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JALALABAD GAS T & D SYSTEM LTD.
(A Company of Petrobangla)
Gas Bhaban, Mendibag, Sylhet-3100.

Terms of Reference (ToR)
For
Feasibility Study for The Prepaid Meter Project in JGTDSL.

1. Background:

Jalalabad Gas Transmission and Distribution System Ltd (JGTDSL) a sister concern of Petrobangla. JGTDSL is engaged to continuous supply and marketing of natural gas to the four district of Sylhet Division. The Company has been playing an important role since its inception in reducing dependency on imported fuel, saving of foreign currency and maintenance of ecological balance through construction of pipeline, installation and maintenance of related facilities to ensure uninterrupted transmission and distribution of gas throughout the franchise area. JGTDSL's visions are efficient and secure transmission and distribution of natural gas in the Jalalabad Gas affiliated area along side mission is to providing better services to the respected customers, ensuring efficient use of natural gas and also ensuring good governance in gas marketing. Wastage of gas in domestic users is a common phenomenon in Bangladesh; Most of the domestic customers in Jalalabad Gas franchise area use non-metered gas supply service. Domestic customers pay bill amount a fixed bill whatever may be the quantity of this gas consumption. As they need not pay for every unit of gas they use it wastefully. The domestic users use gas for drying cloth in the rainy season, keeping room warm in winter and every saving the expense of match stick due to use un-metered gas. Most of the domestic customers do not pay any headache to ensure the efficient use of gas to reduce the wastage.

Realization of the efficient use of natural gas is one of the major policies of government of people's republic of Bangladesh to mitigate the energy crisis due to depletion of natural gas expected in the future.

Gas pilferage and management inefficiency are two other factors behind this. Thus it is imperative that we take appropriate measures to combat wastage of gas in domestic sectors, system loss, management and gas utilization inefficiency with a view to contributing to energy saving and national energy security and thus create a positive environmental impact.

From practical experience it is seen that the domestic customers are not aware of huge wastage of gas due to the leakage of internal GI line & also does not inform the company about the matter. If pre-paid meter is installed the customer will take immediate action to repair the GI line leaked gas. This will help prevent a huge amount of gas wastage as well as prevent unwanted accidents by ensuring overall safety.

Gas is being wasted and abused by non-metered domestic customer. There is no limit of gas use in the flat rate system but at the end of the month a domestic customer pays 1080 Taka for each double burner. According to the gas tariff of domestic purpose (Tk. 18.00 per cubic meter) the customer should not use more than 60.00 cubic meter gas per month. But in reality the domestic customer have access to use a maximum of 180 cubic meter gas (24 hours case) per month.

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In the prepaid metering system, the customer will have to pay the bill in advance, so the customer will be aware of gas usage and try to prevent the waste & misuse of gas. Thus this project will contribute significantly to the natural energy security by increasing gas supply efficiency, reduce system loss and preventing gas wastage.

2. Objective of the Study:

Jalalabad Gas Transmission and Distribution System Ltd is soliciting the services of a qualified consulting firm for feasibility Assessment which will inform the preparation of the Foreign Assistance Development Project Proposal (DPP) of the prepaid meter installation projects for domestic customers in JGTDSL Franchise area. Specifically the feasibility study will provide the decision makers with the necessary baseline and information to justify the proposed project from the following point of view:

- Project Scope (Including project cost, implementation plan, procurement package, etc)
- Organizational Structure for the Project Implementation and Operation & Maintenance (O&M)
- Financial and Economic Analysis
- Operation and Effect Indicators
- Environmental and Social Impact

3. Scope of Services:

The consultant shall work to achieve the above objectives by considering but not limited to the following scope:

a) Survey of Customers:

Analyse, collect and describe the up-to-date information available of existing domestic customers in Sylhet, Sunamgonj, Hobiganj, Moulvibazar. under JGTDSL Franchise Area to justify project rationale.

b) Detailed design and engineering, material procurement, Installation, Commissioning and Testing of Pre-paid Gas Meters and WEB system units with associated materials.

c) Preliminary Design of the project:

- i) Design life and warranty of the entire system.
- ii) Working Conditions for prepaid gas meters.
- iii) Specifications & Requirements for prepaid gas meters.
- iv) Specifications & Requirements for WEB System (Network Service Center & Data Base Center)
- v) The number of pre-paid meters to be installed.

d) Construction Plan:

- i) Design and installation of WEB system.
- ii) Prepaid meter installation procedure.
- iii) Safety plan during installation.

