



# Gas Transmission Company Limited (GTCL)

(A Company of Petrobangla)

Plot No. F-18/A, Sher-E-Bangla Nagar Administrative Area,  
Agargaon, Dhaka-1207

গ্যাস জাতীয় সম্পদ, এর অপচয় রোধ  
করে জাতীয় দায়িত্ব পালন করুন

“জ্বালানী নিরাপত্তা  
সর্বোচ্চ অগ্রাধিকার”

## Request for Expression of Interest (EOI) for Selection of Consulting Firm (International) for Consultancy Services for Conducting Feasibility Study for Maheshkhali/Matarbari-Bakhrabad 3<sup>rd</sup> Parallel Gas Transmission Pipeline Project.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH		
1	Ministry/Division	: Ministry of Power, Energy & Mineral Resources/ Energy & Mineral Resources Division
2	Agency	: Bangladesh Oil, Gas and Mineral Corporation (Petrobangala)
3	Procuring Entity Name	: Gas Transmission Company Limited (GTCL)
4	Procuring Entity District	: Dhaka
5	Expression of Interest for Selection of	: Consulting Firm (International) for Consultancy Services for Conducting Feasibility Study for Maheshkhali/Matarbari-Bakhrabad 3 <sup>rd</sup> Parallel Gas Transmission Pipeline Project.
6	EOI Ref No	: 28.14.0000.185.65.001.23-1314
7	Date	: 16/09/2023
KEY INFORMATION		
8	Procurement Method	: Quality & Cost Based Selection (QCBS)
FUNDING INFORMATION		
9	Budget and Source of Funds	: Own fund of GTCL
10	Development Partners	: Not Applicable
PARTICULAR INFORMATION		
11	Project/Programme Code	: Not Applicable
12	Project/Programme name	: Consultancy Services for conducting Feasibility Study for Maheshkhali/Matarbari-Bakhrabad 3 <sup>rd</sup> Parallel Gas Transmission Pipeline Project.
13	EOI Closing Date and Time	: 09/10/2023 and 12.00 Noon
INFORMATION FOR APPLICANT		
14	Brief Description of Assignment	: The major source of primary energy in Bangladesh is domestic natural gas. The demand for gas is increasing rapidly while its production is declining day by day. So, the gap between supply and demand is increasing. To minimize the gap, imported Liquefied Natural Gas (LNG) through two existing FSRU is being supplied to national gas grid since 2018 and Government of Bangladesh (GOB) has planned to install 3 <sup>rd</sup> FSRU and Land based LNG terminal to meet the current and future gas

		<p>demand of the country. In order to supply additional R-LNG to national grid from Maheshkhali/Matarbari points, it is imperative to construct Maheshkhali/Matarbari-Bakhrabad 3<sup>rd</sup> parallel Gas Transmission pipeline for which a detailed feasibility study needs to be carried out.</p> <p>The EOI document will be available in the website of GTCL (<a href="http://www.gtcl.gov.bd">www.gtcl.gov.bd</a>). Interested Consulting Firm may download the detailed Terms of Reference (TOR) and "Expression of Interest (EOI)" Form from GTCL website.</p>
15	Experience, Resources and Delivery Capacity Required	<p><b>The applicant should have the minimum following experience:</b></p> <ul style="list-style-type: none"> <li>• The Consulting firm must have 10 (Ten) years overall experience in Consultancy service.</li> <li>• The Consulting firm must have at least 08 (Eight) years experiences with minimum 3 successful completion of conducting Feasibility Study of gas Infrastructure and/or similar other projects in utility sectors.</li> <li>• Consultancy work experience regarding feasibility of offshore/onshore Pipeline in Oil and Gas Industries.</li> <li>• Submit evidence of experiences, continuing capability and adequacy of resources to carry out the service effectively.</li> <li>• Financial Capacity.</li> <li>• Consultancy works experience in South-East Asia region.</li> </ul>
16	Documents comprising the EOI	<p><b>The Expression of Interest must comprise the followings:</b></p> <ul style="list-style-type: none"> <li>• Covering letter;</li> <li>• Company profile, copy of Registration, Trade License Certificate, Brochure summarizing the available facilities to conduct the Feasibility Study;</li> <li>• Letter of Association /JVCA (if any)</li> <li>• Experience details as mentioned above;</li> <li>• Bank solvency certificate;</li> <li>• Availability of appropriate skilled staffs list of relevant professional, their qualification and experience;</li> <li>• Copy of Audit report (Yearly Turnover) for the last 3 (Three) years;</li> </ul> <p>Only shortlisted Consulting Firms will be called to participate in the Request for Proposal (RFP).</p> <p>Interested Consulting Firm will be required to submit the EOI (3 Copies) one (01) Original, two (02) copies in a closed envelope marked with "Expressions of Interest for Selection of Consulting Firm (International) for Consultancy Services for Conducting Feasibility Study for Maheshkhali/Matarbari-Bakhrabad 3<sup>rd</sup> Parallel Gas Transmission Pipeline Project" on all working days between 09:00 to 16:00 hrs. (BST) at Committee room, Level-3, GTCL Head Office, Plot No. F-18/A, Sher-E-Bangla Nagar, Agargaon, Dhaka-1207 before the EOI closing date &amp; time.</p> <p>Any application submitted later than the specific date and time or submitted through E-mail/fax will not be allowed.</p>
17	Association with local firms	Preferred
18	Place of Receiving the EOI	Committee Room, Level-03, GTCL Head Office, Agargaon, Dhaka-1207

