Print | Close

TERMS OF REFERENCE

Selection Number	**144452**
Project	**LOAN-3350 BAN: Power System Expansion and Efficiency Improvement Investment Program - Tranche 3 - PPMW Supply, Installation, Testing, Commissioning, Initial Maintenance of Prepaid Meters and related service (42378-017)**
Expertise	**Smart Meter Expert**
Expertise Group	**Engineering**
Source	**International**

Objective and Purpose of the Assignment

In response to country's vision to progressively implementing Smart Prepaid Metering Systems for the customers of the entire country, Power Cell on behalf of Government of Bangladesh (GOB) has developed a Unified Smart Prepaid e-Metering System. Bangladesh Rural Electrification Board (BREB) has taken initiatives to install 1 Million Smart Prepaid Meter under ADB Loan 3350-BAN: Power System Expansion and Efficiency Improvement Investment Program(Tranche 3) in two lots (Lot-1 & Lot-2) at 11 Palli Bidhyut Samitis (PBS) surrounding Dhaka.

Procurement of the meters has been completed and accordingly BREB signed contracts with Wasion Group Ltd. for Lot-1 (Dhaka 1/3/4, Munshigonj, Manikgonj PBS) and with Hexing Electrical Co. Ltd. for Lot-2 (Narshingdi1/2, Narayangonj1/2, Gazipur-1, Mymensingh-2 PBS). These two suppliers will supply and accordingly carryout the installation, testing and commissioning of 1 million prepaid meters in the mentioned PBS. BREB is recruiting one International Consultant (Smart Meter Expert) who will support the project until November 2019 and will be responsible for design approval, quality assurance and design supervision of the supplied meters. BREB will also engage one National Consultant who will act as local counterpart of the International Consultant and will be mainly responsible for implementation, supervision, monitoring and technical support during installation phase.

The overall objective of the individual consultant as Smart Meter Expert is to provide technical assistance to BREB during project implementation period for installation of 1 million prepaid meters in coordination with these two contractors.

Scope of Work

The Smart Meter Expert (SME) shall be responsible for providing all necessary technical support and advise to the project management office (PMO) of BREB for smooth implementation of the whole project. SME will ensure that proposed metering system and hardware supplied by supplier will properly interface with existing unified prepaid meter system developed by Power cell for all utilities in Bangladesh. SME will review the design of the meters, and confirm BREB that developed system will support the overall architecture of the smart meter system and its features will be implemented properly. SME will assist BREB in preparing database for 1 million prepaid meters and support BREB in installation, testing, commissioning of the meters and analyzing field level data.

The consultant will carry out the services as detailed in the TOR for the best interest of the project.Throughout the consultancy period, the consultant's activities will be reviewed continuously by BREB as time specified in TOR.

Facilities to be provided by BREB:

The Smart Meter Expert shall work with the Project Director, BREB. BREB will make necessary arrangement for smooth working of the specialist in the office premises of the project Director. He/She will be provided with necessary working facilities, like office accommodation, and BREB's existing data as per project requirement.

Detailed Tasks and/or Expected Output

The SME will

1. Assist BREB to prepare database of 1 million prepaid meters which are going to be replaced;

2. Review the architecture of contractor's proposed prepaid metering system interfacing and confirm that the hardware meets the specifications in the submitted bid documents, as well as in any other relevant requirements (such as Application Programming Interface (API)) set by the employer (BREB).Based on consultant's confirmation of the design architecture and equipment specification, Employer (BREB) will approve the design and provide equipment manufacturing order to the supplier;

3. Support BREB for testing and commissioning of the hardware and software and provide final acceptances for receipt of the meters by BREB at their warehouse;

4. Supervise periodically the installation of Prepayment meters, UVS (Utility Vending Station), UCC (Utility Customization Center) & POS's (Point of Sale) and will suggest the suppliers for any remedial works;

5. Review and verify during the installation that solution/ system architecture complies with unified prepaid meter system. Review the meter readings and billing system and verify that the system is working properly, and reports are correctly generated;

6. Support BREB for verification, measurement and approval of changes proposed by the contractors. Changes can be in terms of the solution, technical specifications etc. during project implementation;

7. Review and verify the functionality of the installed UVS & POS as required;

8. Responsible for the tasks assigned to the Project Implementation Support Consultant (National) and supervise/ guide him/her to capture field level data in reporting template. Supervise and analyses the vending reports, energy consumption reports including any other reports generated and suggest scopes of improvements such as identifying "No vending", "Low vending suspicious customers" and guide the national consultant in developing remedial plan for management of such clients;

9. Suggest as needed for the current and future course of action for smooth interfacing and healthy operation of Master Information Center (MIC) and vending stations (UVS) & POS; and in case of BREB's decision to convert the prepaid meters to full online prepaid meters, ensure preparation of necessary technical specification (Section-6) for bidding document, assist BREB in bid evaluation and further support for integrating the new technology with existing architecture etc;

