



**Titas Gas Transmission and Distribution Co. Ltd.**

Titas Gas Bhaban, 105 Kazi Nazrul Islam Avenue,  
Kawran Bazar C/A, Dhaka-1215

**Request for Expression of Interest (REoI) for Selecting an International Project Management Consulting Firm**

1	Ministry/Division	:	Ministry of Power, Energy & Mineral Resources/Energy & Mineral Resources Division (EMRD)
2	Agency	:	Bangladesh Oil, Gas & Mineral Corporation (Petrobangla)
3	Procuring Entity Name	:	Titas Gas Transmission & Distribution Company Limited (TGTDCCL)
4	Procuring Entity District	:	Dhaka
5	Expression of Interest for Selection of	:	International Project Management Consulting Firm for the installation of Smart Prepaid Gas Meter in the southern part of Titas Franchise Area.
6	EoI Ref. No.	:	TGTDCCL/SMEEIP-ADB/SD-1 (CS-1)/2024
7	Date	:	08/02/2024
<b>KEY INFORMATION</b>			
8	Procurement Method	:	Quality and Cost Based Selection (QCBS)
<b>FUNDING INFORMATION</b>			
9	Source of Fund	:	Asian Development Bank (ADB) Loan No. 4386-BAN
<b>PARTICULAR INFORMATION</b>			
10	Project Name	:	Smart Metering Energy Efficiency Improvement Project [Installation of Prepaid Gas Meter for TGTDCCL]
11	EoI Closing Date & Time	:	10/03/2024 & 12:00 pm [BST]
<b>INFORMATION FOR APPLICANT</b>			
12	Brief Description of Assignment	:	The Government of Bangladesh has received financing from the ADB to promote efficient and safe use of gas through the installation of 6.5 lac Smart Prepaid Gas Meters (SPGMs) for domestic customers in the Metro Dhaka Marketing (South) and Regional Marketing (Narayanganj) of Titas Franchise Area (TFA). The detailed description of Assignments is mentioned in the Terms of Reference (ToR). The ToR and the EoI Forms will be available in the website of TGTDCCL ( <a href="http://www.titasgas.gov.bd">www.titasgas.gov.bd</a> ).
13	Experience, Resources and Delivery Capacity Required	:	The Experience, Resources and Delivery Capacity Required for the Assignment are mentioned in the ToR.
14	Documents Comprising the EoI	:	The International consulting firm/JV that submit(s) tender shall be evaluated using, but not limited to the following minimum criteria which the consulting firm/JV must provide documentary proof of compliance: a) Qualification Requirements mentioned in the ToR. b) Additional Documents: Covering letter, Letter of Association/JVCA (if any), Company profile with registration and age of firm, Bank solvency certificate, Availability of appropriate skilled staff's list of relevant professional, their qualification and experience, Audit report for the last 3 (three) years.  Interested consulting firm/JVs will be required to submit 3 (Three) signed copies of EoI- 1 (One) Original and 2 (Two) copies in closed envelope marked with "EXPRESSION OF INTEREST (EoI) FOR SELECTION OF INTERNATIONAL PROJECT MANAGEMENT CONSULTING FIRM FOR THE INSTALLATION OF SMART PREPAID GAS METERS IN THE SOUTHERN PART OF TITAS FRANCHISE AREA" along with soft copy in CD-ROM on all working days (Sunday to Thursday) within office time at the place of receiving EoI before the EoI closing date & time. Any application submitted later than the specific date and time or submitted through e-mail/fax will not be entertained. In addition, EoI can also be submitted through ADB's Consultant Management System (CMS) at <a href="http://www.cms.adb.org">www.cms.adb.org</a> .  A Shortlist of firms/JVs will be prepared upon evaluation of EoIs based on the criteria of (a) Management Competence, (b) Technical Competence, and (c) Geographic Competence following the provisions of the Procurement Regulations for ADB Borrowers and PPR-2008. The Request for Proposal (RFP) Documents will be issued in their favor.
15	Place of Receiving the EoI	:	Office of Project Director, Smart Metering Energy Efficiency Improvement Project [Installation of Prepaid Gas Meter for TGTDCCL] Planning Department, Titas Gas Bhaban (10 <sup>th</sup> Floor), 105 Kazi Nazrul Islam Avenue, Kawran Bazar C/A, Dhaka-1215
<b>PROCURING ENTITY DETAILS</b>			
16	Name of Official Inviting EoI	:	Engr. Muhammad Abul Kawser
17	Designation of Official Inviting EoI	:	Project Director, Smart Metering Energy Efficiency Improvement Project [Installation of Prepaid Gas Meter for TGTDCCL]
18	Address of Official Inviting EoI	:	Planning Department, Titas Gas Bhaban (10 <sup>th</sup> Floor), 105 Kazi Nazrul Islam Avenue, Kawran Bazar C/A, Dhaka-1215
19	Contact Details of Official Inviting EoI	:	Cell No.: +8801712816739, E-mail: <a href="mailto:pd.ipgm.adb@gmail.com">pd.ipgm.adb@gmail.com</a>
20	<b>The procuring entity reserves the right to accept or reject EoI as well as whole procedure.</b>		

*M. A. Kawser*  
08.02.2024

(Engr. Muhammad Abul Kawser)  
Project Director

"Smart Metering Energy Efficiency Improvement Project  
[Installation of Prepaid Gas Meter for TGTDCCL]"  
Titas Gas Transmission and Distribution Co. Ltd.

**TERMS OF REFERENCE (TOR)**

for

**SELECTION OF INTERNATIONAL PROJECT MANAGEMENT CONSULTING  
FIRM FOR THE INSTALLATION OF SMART PREPAID GAS METER IN THE  
NORTHERN PART OF TITAS FRANCHISE AREA**

**SMART METERING ENERGY EFFICIENCY IMPROVEMENT PROJECT  
[INSTALLATION OF PREPAID GAS METER FOR TGTDC]**

**SUPPORTED BY:  
ASIAN DEVELOPMENT BANK  
(LOAN NO. 4386-BAN)**

**IMPLEMENTED BY:  
TITAS GAS TRANSMISSION & DISTRIBUTION COMPANY LIMITED (TGTDC)**

February 2024



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# TERMS OF REFERENCE

## for

### Project Management Consultant Firm (International)

#### 1. Introduction and Background

1. Natural gas has been playing a vital role in the rapid economic development of Bangladesh and is a major primary energy source accounting for over 60% of the total primary energy supply in the country. While the high growth trajectory in demand for energy will continue as the economy grows, indigenous gas production peaked in 2017 and is decreasing. To fill the supply gap, Bangladesh began importing liquified natural gas (LNG) in 2018, and its share in the total gas supply increased from 11% in 2019 to 19% in 2020, which makes the country increasingly vulnerable to the volatility of international gas prices. The increased share of costly imported LNG is also worsening the financial performance of gas sector entities and increasing the energy costs for energy-intensive industrial customers.
2. Wasteful use of natural gas is prevalent among residential customers in Bangladesh who consume about 13 percent of the natural gas demand. While all other customer categories are connected to gas meters, most residential customers use non-metered gas. Non-metered residential customers pay a fixed amount per month regardless of the gas quantity they use. Since they do not pay for every unit of gas, they tend to use gas inappropriately without limit, nor do they consider using gas more efficiently. Following the Government of Bangladesh's target to connect all residential customers with prepaid gas meters, each of the six gas distribution companies in Bangladesh embarked on programs to connect the remaining residential customers to smart prepaid gas meters (SPGMs) in accordance with the government's standard technical specifications. Of nearly 4.3 million residential gas customers nationwide, less than 500,000 are connected to prepaid meters as of June 2022.
3. Titas Gas Transmission and Distribution Company Limited (TGTDC) is the largest gas distribution company in Bangladesh and undertook the installation of prepaid gas metering (web-based) system project funded by the Japan International Cooperation Agency (JICA). TGTDC has taken up this project to counteract gas wastage by reducing system loss and helping in the efficient use of gas. The total non-metered domestic connections in the Titas Franchise Area (TFA) is around 2.6 million. At present, there are around 4 lac prepaid gas meters in use in the TFA. TGTDC intends to install 6.5 lac SPGMs ('pay-as-you-go' meters) in prepayment mode wherein, customers can top up their meters online, via cellphone or text message, point of sales (POS), or even with a smartphone app. The prepayment metering system will have a secure smart data network to collect gas meter data and provide it to TGTDC's System Master Station/Data Center.
4. TGTDC has applied for a loan from the Asian Development Bank (ADB) for the Smart Metering Energy Efficiency Improvement Project (the Project). Building on the previous project funded by JICA, the Project will help promote efficient and safe use of gas in TFA. The scope of the Project includes the following components:
  - (i) Supply, installation, and commissioning of Unified Web System (UWS) for SPGM system;
  - (ii) Supply, installation, and commissioning of at least 650,000 SPGMs;
  - (iii) Supply, installation, and commissioning of Automated Grievance Redress Center (AGRC) for SPGM system comprising (a) one automated central call center at Head Office, and (b) customer support service centers at 30 Zonal Offices in TFA;
  - (iv) Supply, installation, and commissioning of Meter Testing and Calibration Bench (MTCB); and



