

**गेल (इंडिया) लिमिटेड**  
**GAIL (INDIA) LIMITED**



रुचि की अभिव्यक्ति (ई.ओ.आई)

सलाहकारों / प्रौद्योगिकी समाधान प्रदाताओं से  
उल्लिखित कार्य के लिए  
गेल प्रतिष्ठानों विजयपुर (सी2सी3 संयंत्र) और छायांसा (कंप्रेसर स्टेशन) में उद्योग 4.0 समाधान के  
कार्यान्वयन का आकलन

**EXPRESSION OF INTEREST (EOI)**  
**TO CONSULTANTS / TECHNOLOGY SOLUTION PROVIDERS**  
**FOR**  
**ASSESSMENT OF GAIL INSTALLATIONS AT VIJAIPUR (C2C3 PLANT) &**  
**CHHAINSA (COMPRESSOR STATION) FOR IMPLEMENTATION OF**  
**INDUSTRY 4.0 SOLUTIONS**

## EXPRESSION OF INTEREST (EOI)

Interested reputed Consultants / Technology Providers experienced in providing Industry 4.0 Solutions and assessment of major manufacturing/ processing plants of Power, Steel, Auto, Aerospace, Fertilizer, cement, Oil & Gas Sector are invited to submit application in prescribed format along with necessary documents in support of their technical and financial capabilities in order to get enlisted for the proposed job.

The completed Application form along with attachments in a sealed envelope super scribed with “Application for **ASSESSMENT OF GAIL INSTALLATIONS AT VIJAIPUR (C2C3 PLANT) & CHHAINSA (COMPRESSOR STATION) FOR IMPLEMENTATION OF INDUSTRY 4.0 SOLUTIONS**” as per Form-1 provided in Annexure-1 may be forwarded to the specified address within 25 days of publication of this EOI i.e. latest by **26.05.2023**. Electronic submission of the EOI (PDF documents via email) will also be acceptable. Application received after Bid Due date will not be entertained. Applicants applying against the EOI will be screened based on the technical proposals submitted by them in the attached Form along with supporting documents.

**Shortlisted consultants will only be eligible to participate in the subsequent Request for Proposal (RFP) process for providing Technological Solutions & / or consultancy services during execution of the recommended initiatives.**

**Basic details of this EOI are:**

<b>EOI download</b>	EOI may be downloaded from any of the Websites as below: (i) <a href="http://www.gailonline.com">www.gailonline.com</a> (ii) GAIL’s Tender Website – <a href="http://www.gailtenders.in">www.gailtenders.in</a> (iii) Govt. CPP Portal - <a href="https://eprocure.gov.in">https://eprocure.gov.in</a>
<b>Address</b>	GAIL (INDIA) LIMITED, Plot No. B, 35-36, Block B, Sector 1, Noida, Uttar Pradesh 201301
<b>Pre-EOI meeting Date &amp; time</b>	11.05.2023 at 15:00 hrs
<b>Pre-EOI meeting link</b>	<a href="#">Click here to join the meeting</a> Meeting ID: 463 930 358 380 Passcode: wjb6AJ
<b>EOI submission mode</b>	Through E-mail: <a href="mailto:tamaheshwari@gail.co.in">tamaheshwari@gail.co.in</a>
<b>Due date &amp; time for submission of EOI</b>	26.05.2023 16:00 hrs
<b>EOI Validity</b>	6 months from the due date for submission of EOI

## **1. ELIGIBILITY:**

1. Applicant should be an Indian company, registered in India as per Companies Act, 2013
2. Applicant must have executed at least three (3) consultancy job for Industry 4.0 / Smart Digitalization solution in Oil & Gas / Fertilizers / Petrochemical / Cement / Power / Automobiles / Manufacturing Sector of Govt./ PSE/ Listed Private companies in India or abroad within preceding five (05) years to be reckoned from EOI issue date.
3. Applicant must have minimum Five years' experience in any of the fields of Software Development, Consulting services, System Integration and Industry 4.0 solutions.

## **2. ABOUT GAIL:**

GAIL (India) Limited (“GAIL”) is India’s leading Natural Gas Company with presence along entire natural gas value chain comprising of Exploration & Production, LNG imports, Gas Transmission & Marketing, Gas Processing, Petrochemicals, LPG Transmission and City Gas Distribution. GAIL is listed on the National Stock Exchange of India, the Bombay Stock Exchange and the London Stock Exchange (in the form of GDRs) with the market capitalization of more than Rs. 50,000 crores. With a focus on innovation and sustainability, GAIL is committed to contributing to the country's energy security and promoting a clean and green future.