PROCURING ENTITY DETAILS		
19	Name of Official Inviting Expressions of Interest	: Monshof Ali
20	Designation of Official Inviting Expressions of Interest	: Deputy General Manager (Strategic Planning)
21	Address of Official Inviting Expressions of Interest	: Room#1114, Level-11, GTCL Head Office, Agargaon, Dhaka-1207
22	Contact details of Official Inviting Expressions of Interest	: Telephone: +88-02-44827272 Email: stplanning17@gmail.com
23	The procuring entity reserves the right to reject any or all EOI.	




(Monshof Ali)

Deputy General Manager (Strategic Planning)

## Terms of Reference (ToR)

For

### Consultancy Services for Conducting Feasibility Study for Maheshkhali/Matarbari-Bakhrabad 3<sup>rd</sup> Parallel Gas Transmission Pipeline Project.

#### 1. Background of the services required

The major source of primary energy in Bangladesh is domestic natural gas. The demand for gas is increasing rapidly while its production is declining day by day. So, the gap between supply and demand is increasing. To minimize the gap, imported Liquefied Natural Gas (LNG) is being supplied to national gas grid since 2018 and the Government of Bangladesh (GOB) is planning to import more LNG to meet the demand.

Present indigenous gas production is around 2160 mmscfd against the demand of around 3700 mmscfd. To fulfil the existing and forecasted additional gas demand, two Floating Storage and Regasification Unit (FSRU) each of 500 mmscfd capacity have been installed by Excelerate Energy Bangladesh Ltd. (EEBL) and Summit LNG Terminal Ltd. at Maheshkhali of Cox's Bazar district from where presently around 850-900 mmscfd RLNG is being supplied to national gas grid. Present total gas production including RLNG in Bangladesh is around 3000 - 3100 mmscfd against existing demand of around 3700 mmscfd.

To fulfill the current gas demand, Summit LNG Terminal Ltd will install 3<sup>rd</sup> Floating Storage and Regasification Unit (FSRU) of 600 mmscfd capacity at Maheshkhali of Cox's Bazar district and Excelerate Energy Bangladesh Ltd. (EEBL) will increase its existing FSRU capacity by 100 mmscfd. So from Maheshkhali, total  $(500+600+600) = 1700$  mmscfd gas will be supplied to national gas grid by 2026. By the year 2031-32, 01(one) Land based LNG terminal of 1000 mmscfd capacity is planned to install at Matarbari of Cox's Bazar district and capacity of the said Land Based LNG terminal will be further increased by 1000 mmscfd. So, in future, total  $(1700+2000) = 3700$  mmscfd R-LNG will be added to national gas grid from Maheshkhali & Matarbari points. Besides, under 4<sup>th</sup> round PSC bidding process, there is an expectation of potential gas discovery in the Bay of Bengal.

At present approx. 850-900 mmscfd imported R-LNG is being supplied to GTCL national gas grid through (i) 30" & 42" dia. Maheshkhali – Anowara; (ii) 42" dia. Anowara-Fouzdarhat; and (iii) 36" dia. Chattagram-Feni-Bakhrabad Gas Transmission Pipeline. From the study, it is found that 85% of 1700 mmscfd R-LNG at Maheshkhali point i.e. 1445 mmscfd R-LNG can be supplied to national gas grid using existing infrastructure subject to the necessary modification at Kutumbopur of national gas grid by April 2024. So, in order to supply additional R-LNG to national grid from Maheshkhali/Matarbari point, it is imperative to construct Maheshkhali/Matarbari- Bakhrabad 3<sup>rd</sup> parallel Gas Transmission pipeline.

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A meeting presided over by the Honorable Secretary of Energy and Mineral Resources Division (EMRD) was held on 25 June 2023 regarding the Import of LNG & GTCL's transmission pipelines' capacity to evacuate the R-LNG. In the meeting among others the following decision was made:

“ 4.4 For the construction of the pipeline from Maheshkhali to Bakhrabad, GTCL will conduct detailed feasibility study in 2 segments: (1) From Foujdarhat to Bakhrabad and (2) From Maheshkhali/ Matarbari to Foujdarhat. PDPP of these 2 projects need to be sent to EMRD at the earliest.”