- (v) Training for operation and maintenance staff and capacity building of TGTDCCL staff.
5. The SPGMs shall be EN ISO/IEC conformance or equivalent with accuracies traceable to international standards. The existing NFC card-based web system and/or Data Center at Head Office building at Kawran Bazar and the Disaster Recovery Center at Joydebpur Regional Sales office building of TGTDCCL shall be upgraded, integrated, and merged with a new smart online-based and NFC card-based Web System for installation of prepayment system. The new smart online-based and NFC card-based system should utilize the space available in the existing Data Center at Head Office building at Kawran Bazar and the Disaster Recovery Center for the installation of prepayment hardware and software system. The Project will be compliant with the Laws of Bangladesh, including in relation to waste and health and safety and ADB's Safeguard Policy Statement 2009 (SPS 2009).
6. The Project also includes for institutional capacity to be strengthened, including on the social and environmental safeguards. The Project Management Consultant (the Consultant) will work in conjunction with TGTDCCL's corporate environment and safety staff and individual consultants to support capacity building of the Project Management Unit (PMU) of TGTDCCL and the contractor and to ensure project implementation is per the Laws of Bangladesh and ADB SPS 2009.
7. This project will be implemented in the Metro Dhaka Marketing (South) and Regional Marketing (Narayanganj) of TFA. Location of the project area is given in Annexure-1.

## 2. Objectives of the Assignment

8. TGTDCCL intends to employ a firm as the Consultant to assist the PMU of TGTDCCL in managing the implementation of the Project, strengthening the technical and management capacities of the PMU, and thus the TGTDCCL staff, and ensuring that all the project activities are undertaken in compliance with all requirements including ADB's environment and social safeguard policies, financing agreement between ADB and the government of Bangladesh, and applicable laws and regulations in Bangladesh.
9. The Consultant will also assist TGTDCCL in taking advantage of new functions and capabilities of advanced metering infrastructure employed by gas and power utilities across the world to achieve the following objectives:
- (i) A more accurate and timely billing, fewer customer disputes, and improvements in operational efficiencies;
  - (ii) Lower capital expenditures and customer bill savings resulting from reduced peak demand and improvements in asset utilization and maintenance;
  - (iii) Configurable time- of-use tariffs;
  - (iv) Lower outage costs and fewer inconveniences for customers from faster outage restoration and more precise dispatching of repair crews to the locations where they are needed; and
  - (v) Operations and maintenance (O&M) cost savings.

## 3. Duration of the Assignment

10. The duration of the assignment will be 40 (Forty) months.

## 4. Scope of Consulting Services

11. The Services to be provided by the Consultant will include, but not be limited to, (i) review of all related study reports, bid documents, project reports, and the contractor's documentation, (ii) assistance in bidding including preparation of bid documents and bid evaluation, (iii) project

management for the detailed engineering, procurement, contractor environment, health and safety supervision, field construction, commissioning, all as necessary and appropriate for successful implementation and completion of the Project, and (iv) capacity building activities at PMU and contractor level.

12. The Consultant will keep TGTDCCL fully informed on all matters relating to the Services and the Project during the period of the Service. This can be done through oral communication and will be confirmed by the submission of letters, monthly correspondence, weekly correspondence, and other reports in writing, all as appropriate for the purpose. The Consultant shall carry out the following Services at each stage of the Project:

**(i) Pre-Installation Stage**

- (a) Project management support;
- (b) Review and updating of data/information of existing studies;
- (c) Pre-survey to assess the level of awareness and understanding of residential customers on safe and efficient use of domestic gas appliances and SPGMs;
- (d) Site survey to finalize the customers for SPGM installation;
- (e) Basic design and engineering including health and safety risk assessment;
- (f) Cost estimate based on the basis of site survey results;
- (g) Facilitation of health and safety risk assessment for installation and commissioning and review of contractor's health and safety management planning;
- (h) Review of contractor's waste management planning;
- (i) Procurement assistance including preparation of bid documents, bid evaluation, awarding of contract, and operations and maintenance service agreement; and
- (j) Institutional capacity development of TGTDCCL (delivery of trainings by consultants to the PMU and contractor on waste management and health and safety).

**(ii) Installation Stage**

- (a) Project management support;
- (b) Supervision for detailed design engineering, procurement, installation, commissioning and testing including health and safety provisions of the contractor;
- (c) Record keeping for waste management, health and safety incidents including near miss, consultations, and grievances received for including in quarterly progress reports
- (d) Supervision of the planning and implementation of TGTDCCL's Communication and Awareness Plan for the project, including the efficient and safe use of gas by residential customers;
- (e) Designing an optimum business model to outsource SPGM operation and maintenance work including preparation of the required bid document;
- (f) Institutional capacity development of TGTDCCL (monitoring of training and technology transfer to TGTDCCL personnel/operation team by the contractor); and
- (g) Institutional Capacity development of TGTDCCL (delivery of ongoing trainings by consultants to the PMU and contractor on waste management and health and safety).

**(iii) Post-Installation Stage**

- (a) Inspection, assisting, and advising TGTDCCL to issue a work completion report to the contractor(s) for effective and efficient completion of the Project and preparation of all reports including the Project Completion Report;
- (b) Post-survey to assess whether awareness of residential customers on safe and efficient use of gas has been enhanced compared with the baseline and measurement of the average monthly gas consumption per customer; and

- (c) Any other work as required for effective and efficient completion of the Project.

## 5. Detailed Tasks

13. The detailed tasks of the Consultants at each stage of the Project are as below:

### (i) Pre-installation Stage

- (a) Project management support
- Prepare an overall project implementation program to achieve successful installation, commissioning and operation of the Project, whilst ensuring compliance with the Laws of Bangladesh and ADB SPS 2009. This program has to clearly identify actions with time schedule and funding requirements of all components and concerned parties. It will be the basis of the project implementation and reviewed and revised at the end of the basic design stage.
  - Develop a project management system and a project management plan for the pre-installation stage, taking the following into consideration:
    - Identification of responsibility and authority of the Employer, concerned agencies and/or parties, TGTDC's corporate-level environment and safety staff, PMU, the Consultants, and the individual consultants;
    - Decision making process;
    - Coordination among the concerned agencies and/or parties, staff and consultants;
    - Communication/ information dissemination; and
    - Monitoring and reporting including on waste management and health and safety.
- (b) Review and updating of data/information of existing studies
- Carefully review previous studies and documents of similar prepaid gas metering system projects including all data and information related to the Project such as conceptual study results, project implementation schedule, and preliminary cost estimation. The Consultant shall obtain from TGTDC all the latest data and information necessary for basic engineering.
- (c) Site survey
- Conduct project site and customer surveys with TGTDC including the following activities to finalize the customers to be equipped with SPGMs for full-scale installation, and the installation sites and conditions for Web system along with the grievance management centers:
    - Examine the cases where gas is supplied to multiple kitchens from a single riser through site surveys and discussions with TGTDC, and propose appropriate installation method for such cases by mutual consent of TGTDC and customers;
    - Select the installation site for before-after analysis of actual gas consumption from the customer data in TFA; and
    - Finalize the sites and conditions for the installation of SPGMs, UWS along with AGRC, and POS with the consent of TGTDC.
- (d) Basic design and engineering
- Carry out the following basic engineering work and provide the results for incorporation in the bid and contract documents.
    - Basic design for the Project including, but not limited to (a) conditions for gas service line (customer side) and distribution pipeline, (b) conditions for header, riser, lock wing valves, regulators, bush (insulator), etc. of service gas line, (c) service line replacement, modification, removal etc., (d) type of SPGM, (e)



installation method of SPGM and tamper, weather/shelter protection, (f) reliability, availability, maintenance ability and safety; and (g) authorized constructor skills, piping design rules, etc. for piping works.

