Terms of Reference

Owner's Engineer for Pre- Construction and Construction of a Dual Circuit Transmission Network, Substation and Associated Equipment and Installation of Battery Energy Storage System (BESS) otherwise referred to as ("the Sub-Project")

1. Background:

GRENLEC otherwise known as ("the Client") has been granted conditional approval to proceed with a full EPC for 33kV Transmission interconnection, Substation and BESS installations to support the 15MW solar PV farm to be installed at the Maurice Bishop International Airport. The World Bank and Caribbean Development bank are providing joint concessional financing to Grenlec for the implementation of this project. Appendix A provides the project scope.

2. Objective(s) of the Assignment

The objective of the assignment *is to engage a multi-discipline engineering consulting firm otherwise referred to as ("the Owner's Engineer")* to provide technical and management support to the Client to ensure the successful delivery of the above-mentioned *Project which is intended to be the Point of Interconnection (POI) for a 15MW utility scale renewable energy solar array sub-component to the national electrical grid.*

The Owner's Engineer is expected to (i) review and update as necessary preliminary survey and the corresponding scoping, cost estimate and engineering design work and technical specifications for each activity of the Project which is prepared by other consultant and to be provided by the Client; confirm the procurement plan, prepare bidding documents for each procurement package, including technical specifications; (ii) support the Client in bidding process; and (iii) support *GRENLEC* for contract management and carry out construction supervision of the entire *Project, which also includes the implementation of any ESMP requirements*, (iv) support the Client during the defects liability period.

2. Scope of Services, Tasks (Components) and Expected Deliverables

The scope of work for this assignment covers all stages of the project and will be managed via a two Contracts as follows.

Contract #1:

- Phase I: Bid Preparation and Bidding Process – through a Lump-sum contract

Contract # 2:

- Phase II: Construction Supervision and Contract Management and Phase III: Post-Construction/Defects Liability Period through a time-based contract.

Proposal must include price schedules for both Contract #1 and Contract # 2. The Owner's Engineer will be selected for Phase I (Contract #1). On successful completion of Contract 1 with satisfactory performance, the Owner's Engineer can be selected for Phase II and III (Contract 2).

Across all stages of the Project, the Consultant will ensure that each Contractor delivers its Environmental and Social (E&S) obligations under its contract. This includes, but is not limited to the following:

1. Review and familiarization with the project's Environmental and Social Impact Assessment Report (ESIA) and Environment and Social Management Plan (ESMP), and any other environmental and social risk management documents for the Project;
2. Ensure the E&S requirements as laid out in the ESMP and other relevant environmental and social risk management documents are included in the bidding documents for the contractor(s);
3. Review the Contractor's Environment and Social Management Plan (C-ESMP), including all updates and revisions at frequencies specified in the Contractor's contract (normally not less than once every 6 months);Review all other applicable contractor's documents related to E&S aspects including the health and safety manual, security management plan and Sexual Harassment (SH) and Exploitation and Abuse (SEA) prevention and response action plan and other plans as specified in the Project's ESMP;
4. In coordination with the E&S specialists from the Client approve the C-ESMP and other environmental and social risk management documents developed by the contractor(s).
5. Review and consider the E&S risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits and other relevant Project or E&S documents requirements;
6. Undertake supervisions and/or inspections of any sites where the Contractor is undertaking activities under its contract, to verify the Contractor's compliance with E&S requirements (including, where appropriate, its SEA and sexual harassment (SH) prevention and response obligations);
7. Undertake audits and inspections of Contractor's accident logs, grievance mechanism complaints, community liaison records, monitoring findings and other E&S related documentation, as necessary, to confirm the Contractor's compliance with E&S requirements;
8. Review safety plan to prevent accidents and mishaps in accordance with OSHA standards and Client's safety manual. Necessary PPE must be worn where necessary and all job hazard analysis, permits to work, hot works documentation must be completed signed and made available for inspection by the consultant.
9. Determine remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's E&S obligations;

10. Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with E&S obligations;
11. Ensure that the Contractor's actual E&S reporting (content and timeliness) is in accordance with the Contractor's contractual obligations;
12. Review and critique, in a timely manner, the Contractor's E&S documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
13. From time to time and as necessary, consult with project stakeholders to identify and discuss any actual or potential E&S issues;
14. Provide monthly reports to the Client on E&S aspects;
15. Assist the Client in establishing and maintaining a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of SEA and/or SH.