As per the above decision of the meeting, GTCL has taken an initiative to carry out a Feasibility Study of gas transmission pipeline construction from Maheshkhali/Matarbari, Cox's Bazar to Bakhrabad, Cumilla by engaging an experienced International Consulting Firm. The Consulting Firm will be required to conduct the feasibility study dividing the pipeline in two segments either as (1) Foujdarhat to Bakhrabad and (2) Maheshkhali/ Matarbari to Foujdarhat or suitable segments considering Onshore/Offshore/Onshore-Offshore Combination.

## 2. Objectives

The overall objectives for conducting this Feasibility Study is to examine technical feasibility, financial viability, environmental sustainability and social acceptability of the proposed Maheshkhali/Matarbari-Bakhrabad 3<sup>rd</sup> parallel Gas Transmission pipeline.

## 3. The Regulations and Guidelines to Conduct the Assessment

The regulations and guidelines of the Government of Bangladesh shall govern in conducting this assessment. Including others, they include:

- Bangladesh Natural Gas Safety Rules, 1991 (as amendment in 2003);
- Environmental Conservation Act, 1995 including all amendments;
- Environmental Conservation Rules, 1997 including all amendments;
- Explosive Rules, 2003;
- The Forest Act, 1927 including all amendments;
- Wildlife (Protection and Safety) Act, 2012;
- Noise Pollution Control Rules, 2006;
- Bangladesh Water Act, 2013;
- National River Protection Commission Act, 2013;
- Bangladesh Energy Regulatory Commission Act, 2003;
- Public Procurement Acts 2006 & Public Procurement Rules-2008 including all amendments;
- The Acquisition and Requisition of Immovable Property Act, Act No. 25 of 2017 (including all its amendment); and
- Territorial Waters and Maritime Zones (Amendment) Act, 2021.

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#### 4. Scope

The scope of the study will comprise a general background analysis of setting up a gas transmission pipeline from Maheshkhali/Matarbari upto Bakhrabad area considering present and potential imported R-LNG at Maheshkhali/Matarbari points and other probable gas sources and considering overall demand of the country. The study will analyze the constraints and ways to remove them. The study will also examine the technical, financial, economic, social & environmental aspects relating to constructing gas transmission pipelines in that area and recommendations for the Government's consideration.

The scope of services is given as follows but not limited to:

##### A. Identification of Gas Demand and Sources

- Identify category-wise gas demand of the country and forecast probable gas demand of the whole country up to 2041;
- Identify LNG and other gas sources to supply gas to mid region as well as other parts of the country (amount of gas, location, duration, etc.) and forecast probable gas source up to 2041.

##### B. Project Engineering

- Preliminary suitable route selection of gas transmission pipelines delineating the three probable routes on topographical sheet based on preliminary survey. Selecting route may be Onshore/Offshore/Onshore-Offshore Combination;
- For offshore part the following activities will need to be carried out:
  - Data collection, surveying and technical analysis for Met-Ocean Data (determination of weather windows, currents data, wind data, visibility, pipeline stability and installation methodologies etc.);
  - Data collection and technical analysis of Geotechnical Data (soil investigation in sub-sea and offshore locations, SONAR survey for sub-sea pipe-laying to determine sub-sea soil condition which affect pipeline design, shore crossing, trenching and installation methodologies);
  - Collection of Bathymetry and Hydrographic data to determine water depths, seabed profiles, seabed obstructions which affect shore-crossing, trenching, span corrections, obstruction removals, etc.
- Prepare the Front End Engineering Design/Basic Design Engineering Package (BDEP);
- Hydraulic Modeling and analysis- Determination of adequacy of existing network based on current and foreseen future supply and demand;
- Implementation modalities of the above project;

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- Determining the diameter, length, capacity and operating pressure of the pipelines considering the forecasted gas demand and sources up to 2041 and evacuation plan to the gas grid by Hydraulic Modelling;
- Project cost estimate with financial and economic analysis;
- Considering the above, identify probable duration for constructing gas transmission Pipelines; and
- Identifying the constraints/risk analysis that may hinder the construction of pipelines and way forward.

### **C. Preliminary Environmental and Socio-economic Study**

- Socio-economic impact over that region due to construction of the gas transmission pipeline;
- Environmental sustainability of the project activities and impact after completion of the project;
- Climate resilience and disaster risk analysis; and
- Consultation with concerned stakeholders.

### **D. Cost-Benefit Analysis**

### **E. Human Resources and Administrative Support Analysis**

- Human resources and administrative support that would be needed during implementation and post implementation of the project.

### **F. Institutional and Legal Analysis**

### **G. Risk (Uncertainty) and Sensitivity Analysis**

### **H. Alternative/Option Analysis**

### **I. Recommendation and Conclusion**

- J. Training:** Capacity building and technology transfer seminar, workshop and field trip to selected Middel East/ European gas operator for clients (5 persons) for 7 (seven) days excluding traveling time.

