BELIZE ELECTRICITY LIMITED

EIGHTH POWER (ADVANCED METERING INFRASTRUCTURE UPGRADE) PROJECT

TERMS OF REFERENCE

ENGINEERING SUPERVISION CONSULTANT

CONSULTANCY SERVICES FOR INDEPENDENT SUPERVISION AND CERTIFICATION OF AMI METER INSTALLATION WORKS IN BELIZE

1. Project Background

Belize Electricity Limited (BEL), the national electric utility, is responsible for delivering safe, reliable, and sustainable electricity to over 114,000 customers across Belize. As part of its strategic modernization efforts, BEL is implementing a nationwide Advanced Metering Infrastructure (AMI) Program to replace legacy electricity meters with smart meters.

The long-term goal of the AMI Program is to modernize BEL's metering infrastructure and establish a foundation for a future-ready electricity grid that supports sustainability, innovation, and customer empowerment. This program is a major step toward enabling a smarter grid and improving service delivery. The transition to AMI will support automated meter reading, real-time data access, outage detection, integration of distributed energy resources, and improved customer engagement.

BEL has received financing from the Caribbean Development Bank (CDB) for the supply and installation of approximately 114,000 smart meters, together with associated systems and services. To ensure compliance with contractual obligations, international engineering standards, and CDB requirements, BEL intends to engage an independent Engineering Supervision Consultant (ESC) to supervise, audit, certify, and report on the execution of the meter installation works.

2. Consultant Eligibility

This opportunity is open to eligible Consultants, regardless of gender, and aims to foster equal participation. **Given the nature of this consultancy, strong preference will be given to consultants based in Belize.** The Consultant must already be resident in Belize or the region, and demonstrate technical skills, tools, and logistical capacity to perform supervision of AMI meter deployment with special considerations to safety, accuracy, and professionalism. No international relocation, flights, or per diem will be covered under this contract.

3. Objectives of the Assignment

The objective of this assignment is to provide independent engineering supervision, verification, and certification of the AMI meter installation works across Belize.

Specifically, the ESC will:

i. Verify that AMI meter installations comply with approved technical specifications, applicable international standards, and contractual requirements;
ii. Certify completed works for payment purposes;
iii. Provide independent assurance to Belize Electricity Limited (BEL) and the Caribbean Development Bank (CDB) regarding the quality, safety, and completeness of installations; and
iv. Support the timely and orderly implementation of the national AMI rollout through professional engineering oversight and reporting.

To support the national rollout, BEL seeks to engage a qualified individual consultant to independently supervise and verify the execution of electric meter replacements across the country. Installation contractors have been engaged and assigned works in accordance with BEL's regional deployment plan and performance targets. The rollout is currently underway, with approximately 30,000 meters installed to date.

The ESC will be responsible for providing independent certification and reporting of the installation works, ensuring compliance with the relevant contracts, the CDB Financing Agreement, and applicable international engineering standards, and for issuing the necessary engineering certifications upon completion of the works.

4. Scope of Services

The Engineering Supervision Consultant shall perform, but not be limited to, the following tasks:

a) **Meter Installation Inspection and Verification**

- Verify that AMI meter installations are carried out in accordance with the approved technical specifications, Employer's Requirements, and applicable ANSI, IEC, and other relevant international standards.
- Inspect workmanship, installation practices, safety procedures, and adherence to BEL service requirements.
- Use a sampling approach of at least 5% of meter installations.

b) **Certification for Payment**

- Measure, verify, and certify a minimum of 5% of completed installation works recorded in Landis & Gyr's Emerge software for each two-month interim period.

c) **Technical Advisory Support**

- Provide engineering advice to BEL during the installation phase, including identification of non-conformities, corrective actions, and recommended improvements.

d) **Progress Reporting**

- Prepare and submit bi-monthly progress reports commencing two (2) months after the start of the assignment, detailing:
    - Installation progress against targets.
    - Quality and safety observations.
    - Key risks and constraints.
    - Non-conformities and corrective actions; and
    - Any issues affecting timely and efficient execution.

e) **Completion Certification**

- Issue Certificates of Completion upon satisfactory completion of installation works under each service area.

f) **Completion Report**

- Prepare a **Final Completion Report** summarising the execution of the AMI installation programme, lessons learned, and key recommendations, within three (3) months of issuance of the final certificate of practical completion.