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e) Package for the Procurement for the Project:

The Feasibility Study will indicate the necessity of procurement of packages during pre-construction stage, construction stage and post construction stage.

f) Organizational Structure for the Project Implementation and Operation & Maintenance (O&M):

- i) Organization for the Project Implementation
- ii) Organization for Operation & Maintenance (O&M)

g) Training

For the operation and maintenance of pre-paid meter as well as the WEB system the necessity of training of JGTDSL staffs.

h) Project Implementation Schedule

Provide the proposal for the project implementation schedule.

i) Project Cost

The project cost can be composed of the following items:

- i) Construction cost (Manufacturing, supply and installation) of prepaid gas meter including web system (Design and build cost)
- ii) Project management cost (including cost for consulting service)
- iii) Dispute Board Fee
- iv) JGTDSL's administration cost
- v) Bank Charge cost
- vi) VAT and Custom duties etc.

j) Financial Feasibility Assessment

In accordance with the Government of Bangladesh guidelines, financial assessment will be carried out for the investments supported by the project for which the following parameters will be finalized:

- i) Net Present Value (NPV) considering a 12% discount rate;
- ii) Benefit-Cost Ratio (BCR) considering a 12% discount rate; and
- iii) Internal Rate of Return (IRR).

k) Economic Feasibility Assessment

In accordance with the Government of Bangladesh guidelines, Economic assessment will be carried out for the investments supported by the project for which the following parameters will be finalized:

- i) Net Present Value (NPV) considering a 12% discount rate;
- ii) Benefit-Cost Ratio (BCR) considering a 12% discount rate; and
- iii) Internal Rate of Return (IRR).

l) Operation and Effect Indicators

Recommend for operation indicator of gas meter and its target value. Also recommend for the method of measurement of gas consumption volume as an effect indicator.

m) Environmental and Social Considerations

The Consultant will be carried out the environmental and social feasibility of the project.

n) Associated Risks under the project

The Consultant will analyze the risk assessment of the project and suggest for actions to avoid the risks.

4. List of reports, Schedule of deliveries, period of performance:

Following the document structures recommended by the JGTDSL, the consultant will produce the following deliverables:

- i) Inception Report for Feasibility Assessment within two (02) weeks from contract agreement.
- ii) Draft Feasibility Study report after twelve (12) weeks from contract agreement.
- iii) Final Feasibility Study report within 120 days from the contract agreement.

5. Institutional Arrangement:

JGTDSL, a company of Petrobangla represents the client for this assignment. The consultant will work under the direct supervision of Deputy General Manager (Planning). JGTDSL will assist the study team as required, particularly with regard to customers data in the study area.

Deputy General Manager (Planning) will support to the consultant that the objective of the study, as detailed in the ToR, would be achieved within the agreed time schedule and that the contents of the report are acceptable to Foreign Assistance. He will supervise the execution of the feasibility study and will monitor progress according to the objective set in the ToR.

To facilitate the consultant's work, JGTDSL will provide the consultant with the facility to use a room on a temporary basis at JGTDSL'S head office.

Deputy General Manager (Planning) will facilitate meetings between the consultants and JGTDSL professional staffs to discuss technical issues. Any unresolved issues, either technical or otherwise, will be taken up with JGTDSL's senior technical personnel or other Foreign Assistance agencies as required.

6. Consultant Responsibilities:

Data, personnel, facilities and local services to be provided by the Consultant as described in the ToR. The consultant will mobilize the necessary expertise for the effective delivery of the services as stipulated in the scope of works and ToR. The consultant will carry out the services in the best interest of the client JGTDSL with reasonable care, skills and diligence in line with sound professional, administrative and financial practices. Field survey and field data collection will be carried out in coordination with field officers of JGTDSL (Officers of Area Sales Office/Head Office).

The consultants will consider Case-D for single riser single burner situated in remote areas along with Case-A, Case-B & Case-C which was mentioned in this proposal.

The consultant will be responsible to the JGTDSL for the execution of the contract according to the terms and conditions spelled out there in. Consultant will organize presentations and dissemination events to enable the monitoring progress and study results by the relevant JGTDSL officials.





Man Month Calculation

1. Team Leader (minimum B.Sc. Engineering or equivalent degree including 10 years experience in relevant field); 01 Person 2 Months
2. Gas Meter Expert (minimum B.Sc. Engineering degree including 05 years experience in relevant field); 01 Person 02 Months
3. IT Experts (minimum B.Sc. Engineering or equivalent degree in Computer Science & Engineering/ Computer Science including 05 years experience in relevant field); 01 Person 02 Months
4. Financial and Economical Expert (National) (minimum Master or equivalent degree in any discipline including 8 years experience in relevant field); 01 Person 02 Months
5. Social & Environment Expert (National) (minimum Master or equivalent degree in any discipline including 8 years experience in relevant field); 01 Person 02 Months

Total Man Month = 10 MM

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