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### 5. Period of Performance

The consultancy services are expected to be completed within six (06) months. An international consultancy firm will be engaged for the assignment. The consultant's composition will be as follows:

**Indicative Professional Staff with Expatriate Consultant:** It has been estimated that over the total services period, the below mentioned professional staff are required which is about 42.00 man-months and it is an initial indication. The interested firms are expected to make their own estimates of staffing to deliver the services:

Sl. No	Professional Personnel	No. of Months	No. of Consultants	Total Man-Months (MM)
<b>International Consultant:</b>				
1.	Team Leader	5.00	1	5.00
2.	Pipeline Engineer	2.50	1	2.50
3.	Hydraulics Expert	2.00	1	2.00
4.	Hydrogeologist	1.50	1	1.50
5.	Subsea Pipeline Expert	1.50	1	1.50
6.	Physical Oceanographer	1.50	1	1.50
7.	Cost Estimator	1.50	1	1.50
8.	Design Engineer	1.50	1	1.50
<b>National Consultant:</b>				
9.	Pipeline Engineer cum Deputy Team Leader	3.00	1	3.00
10.	Environmental Specialist	1.50	1	1.50
11.	DIA & Risk Management Specialist	1.00	1	1.00
12.	Sociologist	1.50	1	1.50
13.	Resettlement Expert	1.50	1	1.50
14.	Economist/ Financial Analyst	1.50	1	1.50
15.	Geotechnical Expert	1.00	1	1.00
16.	Morphologist	1.50	1	1.50
17.	Institutional and Legal Specialist	1.00	1	1.00
18.	Route Survey Specialist	2.00	1	2.00
19.	AutoCAD Operator	1.50	1	1.50
20.	Field Surveyors/Data Analyst	2.00	4	8.00
<b>Total</b>		<b>36.00</b>	<b>23</b>	<b>42.00</b>

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**6. Consultant's Manpower Qualification & Experience**

<b>Consultants</b>	<b>Educational qualification</b>	<b>Experience</b>
Team Leader (International)	M.Sc. degree in Engineering or equivalent degree.	Minimum 20 years of professional experience in Gas Sector and /or similar other projects. At least one in Feasibility Study in utility sectors.
Pipeline Engineer (International)	B.Sc. degree in Engineering or equivalent degree.	Minimum 10 years of experience in preparing pipeline design basis, route selection & location class study reports, block valve study report, route verification, material grade selection and wall thickness selection etc.
Hydraulics Expert (International)	B.Sc. in Mechanical Engineering or equivalent degree.	Minimum 10 years of experience in related field including experience of hydraulic models, hydraulic analysis using software.
Hydrogeologist (International)	M.Sc. in Geology or equivalent degree.	Minimum 10 years of experience as Hydrogeologist including experience of subsea.
Subsea Pipeline Expert (International)	B.Sc. degree in Engineering or equivalent degree.	Minimum 07 years professional experience including Feasibility Study related works of Gas Transportation Subsea Pipeline.
Physical Oceanographer(International)	B.Sc. degree or Equivalent in Oceanography/Ocean Science/Marine Science.	Minimum 07 years of experience as or Oceanographer equivalent.
Cost Estimator (International)	B.Sc. in Mechanical, Chemical, Instrumentation & Control Engineering or equivalent.	Minimum 10 years of experience in Cost Estimation, and Basis of estimation for Mechanical packages, equipment, piping and valves,

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Consultants	Educational qualification	Experience
		Electrical & Instrument Cost for gas/oil pipeline projects.
Design Engineer (International)	B.Sc in Mechanical Engineering or equivalent degree.	Minimum 10 years of experience in oil, gas, power generation industries to engineering teams in the process design, project set-up and development, timely completion of feasibility, FEED and EPC projects.
Pipeline Engineer cum Deputy Team Leader (National)	B.Sc. degree in Engineering	Minimum 10 years of experience in preparing pipeline design basis, route selection & location class study reports, block valve study report, route verification, material grade selection and wall thickness selection etc.
Environmental Specialist(National)	Masters' degree in Environmental Science/Biological Science/ equivalent degree.	Minimum 10 years of professional experience in relevant field. Must have relevant consultancy experience in environmental impact assessment along with experience of working in several Feasibility Study, EIA, ESIA, etc. studies for heavy industries.
DIA & Risk Management Specialist (National)	Master's degree in Engineering/environmental science/Disaster Management/ relevant discipline.	Minimum 10 years of professional experience in relevant field. Must have relevant consultancy experience in environmental impact assessment along with experience of working in several Feasibility Study, DIA, ESIA, etc. studies for heavy industries.
Sociologist (National)	Master's degree in Social Science/ Sociology.	Minimum 10 years of professional experience in relevant field. Must have relevant consultancy experience in