- Basic design and engineering for UWS, AGRC, MTCB, and recharging points (such as online, Bkash, etc.). The design shall include, but not limited to, the following:
    - Considering the category and total number of customers (domestic, commercial, industrial, CNG, captive power, etc.) as per the requirements of PMU;
    - Considering the technical specifications of SPGM, AGRC, and MTCB;
    - Conditions for providing secure access based on user role to TGTDCCL employees to UWS, on demand;
    - Conditions for handover of source code, database schema and related documents;
    - Conditions for proper documentation of UWS (for codebase, database and system architecture) and providing access to these documentations to TGTDCCL employees, on demand;
    - Conditions for regular meeting during UWS development phase for monitoring;
    - Conditions for ensuring compatibility with the already existing pre-paid meter web system;
    - Conditions for making UWS compatible with different types of meters (i.e., NFC, Smart), provision for adding modules to support future available meters and AGRC;
    - Conditions for running web system on already existing pre-paid meter data center;
      - (a) Technical specification for Production, Mirror Fail Over Servers, Backup Servers, Storage, Server DB, Cyber Security Software, specific design, communication standards & protocols, etc.;
      - (b) Internet and connectivity condition and site conditions including network coverage for the establishment of UWS; and
    - Conditions of project sites i.e., customer premises, existing prepaid meter Data Center at TGTDCCL Head Office and Disaster Recovery Center; and
    - Designing out and minimizing health and safety risks with installation, commissioning, and operation.
- (e) Cost estimation
- Based on the basic design, prepare a preliminary cost estimate of the Project. In case any cost increase is observed due to unexpected reasons, compare it with the estimated project cost, and prepare an alternative proposal.
- (f) Health and safety support
- Undertake and document a designer's/engineer's risk assessment to ensure health and safety considerations are addressed in undertaking the basic design process to design out potential risks to installers and the community during installation, commissioning and operation;
  - On the basis of design, engineering information and the site survey results facilitate a health and safety risk assessment workshop with TGTDCCL corporate staff, PMU staff, and the contractor's staff to identify and discuss all potential risks and how they can be further designed out or minimized during detailed design, installation, commissioning and operation;

- Review of contractor's health and safety management planning for installation and commissioning ensuring it reflects all potential risks and how they will be managed to further design out or minimize risks, including an emergency preparedness and response plan in case of an incident, in line with the Laws of Bangladesh and good international industry practices as detailed in the Environment and Social Safeguard Due Diligence Report.
- (g) Waste Management
- Review of contractor's waste management planning for installation and commissioning ensuring it reflects how solid, hazardous, and e-wastes will be managed in accordance with Laws of Bangladesh and good international industry practices as detailed in the Environmental and Social Safeguard Due Diligence Report.
- (h) Procurement assistance
- Based on the basic design and cost estimation, review and propose the bidding package to attract international contractors and/or suppliers for competition and shall be based on TGTDCCL comments as well as in consideration of the following phases for successful implementation of the Project:
    - Detailed design and procurement;
    - Installation of SPGMs, UWS, AGRC and Recharging Points (such as online, Bkash, etc.), and MTCB;
    - Commissioning, integration, testing and functional guarantee; and
    - Operational acceptance
  - Prepare, qualification criteria including, but not limited to, eligibility, joint venture, general experience, specific experience, financial capability, environment, health and safety management capacity, organizational capacity, and others with the consent of TGTDCCL;
  - Prepare bid documents for supply, installation and commissioning of UWS, AGRC, Recharging Points (such as online, Bkash, etc), and MTCB with reference to the applicable ADB Standard Bidding Documents and the Environment and Social Safeguards Due Diligence Report with respect to the recommended clauses for compliance with the Laws of Bangladesh and good international industry practice;
  - Assist TGTDCCL with the pre-bid conference that will be held at TGTDCCL Head office at least one month before the bid closing date, and in replying to bidders' questions and in issuing addenda to bid documents.
  - Assist TGTDCCL in the bidding process based on the qualification and evaluation criteria. Consultant's activities shall include, but not be limited to, the following:
    - Assist TGTDCCL in replying to bidders' questions and in issuing addenda to bid documents;
    - Examine and evaluate the technical bids received (on qualification and technical aspects) in accordance with the ADB guidelines and TGTDCCL's approved criteria;
    - Prepare a draft evaluation report of TGTDCCL and assist TGTDCCL in selecting technically responsive bidders;
    - Evaluate and tabulate contents of all bids for compliance with the bid documents, the reasonableness of price, and the proposed time for completion of the work in accordance with ADB's applicable guidelines or as required by TGTDCCL. If the reasonableness of the bidder's proposal, especially on the proposed price and/or time of the work is found substantially lower than the previously estimated cost or time, the Consultant shall duly investigate the responsiveness of the bidder;



- Prepare a final evaluation report and recommend for award of contract taking into consideration the comments of TGTDCCL on the draft evaluation report;
  - Prepare a draft contract to be issued by TGTDCCL to the successful bidder; and
  - In the case of differences of opinion between TGTDCCL and the Consultant on any important matters concerning the evaluation results, a final evaluation report must clearly state those differences.
- After TGTDCCL's approval and review and concurrence from TGTDCCL Authority on the results of the bid evaluation, the Consultant shall assist in contract negotiation with the awarded bidder. The Consultant shall ensure that the contract documents duly incorporate the provisions for the right of TGTDCCL to terminate the contract, and clearly define the conditions for the termination of the contract. They should also ensure they incorporate the environment, health and safety requirements. Upon the results of bid evaluation, and contract documents, the Consultant shall assist TGTDCCL to issue the Notice to Proceed according to the condition of the contract.
- (i) Prepare Project Operational Manual
- Draft a project operational manual for consideration by TGTDCCL highlighting all aspects of project implementation including project components, cost estimates and financing plan, implementation schedule and arrangements, procurement and disbursement, financial management, accounting and reporting, and environment and social management including a Standard Operating Procedure (SOP) for e-waste management and a SOP for operational and maintenance health and safety including the emergency preparedness and response plan in the event of a gas-related incident..
- (j) Institutional development
- Considering the overall project implementation plan, the Consultant shall advise TGTDCCL for the assignment of their staff required for institutional capacity development of TGTDCCL in project implementation as well as operation and maintenance; and
  - Provide trainings to the PMU and contractor on waste management and health and safety requirements during installation and commissioning.
- (ii) **Installation Stage**
- (a) Project management support
- Provide project management support at all levels including periodic review of budget estimates and administration of project cash flows.
  - Establish a project management system for the installation stage, acceptable to TGTDCCL, which will be used to monitor, track and pinpoint problems. The tasks involved will include, but not be limited to, the following:
    - Establish the overall project construction schedule, budget, and cash disbursement schedule for both foreign and local portions;
    - Establish and implement a project management system and procedures to monitor and control the cost and time schedule to enable timely corrective measures;
    - Support, co-coordinate, supervise, and make decisions and issue instructions for all design and engineering related to all installation activities to TGTDCCL ensuring the engineering standards, quality assurance, and safety of the Project;

- Set up a quality reporting system of project progress and status to TGTDCCL;
  - Set up a simple environment, health and safety reporting system;
  - Collect data from the contractor and keep records of waste management and health and safety as well as keeping or ensuring TGTDCCL are keeping records of all the consultations and grievances for inclusion in quarterly progress reports, provide copies of all these records to TGTDCCL and to ADB on request;
  - Ensure all health and safety incidents are reported to TGTDCCL within 24 hours with an action report, and any lost time incidents or fatalities are reported within 48 hours with a corrective action;
  - Manage claims by and against the contractor properly and reasonably within a reasonable time considering the best interest of TGTDCCL;
  - Identify potential difficulties or conflicts and their effect on the implementation schedule, and recommend steps to be taken by the contractor(s) and/or TGTDCCL to overcome the difficulties and avoid delays;
  - Prepare and/or evaluate recommendations to TGTDCCL regarding any change proposals, technical amendments, and changes in the scope of work, if any, the appropriateness of their pricing, and if agreed by TGTDCCL the timely issuance to the Contractor(s) of change order(s), as per the conditions of the supply and installation contract(s); and
  - Prepare the required reports including a project interim report, quality progress reports, social and environment records, and maintain all relevant project records.
- (b) Assessment of existing distribution networks.
- Assess the existing distribution networks close to customer premises, service lines, and internal house lines; prepare a design for appropriate adjustment of existing layout for efficient space management; and assist TGTDCCL with customer management required for the installation of pre-paid meters, etc.
- (c) Supervision for detailed design engineering, procurement, installation, commissioning and testing
- Supervise detailed design engineering work of the contractor(s) by the following tasks:
    - Monitor the progress of detailed design and engineering works;
    - Check and review the detailed engineering designs, specifications, shop drawings of the works, procurement and engineering plans, schedules, training, procedures, and the like; and
    - Ensure that all the detailed design objectives, such as including quality and safety control design sheet, etc., site installation design and system development plan, health and safety risk assessments, etc., are met in accordance with the requirements of the contract(s).
  - Supervise activities for procurement of meters, equipment, materials, hardware, etc. by the following tasks:
    - Vendor check, approval, and monitoring
      - Check and review the contractor(s)' proposed vendor list(s) for all goods, equipment, hardware, and bulk materials. Make a recommendation to TGTDCCL regarding the acceptance or rejection of the contractor(s)' proposal;
      - Monitor the status to ensure that the contractor(s) employ only the approved suppliers, vendors, and subcontractors with detailed installation plans and O&M support structure;