The Consultant shall:

- Immediately notify the Client of any failure by the Contractor to comply with its SEA and SH obligations;
- Immediately notify the Client of any allegation, incident or accident, which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Client's Personnel, Contractor's Personnel or Experts. In case of SEA and/or SH, while maintaining confidentiality and ensuring a victim's centric approach in the handling of these type of incidents, the type of allegation (sexual exploitation and abuse or sexual harassment), gender and age of the person who experienced the alleged incident should be included in the information. The Consultant shall provide full details of such incidents or accidents to the Client within the timeframe agreed with the Client.
- Immediately inform and share with the Client notifications on ES incidents or accidents provided to the Owner's Engineer by the Contractor, and as required of the Contractor as part of the Progress Reporting;
- Share with the Client in a timely manner the Contractor's E&S metrics, as required of the Contractor as part of the Progress Reports.

PHASE 1: SURVEY, DESIGN AND BIDDING (PRE-CONSTRUCTION)

1. Review preliminary survey for the double circuit transmission lines, substation and BESS, technical designs (single line diagram, layouts) which was prepared by other consultant, update cost estimate and procurement plan for the transmission line and substations; resilience is a significant consideration for the transmission line, substation and BESS design and findings from existing resilience studies should form part of the design.
2. Prepare the bidding documents (Request for Bids-RFB) following the applicable WB procurement regulations, including review and confirm of the technical specifications (specification of the equipment required for the transmission line, substations and

BESS) for each of the procurement packages which was prepared by other consultant; The bidding document should cover environmental and social risk management requirements as specified in the approved ESIA and ESMP of the subcomponent;

3. Assist with Bid clarifications and produce and maintain a bid clarification register
4. Assist in procurement processes including preparation of bid evaluation reports.
5. Participate in the pre-award contract negotiations for the transmission lines, substations and BESS. Compile and prepare the contract documents for review and approval, including minutes of negotiations. The following section provides more details on the contract negotiations requirements:

- Compiling and preparing the necessary contract documents for review and approval by GRENLEC including the minutes of negotiations.
- Preparing the final contract documents each works package for signing by GRENLEC and selected contractors.
- Preparing a Construction Supervision Manual that delineates a consistent, comprehensive, and uniform system of quality assurance and quality control, monitoring and reporting on health and safety and other environmental and social safeguards issues for the proposed backbone transmission works, including but not limited to checks and reviews that will be enforced during construction to ensure the highest standards of quality.

6. Organizing and presiding over the project kick-off meeting, handing over of the project sites to the contractors, and preparing the minutes meetings and other associated documents in collaboration with GRENLEC.

PHASE II: CONSTRUCTION SUPERVISION AND CONTRACT MANAGEMENT

Task 1: Administration, Contract Management

1) Assisting the Client with the reviews and approvals of the engineering designs for the various project components submitted by the contractors,

2) Approve final surveys and detailed designs prepared and submitted by Contractors for the project component(s) prior to commencement of any construction work,

3) Prepare a detailed (master) implementation schedule (DIS) for the project and estimate implementation periods and costs for the individual- and overall packages,

4) Follow-up the detailed implementation schedule for the project prepared and submitted by the Contractor(s),

5) Review and recommend for approval, the Contractor's supply and installation schedules,

6) Assist the Client with formal handover of sites including verification that any RAP actions have been completed,

7) Provide consulting services for contract management including the clarifications /amendments of Contract Documents and preparation of change order request for the different Project Components as and when needed for the Client,

8) Prepare a risk matrix which will be reviewed throughout the project period,

9) In the event of contractual disputes, assist the Client in collating and preparing factual documentation and recommend a line of actions. If required by the Client, the Consultant will attend hearings,

10) Reviewing works progress against the baseline schedule and working closely with the contractors to address any identified delays or changes that could jeopardize successful completion of the works,

11) Inform the Client on problems or potential problems which may arise in connection with the implementation of each contract and make recommendations to the Client for possible solutions,

12) Issue instructions to construction contractors as needed, as per the contract conditions of the Contractor's contract,

13) Confirm that the Contractor's schedule of personnel is as stated in the contract and recommend changes in the contractor's personnel where necessary,

14) Assist the Client with regard to all questions relating to the contract, in particular compliance with insurance, time extensions, claims, etc.