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Consultants	Educational qualification	Experience
		social impact assessment along with experience of working in several Feasibility Study, EIA, ESIA, etc. studies for heavy industries.
Resettlement Expert (National)	Masters's degree in Social Science/Sociology.	Minimum 10 years of professional experience in relevant field. Must have relevant consultancy experience in Resettlement Study along with experience of working in several Feasibility Study, EIA, ESIA, RAP, LAP etc.
Economist/ Financial Analyst (National)	Master's degree in Economics/ Finance/MBA/other relevant disciplines.	Minimum 12 years of professional experience in relevant field. Must have relevant consultancy experience in Financial Analysis along with experience of working in similar Feasibility Study, DPP preparation, etc.
Geotechnical Expert (National)	B.Sc. in Civil Engineering or equivalent.	Minimum 10 years of experience as Geotechnical Expert or equivalent.
Morphologist (National)	B.Sc. degree in Civil Engineering/ Water Resources Engineering/Hydraulic Engineering/ equivalent degree.	Minimum 10 years of professional experience in morphological analysis along with experience of working in Feasibility Study or related field.
Institutional and Legal Specialist (National)	Master's degree in Law or equivalent	Minimum 12 years of professional experience in relevant field. Must have relevant consultancy experience in institutional analysis and capacity building along with experience of

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Consultants	Educational qualification	Experience
		working in several Feasibility Study, EIA, ESIA, RAP, LAP etc.
Route Survey Specialist (National)	Bachelor degree in Surveying/ Civil Engineering/ Geography/ URP/ relevant discipline.	Minimum 12 years of professional experience in relevant field. Must be specialized in GIS, surveying equipment, such as high-precision instruments, RTK, DGPS and global positioning technologies, to acquire spatial data.
AutoCAD Operator (National)	B.Sc. degree in Surveying/Geography/ Civil/relevant discipline.	Minimum 12 (twelve) years of professional experience in relevant field. Must have relevant consultancy experience in the field of drawing and design. Extensive experience is required with Auto-CAD. ARC/ INFO, ArcView Pro and ArcView software.
Field Surveyor/ Data Analyst (National)	Graduation degree in relevant discipline.	Minimum five (05) years of professional experience in relevant field. Must have relevant survey experience in customer survey/ socioeconomic survey/ land use survey etc. and data analysis.

**7. List of reports, Schedule of report deliveries**

- The Inception Report shall be submitted in three (03) copies within 30 days from the commencement of the service.
- Draft Final Report shall be submitted in five (05) copies within 120 days from the commencement of the service.
- Feedback collection from all stakeholders by arranging a seminar as required within 15 days of submission of the Draft Final Report.
- The Final Report shall be submitted in Ten (10) copies within 180 days from the date of commencement of the service along with the digital copy.


  
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8. Client's Responsibilities

Issuance of request letter to officials, agents and representatives of the Government for collection of secondary data (gas demand, sources data etc.) or other purposes as may be necessary or appropriate for the prompt and effective implementation of the Services. During site visits of potential routes of the feasibility study area, the consultants will take GTCL representatives with them for the assistance of their work.

9. Consultant's Responsibilities

The Consultant at their own responsibility and risk shall visit and examine the project site and their surroundings, social and physical aspects and to obtain all information that may be necessary for the purpose of execution of study and preparation of reports. Any cost associated with the site visit shall be borne by the Consultant. Prior permission may be required for visit to the sensitive sites.

10. Report Structure

The Report will have to be formulated based on the updated Feasibility Study Format circulated by the Planning Commission of Government of Bangladesh (GoB) that has been attached herewith. The final feasibility study report for Maheshkhali/Matarbari - Bakhrabad Gas Transmission Pipeline will have to be prepared by 2 (two) suitable segments separately and will have to be submitted the reports accordingly.







**Ministry of -----**  
**Government of the People's Republic of Bangladesh**

**Feasibility Study for -- (Name of the Project/Projects)**

**----- (Month) 20--**

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## Executive Summary

Summarise the key findings of the Feasibility Study and recommendations.

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# Project Feasibility Study Report

## Section 1: Basic Information

1.	Name of the Project	:	
2.	(a) Sponsoring Ministry/Division (b) Implementing Agency	:	
3.	Project Objectives (Project to be taken based on the study)	:	
4.	Estimated Project Cost (Taka in Crore)	:	
5.	Sector & Sub-Sector	:	
6.	Project Category (Based on Environment Conservation Rules 1997)	:	
7.	Project Geographic Location (a) Countrywide (b) Division (c) District (d) Upazila (e) Others (City Corporation/Pourashva)	:	
8.	Project Duration	:	

## Section 2: Introduction

Describe the following:

- Project Background: Rationale and genesis (Mention the sources of information through reviewing the relevant documents);
- Objectives of the feasibility study;
- Approach and methodology of the feasibility study; and
- Organization of the feasibility study.