10. Launch appropriate modality so that Meters of one PBS's cannot be vended from other PBS's vending stations & POS's;

11. Develop an operations guideline for the Palli Bidyut Samity (PBS) staffs to be adopted after taking over from the contractor;

12. Prepare a Standard Operational Process (SOP) for dismantling and returning the old analogue meters. With the help of National consultant, prepare appropriate disposal mechanism for the old meters and submit to BREB;

13. Supervise/ guide the national consultant when and as required;

14. Verify and confirm proper installation & operations of Head end System (HES) and Meter Data management system (MDM) which will be open and International standard. The HES & MDM will support both Hexing & Wasion Meters and meter related Equipment;

15. Solve any other technical issues relating to smart meter implementation that may arise during implementation of the project and

16. Conduct any other duties as reasonably requested by EA.

Deliverable and Payment Milestone:

The contract will be on partial lump sum basis. The remuneration will be paid on lump-sum linked with deliverable on achievement of milestones mentioned below. The International Consultant shall have to submit the following deliverable and payment will be done in following manner:

Sl No	Milestone	Payable Amount
1	Inception report with database and SOP (tasks 1, 11,12)	(10% Payment)
2	Review the design of the meters and assist BREB in approving (Task 2)	(10% Payment)

Final Acceptance on delivery (Task 3) (15% Payment)

4 Installation Supervision (task 4,5,13,) (30% Payment) (in 3 separate installment after installation of 33% meters in each batch)

5 Interfacing and further support to make the meters fully online (Task 6,7 8,9,10,14) (20% Payment)

6 Handover protocol and SOP (15% Payment)

Other expenses like air fare, transportation, per Diem, communication etc will be paid at actual basis.

Minimum Qualification Requirements

Bachelor's degree in Electrical and Electronic or relevant Engineering. Candidates should have advanced academic/ professional qualification/ training in smart prepaid metering system.

Minimum General Experience	**15 Years**
Minimum Specific Experience (relevant to assignment)	**10 Years**
Regional/Country Experience	**Desired**

Deliverables	**Type**	**Estimated Submission Date**
Inception report with database and SOP (tasks 1, 11,12)	Report	30-Sep-2018
Design approval for the meters (Task 2)	Others	30-Oct-2018
Final Acceptance on delivery (Task 3)	Others	31-Jan-2019
Installation Supervision (task 4,5,13)	Others	30-Jun-2019
Handover protocol and SOP	Final Report	31-Aug-2019
Interfacing and further support to make the meters fully online (Task 6,7 8,9,10,14)	Others	30-Nov-2019

Schedule and Places of Assignment (chronological and inclusive of travel)

City and Country	**Working Days**	**Estimated Start Date**	**Estimated End Date**	**Other Details**
Dhaka, Bangladesh	96	01-Sep-2018	31-Mar-2019	
Other City, Bangladesh	48	01-Apr-2019	30-Sep-2019	Munshigonj, Manikgonj, Narshindhi, Gazipur, Mymensingh
Home Office, Other	32	01-Oct-2019	30-Nov-2019	
Total	**176**	Intermittent; Max. Working Days/Week: **5** for Home Office, **6** for Field		

2/8/18

2/8/18

Md. Rafiqul Islam
Project Director
Prepayment e-Metering (Phase-1)
BREB, Dhaka-1229

Print Close

TERMS OF REFERENCE

Selection Number	**144530**
Project	**LOAN-3350 BAN: Power System Expansion and Efficiency Improvement Investment Program - Tranche 3 - PPMW Power System Expansion and Efficiency Improvement Investment Program – Tranche 3 (Component C) (42378-017)**
Expertise	**Project Implementation Support Expert**
Expertise Group	**Engineering**
Source	**National**

Objective and Purpose of the Assignment

In response to country's vision to progressively implementing Smart Prepaid Metering Systems for the customers of the entire country, Power Cell on behalf of Government of Bangladesh (GOB) has developed a Unified Smart Prepaid e-Metering System. Bangladesh Rural Electrification Board (BREB) has taken initiatives to install 1 Million Smart Prepaid Meter under ADB Loan 3350-BAN: Power System Expansion and Efficiency Improvement Investment Program (Tranche 3) in two lots (Lot-1 & Lot-2) at 11 Palli Bidhyut Samitis (PBS) surrounding Dhaka.

Procurement of the meters has been completed and accordingly BREB signed contracts with Wasion Group Ltd. for Lot-1(Dhaka 1/3/4, Munshigonj, Manikgonj PBS) and with Hexing Electrical Co. Ltd. for Lot-2 (Narshingdi1/2, Narayangonj1/2, Gazipur-1, Mymensingh-2 PBS). These two contractors will do supply,installation, testing and commissioning of 1 million prepaid meters in the mentioned PBS. BREB is recruiting one International Consultant (Smart Meter Expert)who will support the project until August 2020 and will be responsible for reviewing the design approval, quality assurance and design supervision of the supplied meters. BREB will also engage one National Consultant who will act as local counterpart of the International Consultant and will be mainly responsible for implementation, supervision, monitoring and technical support during installation phase.