Task 2: Review, Approval of Design and Drawings as well as sub-contractors

1) Ensure that the principles, scope and technical specifications in the technical documents prepared earlier, pertaining to system control, protection, metering, cabling, communication etc. are complied with,

2) Propose and present for approval of the Client changes in the technical documents that may be deemed necessary for the completion of works including information on any effects the changes may have on the contract amount and time of completion of the project and prepare all specifications and other details arising thereof,

3) Review of geotechnical investigations and soil classification,

4) Review the Contractor's Quality Assurance program and routines,

5) Review and approval of the Contractor's construction procedures, technical reports, safety plan, design calculations, detailed design proposals and detailed drawings for compliance with the specifications in accordance with sound engineering practice.

Task 3: Assisting the Client during Preparation and Installation Services

1) Confirm that the contractor's schedule of personnel aligns with the terms outlined in the contract, and recommend any necessary changes to the contractor's personnel,
2) Ensure coordination and supervision of all work, materials, and equipment deliveries and storage, as well as construction procedures, in compliance with relevant standards (including environmental and social safeguard policies) and codes of practice,
3) Supervise the performance of all required tests to ensure the quality of materials used in construction, particularly soils, rocks, aggregates, cement, etc., and analyze test results to verify the materials meet quality standards,
4) Supervise the works to ensure that they are carried out in compliance with the specifications and contract plans, including procurement of materials, deployment of personnel, and use of equipment,
5) Instruct the contractor(s) to take corrective actions to mitigate or remedy any impacts within a specified timeframe. Additionally, carry out further monitoring as required by contractual procedures in the event of non-compliance or complaints,
6) In the case of change orders, extensions of completion time, or financial claims from the contractor(s), conduct a detailed assessment and provide recommendations to the executing agency based on daily records and applicable contract conditions,
7) Witness and approve the contractor's on-site tests and commissioning for each piece of equipment, accessory, and material covered by the project,
8) Supervise and monitor the construction of all project components, verify any necessary modifications to designs due to site conditions, and issue variation orders to all contractors. Additionally, check measurements for completed works and verify bills for payments to contractors in accordance with the contract terms,
9) Ensure that all the sites (if any) and support facilities like storage yards are restored,
10) Assist the Client in issuing the completion and take-over certificates,
11) The written approval of the Client is required prior to taking any action designating the Owner's Engineer as "Engineer"

Task 4: Inspection, Testing and Acceptance during Manufacturing

1) The work includes inspection and factory test witnessing of equipment and material for the project. The equipment and materials to be supplied under this project should be inspected and tested in the manufacturers testing stations.
2) The Consultant shall be responsible for quality assurance of all equipment and material to be supplied under the project including:
    - Monitor contractor's compliance and progress in equipment manufacturing;
    - Examining and approving the program for factory testing and acceptance proposed by the contractor; and

3) Examine any modification in relation to the contract specifications that the contractor may wish to make. Any modification leading to additional costs must be submitted to the Client for approval.

4) Coordinating with contractors and the client prior to and during Factory Acceptance Tests (FAT) of major equipment or plant (i.e. power transformer, power equipment, measuring transformers, switchgear, protection and control panels, System Control and Data Acquisition (SCADA), telecom equipment, underground cables, overhead power conductors, steel towers, insulators, BESS and other relevant equipment) to be supplied by Contractors. For the purpose of a fair evaluation, the Owner's Engineer shall state in his proposal day rates for FAT to be witnessed in different geographical areas i) in Europe, ii) in Africa and iii) in Asian and iv) American countries. Such rates shall include remuneration, hotel accommodation, air and ground travel as well as miscellaneous travel cost. It shall be assumed that there will be an average of 5 FAT of no more than 5 days per each one of the Contracts; 4) The Owner's Engineer shall also:

I. Ensure contractor's compliance with deadlines for manufacturing, testing, shipping and supplying equipment on site;
II. Ensure that equipment and materials conform with contract specifications and standards;
III. Ensure that the equipment and materials do not contain any internationally banned chemicals or substances and also ensure that specifications (environmental related like noise levels of transformers) are in line with the national environmental requirements and standards. iv. Examine and approve the program for factory testing and acceptance proposed by the contractor, participate in works acceptance procedures and draw up the reports for each works inspection;
IV. Ensure that all equipment and materials have been subjected to type tests already and certified and all additional tests described in the Bid documents have to be performed accordingly. vi. Participate at factory tests for main items of equipment at contractor/suppliers' factories in collaboration with the Client. Examine any modification in relation to the contract specifications that the contractor may wish
V. to make. Any modification leading to additional costs must be submitted to the Client for approval.
VI. Provide a report on each factory inspection and testing indicating, Team composition.
VII. Factory brief, Factory audit report, Methodology adopted, Tests carried out and results, Conclusion and recommendation.