## Section 3: Market/Demand Analysis

This section assesses the need for public investments and involves the elements listed below:

- Problem Statement:** Provide an explicit definition of the problem to be addressed, identify the likely causes (both direct and indirect) of the problem and give a brief insight of the likely consequences if no intervention in public sector is made.
- Relevance of the Project Idea:** Justify the need for the proposed project by linking the project(s) goals, outcomes and outputs to Global/National Development Plans/Policies and Sector Strategic objectives.
- Proposed Project Interventions:** Describe the interventions (project inputs & outputs) that need to be undertaken by the government through the proposed project to address the problem, describe the interventions undertaken earlier to solve this problem by this organization or other organizations (if any).

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- (d) **Stakeholders:** Identify the key stakeholders that are likely to be associated with the project interventions.
- (e) **Demand Analysis:** Identify the need for public investments by assessing:
  - (i) Current demand (based on statistics provided by service providers/regulators/ ministries/national & regional statistical offices for the various types of users);
  - (ii) Future demand (based on reliable demand forecasting models) in both the scenarios with and without the project; and
  - (iii) Various constraints and means to meet the demand including government regulations, technological developments etc.
- (f) **SWOT Analysis:** Identify the Strengths, Weaknesses, Opportunities and Threats to the project.

#### **Section 4: Technical/Technological & Engineering analysis**

A summary of the proposed project shall be presented with the following headings:

- (a) **Location:** description of the location of the project including a geographical illustration (map and/or geo-coordinates) with justification. Availability of land is a key aspect; evidence should be provided that the land is owned (or can be accessed) by the organization, which has the full title to use it, or has to be purchased (or rented) through acquisition/requisition process. Besides, it should address if any kind of utility shifting is required. Identify the issues of disaster risks (existing and future) in the proposed location along with project site on hazard map.
- (b) **Technical design:** description of the main components, technology adopted, design, standards and specifications. Key output indicators should be defined as the key physical quantities produced (e.g. meters, sq. meters, kilometers, numbers, manmonths, etc.). If the project is in disaster prone areas and has the probability of climate change impact, disaster and climate change risks related information should be integrated in technical design in order to address the impact of hazards on the project.
- (c) **Output plan:** description of the output and the expected utilization rate. These elements describe the service provision from the supply side in the context of the forecasted demand.
- (d) **Costs estimates:** estimation of the financial needs for project design, implementation and operations, componentwise cost estimates should be provided based on evidence.
- (e) **Implementation timeline:** considering the volume of works, capacity of implementing agency, budget flow (MTBF ceiling), project priority etc. a realistic project timeline along with the implementation schedule should be provided (for example, a Gantt chart with the work plan).

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## **Section 5: Environmental Sustainability, Climate Resilience and Disaster Risk Analysis**

### **5.1 Environmental, Climate Change and Disaster Risk Analysis**

Specify and describe the economic effects/impacts of environmental, disaster and climate change and possible compensations for ecological damages. Key issues to be addressed:

- (a) What are the likely environmental, disasters and climate change impacts or risks from the project (any impact of project to increase the existing disaster and climate change related risks and/or contribute to create new risks)?
- (b) What counter measures are taken to reduce these impacts?
- (c) What is the cost for reducing/mitigating the negative impacts?
- (d) Are there alternative ways of delivering the required services or goods without incurring these environmental costs? What are the costs of these alternatives?
- (e) What types of assessments are required for the project (e.g. EIA/DIA)?
- (f) Are there any resettlements issues to be addressed? If yes, provide resettlement modality in details.

### **5.2 Assessment of Disaster Resilience of the Project**

This section assesses the resilience and address about uncertainties. Key indicators need to be discussed:

- (a) Contingency Plan for Emergency Disaster Management: Describe the evacuation plan if required, institutional arrangement for shutting down of utility services, and general procedures to be followed by individuals during disasters (Fire, Earthquake, Flood, Cyclone etc.);
- (b) Business Continuity Plan: Outline the key response and recovery priorities. This plan will detail out how different utility services will be rendered to support the overall Emergency Management Plan;
- (c) Time of Recovery: Required time for rehabilitation after a disaster; and
- (d) Reporting of residual risks: Reporting of remaining risks after recognition and put in place adequate risk reduction measures.

## **Section 6: Cost-Benefit Analysis**

### **6.1 Financial Analysis**

Describe the components of costs and benefits at market prices including option analysis.

- (a) Identify the components of cost & benefit;
- (b) Transfer them in monetary value;
- (c) Construct cash flow;
- (d) Identify the Key Assumptions considered in exercises; then
- (e) Compute the following indicators and interpret the results:
  - (i) Financial Net Present Value (FNPV)
  - (ii) Financial Benefit Cost Ratio (FBCR)
  - (iii) Financial Internal Rate of Return (FIRR)

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## 6.2 Economic Analysis

Economic adjustments from financial data using standard conversion factor; after that costs and benefits are appraised from the point of view of the entire economy.

