



***Terms of Reference (ToR) for the Provision of Consultancy Services for a Distribution Supervisory Control and Data Acquisition System for the British Virgin Islands Electricity Corporation's electrical network.***

**September 2023**



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## **1. Background and Introduction**

### **1.1. Background for BVIEC Distribution Control Systems Implementation Project.**

The core business activity of the BVI Electricity Corporation is the generation and distribution of electricity. While the generation functionality produces the electrical power required by the territory, the Distribution network holds the responsibility of disseminating that electrical power to the territory's residents. Being the only utility in the territory, the efficient distribution of electricity plays an important role in the standard of living of the society and the maintenance of the economy.

The BVIEC is investing in innovative operation, information, and communication technologies and developing processes and policies to transition the company into a more efficient and responsive organization. It is essential that the Corporation is equipped with the ability to remotely monitor and control the various components of the electrical network in real time. The implementation of technology elements to support improvement in efficiency in managing the electricity supply is an essential aspect of providing a best-in-class service to the customer.

The challenges the BVIEC faces without the ability to monitor the network in real-time and take appropriate action include;

- Delayed awareness of the cause and location of issues developing on the network.
- Inadequate means of assessing network performance metrics at various points throughout the territory.
- Limited ability in addressing customer issues or faults on the grid.
- Difficulty determining and correcting issues with some inefficiency of bringing issues to closure.
- General situational awareness of the electrical system operation

The computerized technologies of the desired control systems are intended to support the strategic goal of remote monitoring of the BVIEC's assets, and the protection and control of the various equipment on the electrical infrastructure. This will facilitate the effective engagement of our customers and ensure that the Company can maintain efficient operations. We expect the distribution control systems to allow employees to access video and data using a mobile phone, tablet, or computer, which provides real-time information on the status of the electricity supply and related components of the network.

### **1.2. BVIEC Distribution Control Systems Implementation Project**

"We are committed to delivering an exceptional customer experience by fostering partnerships and safely developing the BVI as we invest in our people and provide sustainable, innovative energy solutions at an affordable cost." This is the mission of the British Virgin Islands Electricity Corporation. Given the national mandate to supply a broad level of services, relative to the significant number of investments, small customer base, and meagre resources available to accomplish its mission, the Corporation must strive for the most efficient operations possible.



In order to address the aforementioned challenges, the BVIEC has developed a strategic initiative to implement a Transmission and Distribution Control System under the project name: **BVIEC Distribution SCADA Systems Implementation**. The project will contribute to the objective of maintaining the standard of living for the residents of the territory by strengthening operations and increasing the flexibility of the BVI Electricity Corporation to efficiently and effectively provide electrical service, and to respond and adapt to extreme and recurrent situations.

This endeavor will utilize several components to address relevant gaps and implement appropriate solutions. Through the introduction of a SCADA system for the Transmission and Distribution network, the Corporation will be equipped to maintain efficient and resilient operations as previously indicated. Listed below are the key outputs of the project:

- **Output 1:** SCADA Terms of Reference prepared.
- **Output 2:** SCADA tender documents prepared.
- **Output 3: Procurement support** (Tender documents evaluated, recommendations made).
- **Output 4:** Contract negotiated and awarded. □ **Output 5:** SCADA system implemented.

To support the implementation of the project, the Corporation is soliciting the services of a consultant or consulting firm with expertise and experience in planning and implementation of a Transmission and Distribution Supervisory Control and Data Acquisition (SCADA) system project. The Consulting expert will provide support for the implementation and production of the outputs indicated above.

This document presents the Terms of Reference (ToR) as a description of the expected scope of this assignment and the requirements for submission of technical and financial proposals.

## **2. Objective of the Assignment**

### **2.1. Overall objective**

To support the vision of the British Virgin Islands Electricity Corporation by strengthening the operations and increasing the resilience in response to incidents, and adapt to extreme conditions.

### **2.2. Specific Objective**

To improve the capacity of the BVI Electricity Corporation to maintain efficient operations and provide timely customer service, through the remote monitoring and specific access based control of its generation, transmission and distribution systems of the BVIEC.



### **3. Expected Scope**

#### **3.1. Duration and location**

The project will be executed on-site at the properties of the BVI Electricity Corporation on the islands of Tortola, Virgin Gorda and Jost Van Dyke in the British Virgin Islands. The Consultant is expected to conduct at least one site visit with subsequent visits on an as-needed basis or thereafter, and will perform tasks remotely as required or wherever possible. To conduct the initiative efficiently, the project team will arrange to promote virtual opportunities throughout its duration.

The Corporation will provide funding for travel cost recovery upon prior approval by the project steering committee.

The completion date for the project is July 2024.

#### **3.2. Responsibilities**

The Consultant will be responsible for the systems procurement support by way of the evaluation, selection and implementation of a Distribution Control System onto the BVIEC's electrical grid, and providing technical assistance in the areas described under sections 3.3.1 and 3.3.2.

Throughout the lifetime of the project, the BVIEC project manager and the Consultant will gather and compile relevant data from the project activities to satisfy the requirements of the monitoring, evaluation, accountability, and learning review meetings to be held by the project steering committee.