5. Provide a report on each factory inspection and testing indicating: Team composition. Factory brief, Factory audit report, Methodology adopted, Tests carried out and results, Conclusion and recommendation.

Task 5: Inspection, Testing and Acceptance on Shipment as well as On Site

1) Conduct post shipment material quality inspection audits prior to acceptance of the project materials and equipment on site,

2) The Owner's Engineer shall ensure that equipment and materials delivered on site are in conformity with stipulated specifications and work schedules.

i. Check that materials delivered meet technical specifications,
ii. Inspect and monitor damages, defects and accordingly reject unacceptable materials, and ensure corresponding replacement of damaged equipment and materials;
iii. Issue acceptance certificates for goods;
IV. Check the quantities of equipment/materials supplied.

3) Checking proper storage of materials and equipment as per the manufacturer's storage procedure and recommendation.

4) Witness and approve the contractor on site tests and commissioning for each equipment, accessories and materials covered by the Project,

5) Issue delivery and site acceptance certificates for goods;

6) Carry out final inspection of the installation works, including deficiency lists, witness commissioning tests, perform acceptance procedures for all equipment, and issue the corresponding taking over/completion certificates in accordance with the relevant conditions of contract with prior consent of the Client.

Task 6: Assist the Client on review and approval of the post-construction documentation

1) Review for adequacy and completeness of the as-built drawings, operation and maintenance manuals provided by contractors,

2) Ensure that the Contractors have submitted final as-built drawings, operation and maintenance manuals as per the requirement and quantity specified in the contracts,

3) Ensure availability of hand-over requirements including manuals, drawings, list of PAPs compensated and wayleaves consent forms for handover to the service provider.

Task 7: Reporting and Project Documentation

1) Prepare and submit to the Client the detailed monthly and quarterly progress reports and any other reports according to Client's requirements for the works. These reports shall:

(i) describe work progress, the contractor's performance, quality of work, delays, deficiencies, constraints, and the project's financial status, forecasts, and giving recommendations for action,

(ii) mention any authorized changes in the original design and specifications.

2) Facilitate preparation and updating of detailed O&M manuals as well as As-Built documentation to be issued by the contractors,

3) Inspect regularly the records of the contractor's site activities (site diaries) and ensure that they adequately document the progress and performance of the work. Recommend corrections/changes to the records as required,

4) Monitor contractor's preparation of As-Built Documents and Operation and Maintenance Manuals.

5) Issue Draft and Final Project Completion/Close-Out Report (PCR) upon completion of the project construction activities of all Contracts.

Task 8 - Follow and control payments to the Construction Contractor(s)

In following and controlling payments to the contractors, the Consultant shall:

1)Follow up and update on disbursement projection estimate for the different phases of the project

2)Develop in conjunction with the Client a milestone payment schedule which will be utilized by the Contractor(s) to guide the submission of project payment certificates.

3)Examine invoices submitted by Contractors on the basis of the supply and service contracts to determine whether the services and supplies being invoiced were actually performed, the payment has fallen due and all necessary documents are available as required. The Owner's Engineer will then give the clients the corresponding "payment certificates" following verification and approval. The documents to be presented include, for example, valid down payment and implementation guarantees in accordance with the specimen required by client, insurance policies and transport documents. The Owner's Engineer will keep the relevant documents ready for inspection by the client,

4)Determine the amount to be added to, or deducted from, payment certificates presented by the contractor for any additional work or for work omitted, respectively,

5)Examine whether the regulations concerning the disbursement procedure that are agreed between the Client and the Lenders passed on to the Contractor are being adhered to,

6)In so far as the above-mentioned conditions are met, certify the disbursement request for onward processing by the client; Follow up and updates on disbursement projection estimate for the different phases of the project,

7)Ensure the monitoring and reporting in table form on all project relevant guarantees pursuant to the relevant Lender's guidelines and obligations of the client towards the Lenders to ensure that these guarantees will remain in place until the complete fulfilment of all claims under the supply and service agreements secured by such guarantee or until the full reimbursement of the loan (whichever is earlier). The Owner's Engineer shall support the client in fulfilling its obligations. The Owner's Engineer shall inform the

Client immediately and in a timely manner before the expiring of the guarantee if relevant problems occur with the extension of the guarantee and if necessary, will assist the employer with the call on the guarantee,

8)Monitor, check and approve construction works on site, which forms the basis for Contractor's periodic invoicing,

9)Review the contractor's claims for additional time or costs and submit recommendations to the Client; anticipate possible problems that the project execution might encounter and recommend appropriate solutions (in particular identify possible sources of time delays and cost overruns and propose measures to overcome them),

10) Check and report on spending versus budgets/contract sums.
11) Validate variation orders in a contractually correct manner.