- Evaluate and comment on the sample system demonstration, software and hardware, samples of material, and equipment proposed by the contractor(s); and
- Monitor the contractor(s)' procurement and delivery schedules for major or critical equipment and materials.
- Acceptance audit, inspection, testing and delivery control during manufacturing
  - Monitor and supervise the quality assurance program prepared by the contractor(s);
  - Regularly review production and delivery schedules submitted by the contractor(s);
  - Check and approve factory testing procedures and factory test results submitted by the contractor(s);
  - Monitor manufacturing progress by testing regular inspections to ensure compliance with contract documents;
  - Supervise shop test and site test to be conducted according to the specifications on behalf of TGTDCI for major and critical equipment;
  - Witness factory test and site demonstration test and preparation of corresponding certificates (test items to be witnessed are to be agreed between TGTDCI and the contractors);
  - Check and review inspection reports of all routine test submitted by the contractor(s); and
  - Ensure that all goods received on site are inspected by the Consultant as necessary to monitor compliance with the standards and specifications.
- Supervision of installation
  - Examine, accept, or suggest modification to the contractor(s)' alternative proposals, if any;
  - Manage effectively all project interfaces;
  - Ensure proper submission of documents to be delivered by the contractor(s);
  - Supervise and monitor on site the contractor's work to ensure the health and safety of workers and the community is protected with measures implemented per the approved health and safety plan, issuing time-bound instructions in the event of observations or non-compliances with stop work instructions in respect of any risk to life being present;
  - Supervise and monitor the contractor's waste management to ensure that all waste is being stored and disposed in accordance with the approved waste management plan, issuing time-bound instructions in the event of observations or non-compliances;
  - Support TGTDCI in undertaking consultations and act as a focal point on-site to receive any grievances from workers or the community and ensure they are recorded and responded to in accordance with the grievance redress mechanism;
  - Monitor and verify the quality of the contractor(s)' work to ensure that all works will fit the purpose of the Project;
  - Review suitability of the contractor(s)' key and supervisory personnel and ensure they are providing adequate health and safety supervisors;
  - Issue all necessary instructions to the contractor(s) to ensure that the works are carried out in conformance with the applicable regulations and the requirements of the contract(s);



- Anticipate and identify potential difficulties or conflicts and their effect on the implementation schedule, and recommend steps to be taken by the contractor(s) and/or TGTDCCL to overcome the difficulties and avoid delays
- Prepare and maintain an up-to-date progress schedule of the major work items showing the expected date of completion, which can readily be used for discussion with the contractor(s);
- Prepare change orders for TGTDCCL to issue to the contractor(s) and prepare cost estimates thereof. Review and negotiate the cost proposal of the contractor(s) as necessary, and make recommendations to TGTDCCL regarding approval;
- Review and verify the contractor(s)' invoices, and make recommendations regarding the issuance of the certification of the contractor(s) progress payment claims;
- Assess the amount of penalties and liquidated damages caused by the delay of progress of work, if any, and prepare recommendations to TGTDCCL for taking necessary action;
- Maintain records of all measurements made of the works quantities as may be necessary for payment to the contractor(s). Maintain records of the results of all tests made on materials and equipment used in the works;
- Make recommendations regarding issuance of certificates to the contractor(s);
- Monitor contractor(s)' compliance with waste management regulations, safety regulations and labor regulations (especially working hours) and advise TGTDCCL of any violations or incidents;
- Attend various meetings with TGTDCCL, the relevant authorities, and/or the contractor(s) and advise TGTDCCL as necessary and appropriate; and
- check and review as-built drawings to be submitted by the contractor(s) and make a recommendation to TGTDCCL regarding acceptance.
- Supervision of commissioning and testing
  - Monitor and verify that all pre-commissioning activities carried out by the contractor(s) are in compliance with safety and environmental requirements, schedules, and procedures;
  - Check and review the contractor(s)' planning and procedures for the commissioning, start-up, and test runs of the Project;
  - Supervise and monitor on site the contractor's work to ensure the health and safety of workers and the community are maintained with measures implemented per the approved health and safety plan, issuing time-bound instructions in the event of observations or non-compliances with stop work instructions in respect of any risk to life being present;
  - Supervise and monitor the contractor's waste management to ensure that all waste is being stored and disposed in accordance with the approved waste management plan, issuing time-bound instructions in the event of observations or non-compliances. Verify that all wastes especially e-waste has been disposed of on the completion of commissioning;
  - Support TGTDCCL in undertaking consultations and act as a focal point on-site to receive any grievances from workers or the community and ensure they are recorded and responded to in accordance with the grievance redress mechanism;
  - Witness and verify the commissioning and start-up activities of the Project; and



- Verify completion of all items on the contractor(s)' checklists for any defects or rectifications, and make recommendations to TGTDCCL regarding the issue of completion certificates, as and when appropriate.

(d) Public awareness campaigns

- The Consultant shall assist TGTDCCL to plan and implement the Communication and Awareness Plan for the project, and build awareness of residential customers on the safe and efficient use of gas by undertaking the following tasks:
  - Check and review the Communication and Awareness Plan proposed by the contractor(s);
  - Assist TGTDCCL to finalize the Communication and Awareness Plan;
  - Monitor the execution of the Communication and Awareness Plan and ensure its effectiveness; and
  - Propose a Communication and Awareness Campaign for the nationwide expansion of SPGM system in the future.

(e) Institutional Development

- Provide training and team building work to the relevant operations staff of TGTDCCL for technology transfer.
- Verify and monitor the training programs to the TGTDCCL O&M team provided by the contractor(s), and ensure that TGTDCCL will be capable to operate and maintain the entire project works after taking over by undertaking the following activities:
  - Assist TGTDCCL to define the required skills and experiences for the operation and maintenance of SPGMs & UWS team and meter calibration team including relevant health and safety qualifications;
  - Check and review the contractor(s)' plan for technology transfer to TGTDCCL operation team, based on the defined skills and experiences. Revise the definition of the skills and experiences in consultation with TGTDCCL, in accordance with the actual implementation status and situation; and
  - Monitor and ensure the technology required for operation and maintenance is duly transferred to TGTDCCL during the project implementation.

(f) Capacity Building through Overseas Training

- In close consultation with TGTDCCL, organize and implement a capacity-building program on high-level technologies related to SPGMs or other technologies identified by TGTDCCL; and
- Provide ongoing training as required to the PMU and contractor on waste management and health and safety during installation and commissioning.

**(iii) Post-installation Stage**

(a) Final acceptance

- Defects liability period
  - Inspect and report on the contractor(s)' performance during the Defects Liability Period, one year for the system after the handing over including on the environmentally safe and sound disposal of any e-waste. The Defect Liability Period will start from the date specified in the corresponding contract(s).
- Final taking over
  - Upon completion of the defects liability period for the entire system, advise TGTDCCL to issue the Final Taking Over Certificate(s) according to the stipulation of the contract(s).

- Project completion report
  - Within 6 months after the commencement of commercial operation of the entire project, prepare and submit the Project Completion Report to TGTDCCL.

## 6. Key Deliverables

14. The reports and deliverables to be prepared and submitted to TGTDCCL by the Consultant include, but not be limited to, the following:
- (i) Inception report (including schedule);
  - (ii) Engineering report (including basic design report and health and safety risk assessment);
  - (iii) Installation schedule and cost estimates;
  - (iv) Draft bid documents including evaluation and qualification criteria;
  - (v) Draft bid evaluation reports;
  - (vi) Monthly progress reports;
  - (vii) Quarterly progress reports; and
  - (viii) Project completion report.
15. All reports and deliverables shall be one (1) original with the signature of the Team Leader and two (2) copies and softcopy in English in PDF format. The timing of submission will be decided and notified to the Consultant by TGTDCCL.

## 7. Qualification Requirements

### 1. Qualification of the Firm

16. The consulting services will be carried out by an international consulting firm and/or joint venture (JV) associated with national consultants. The consulting firm/JV shall have at least five (05) years of experience in consultancy services in project management, procurement assistance, engineering, environment, health and safety, and supervision of construction. The consulting firm or one of the JV partners should have completed at least one (1) contract having a contract value of USD 0.5 million or more in the relevant field in the past ten (10) years, i.e., consultancy service for the establishment of pre-paid gas metering system or pre-paid utility (water, electricity, etc.) metering system. Previous experience with multilateral development banks/partners is advantageous. In addition, it is highly desirable to possess prior experience in similar geographical conditions, like Bangladesh. Furthermore, the establishment of a permanent local presence is preferred.
17. The consulting firm/JV shall have staff with appropriate experience and expertise in the areas and fields outlined in the terms of reference, particularly in the prepaid customer management system, central call center integration, and integration to recharging points (such as online, Bkash, etc.).
18. The consulting firm or one of the JV partners shall have an ISO 9001:2015 certification with audit report.

### 2. Qualification of Experts

19. The Consultant will ensure the availability of the key experts shown in Table 1 during the entire project implementation period. As the team composition set out in Table 1 is for guidance only, the Consultant may propose alternative arrangements, which in their opinion will provide the equivalent services with desired quality, while ensuring that the input of any individual member of the international consultants is not less than indicated.