- (a) Identify the direct, indirect and associated cost and benefit components;
- (b) Adjust them where necessary;
- (c) Convert the value of cost and benefit components into economic price by using Standard Conversion Factor (SCF) determined by the Government;
- (d) Construct the cash flow;
- (e) Mention the Assumption;
- (f) Compute the following indicators and interpret the results:
  - (i) Economic Net Present Value (ENPV)
  - (ii) Economic Benefit Cost Ratio (EBCR)
  - (iii) Economic Internal Rate of Return (EIRR)

### Section 7: Human Resources and Administrative Support Analysis (During Implementation and Post Implementation of the project)

Point out the functional structure and institutional capacity of the Agency (in terms of both Technical & Financial) required for implementation and operational stages of the project(s), sources of the workforce & financing are needed to be identified. Key issues to be addressed:

- (a) What types of managerial and skilled workforces are needed during implementation and operational phases of the project?
- (b) Does the project entity have ability to provide the managerial and skilled workforces needed for implementation of the project? If not, provide suggestions specifically.
- (c) Does the implementing agency have institutional capacity (financial & technical) to retain the project output functional? If not, provide specific suggestions.
- (d) Is the project entity equipped with skilled & experienced workforces to operate the project output? If not, provide specific suggestions.
- (e) Does the entity have adequate fund under its recurring budget to incur the operational expenditure of the project output? If not, provide specific suggestions.
- (f) Is timing of project consistent with organizational capacity (in terms of quantity and other)? A comparative statement should be provided in light of experience of the entity in project implementation.

### Section 8: Institutional and Legal Analysis

Illustrate the legal restrictions (if any) that may obstruct or impede the project during its implementation and functional stage of the project outputs, key issues are:

- (a) Does the project match with the legal boundary (allocation of business or mandate) of the project entity?
- (b) Are the capabilities and physical facilities of the agency being properly utilized?
- (c) Is there any need for adjustment (reforms) in the policy and/or institutional setup?

- (d) What adjustments may be required before the project is implemented?
- (e) Do the institutions have suitable skills and capacity in line with the project requirements?
- (f) Are there any incentives or penalties in place to ensure the project delivery on time and within the budget?
- (g) Are there any critical governance issues that may affect implementation? If yes, state briefly.
- (h) Are there any challenges related to cross-cutting issues to be addressed? If yes, a mitigation strategy would be suggested.
- (i) Others (if any).

### **Section 9: Risk (Uncertainty) and Sensitivity Analysis**

The flow of costs and benefits throughout the project life is uncertain. Given that uncertainty, Considerations have to be given to the costs that risks imply. The objective of this module is to simulate various scenarios and generate guidance on how to reduce the risk exposure through relevant contractual clauses. The questions that need to be answered are:

- (a) What are the major risks that may affect project?
- (b) How will the project be affected if the risk event materialized?
- (c) What are the possible mitigation measures needed?
- (d) How sensitive are the assumptions used in the financial and economic models in an environment that differs significantly?
- (e) Are there any risks, legal and regulatory obligations that could increase costs or decrease the benefits? If there any, how much project implementation may be hampered or benefit of the project may be reduced?

### **Section 10: Alternative/Options Analysis**

Option Analysis with recommendations & justifications. Technology and strategy recommended to achieve the goals and objectives of the proposed project should be described along with advantages and disadvantages considering various technologies and strategies applicable.

### **Section 11: Recommendation and Conclusion**

Illustrate the solutions specifically to overcome the critical issues that may hinder the project implementation and that would be supported by different sections of analysis.

### **Section 12: Annexes**

Attach detailed technical and engineering designs, plant prototypes designs etc. Financial & Economic models and any supporting documents.

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# Expression of Interest Forms: Contents

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1. Form of Letter of "Expression of Interest"

2. Form (1) GENERAL INFORMATION

A-1 The Consulting Firm's Information

A-2 General information of the Consulting Firm

A-3 Overall Experience of the Consulting Firm

3. Form (2) Firm's Experience Record

4. Form (3) Available Resource Personnel

5. Form (4) Available Office Facilities

6. Form (5) Financial Capacity

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# Expression of Interest

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[Letter head paper of the Applicant including full postal address, telephone no., and fax no.]

Date:

To:

**Deputy General Manager (Strategic Planning)**  
**Gas Transmission Company Limited**  
**Plot no: F-18/A, Sher-E-Bangla Nagar Administrative Area**  
**Agargaon, Dhaka-1207**  
**Dhaka, Bangladesh.**

Sir,

Being duly authorized to represent and act on behalf of..... here in after referred to as "the Applicant", and having reviewed and fully understood all of the information provided in the Notice Inviting Expression of Interest, the undersigned hereby expresses its interest in and applies to be short-listed by your selves as a submitter of proposal for Consultancy Services for Conducting Feasibility Study for Maheshkhali-Bakhrabad 3rd Parallel Gas Transmission Pipeline Project.