Task 9 - Assistance during Commissioning and Handing Over of Installations

1) At the completion of supply and installation works by the contractors of the different project packages, the Consultant shall assist the Client with all activities related to inspection, testing and commissioning of all equipment and installations and ensure that such installations and equipment are properly handed over to the clients in acceptable and satisfactory conditions to the requirements of the respective contracts. This shall include a quality assurance plan which should focus on calibration of equipment, testing, inspections of equipment and works and any other quality related issue can impact the functionality and durability of the installation.

2) The Consultant shall put in place handover procedures and checklist (including ESHS compliance) for proper documentation of the handed over facilities,

3) Notify the Client on the readiness of the project to enable mobilization of key stakeholders,

4) Coordinate all the tests to be performed by the contractor in line with the equipment and network test protocols. Carry out final inspection of the works, witness commissioning tests, perform acceptance procedures for all equipment, and issue the corresponding completion certificates in accordance with the relevant conditions of contract with prior consent of the Client,

5) Ensure that the Contractor prepared and submitted the as-built drawings, operation and maintenance manuals as per the requirement and quantity specified in the contracts,

6) Review for adequacy and completeness of the as-built drawings, operation and maintenance manuals provided by contractors. Approve the contractor's as-built drawings,

7) Ensure availability of hand-over requirements including manuals, drawings, list of PAPs compensated and wayleaves consent forms for handover to the service provider,

8) Conduct final environmental and social audits to ensure that no environmental and/or social liabilities are left behind by the Contractors. Prepare an environmental and social management closure report, and

9) Upon completion of the project construction activities of all Contracts/Lots, the Consultant shall prepare a Project Completion/Close-Out Report (PCR), which will form a comprehensive record of the construction and installation works accomplished.

Task 10 – Coordination of the Project Progress Meetings

To better coordinate the implementation of the project, project meetings shall be coordinated by the Owner's Engineer during the progress of the project. The minutes of meetings shall be prepared by the Owner's Engineer. The manual and electronic formats of the minutes will be agreed upon by the parties beforehand.

The following are the two types of project meetings to be held during the project implementation:

Site meetings
The site meetings will be held at the site of the project implementation on a monthly basis starting from the commencement of the works by the Contractor and will focus on coordination of all the practical issues related to the works on the ground involving the Client, the Owner's Engineer and the Contractor, and they shall be led by the Consultant's Project Manager. Among other issues, the meeting shall deal with approval or rejection of executed work elements, contractor's work schedule, contractor's work method, safety requirements, implementation of environmental and social safeguards of the project, temporary works and additional works (if any).

Project management meetings
Management meetings are aimed at coordinating the strategic issues of project implementation at a high level and will be held on a quarterly basis.
The Clients, the Consultant and Contractors are the parties expected to participate in the meetings.

PHASE III: POST-CONSTRUCTION/DEFECTS LIABILITY PERIOD

Owner's Engineer will provide part-time assistance during defects liability period.

With regards to the part-time assistance during defects liability period the Consultant shall:

1) Undertake quarterly site inspection, identify snags and issue instructions to the contractor to rectify all snags,
2) Ensure that all defects and queries are properly cleared/removed by the Contractors before the end of the defect liability period,

3) Ensure that compliance with all environmental, social, health and safety (ESHS) requirements has been achieved, in line with contractual obligations, and no liabilities remain,
4) Ensure that all post-construction (as-built) drawings are furnished/submitted and bills of quantities and installed equipment specifications that may arise thereof,
5) Facilitate decisions on all claims and accounts, all questions, disputes and differences which may arise between the client and Contractor and which under the terms of the contracts are left for the Arbitrator's settlement and decisions, Assist
6) and advise the Client with regard to any matter that may be subject to adjudication, arbitration, inquiry or litigation up to delivery certificate of completion, Maintain detailed records of relevant events & activities, drawings & documents,
7) minutes of meetings, etc.
Submit to the Client the project completion/close-out report, and
8) Assist the Client on the eventual works' defects and issue the final acceptance
9) certificates.