**Table 1: Team Composition**

Position		Person-Months
International Consultants	Team Leader/Web System Specialist	12.0
	Gas Metering Expert	6.0
	<b>Subtotal (International) (A)</b>	<b>18.0</b>
	Deputy Team Leader/Web System Specialist	34.0
	Network/Hardware Specialist	6.0
	Software Specialist	12.0
	Procurement Specialist	12.0
	Social and Gender Development Specialist	6.0
	Environment, Health and Safety Specialist	6.0
	<b>Subtotal (National) (B)</b>	<b>76.0</b>
<b>Total (A) + (B)</b>		<b>94.0</b>

N.B.: Parallel to the Key Experts, there are Non-Key Experts, which include 4 Site Engineers of 120.0 person-months, 1 Manager of 40.0 person-months, 2 Computer Operators of 80.0 person-months, and 2 Office Assistants of 80.0 person-months.

20. The position-based tasks/responsibilities of the team members and their qualification requirements are in Table 2.

**Table 2: Tasks, Responsibilities, and Qualification**

Position	Task Assignment	Qualification
<b>Key Experts</b>		
<b>International Consultants</b>		
Team Leader/Web System Specialist	<p>Working closely in collaboration with, and reporting to the Project Management Unit (PMU), the expert will be responsible for the overall management, coordination, and reporting of the consulting services, for the efficient and effective delivery of the services to meet the defined objectives, and for liaison with TGTDCI for project matters. The expert will also be expected to apply significant international experience to guiding and supporting all technical and social aspects of the assistance of the consulting firm. Specifically, the expert will:</p> <ul style="list-style-type: none"> <li>- Lead, coordinate &amp; manage the technical, environment, health and safety and managerial activities of the team;</li> <li>- Provide overall management and supervision of the consultant staff, quality assurance of all consultant outputs and coordinate closely with PMU, advise and support them on all aspects of the implementation;</li> <li>- Assist PMU in planning, preparation, bidding and implementation of all project works.</li> </ul>	<ul style="list-style-type: none"> <li>- A bachelor's degree in computer science, electrical engineering, electronics engineering, or other relevant field. A postgraduate degree in the relevant field, or chartered engineer, or professional engineer with an internationally recognized professional body is advantageous.</li> <li>- A minimum fifteen (15) years of working experience, of which five (5) years are in power/energy sectors in planning, construction, maintenance, and operations of web</li> </ul>

Position	Task Assignment	Qualification
	<ul style="list-style-type: none"> <li>- Database design, performance &amp; load testing of database, integration testing, security testing, monitoring performance of server after deployment;</li> <li>- Acceptance testing of UWS during implementation and after deployment;</li> <li>- Support PMU to ensure that all requirements related to the implementation are effectively met;</li> <li>- Support PMU in project reporting to PD, and be directly responsible for reporting on the progress of the consulting services regarding project activities;</li> <li>- Support PMU in achieving the project objectives, including problem-solving and responding to unexpected events or developments that may impact project implementation;</li> <li>- Provide support to the network system and database team in the preparation, monitoring, and reporting of UWS establishment;</li> <li>- Together with PMU, finalize the methodology of UWS and define the customer database requirements for planning;</li> <li>- Advise and assist PMU to collect system errors, test and evaluate all system procedures in each project site;</li> <li>- Advise and assist PMU to enhance their capacity and knowledge by using the system tool in gas saving consumption analysis skill transferring;</li> <li>- Advise PMU on actions to address problems in implementing O&amp;M plan for UWS;</li> <li>- Assist TGTDCCL in fulfilling their responsibilities for engineering, construction, environment, health and safety, training, monitoring installation and O&amp;M work, evaluation of quality, and commissioning of UWS;</li> <li>- Assist TGTDCCL in fulfilling their responsibilities for engineering, construction, environment, health and safety, training, monitoring for full-scale installation and O&amp;M work, evaluation of quality and commissioning of SPGMs;</li> <li>- Ensure consultation and grievance records are being adequately recorded;</li> <li>- Evaluate the existing training program and suggest to PMU a training program for the key human resource development needs in local training and field visit for improved customer database management and system O&amp;M management under the Project;</li> <li>- Together with PMU, supervise all construction and O&amp;M works through frequent site inspection, checking of their outputs and compliance with contract terms, measurement, and site demonstration and testing;</li> </ul>	<ul style="list-style-type: none"> <li>system and associated prepaid meter billing software.</li> <li>- A minimum two (2) years working experience in similar geographical condition like Bangladesh.</li> <li>- A minimum two (2) years working experience as a Team Leader or Deputy Team Leader in any project.</li> <li>- A minimum two (2) years working experience in serving in international project.</li> <li>- A minimum one (1) year working experience with multilateral development banks/partners.</li> <li>- Knowledge and experience in (i) current international best practices for prepaid meter system solutions, especially for safety protection solution and human interface, (ii) design, installation, operation and maintenance of data center and disaster recovery center hardware equipment, (iii) troubleshooting, maintaining network, hardware, and/or software including firewall, router and/or switches, LAN and/or WAN and network security for overall networks and wireless communication &amp; protocol, and (iv) C++, Java, HTML, MySQL and/or Oracle is advantageous.</li> <li>- CCNA certified and knowledge in the latest security issues is advantageous.</li> </ul>



Position	Task Assignment	Qualification
	<ul style="list-style-type: none"> <li>- Advise PMU on actions to address problems arising in the system, to monitor and report on the physical and financial progress;</li> <li>- Assist PMU in implementing and O&amp;M plan, resolving issues (if any) between the contractor and PMU for prepaid metering system; and</li> <li>- Any other tasks requested by PMU related to the Project.</li> </ul>	<ul style="list-style-type: none"> <li>- Fluency in oral and written English is essential.</li> </ul>
Gas Metering Expert	<p>Under the direction of the Team Leader and in collaboration with other members of the consultant team, the expert will:</p> <ul style="list-style-type: none"> <li>- Conduct site visit and assist PMU in supervising the implementation of the Project and provide guidance to the contractor(s) to conform to the specifications;</li> <li>- Identify any problem during the implementation stage of the contract(s), propose remedial actions and promptly report any outstanding issues to PMU;</li> <li>- Advise PMU on any contractual or technical disputes between contractor(s) and TGTDCCL during the implementation phase;</li> <li>- Assess the operational soundness of gas distribution networks and installation of SGPMs;</li> <li>- Identify potential hazards in the system and suggest ways and means to eliminate these;</li> <li>- Examine the codes, standards, and practices followed in international as well as in Bangladesh and suggest updates thereto with respect to design, materials, construction, operation and maintenance of gas systems, focusing on carbon abatement, system loss and energy conservation scenario;</li> <li>- Suggest ways and means to be included as built-in mechanism in the sales contracts to safeguard customer's rights on the one hand and TGTDCCL's interests on the other, as in developed countries;</li> <li>- Examine the existing gas metering installations serving both gas intake and delivery measurements at different locations and suggest improvements;</li> <li>- Assess the impact of presently non-metered residential customer's sector on the overall system loss and suggest improvements;</li> <li>- Recommend measures for building customer awareness against wastage of gas and loss of public revenue;</li> <li>- Assist the team leader of the consultant team in carrying out their assigned activities; and</li> <li>- Any other tasks assigned by the Team Leader or PMU.</li> </ul>	<ul style="list-style-type: none"> <li>- A bachelor's degree in engineering, or other relevant field. A postgraduate degree in relevant field is advantageous.</li> <li>- A minimum fifteen (15) years of working experience, of which five (5) years of field-level experience in gas metering or power and energy sectors.</li> <li>- A minimum two (2) years working experience in serving in international project.</li> <li>- A minimum one (1) year working experience with multilateral development banks/partners.</li> <li>- Fluency in oral and written English is essential.</li> </ul>
<b>National Consultants</b>		
Deputy Team Leader/Web System Specialist	Working closely and in collaboration with PMU under the Team Leader, the expert will be responsible for the overall management, coordination, and reporting of the consulting	<ul style="list-style-type: none"> <li>- A bachelor's degree in computer science/electrical &amp; electronics</li> </ul>