The objective of the individual consultant as Project Implementation Support Expert (PISE) is to assist the International Smart meter Expert. He/ she will also work closely with the Project Director to ensure successful implementation of the project.

Scope of Work

PISE will be responsible to ensure, a) the quality of the meters as per technical specification, b) preparation of customer database, c) proper installation and commissioning of meters, d) interfacing these meters with the unified prepaid meter system, e) analyzing data and develop reporting template,and f) supervise the customization of meter during installation stages.

The consultant will carry out the services as detailed in the TOR for the best interest of the project. Throughout the consultancy period, the consultant's activities will be reviewed continuously by BREB as specified in the TOR.

Facilities to be provided by BREB:

The Project implementation Support Expert (PISE) shall work with the Project Director, BREB. BREB will make necessary arrangement for smooth working of the Expert in the office premises of the Project Director. He/She will be provided with necessary working facilities, like office accommodation, and BREB's existing data as per project requirement.

Detailed Tasks and/or Expected Output

The PISE will

A) Assist the Smart Meter Expert in preparing database of 1 million meters;

B) Assist the International Smart Meter Expert in providing final acceptance for receipt of the meters by BREB at their warehouse;

C) Work with BREB and Suppliers during installation and commissioning of Prepaid meters, UVS (Utility Vending Station), UCC (Utility Customization Center) & POS's(Point of Sale) in field level and will suggest the suppliers for any remedial works as per consultation with the International Smart Meter Expert;

D) Verify the number of installed meters as per feeder, substation and PBS and verify the functionality of the installed UVS & POS. based

on the PISE's installation report, BREB will release contractor's payment;

E) Prepare following reporting template for BREB in consultation with International Smart Meter Expert

i. Template for daily and monthly vending

ii. Template for monthly Energy Consumption Report in Kilowatt-hour

iii. Template for miscellaneous Report/s: including reports on "No Vending for long time" , "Low vending suspicious customer", etc for a customization period indicating customer identities.

F) Support BREB's technical people to generate monthly and yearly Energy Consumption(KWH) report (feeder, substation and PSB wise) with the vended amounts and assist them to monitor the revenue deposited in the banks/utilities.

G) Identify "No Vending" and "Low vending suspicious Customers" and suggest a remedial work plan as per advice of the Smart Meter Expert for those consumers.

H) Support International Smart Meter Expert to develop operations guideline for the PBS staffs to be adopted after taking over from the contractor.

I) Provide training to PBS staffs to adopt the operational guideline. At least 3 PBS staff from each PBS will receive this training from PISE.

J) Support BREB's technical people to manage the vending stations & POS Stations for future operation until handover to PBS.

K) Support International consultant as a local counterpart as required.

L) Assure the installation & operations of Head end System (HES) and Meter Data management system (MDM) which will be open & International standard and the HES & MDM will support both Hexing & Wasion Meters and meter related Equipment.

M) Conduct any other duties as reasonably requested by EA.

Deliverable and Payment Milestone:

The contract will be on partial lump sum basis. The remuneration will be paid on lump-sum linked with deliverable on achievement of milestones mentioned below. The Consultant shall have to submit the following deliverable and payment will be done in following manner:

1 Inception report with database (10% Payment)

2 Final Acceptance of the supplied meters on delivery (5 % Payment)

3 Installation Supervision (40% Payment) (in 3 separate installment after installation of 33% meters in each batch)

5 Report Template developed (15% Payment)

6 Training and Capacity Building (10% Payment)

6 Supervision during warranty period (20% Payment)

Other expenses like transportation, per Diem, communication etc will be paid at actual basis.

Minimum Qualification Requirements

Bachelor's degree in Engineering/ Information Technology/ Computer Science or equivalent.

Candidates should have relevant working experience in Metering system/ Telecom sector in roll out division.

Minimum General Experience	**10 Years**
Minimum Specific Experience (relevant to assignment)	**8 Years**
Regional/Country Experience	**Desired**

Deliverables

	Type	Estimated Submission Date
Inception report with database	Report	30-Sep-2018
Final Acceptance of the supplied meters on delivery	Others	31-Dec-2018
Installation Supervision	Others	31-Jul-2019
Report Template developed	Report	31-Oct-2019
Training and Capacity Building	Others	31-Jan-2020
Supervision during warranty period	Others	31-Aug-2020

Schedule and Places of Assignment (chronological and inclusive of travel)

City and Country	Working Days	Estimated Start Date	Estimated End Date	Other Details
Dhaka, Bangladesh	196	01-Sep-2018	31-Dec-2019	
Other City, Bangladesh	200	01-Jan-2020	31-Aug-2020	Munshigonj, Manikgonj, Narshindhi, Gazipur, Mymensingh
Total	**396**	Intermittent; Max. Working Days/Week: **5** for Home Office, **6** for Field		

2/8/18

Md. Rafiqul Islam
Project Director
Prepayment e-Metering (Phase-1)
BREB, Dhaka-1229.

2/8/18