In addition, the Consultant ensures timely answers to requests from the BVIEC Project Team and/or Steering Committee via email (maximum 2 days to respond) or phone.

The Consultant will ensure that the project is executed in a healthy and safe manner ensuring compliance with local legislation and industry best practices. Prior to the commencement of the implementation phase, a method statement should be provided to the Corporation by the selected contractor for review and approval.

### 3.3. Deliverables and Milestones

#### 3.3.1. Schedule

The assignment includes the following tasks and deliverables that the Consultant will prepare and implement, along with estimated times.

|              | <b>Task</b>                                      | <b>Deliverable</b>   | <b>Workdays</b> |
|--------------|--|--|-----------------|
| <b>1</b>     | Preparation of SCADA Terms of Reference          | Terms of Reference document describing the project   |                 |
| <b>2</b>     | Preparation of Tender Documents for the project. | A Tender Document describing and including the commercial and technical aspects of the project |                 |
| <b>3</b>     | Tenders Evaluation                               | A formal report on the completion of the Tender Process  |                 |
| <b>4</b>     | Negotiation of contract and award                | A selected vendor that will provide a SCADA system to fulfil BVIEC requirements                |                 |
| <b>5</b>     | Project Implementation                           | Installed and operational Distribution Control System  |                 |
| <b>Total</b> |  |  |                 |

The Consultant will elaborate on each deliverable, which will be subject to a review process conducted by the BVIEC. The workdays will be approximated by the consultant and will be reviewed by the project team and steering committee. The indicated completion date of the project is final, however.

#### Scope of key Deliverables

The following sections describe detailed requirements on the scope and quality of deliverables mentioned in the table under section 3.3.1. The last heading number corresponds to the task/deliverable number in the table.

##### 3.3.1.1. Preparation of a SCADA Terms of Reference.

The Consultant will prepare a Terms of Reference document according to instructions from discussions held with the stakeholders of the BVIEC. A draft document shall be submitted for review by the project stakeholders for comments and adjustments. A final draft will be submitted following review by the BVIEC project steering committee. The terms of reference document will contain a set of design requirements focusing on the following:

- a) Specific assets to be monitored and controlled
- b) BVIEC preferences in terms of system alerts and events
- c) SCADA system extension capability requirements
- d) Remote monitoring and control



- e) Indication of existing and future medium voltage switching equipment in the system f) Data logging capabilities
- g) Geographic interfaces
- h) GIS integration requirements

The approved Terms of Reference document will be the basis for preparation of the Tender Specifications described in the following section.

#### **3.3.1.2. Preparation of Tender Documents for the Project.**

The Consultant will prepare the Tender Documents for the project from the Terms of Reference developed as described in the preceding section. Once complete, a draft will be issued for review and comment by BVIEC. The Consultant will subsequently amend the document according to BVIEC's comments and issue a final edition for approval.

The Tender Documents are expected to be comprised of the following sections:

- a) Commercial Section indicating instructions to bidders, qualifications criteria, etc.
- b) Technical Section indicating scope of work, technical requirements, and diagrams.
- c) Schedules to be completed by the bidder.

The arrangement of these documents will be in accordance with the requirements of the BVIEC and the agreed procurement strategy.

#### **3.3.1.3. Tender Evaluation**

The Consultant will support the tender review, evaluation and selection process and is expected to submit a formal report on its completion.

The details of the evaluation process will be discussed and agreed with the BVIEC project team during preparation of the bidding documents to enable guidance to be included on the evaluation process in the "Instructions to Bidders" section of the Tender Document.

The Consultant shall perform administrative, eligibility, and technical reviews to ensure qualified bidders with eligible bids are included and address the scope, implementation plan, design solution and technical schedules at this stage of the project. Reports on the results of the review stages are also a requirement.

The Consultant will issue the formal evaluation report after discussing the draft documentation with the BVIEC project team.

#### **3.3.1.4. Contract Negotiation and Award**

The BVIEC will lead the process of contract negotiation and award, supported by the Consultant. The BVIEC project team will agree with the consultant on how best to support the process of forming an agreement with the bidder that submits the highest rated bid. The principal activities to be undertaken by the Consultant include;



- a) Advising the BVIEC on issues for negotiation including clarifying any outstanding technical issues and finalizing commercial issues.
- b) Compiling the Contract Document in coordination with the BVIEC project team.

The BVIEC project team assumes that negotiations will take place with only one bidder.

#### **3.3.1.5. Project Implementation**

The Consultant will ensure that the successful contractor submits a project implementation plan and system design specification documents first for review and approval before commencing work. While the work is being executed, the Consultant will collaborate with the BVIEC in verifying that the work is progressing according to schedule and budget, and to identify any issues that may delay the progress. The Consultant, working with the BVIEC project manager, will ensure that project management and contract administration are performed according to the best commercial and engineering practices and standards. The team will ensure that appropriate quality standards matching ISO, BSI or an equivalent benchmark are applied, and that the result of the work addresses all specific requirements of the BVIEC.