Position	Task Assignment	Qualification
	<p>services, for the efficient and effective delivery of the services to meet the defined objectives, and for liaison with TGTDCCL for project matters. The expert will also be expected to apply experience to guiding and supporting all technical and social aspects of the assistance of the consulting firm. Specifically, the expert will:</p> <ul style="list-style-type: none"> <li>- Assist the Team Leader or act as a Team Leader in the absence of the Team Leader;</li> <li>- Coordinate &amp; manage the technical, and managerial activities of the team;</li> <li>- Provide overall management and supervision of the consultant staff, quality assurance of all consultant outputs and coordinate closely with PMU, advise and support them on all aspects of the implementation;</li> <li>- Assist PMU in planning, preparation, bidding, and implementation of all project works;</li> <li>- Database design, performance &amp; load testing of database, integration testing, security testing, monitoring the performance of server after deployment;</li> <li>- Acceptance testing of UWS during implementation and after deployment;</li> <li>- Support PMU to ensure that all requirements related to the implementation are effectively met;</li> <li>- Support PMU in project reporting to PD, and be directly responsible for reporting on the progress of the consulting services regarding project activities;</li> <li>- Support PMU in achieving the project objectives, including problem-solving and responding to unexpected events or developments that may impact on project implementation;</li> <li>- Provide support to the network system and database team in the preparation, monitoring, and reporting of UWS establishment;</li> <li>- Together with PMU, finalize the methodology of UWS and define the customer database requirements for planning;</li> <li>- Advise and assist PMU to collect system errors, test and evaluate all system procedures in each project site;</li> <li>- Advise and assist PMU to enhance their capacity and knowledge by using the system tool in gas saving consumption analysis skill transferring;</li> <li>- Advise PMU on actions to address problems in implementing O&amp;M plan for UWS;</li> <li>- Assist TGTDCCL in fulfilling their responsibilities for engineering, construction, environment, health and safety, training, monitoring installation and O&amp;M work, evaluation of quality, and commissioning of UWS;</li> </ul>	<p>engineering, or other relevant field. A postgraduate degree in the relevant field, or chartered engineer, or professional engineer with internationally recognized professional body is advantageous.</p> <ul style="list-style-type: none"> <li>- A minimum ten (10) years of working experience, of which two (2) years are in planning, design, development, maintenance, and operations of web system &amp; associated prepaid meter billing software.</li> <li>- Experience as a Team Leader or Deputy Team Leader in any project is advantageous.</li> <li>- Experience in serving in international projects is advantageous.</li> <li>- Experience in serving with multilateral development banks/partners is advantageous.</li> <li>- Knowledge and experience in (i) current international best practices for prepaid meter system solution, especially for safety protection solution and human interface, (ii) design, installation, operation and maintenance of data center and disaster recovery center hardware equipment, (iii) trouble shooting, maintaining network, hardware and/or software including firewall, router and/or switches, LAN/WAN and network security for overall networks and wireless communication &amp;</li> </ul>

Position	Task Assignment	Qualification
	<ul style="list-style-type: none"> <li>- Assist TGTDCI in fulfilling their responsibilities for engineering, construction, environment, health and safety, training, monitoring for full-scale installation and O&amp;M work, evaluation of quality and commissioning of SPGMs;</li> <li>- Evaluate the existing training program and suggest to PMU a training program for the key human resource development needs in local training and field visit for improved customer database management and system O&amp;M management under the Project;</li> <li>- Together with PMU, supervise all construction and O&amp;M works through frequent site inspection, checking of their outputs and compliance with contract terms, measurement, and site demonstration and testing;</li> <li>- Advise PMU on actions to address problems arising in the system, to monitor and report on the physical and financial progress;</li> <li>- Assist PMU in implementing and O&amp;M plan, resolving issues (if any) between the contractor and PMU for prepaid metering system; and</li> <li>- Any other tasks requested by PMU and assigned by Team Leader related to the Project.</li> </ul>	<ul style="list-style-type: none"> <li>protocol, and (iv) C++, Java, HTML, MySQL and/or Oracle.</li> <li>- CCNA certified and knowledge in the latest security issues is advantageous.</li> <li>- Fluency in oral and written English is essential.</li> </ul>
Network/Hardware Specialist	<ul style="list-style-type: none"> <li>- Under the direction of the Team Leader and in collaboration with other members of the consultant team, all necessary networking/hardware and related electrical work;</li> <li>- Support PMU in the preparation, supervision, progress monitoring of the Project, reporting of the project progress, and solutions of issues specifically for UWS;</li> <li>- Assist PMU in planning, design, bidding, and procurement of cost-effective data center, DRC cloud services &amp; SPGMs application;</li> <li>- Assist TGTDCI in fulfilling their responsibilities for engineering, construction, environment, health and safety, training, monitoring for UWS installation and O&amp;M work, evaluating of quality, and commissioning;</li> <li>- Assist in server deployment, testing hardware infrastructure according to specification;</li> <li>- Conduct a security assessment of DC &amp; DRC, cloud services, final acceptance testing of infrastructure (DC, DRC);</li> <li>- Coordinate with PMU, supervise all construction and O&amp;M works through frequent site inspection, checking their outputs and compliance with contract terms, measurement, site demonstration and testing;</li> <li>- Assist the team leader of the consultant team in carrying out their assigned activities;</li> <li>- Assist PMU in planning, preparation, implementation and training of all project works;</li> </ul>	<ul style="list-style-type: none"> <li>- A bachelor's degree in computer science/electrical and electronics engineering or other relevant field. A postgraduate degree is advantageous.</li> <li>- A minimum of ten (10) years of working experience of which two (2) years are as network specialist in planning, design, construction, maintenance, and operations.</li> <li>- Expert in troubleshooting, and maintaining network, hardware and/or software including firewall, router and/or switches, LAN and/or WAN and network security for overall networks and wireless communication and protocol.</li> <li>- Knowledge and experience in DC/DRC, cloud services design, installation, operation</li> </ul>



Position	Task Assignment	Qualification
	<ul style="list-style-type: none"> <li>- Assist PMU on actions to address problems arising in UWS;</li> <li>- Assist PMU in implementing and O&amp;M plan for UWS;</li> <li>- Any other tasks assigned by the Team Leader and or PMU.</li> </ul>	<ul style="list-style-type: none"> <li>and maintenance are preferred.</li> <li>- CCNA certified and knowledge of the latest security issues is advantageous.</li> <li>- Fluency in oral and written English is essential.</li> </ul>
Software Specialist	<ul style="list-style-type: none"> <li>- Under the direction of the Team Leader and in collaboration with other members of the consultant team, provide PMU in planning, design, bidding and procurement of data center, DRC cloud services and UWS application;</li> <li>- Support PMU in the preparation, supervision, progress monitoring of the project, reporting of the project progress, and the solution of issues specifically UWS;</li> <li>- Coordinate with PMU, supervise all construction and O&amp;M works through frequent site inspection, checking their outputs and compliance with contract terms, measurement, site demonstration and testing;</li> <li>- Assist Team Leader of the consultant team in carrying out their assigned activities;</li> <li>- Assist PMU in planning, preparation and implementation of all project works;</li> <li>- Any other jobs assigned by Team Leader or PMU.</li> </ul>	<ul style="list-style-type: none"> <li>- A bachelor's degree in computer science, electrical, electronic engineering, information technology or other relevant field. A postgraduate degree is advantageous.</li> <li>- A minimum of ten (10) years of relevant working experience in planning, design, construction, maintenance, and operation of similar infrastructure including a minimum of three (3) years of experience in web system development projects.</li> <li>- Expert in C++, Java, HTML, MySQL and/or Oracle is advantageous.</li> <li>- Fluency in oral and written English is essential.</li> </ul>
Procurement Specialist	<p>Under the direction of the Team Leader and in collaboration with other members of the consultant team, the expert will support PMU in all aspects of procurement and contract management of works and goods under the Project. Specifically, the expert will:</p> <ul style="list-style-type: none"> <li>- Review the procurement plan of the Project, procurement thresholds, procurement methods, and approval requirements (prior or post) in connection with procurement of goods and services under the Project as an advisor for PMU on its application;</li> <li>- Support and advise PMU in preparing, monitoring, and reporting on their procurement plans for works and spare goods, and in resolving any significant problems and issues arising;</li> <li>- Liaise with PMU to support the contract(s), including preparation of specification and bid documents, bidding, and contract award;</li> <li>- Assist and provide advisory support to PMU in the preparation of bid and contract documents</li> </ul>	<ul style="list-style-type: none"> <li>- A bachelor's degree in engineering, business administration, economics or other relevant field. A postgraduate degree is advantageous.</li> <li>- A minimum ten (10) years of work experience, of which three (3) years of experience are directly to the relevant tasks of procurement planning, bidding, and contract management and administration.</li> <li>- Experience in serving international projects is advantageous.</li> <li>- Experience in serving with multilateral</li> </ul>