4. Team Composition & Qualification Requirements for the Key Experts Profile of Consultancy/firm

The multi-discipline engineering Consultancy/firm must be highly qualified and should have sufficient experience in the supervision of Transmission/substation and BESS projects (69 kV and above) including experience in training of power utility personnel and should submit evidence of firm's previous experience in relevant works associated with supervision and construction management, and training in an island environment. The Consultancy/firm will deploy a team of well qualified personnel/experts to undertake field activities who will be supported by a competent team at the home office.

In particular, the team leader shall clearly indicate in his/her technical proposal the presence of the Resident Site Manager on site during the entire construction stage of the project. During the Site Supervision Works, the Resident Site Manager shall be at site on a permanent basis and will have to travel frequently along the project routes to ensure constant high-level supervision of the ongoing construction works for the corresponding project packages.

Key personnel to be assigned shall have adequate academic and professional qualifications and substantial experience in the sector. International experience and experience with World Bank financed projects or projects funded by other multilateral donors are necessary to carry out the assignment. The Consultants/firms are free to propose a staffing plan and skill mix necessary to meet the objectives and scope of services taking into consideration the person months provided. If all the required skills are not available within the firm, consultants may associate with others to make up the skills.

The Client's expectations of the Owner's Engineer key staff and requirements for carrying out the assignment are as follows:

The **Key Staff** shall include:

1) Resident Site Manager / Deputy Project Manager
2) Transmission Line Engineer
3) Substation Engineer
4) Structural/Civil Engineer
5) BESS Specialist
6) Procurement Specialist
7) Protection and Controls Engineer
8) SCADA and Telecoms Engineer
9) Site Supervisor for OHTL
10) Site Supervisor for Substation
11) Environmental Health and Safety (EHS) Specialist)
12) Social Risk Management Specialist

Key Expert	Education	Minimum Experience
Resident Site Manager (1 staff)	Bachelor's Degree in Electrical / Engineering	10 years experience in managing and supervising works related to design, construction of 69 kV and above substations and transmission lines. Should present evidence on having managed at least three (3) projects of similar nature and complexity of which at least two (2) of international supply and installation contracts financed by International Financial Institutions (IFIs).
Transmission Line Engineer (1 staff)	Bachelor's Degree in Electrical/Civil Engineering	10 years experience in designing, managing and supervising works related to updating, construction and rehabilitation of transmission lines, 69 kV and above. Experience in at least three similar projects.
Substation Engineer (1 staff)	Bachelor's Degree in Electrical Engineering	10 years experience in designing managing and supervising work related to construction and rehabilitation of substations, up to

		69 kV. Familiarity with integration of SCADA, Protection & Communication systems of the same size and complexity as the present assignment. Experience in at least three similar projects.

BESS Specialist	Bachelor's Degree Electrical engineering, Energy Systems, or related fields.	Experience: at least 10 years of electrical engineering experience and solid experience in industry, with a minimum of 5 years of experience in BESS design and deployment focused on Li-Ion technology. Experience in BESS safety, and project deployment (contracting, construction, commissioning) is a plus. Experience in Long Duration Energy Storage (LDES) design is a plus. Reference projects from 2 similar projects
Civil/Structure Engineer (2 staff –One for OHTL and one for substation)	Bachelor's Degree in Civil or Structural Engineering	10 years experience in designing, managing and supervising up to 69 kV transmission and substations construction. Experience in at least two similar projects
Procurement Specialist (1 staff)	Bachelor's Degree or equivalent Procurement Certification	10 years in procurement and managing international turnkey contracts related to power systems. The specialist shall have a good understanding of the World Bank Procurement Guidelines and Procurement Procedures and other different International Funding Agencies. Moreover, the Procurement Specialist shall have excellent verbal and written communication skills in the English language and possess a high level of organization skills. The Procurement Specialists should present evidence on having been successfully responsible for procurement on at least 3 (three) projects of a similar nature and