1. Attached to this Expression of Interest are copies of original documents defining:
  - (a) the Applicant's legal status; and
  - (b) the place of incorporation/ organization/ institution (for applicants who are firms), or the place of registration and the nationality of the owners (for applicants individually-owned firms).
  
2. The Deputy General Manager (Strategic Planning), GTCL and its authorized representatives are here by authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this Expression of Interest, and to seek clarification from our bankers and clients regarding any financial and technical aspects. This Expression of Interest will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and as requested by Bangladesh Bank to verify statements and information provided in this Expression of Interest, such as the human resources, experience, and competence of the Applicant.





3. The Deputy General Manager (Strategic Planning), GTCL and its authorized representatives may contact the following persons for further information

Experience inquiries	
Contact	Telephone
Personnel inquiries	
Contact	Telephone
Financial inquiries	
Contact	Telephone

4. This Expression of Interest is made with the full understanding that:
- (a) all information submitted in this Expression of Interest for qualification and selection for short listing will be subject to verification at the time of submitting proposal by short-listed applicants;
  - (b) the Company reserves the right to reject or accept any application, cancel the qualification and selection for short-listing process at any stage, and reject all applications;
  - (c) the Company shall not be liable for any such actions and shall be under no obligation to inform the Applicant of the grounds for them.

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# Expression of interest form (1)

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## A. General Information

[All Consulting firms applying for short-listing are requested to provide following information in this form. Nationality information should be provided for all owners of firms.]

### A-1 Firm's Information

Name of firm	
Head office address	
Telephone	Contact (Name, position)
Fax	
Place of incorporation / registration	Year of incorporation / registration

### A-2 General information of the Consulting Firm:

### A-3 Overall Experience of the Consulting Firm:

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# Expression of interest form (2)

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## B. Firm's Experience Record

[Note: The Consulting Firm is requested to list all contracts for experience mentioned in EOI notice were or being executed by the Firm during the last Ten (10) years.]

1. 10 (Ten) years overall experience in Consultancy service;

Name of the Contract:	
Details of Employer	Contact (Name, position)
Contract person (Designation, Corporate email, Phone etc.)	
Head office address	
Telephone	
Fax	
E-mail	
Implementation period of Contract	
Scope of the Contract	
Firm's input	

2. At least 08 (Eight) years experiences with minimum 3 successful completion of conducting Feasibility Study of gas Infrastructure and/or similar other projects in utility sectors.

Name of the Contract:	
Details of Employer	Contact (Name, position)
Contract person (Designation, Corporate email, Phone etc.)	
Head office address	
Telephone	
Fax	
E-mail	
Implementation period of Contract	
Scope of the Contract	
Firm's input	



3. Consultancy work experience regarding feasibility of Offshore/Onshore Pipeline in Oil and Gas Industries:

Name of the Contract:	
Details of Employer	Contact (Name, position)
Contract person (Designation, Corporate email, Phone etc.)	
Head office address	
Telephone	
Fax	
E-mail	
Implementation period of Contract	
Scope of the Contract	
Firm's input	

4. Consultancy works experience in South-East Asia region:

Name of the Contract:	
Details of Employer	Contact (Name, position)
Contract person (Designation, Corporate email, Phone etc.)	
Head office address	
Telephone	
Fax	
E-mail	
Implementation period of Contract	
Scope of the Contract	
Firm's input	

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## Expression of interest form (3)

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### C. Available Resource Personnel

[Note: The Consulting Firm is requested to provide personnel information of the Resource personnel to be possibly assigned for the specified area mentioned in Request for EOI of expertise.]

No. of Resource personnel to be available

Name of the Resource Personnel	Degree (Bachelor, Master, Doctor)	Year of Professional Experience	Employment Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

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# Expression of interest form (4)

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## D. Available Office Facilities

[Note: The Consulting Firm is requested to provide details of office, resources and other office facilities i.e. office equipment and facilities, list of licensed laboratory Computer hardware/software, list of international journals purchase for firm, library facilities and others if any.]

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# Expression of interest form (5)

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## E. Financial Capacity

[Note: The Consulting Firm is requested to provide audited financial statement (balance sheet, income statement, and cash flow statement) in last three (3) years. The Consulting Firm is also requested to provide summary of financial information in the following form.]

Financial information in Bangladeshi Taka equivalent	Actual: previous 3 years (use the accounting year of the applicant or partner)		
	Accounting Year 1	Accounting Year 2	Accounting Year 3
1. Total assets			
2. Current assets			
3. Total liabilities			
4. Current liabilities			
5. Turnover of the Firm			
6. Gross Profits of the firm			
7. Profits after taxes of the firm			

*Ch*

*FN*