Position	Task Assignment	Qualification
	<p>and evaluation process, contract award, contract management and administration, all in accordance ADB procurement policy and regulations;</p> <ul style="list-style-type: none"> <li>- Advise PMU in resolving any significant issues and problems that arise in procurement and contract management;</li> <li>- Any other tasks assigned by the Team Leader or PMU.</li> </ul>	<p>development banks and/or partners is advantageous.</p> <ul style="list-style-type: none"> <li>- Procurement specialization and/or certification from any reputed institution is advantageous.</li> <li>- Thorough understanding of ADB procurement policy &amp; regulations and public procurement rules of Bangladesh is advantageous.</li> <li>- Fluency in oral and written English is essential.</li> </ul>
<p>Social and Gender Development Specialist</p>	<p>Under the supervision of PMU and in collaboration with the social development specialist to be recruited under the attached technical assistance, the Social and Gender Development Specialist shall be responsible for specific tasks including, but not limited to, the following:</p> <ul style="list-style-type: none"> <li>(i) Act as lead for the implementation of the Gender Action Plan (GAP) for the project in consultation with the government nominated gender focal point;</li> <li>(ii) Support the preparation of the TGTDCCL's gender equality and social inclusion strategy;</li> <li>(iii) Improve the capacity of TGTDCCL in addressing social issues relating to its operation;</li> <li>(iv) Enhance social safeguards, gender, and social inclusion capacity of TGTDCCL through the conduct of relevant trainings/interventions;</li> <li>(v) Provide inputs to enhance TGTDCCL's complaint management system that are socially oriented and socially inclusive;</li> <li>(vi) Advocate for socially inclusive planning and development of operational policies and procedures, strategy, and customer-oriented campaigns in TGTDCCL within the scope/objective of the project;</li> <li>(vii) Support active stakeholder communication and community involvement in the project, primarily through the development and implementation of project information sharing activities; gas safety awareness; and other socially-oriented activities within the scope/objective of the project; and</li> <li>(viii) Support TGTDCCL in preparing quarterly progress reports on GAP implementation, as well as in summarizing statistics on grievances and social issues relating to the implementation of the project (These will be</li> </ul>	<ul style="list-style-type: none"> <li>- Master's degree with specialization in social development, sociology, development studies, gender and social inclusion, anthropology, community development, or related fields.</li> <li>- At least 5 years of relevant experience in the design and implementation of socially-inclusive development programs, particularly gender action plans, stakeholder engagement and communication plans, or customer-oriented information campaigns</li> <li>- At least 5 years of experience in social impact analysis and/or implementation.</li> <li>- Demonstrated skills in preparing quality reports and other knowledge products; and in designing and conducting institutional capacity-building programs.</li> <li>- Experience working in the energy sector, preferably in a gas or utility company</li> </ul>

Position	Task Assignment	Qualification
	inputs to TGTDCCL's quarterly progress reports to be submitted to ADB).	<ul style="list-style-type: none"> <li>- Familiarity with gender-, age- and disability-sensitive approaches in program design, monitoring and evaluation</li> <li>- Excellent speaking, writing, and presentation skills in English is required</li> </ul>
Environment, Health and Safety Specialist	<p>Under the supervision of PMU, the Environment, Health and Safety Specialist shall be responsible for tasks including, but not limited to, the following:</p> <ul style="list-style-type: none"> <li>(i) Support TGTDCCL to implement the Project's Environmental and Social Due Diligence Report (DDR) and monitor its implementation;</li> <li>(ii) Support TGTDCCL to develop an Environmental and Social Management System (ESMS), which is included in the Design and Monitoring Framework outputs. As part of the ESMS development, policies, procedures, guidelines, and manuals will need to be established, which are indicated in DDR;</li> <li>(iii) Carry out environmental, health and safety, and occupational health and safety training for the contractor(s);</li> <li>(iv) Support proper management of wastes (packaging and e-waste) to ensure compliance with the Government of Bangladesh's Hazardous Waste (e-waste) Management Rules, 2021;</li> <li>(v) Verify that TGTDCCL/contractor(s) are registered by the Department of Energy (DOE) as large consumer/ manufacturer of meters and batteries. Support with proper disposal plan for defunct meters and batteries;</li> <li>(vi) Support the Project to be complied with other applicable regulations including Bangladesh Noise Pollution Control rules, 2006, Solid Waste Management Rules, 2021, and applicable international good industrial practices, etc.;</li> <li>(vii) Ensure adherence to safety related rules and regulations (e.g., Bangladesh Labour Act, 2006, and Bangladesh Labour Rules, 2015);</li> <li>(viii) Assist the contractor(s) to conduct an occupational and community health and safety risk assessment and prepare and follow a health and safety plan setting out how they will comply with national laws and regulations, the IFC/WBG Environment, Health and Safety Guidelines and the ILO safety and health in construction guidelines</li> </ul>	<ul style="list-style-type: none"> <li>- A bachelor's degree in environmental engineering, or other related field.</li> <li>- At least ten (10) years of relevant experience.</li> <li>- Fluency in English is required.</li> </ul>



Position	Task Assignment	Qualification
	<p>(2022) for prior approval TGTDCI before any works commence;</p> <p>(ix) Assist TGTDCI in addressing community health and safety implications on how to engage in effective communication with the community, provide clear information about the installation process and potential risks, implement robust safety protocols during installation, conduct regular inspections and maintenance, and establish emergency preparedness and response plans to address any incidents promptly;</p> <p>(x) Ensure that e-waste and environment, health and safety issues are included in contractor bidding/ contract documents;</p> <p>(xi) Assist TGTDCI in preparation of environmental monitoring report/ environmental section for quarterly report of project for ADB in a quarterly basis; and</p> <p>(xii) Any other related tasks to be assigned by PMU.</p>	
<b>Non-Key Experts</b>		
Site Engineers	<p>Under the direction of the Team Leader and PMU, site engineers assist in the implementation of the Project by undertaking, but not limited to, the following tasks including environment, health and safety (labor) supervision, monitoring and reporting:</p> <p>(i) Plan the fieldwork</p> <p>(ii) Monitor and maintain the quality of work as per the design specifications;</p> <p>(iii) Check quantity and quality of materials;- Supervise technicians and workers;</p> <p>(iv) Prepare and monitor the duty schedule of technicians and workers;</p> <p>(v) Ensure safety for technicians and workers;</p> <p>(vi) Supporting TGTDCI to implement all recommendations of the Project' s Environmental and Social Due Diligence Report (DDR);</p> <p>(vii) Undertaking daily checks ensuring compliance with loan covenants and national laws and regulations for environment, health and safety (labor);</p> <p>(viii) Supervising the contractor(s) and enforcing the EHS contract clauses as well as reporting on safeguard progress during installation and operation and maintenance of the Project up to the project completion report;</p> <p>(ix) Supervising and monitoring installation works of SPGMs with a zero-tolerance</p>	<p>- A diploma degree in engineering or other relevant field. A bachelor' s degree is advantageous.</p> <p>- NEBOSH and ISOH certificates or equivalent are advantageous (or the consultant may commit to completing and passing the certification before starting onsite).</p> <p>- A minimum two (2) years of work experience in a similar role including field level construction/health and safety supervision.</p> <p>- Fluency in oral and written English is essential</p>

Position	Task Assignment	Qualification
	<p>approach to health and safety risk management;</p> <p>(x) Collating and maintaining all EHS related records for input to the quarterly progress reports and safeguard completion report as annex to the project completion report;</p> <p>(xi) Organizing and helping with delivery of the capacity building activities for PMU and contractors;</p> <p>(xii) Arranging periodic site visits and reviews of records by ADB;</p> <p>(xiii) Other tasks assigned by the Team Leader or PMU.</p>	

ADB = Asian Development Bank, CCNA = Cisco Certified Network Associate, DC = data center, DDR = due diligence report, DOE = Department of Environment, DRC = disaster recovery center, ESMS = Environmental and Social Management System, HTML = Hypertext Markup Language, IFC/WGB = International Finance Corporation/World Bank Group, ILO = International Labor Organization, O&M = operation and maintenance, PD = project director, PMU = project management unit, SPGM = smart prepaid gas meter, TGTDCCL = Titas Gas Transmission and Distribution Company Limited, UWS = unified web system

## 8. Support to be Provided by TGTDCCL

21. TGTDCCL will be responsible for the provision of the following support services:
- (i) Provision of latest customer data required for the installation of SPGM;
  - (ii) Notice of the installation of SPGM to each customer;
  - (iii) Obtaining consent from each customer for the installation of SPGM;
  - (iv) Provision of company rules and/or standards to be reviewed for the installation of SPGM; and
  - (v) Cooperation with the establishment of new customer data required for the UWS.



