers (PLCs) with appropriate redundancy, Human-Machine Interface (HMI) panels, and licensed control and optimization software. All supplied equipment shall comply with relevant offshore certifications and ONGC specifications.

- **Installation and Commissioning:**

The scope covers site survey, equipment installation, cable laying and terminations, system integration with existing Wellhead Control Panels (WHCPs), and configuration with the existing SCADA and communication infrastructure. The bidder shall perform calibration, loop checking, functional testing, and demonstration of autonomous gas lift operation under simulated and live conditions. All installation activities shall conform to ONGC's offshore safety standards.

- **Submission of As-built Drawings and Manuals:**

Upon completion, the bidder shall provide complete documentation including as-built engineering drawings, equipment data sheets, wiring diagrams, system configuration files, and detailed Operation & Maintenance (O&M) manuals. The documentation shall be submitted both in hard copy and soft copy formats.

- **AI-driven Optimization and Predictive Maintenance:**

The system shall incorporate artificial intelligence and machine learning algorithms to continuously analyze well performance data and optimize gas lift injection in real time. The predictive maintenance module shall identify early warning trends in equipment performance (such as valve response or pressure fluctuations) and recommend preventive actions. This feature aims to maximize production efficiency while minimizing downtime and maintenance costs.

Expected System Capabilities

The proposed automated gas lift system should be capable of achieving the following:

- **Real-time Monitoring of Well Parameters:**

Continuous acquisition and display of critical process parameters such as wellhead pressure, annulus pressure, temperature, and gas injection rate. The system shall provide both local (HMI-based) and remote (SCADA-based) visibility to operators and engineers for effective decision-making.

- **Automatic Adjustment of Gas Lift Injection Rate Based on Current Parameters:**

The control logic shall dynamically regulate the gas lift flow to each well in response to real-time well conditions and production targets. The system shall automatically fine-tune valve openings to maintain optimal lift gas utilization and oil production without manual intervention.

- **Maintaining Safe Operating Limits with Alarms and Interlocks:**

The system shall continuously monitor all operating parameters and ensure they remain within defined safe limits. All alarm and trip events shall be recorded, timestamped, and displayed in the SCADA interface for operator review and audit trail compliance.

- **Storing Historical Trend Data in ONGC Server:**

Historical data shall be stored in a structured format for long-term trend analysis, production reporting, and performance benchmarking. The stored data shall also support predictive analytics, maintenance planning, and integration with ONGC's digital oilfield initiatives.

Broad Scope of Work

The autonomous gas lift system for the VSEC Platform should support the following key functionalities and components:

1. Supply and Installation of Automated Gas Lift Control Valves (Adjustable Choke Valves):

- Each producing well should be equipped with a smart adjustable gas lift choke valve suitable for remote and automated operation.
- The valve shall be motorized or electro-hydraulically actuated, compatible with hazardous area requirements (Ex-proof / Zone 1 or 2 certified).
- The valve operation shall be fully integrated with the platform PLC/RTU and SCADA system, enabling remote set-point control and feedback monitoring (open/close position, valve travel, pressure drop, etc.).
- The valve design shall ensure fail-safe operation in case of power or communication loss.

2. Supply and Installation of Multi-Phase Flow Meters (MPFM):

- One MPFM may be installed to enable real-time measurement of oil, gas, and water flow rates without requiring conventional test separators.
- The MPFM shall be compact, and capable of providing continuous data to the platform RTU/PLC for integration with the control system.
- The live well testing capability shall facilitate production monitoring, allocation, and optimization based on actual flowing conditions.
- Calibration and verification provisions shall be included for periodic accuracy checks.

3. Supply and Installation of Flow Computer with Autonomous Optimization Capability:

- A dedicated computing module shall be installed to perform local control and optimization of gas lift rates based on real-time inputs from pressure, temperature, and MPFM data.
- The wellhead team will divert candidate well to MPFM, and system should be able to dynamically optimize the well by adjusting gas flow rate for the duration of the well test. The optimization algorithm should be adaptive, continuously analyzing well performance to maximize production within safe operating limits.
- The flow computer should interface with the SCADA for data exchange, event logging, and supervisory control from BPA process complex.
- Local autonomous operation shall be possible even in the event of temporary communication failure with the central system.
- Local panel/ HMI to be provided for local control at WHP

4. Integration and Safety Features (Recommended Addition):

- The system shall integrate with existing WHCPs, RTUs, and communication infrastructure on VSEC.
- Built-in safety interlocks, high/low pressure shutdowns, and emergency isolation logic shall be included to ensure well safety.
- The system shall comply with all applicable standards, and offshore safety requirements.