5. Qualifications and Experience

Engineer

- Education**:** Bachelor's degree in electrical engineering or equivalent.

- Experience**:**
    - Minimum of five (5) years' experience in transmission and distribution (T&D) systems;
    - Demonstrated experience in Advanced Metering Infrastructure (AMI) or smart metering projects;
    - Experience in supervision, inspection, or certification of utility-scale electrical installations.
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- Skills**:**
    - Strong knowledge of applicable international standards (ANSI, IEC);
    - Proven reporting and contract administration skills;
    - Familiarity with health, safety, and environmental requirements for utility field works.

6. Payment Structure

Payments will be made upon the acceptance of bi-monthly Progress Report outputs.

7. Duration

The assignment shall be implemented over the duration of the AMI installation programme, which is expected to span approximately twenty-eight (28) months.

The services of the Engineering Supervision Consultant shall not be required on a continuous or full-time basis. Instead, the Consultant shall perform supervision, verification, and certification activities on an intermittent basis, aligned with BEL's installation schedule. This will include batch-based inspections, sample verification of installed meters, and periodic certification of completed works in accordance with agreed milestones and reporting requirements.

The frequency, timing, and scope of site visits and inspections shall be agreed between BEL and the Consultant and may be adjusted based on installation progress and risk considerations. At minimum BEL estimates the hired consultant to conduct four (4) site visits per month, working at least Six (6) days working days per month, to verify 5% of the ongoing installations.

Any extension of the assignment, including non-cost extensions, shall require prior written approval from BEL and shall be granted at BEL's discretion.

8. Compliance Requirements

The Consultant shall comply with:

1. Applicable laws, regulations, and professional standards in Belize;

2. Applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the Consultant's Experts, BEL's personnel, and the Contractor's personnel, including sub-contractors and day workers (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment).

3. The use of illegal substances.

4. Non-Discrimination in dealing with the local community (including vulnerable and disadvantaged groups), the Consultant's Experts, BEL's personnel, and the Contractor's personnel, including sub-contractors and day workers (for example, on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status).

5. Interactions with the local community(ies), members of the local community (ies), and any affected person(s) (for example to convey an attitude of respect, including to their culture and traditions).

6. Sexual harassment (for example to prohibit use of language or behavior, in particular towards women and/or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate).

7. Violence, including sexual and/or gender-based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberty.

8. Exploitation including sexual exploitation and abuse (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading behavior, exploitative behavior or abuse of power) and any form of forced labour.

9. Protection of children (including prohibitions against sexual activity or abuse, or otherwise unacceptable behavior towards children, limiting interactions with children, and ensuring their safety in project areas).

10. Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas).

11. Avoidance of conflicts of interest (such that benefits, contracts, employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection).

12. Respecting reasonable work instructions (including regarding environmental and social norms).

13. Protection and proper use of property (for example, to prohibit theft, carelessness or waste).

14. Duty to report violations of this Code.

15. Non-retaliation against personnel who report violations of the Code, if that report is made in good faith.

16. *The Consultant shall comply with CDB's Prohibited Practices as defined in the Procurement Policy and Procedures of the Caribbean Development Bank.*

The Code of Conduct should be written in plain language and signed by each Expert to indicate that they have:

1. *received a copy of the code;*

2. *had the code explained to them;*

3. *acknowledged that adherence to this Code of Conduct is a condition of employment; and*

4. *understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.*

A copy of the code shall be displayed in the Engineer's office. It shall be provided in appropriate languages.

9. Duty Station

The Engineering Consultant shall be based in Belize, with the primary duty station will be the Consultants own office. Meetings will be held as necessary at Belize Electricity Limited's (BEL) Magazine Road Office. BEL will not provide office space. Reasonable access to software reports and facilities required for execution of the assignment will be provided as needed.

10. Transportation

The Consultant will also be required to travel within Belize to various project sites to conduct field inspections, supervise meter installation activities, engage with BEL regional teams, and verify works as part of the AMI deployment. All such travel is the responsibility of the Consultant. BEL will inform the Consultant of the Meter change schedules and locations as required for the execution of the assignment.

All travel undertaken for project-related activities must be properly recorded. The Consultant is expected to adhere to all applicable safety protocols while traveling, including compliance with PPE requirements during site visits.