Brief information about the two GAIL sites proposed for assessment is provided below.

### **2.1 GAIL Vijaipur:**

GAIL Vijaipur located in Guna District of MP has two LPG Recovery Plants and a C2C3 Recovery Plant along with Compressor Station consisting of Gas Turbines & Compressors of various make and capacities & approximately 6500 km of cross-country natural gas pipeline network under its jurisdiction.

The C2C3 Recovery plant at Vijaipur, consists of Gas Sweetening Unit (GSU) for removal of CO<sub>2</sub> from Natural Gas & Gas Processing Unit (GPU) for cryogenic recovery of C<sub>2</sub>+ fraction from rich feed gas using Turbo-expander process and also its associated utilities & off sites facilities.

### **2.2 GAIL Chhainsa:**

Chhainsa Compressor Station located in Faridabad in Haryana is having two numbers of Gas Turbines driven compressors with capacity of 54 MMSCMD along with associated facilities.

For additional information on GAIL, please visit <http://www.gailonline.com>

### **3. BACKGROUND:**

Industry 4.0 is revolutionizing the way companies manufacture, improve and distribute their products. Industries are integrating new technologies, including Internet of Things (IoT), cloud computing and analytics, and AI and machine learning into their production facilities and throughout their operations. Analyzing the large amounts of big data collected from sensors on the plant ensures real-time visibility of manufacturing assets and can provide tools for performing predictive maintenance in order to minimize equipment downtime. Industry 4.0 concepts and technologies can be applied across all types of industrial companies, including Gas processing and Gas Transportation Company like GAIL. With the growing demand of gas in the local market, GAIL must implement systems that would help in efficient gas processing, gas distribution and Transmission Company to be declared as Industry 4.0 installation.

Further, a complex gas processing facility like C2C3 Vijaipur needs to have increased automation, predictive maintenance, self-optimization of process improvements and, above all, a new level of efficiencies and responsiveness to customers not previously possible.

In line with its mission of revolutionizing GAIL installations namely C2C3 Vijaipur and Chhainsa Compressor Station to be declared as Industry 4.0 compliant unit, GAIL is exploring the possibility of associating with an expert entity to carry gap assessment study. After identifying the best recommended initiatives for making installation Industry 4.0 compliant through the shortlisting process, GAIL will float RFP's for engagement of Qualified Vendors / Technology Solution providers for implementation of the initiatives.

In this backdrop, GAIL invites Expression of Interest (EOI) from reputed experts for assessment of GAIL installations at Vijaipur (C2C3 plant) & Chhainsa (Compressor Station) for implementation of industry 4.0 solutions.

#### **4. PROPOSED ROLES:**

The broad roles of the proposed Consultants / Technology Solution Providers, shall include;

- I. To undertake Industry 4.0 assessment and submit consulting report.
- II. To identify & prioritize areas of improvement with clear recommendations on the steps required to close any identified gaps.
- III. Digital Transformation for C2C3 plant at Vijaipur and Compressor Station at Chhainsa to enable functioning of optimization solutions already in place to its true potential and realization of full benefits. It shall also aid in identifying projects/ initiatives which could enhance the effectiveness of operating teams and deliver immediate business results.

#### **5. SCOPE OF WORK:**

Through this EOI, reputed consultants/ technology providers are proposed to be enlisted, who will be engaged to identify & assess gaps between the existing systems at identified locations for fulfilling Industry 4.0 requirement with the purpose of making GAIL a forerunner in Oil and Gas Sector.

The main objective of Gap analysis assessment is the identification of potential initiatives or operation efficiency activities that may be required to make C2C3 Vijaipur and Chhainsa Compressor station as smart unit of GAIL and the proposed methodology for assessment is given below.

##### **5.1 Survey of Existing Assets:**

Conduct broad-based assessment of the two sites and the systems in place to enable implementation of Industry 4.0 solutions based on its core technological pillars such as System Integration, Cyber Security, Big Data & AI Analytics, IIoT, Augmented Reality, Cloud Computing, Additive Manufacturing, Autonomous Robots, Simulation.

