

2025

## Request For Proposal BQPS-III Workshop Building Cranes Installation



## 1. Introduction:

K-Electric invites qualified engineering firms to submit proposals for conducting a comprehensive feasibility study concerning the detailed evaluation of BQPS-II natural gas compressors to supply indigenous gas to BQPS-III plant. The study will focus on assessing technical, operational, and economic aspects of optimizing BQPS-II compressor performance to reliably deliver indigenous gas at the design pressure of 33 bar.

## 2. Project Objective:

The primary objective is to assess the feasibility of operating BQPS-II Natural gas compressors to supply 130MMSCFD gas at max design pressure of compressor to facilitate BQPS-III plant operation on indigenous gas.

- Identify and analyze all operational limitations, risks, and constraints.
- Propose engineering, operational, and safety solutions to overcome the identified challenges.
- Provide cost estimates and implementation roadmap for recommended solutions

## 3. Scope of Work:

- Conduct detailed analysis of operating BQPS-II compressors to deliver 130MMSCF gas at max design pressure for BQPS-III gas turbines. Assess compressor capability to achieve 33 bar delivery pressure and 130 MMSCFD flow
- Conduct the assessment in coordination with the compressor OEM to check the options of compressor output enhancement.
- Review existing design documents, P&IDs, performance curves, and historical operating data.
- Identify and validate system limitations (e.g., piping design capacity, compressor discharge limits, cooling system margins).
- Confirm NGC upstream & downstream pressure constraints for the full load operation of compressors.
- Evaluate piping, valves, PSVs, and backflow valve sizing for simultaneous operation.
- Analyze cooling water system capacity for full load operation scenarios.
- Review safety-critical devices calibration and implications for dual operation (BQPS-II & III).
- Identify failure modes and operational risks under proposed conditions.
- Assess aging impact on compressor performance and reliability.

- Recommend design modifications (piping, valves, cooling system upgrades etc). Development of preliminary piping layout and basic design drawings of the proposed modifications (if any).
- Review the operational limitations of NGC Motor specially the load current with respect to its designed rating and the defined overload settings in protection relays and NGC control system.
- Review the 6.6kV Electrical distribution System of BQPS2 regarding the reliable operation of all three gas compressors simultaneously as well as the startup of 2<sup>nd</sup> compressor on same auxiliary transformer and 6.6kV busbar.
- Review compressor backflow logic, which is currently linked to BQ2 GT load settings; note that at a 30 MW load variation on BQ2 GT, the backflow system switches to manual mode, retaining the last valve position. Also, review the backflow design and pipeline capacity for operation with three gas compressors at elevated pressure.
- Review compressor sealing system settings under increased discharge pressure conditions.
- Identify potential risks, constraints along with the mitigation strategies
- Suggest operational strategies like pressure adjustments, control logic changes etc.
- Prepare preliminary cost estimates for the recommended solutions.

#### **4. Deliverables:**

1. Technical report covering all analyses, findings, and recommendations
2. Basic design drawings/sketch of recommended modifications (if any)
3. Cost estimate and schedule for the work completion
4. Identification of potential constraints and mitigation measures

#### **5. Timeline:**

1. Kick-off Meeting: Within 1 week of award.
2. Draft Report: Within 4 weeks of Kick-off meeting.
3. Final Report & Presentation: Within 2 weeks of draft report submission

#### **6. Submission Requirement:**

Interested parties should submit the following documents to K-Electric:

1. A proposal outlining their approach to work.
2. A detailed project plan, including timelines and milestones.
3. A budget proposal that includes all costs associated with the work.
4. CVs of key personnel who will be involved in the work.
5. Detailed technical approach and methodology
6. Vendor to share references of previous work experience of similar nature.

## **7. Eligibility Criteria & Specific Requirements:**

- **Direct involvement of EPC HEI (with ENERGAS) and OEM Shenyang is a mandatory requirement**
- Minimum 10 years of experience in gas systems design review and consultation.
- Experience of working with KE will be an added advantage
- Proven track record in feasibility studies for large-scale power plants or gas systems.
- Compliance with international standards and OEM coordination capability.