The Consultant is expected to be on-site for some period during the implementation of the system.





#### 4. Requirements on the Format of the Bid

The interested bidder is required to submit a bid comprising a technical and a financial proposal according to the instructions given in the following sections.

The proposal shall contain both the technical and financial aspects and are to be submitted electronically. Both proposals are requested to be signed and stamped by the bidder.

The comprehensive technical proposal must be submitted by Wednesday 15<sup>th</sup> November, 2023, 11:59 pm AST via email to: [procurement@bvielectricity.com](mailto:procurement@bvielectricity.com).

Further questions related to this assignment and its procurement process can be addressed via email to: [scadaqanda@bvielectricity.com](mailto:scadaqanda@bvielectricity.com).

Further requirements and provisions:

- The consultant must be available at the beginning of the contract.
- The consultant commits to not disclosing confidential information, neither before, during, nor after the delivery of the service.
- Publications and media contact where necessary will be agreed to in advance with BVIEC.
- All studies, digital outputs and documents elaborated within the contract will be made available to the project in digital form for discussion and approval.
- All results must be provided to the BVIEC in digital version and need to follow the BVIEC design standards as necessary.
- Reasonable changes during the assignment will be agreed to in writing in advance, between the consultant and the BVIEC.

The Bidder shall bear all costs associated with the preparation and submission of its proposal and the finalization and execution of the procurement agreement. BVIEC shall under no circumstance be responsible or liable for these costs, regardless of the conduct or outcome of the RFP process. Documents submitted by the Bidders will not be returned.

##### 4.1. Technical Proposal

The technical proposal is required to show how the objectives defined in Sections 2 and 3 of this Terms of Reference (ToR) are to be achieved. In addition, the bidder must demonstrate the company's capacity, expertise, and experience by providing a concept for quality assurance (company description), and respective references from similar assignments. Links to publicly available ITC-based products and platform, elaborated within previous assignments will be considered an additional asset.

The Technical Proposal must be legible (font size 11 or larger) and clearly formulated. The bid must be written in English (language).



The complete technical bid shall not exceed 100 pages (excluding CV's), including:

- Technical concept and a work plan
- Company Description (incl. Overview of staff/ team concept, financial statements of the past 3 years of the company, Backstopping Concept and Quality Assurance) and References related to similar assignments (i.e. the implementation of SCADA systems for electrical utility distribution systems)

The CVs must clearly show the position and job the proposed Expert held in the referenced project and for how long.

#### **4.1.1. Expert Qualification**

The proposed experts shall fulfil the following qualifications to comply with the required expertise as indicated below. Non-compliance with the minimum qualification criteria will exclude the proposal from further assessment.

##### **a. Education/training**

- Minimum academic requirement of a Bachelor's degree, experience or equivalent, in Engineering, Energy Sciences, Information Technology or Computer Science or a similar area.

##### **b. Language**

- Excellent command of English language in speech and writing

##### **c. General Professional experience**

- Minimum of 10 years of professional working experience in the field of energy services for electric utilities.

##### **d. Specific professional experience**

- Demonstrated knowledge and experience in the provision of technical assistance to the development and implementation of a Distribution Control System or SCADA systems for electric utilities.
- Demonstrated knowledge and experience in the provision of technical assistance and direct application of effective project management practices particularly in for electric utilities.
- Demonstrated knowledge and experience in the SCADA systems solution selection process, implementation and evaluation of the solution.

##### **e. Regional Experience**

- Demonstrated working experience in Caribbean OCTs or CARICOM member countries



## **4.2. Financial Proposal**

The financial proposal shall be based exactly on the requirements mentioned under Section 3.2.1. and the cost breakdown as provided in section 4.2.1.

### **4.2.1. Cost Breakdown**

The cost breakdown of the financial proposal shall be provided as follows:

| Deliverable <sup>1</sup> |  | Key Expert      |                   | Total Costs |
|--------------------------|--|-----------------|-------------------|-------------|
|                          |  | No of work days | Daily fee in US\$ | in US\$     |
| 1.                       | Terms of Reference document describing the project   |                 |                   |             |
| 2.                       | A Tender Document describing and including the commercial and technical aspects of the project |                 |                   |             |
| 3.                       | A formal report on the completion of the Tender Process  |                 |                   |             |
| 4.                       | A selected vendor that will provide a SCADA system to fulfil BVIEC requirements                |                 |                   |             |
| 5.                       | Installed and operational Distribution Control System  |                 |                   |             |
| <b>TOTAL</b>             |  |                 |                   |             |



## **4.2.2. Costing Requirements**

### **4.2.2.1. Assignment of personnel**

The assignment is based in the home country according to the time schedule as mentioned. Applicants will be local or foreign based depending on qualifications.

### **4.2.2.2. Travel**

Funding for travel cost recovery will be provided by BVIEC upon prior approval by the Project Steering Committee.

### **4.2.2.3. Other costs**

The Consultant will be responsible for providing their own communication, supplies, out-of-pocket expenses, equipment, and all other costs incurred in preparing the requisite reports as part of their financial proposal. These costs are to be included in the daily fees of the expert.