# Annexure-1: Location of the project area

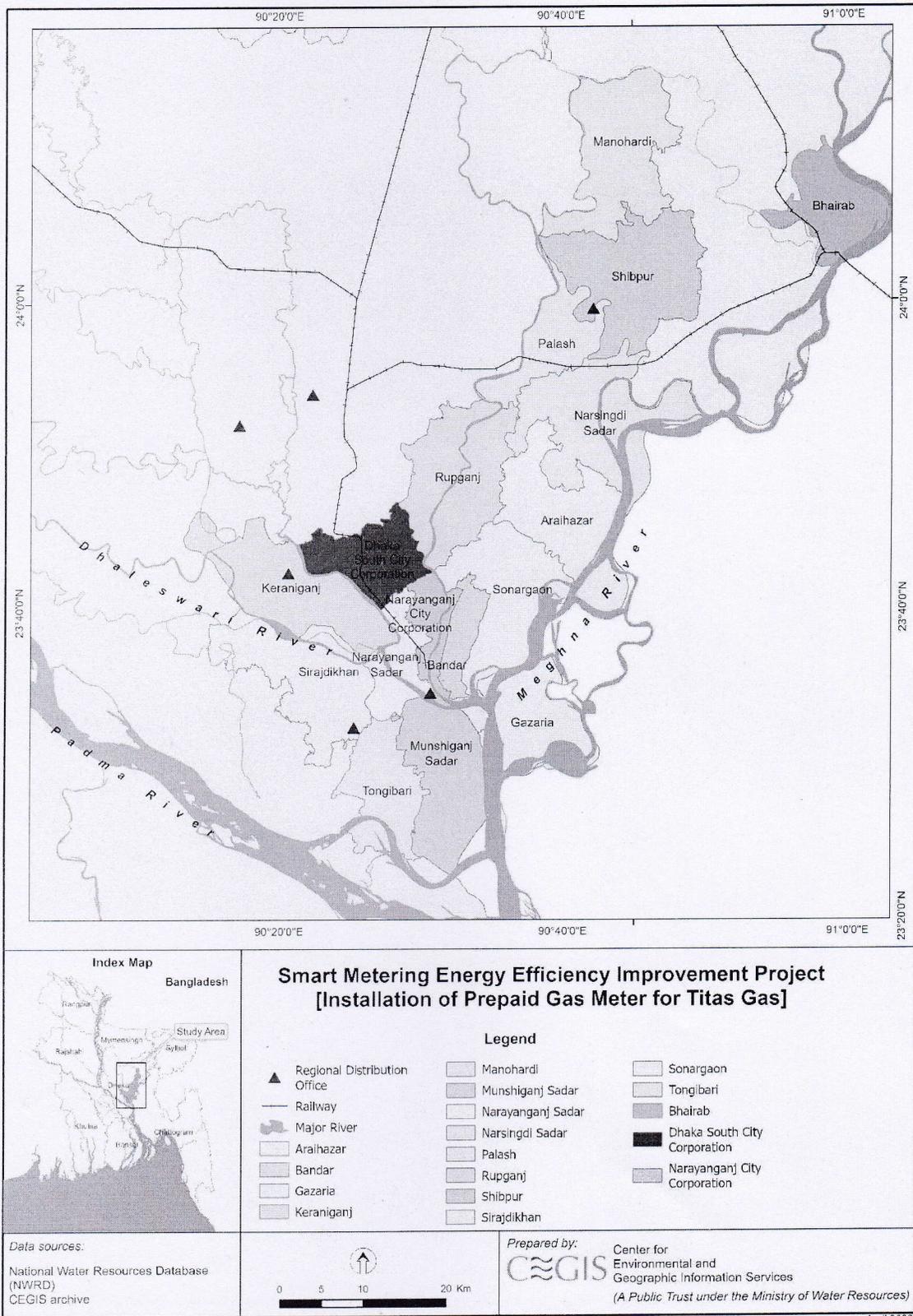


Figure 1: Location of the project area





### Template of Expression of Interest (EOI) for Consulting Firms

<b>Project Number</b>	56004-001
<b>Project Name</b>	Smart Metering Energy Efficiency Improvement Project [Installation of Prepaid Gas Meter for TGTDCCL]
<b>Project Country</b>	Bangladesh

#### I. Consulting Firm Information

CMS No. <sup>1</sup> / date:	Country of Incorporation: <sup>2</sup>
Consultant Name:	Acronym:
EOI Submission Authorized by:	Position

#### Associations (Joint Venture or Sub-consultancy)

CMS No. <sup>1</sup>	Consultant	Acronym	Country of Incorporation <sup>2</sup>	Joint Venture(JV) or Sub-consultant	EOI Submission Authorized By	Position

Present the rationale for and benefits of working in association(JV or Sub-consultant) with others rather than undertaking the assignment independently (as appropriate). Describe the proposed management and coordination approach of the association and the role of each firm.

I confirm that:

- Documentation regarding our corporate structure including beneficial ownership has been attached.
- Documentation regarding our Board of Directors has been attached.

<sup>1</sup> If already registered on ADB’s Consultant Management System (CMS). CMS registration is not mandated under EA-administered selection.

<sup>2</sup> The lead consultant must submit a copy of the Certificate of Incorporation of itself and of each JV member and sub-consultant through VII. EOI Attachments.

- A written agreement to associate for the purpose of this Expression of Interest has been signed between the consortium partners and has been attached.

Once your team is shortlisted and invited for submission of the Proposal, it is not permissible to transfer the invitation to any other firm, such as Consultant's parent companies, subsidiaries and affiliates. The Client will reject a Proposal if the Consultant drops a JV member without the Client's prior consent, which is given only in exceptional circumstances, such as debarment of the JV partner or occurrence of Force Majeure.<sup>3</sup>

## **II. Assignment Specific Qualifications and Experience**

For online submission: Your EOI shall demonstrate technical competence and geographical experience based on project references entered in full registration under your CMS profile. We encourage you to update Project Information under your CMS prior to filling EOI.

For offline submission: Please provide relevant project information in Section E below.

### **A. Technical Competence**

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Cross-referencing from your profile projects in Section E. Project References, highlight the technical qualifications of your entity/consortium in undertaking similar assignments. Provide details of past experiences working with similar project authorities.

### **B. Geographical Experience**

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Cross-referencing from your profile projects in Section E. Project References, present experiences in similar geographic areas.

<sup>3</sup> Paras. 3 and 7, Section 1 of the Standard Request for Proposal (SRFP), ADB website.

**C. Management Competence (Please answer each question in one paragraph of 3-5 sentences)**

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1. Describe standard policies, procedures, and practices that your entity has to assure quality interaction with clients and outputs. Please state if your company is ISO certified.

2. How will your firm/consortium handle complaints concerning the performance of experts or quality of the reports submitted for this assignment? What internal controls are in place to address and resolve complaints?

3. How will you ensure the quality of your firm's/consortium's performance over the life of this assignment?

4. Describe standard policies, procedures and practices that your firm has put in place to avoid changes/replacements of personnel and to ensure the continuity of professional services once contracted.

5. Describe what social protection practices you have in place to safeguard the well-being of your proposed experts? Specifically describe arrangements you have in place for medical, accident, and life insurance coverage during the assignment.

**D. Other Information (maximum of 500 words)**

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## E. Project References

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Please select most relevant projects to demonstrate the firm's technical qualifications and geographical experience (maximum 10 projects).

SN	Project	Period	Client	Country	Firm
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

### Project Summary

SN 1	
Project Title	
Country / Region	
Start Date	
Completion Date	
Continuous / Intermittent	
Client	
Funding Source	
Description	(indicate your role and input in person-months)

SN 2	
Project Title	
Country / Region	
Start Date	
Completion Date	
Continuous / Intermittent	
Client	
Funding Source	
Description	(indicate your role and input in person-months)

(Please insert more tables as necessary)

**III. Comments on Terms of Reference**

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**IV. Comments on Budget Adequacy**

--

**V. Key Considerations in approaching this assignment (no more than 9,000 characters summarizing approach and methodology)**

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**VI. Key Experts**

List of experts is only required for Consultants' Qualifications Selection (CQS). Attach CV of each expert.

SN	Name	Email	Position/Title	Nationality
1				
2				
3				
4				
5				

(Please insert more rows as necessary)

**VII. EOI Attachments**

SN	Description
1	Certificate of Incorporation of the lead member
2	Certificate of Incorporation of the JV member (for each member)
3	Certificate of Incorporation of the Sub-Consultant (for each sub-consultant)
4	Letter of Association
5	

(Please insert more rows as necessary)

### VIII. Eligibility Declaration<sup>4</sup>

We, the undersigned, certify to the best of our knowledge and belief:

- We have read the advertisement, including the terms of reference (TOR), for this assignment.
- Neither the consulting firm nor its JV member or sub-consultant or any of its experts prepared the TOR for this activity.
- We confirm that the project references submitted as part of this EOI accurately reflect the experience of the specified firm/consortium.
- We further confirm that, if any of our experts is engaged to prepare the TOR for any ensuing assignment resulting from our work product under this assignment, our firm, JV member or sub-consultant, and the expert(s) will be disqualified from short-listing and participation in the assignment.
- All consulting entities and experts proposed in this EOI are eligible to participate in ADB-funded, -supported and -administered activities.
- The lead entity and JV member or sub-consultant are NOT currently sanctioned by ADB or other MDBs. Neither the consulting firm nor the JV member or sub-consultant has ever been convicted of an integrity-related offense or crime related to theft, corruption, fraud, collusion or coercion.
- We understand that it is our obligation to notify ADB should any member of the consortium become ineligible to work with ADB or other MDBs or be convicted of an integrity-related offense or crime as described above.
- JV member or sub-consultant, including all proposed experts named in this EOI, confirmed their interest in this activity in writing.
- JV member or sub-consultant, including all proposed experts named in this EOI, authorized us in writing to represent them in expressing interest in this activity.
- None of the proposed consortiums are subsidiaries of and/or dependent on the Executing Agency or the Implementing Agency or individuals related to them.
- We understand that any misrepresentations that knowingly or recklessly mislead, or attempt to mislead may lead to the automatic rejection of the proposal or cancellation of the contract, if awarded, and may result in further remedial action, in accordance with ADB's Anticorruption Policy.

8 August 2018

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<sup>4</sup> Eligibility refers to ADB's Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers 2013 or ADB Procurement Policy 2017 and Procurement Regulations for ADB Borrowers 2017, as relevant.