The following broad sections are identified for conducting systematic & holistic assessment and Gap analysis and proposing recommendations.

##### **5.1a System Integration:**

System integration for Industry 4.0 involves both vertical and horizontal integration within the organization. This involves full digitization of physical assets by gathering data from various OT

systems (DCS, PLC, SCADA, etc.) and integrating with IT applications, thus facilitating transparency and data-based decision-making.

The bidder must analyze the existing OT & IT systems and identify gaps with respect to current best practices in Peer Industries & beyond. Suggest various upgradations & advancement required for enabling full system integration of existing IT & OT assets.

In all Plants & Pipelines, various monitoring & control equipment like field devices & sensors, FCS, DCS, PLC, SCADA are deployed for monitoring and control of equipment. The SCADA system is connected to GAIL IT network for enabling data availability for various applications.

### **5.1b Cyber Security:**

Since, Industry 4.0 aims to provide smart and advanced Physical Systems by integrating with IT Systems/ Cloud/ IIOT; it brings along a new level of cyber risk. This risk can be in the form of internal and external threats on critical infrastructure or compromise of confidential information. Hence, cybersecurity has become an integral part of the Industry 4.0.

Identify the different levels of cybersecurity solutions and tools deployed by GAIL in various domains & suggest additional cybersecurity measures necessary for achieving Horizontal & Vertical integration between IT & OT assets.

### **5.1c Enterprise Data Management:**

Identify existing process of Data integration across various levels and suggest the required Architecture / solutions for enhancement data integration capabilities. Suggestions must include technologies / systems required to collect various data including real time process & event data & alarms from various OT sources at varying frequencies, systems for storage of high frequency and large datasets & Organizing the data into meaningful logical structure through Enterprise Data Modeling. The data collected from integrating different IT and OT sources like smart Sensors / FCS/ DCS/ PLC/ SCADA/ LIMS/ SAP shall be available to run various plant performance analytics & visualization tools & Role based dashboards on a common platform.

### **5.1d Specific Use Cases for deployment of Industry 4.0 Solutions**

The bidder can identify different use cases for implementation of Industry 4.0 solutions along with suggestions for implementation including the estimated cost and anticipated benefits.

The use cases may include (but not limited to) the ones suggested below.

1. Asset Health Monitoring and Predictive Maintenance.
2. Energy monitoring & Plant Utilities Data Analytics & Dashboards
3. Sustainability & Emissions monitoring.
4. Terminal Automation System.
5. System Integration in control rooms.
6. Fleet Management system for plant vehicles.
7. Advanced Process Controller (APC) & Process Optimization
8. Operator Training Simulator (OTS).
9. Advance Digital Logbooks
10. Interlock Bypass Management System
11. Integrated Alarm Management

### **5.2 Deliverables for the Assessment:**

The typical deliverables for this EOI shall include but not limited to the following:

1. Detailed report at the end of the study containing the approach, methodology, technological and engineering basis for the study, observations & conclusions and recommendations
2. Recommendations with prioritization of initiatives along with estimated cost and anticipated benefits for achieving short term & long-term milestones in Industry 4.0 solutions implementation.

## Form I

**APPLICATION FOR PRE-QUALIFICATION**

(TO BE SUBMITTED BY APPLICANT ON ITS LETTERHEAD)

1	Name of the Agency	
2	Address (HQ)	
3	Address (Consultant)	
4	Designated Person with Job Title	
5	Address of Designated Person	
	e-mail address	
	Mobile Number	
	Landline Number	
	Fax Number	
6	<p>Pre-Qualifying Technical Requirements (Attach documents) The Bidder must have executed at least three (3) consultancy job for Industry 4.0 / Smart Digitalization solution in Oil &amp; Gas / Fertilizers / Petrochemical / Cement / Power / Automobiles / Manufacturing Sector of Govt./ PSE/ Listed Private companies in India or abroad within preceding five (05) years to be reckoned from EOI issue date. Documentary evidence in support of the same shall be provided along with the proposal duly attested by CEO / Authorized signatory of the company.</p>	
7	Other information demonstrating Consultant's competence (attach documents)	Provide a list of key personnel with CVs

Place:

Date:

**(NAME AND DESIGNATION OF AUTHORISED PERSON)**

(Seal of Company)