		complexity as international turn- key contracts funded by the World Bank
Protection and Control Specialist (1 staff)	Bachelor's Degree in Electrical Engineering	10 years' overall experience and minimum 5 years of international experience on supervision, design install and maintenance of protection relays and control systems in the level of at least up to 69 kV substations and transmission networks.
SCADA and Telecommunications Specialist (1 staff)	Bachelor's Degree in Electrical /Telecommunication Engineering	10 years' overall experience and minimum 5 years of international experience on supervision, design install and maintenance of SCADA and Telecommunication systems in the level of at least up to 69 kV substations and transmission networks.
Site Supervisor for OHTL (1 staff)	Bachelor's Degree in Electrical/Civil or Mechanical Engineering	7 years' experience in supervising works related to updating, construction and rehabilitation of transmission lines of up to 69 kV Experience in at least three similar projects
Site Supervisor for Substations (1 staff)	Bachelor's Degree in Electrical Engineering	7 years' experience in supervising works related to updating, construction and rehabilitation of substations of up to 69 kV. Experience in at least three similar projects and should also have experience with integration of SCADA, Protection & Communication systems of the same complexity as the present assignment.

Environmental Health and Safety (EHS) Specialist (1 staff)	Bachelor's Degree in Environmental Engineering / Natural Sciences	7 years' experience with at least five years' experience in environmental compliance monitoring. Monitoring and supervision of IFI supported projects is preferred.
Social Specialist (1 staff)	Bachelor's Degree in Social Sciences or related field	7 years experience working with communities (stakeholder engagement) including on projects involving involuntary resettlement and land acquisition; sexual harassment and sexual exploitation and abuse issues; stakeholder engagement and complaints handling; and with at least five years working on projects involving civil works. Experience with IFI supported projects is preferred.

5. Reporting Requirements and Time Schedule for Deliverables

A- Inception report (IR)

This will be delivered prior to commencing work. It will outline the Owner's Engineer work plan and methodology for the project, define the implementation schedule by task, specify submission dates for each invoice, and assign the personnel by name and date period for each task.

It will also include a review of the implementing arrangements to ensure there are adequate staff resources, vehicles, office space, hardware and software facilities available to implement the project until its completion.

The Owner's Engineer shall submit to the Client a draft inception report detailing the plan of action, manpower deployment, work schedule, and detailed methodology, The Inception Report shall include an implementation plan that addresses:

a. The optimal project implementation structure;
b. Environmental and Social Safeguards and OHS plans.

B- Design Report (DR)

It shall follow the completion of the surveys and preliminary design for review and comment. The final DR incorporating the comments made by the Client will form the basis for the subsequent activities leading to the issuing of the Tender Documents.

C- Project cost estimates, implementation schedule and draft bidding documents (PSCI and DBD)

Prior to issuing the draft bidding documents, it is necessary that the Owner's Engineer provides an overview of the actual project's lots scope, including cost estimates and a draft implementation schedule (PSCI).

D- Final bidding documents for construction of works (FBD)

The FBD shall be issued to prospective Bidders by the Owner's Engineer who shall produce and maintain a register detailing all the companies that received the FBD.

E Bid Evaluation Report (BER)

The Owner's Engineer shall evaluate the bids and will be responsible for preparing the appraisal report with recommendations for successful bidders to the *Client* for approval. The BERs are expected to be submitted within the time indicated above and as indicated by the project implementation schedule.

F-Contract Documents (CD)

The Owner's Engineer shall elaborate Contract documents for each of the different tender packages.

G- Detailed Implementation Schedule (DIS)

The Consultant is responsible for the preparation of a detailed (master) implementation schedule, as indicated in the present description of the Supply and Installation Phase.

H-Monthly- and Quarterly Progress Reports (MPR) & (QPR)

It is of utmost importance to have timely elaboration and submission of pertinent monthly progress reports during the course of the assignment. The reports shall be submitted to the Client for review and approval. The format of technical reports must be discussed and agreed upon with the Client. These reports will include progress and updates on E&S aspects including OHS issues that may arise, as well as on grievances captured through the grievance log.

I- Final Report (FR)

This report will summarise all aspects of the project implementation, final costs, suggestions and recommendations for future design and construction techniques and routine maintenance practice to be followed after the completion of the work.

J-Project Completion/Close-Out Report (PCR)

The final PCR will incorporate comments from the Client and the World Bank and finalize.

Deliverable	**Format, frequency and content**	**Deadline**
Inception report	Format: 2 hard copies and one electronic copy Content: Project detailed schedule, presentation of team, review and comments on upstream documents	12 days after the effective date of the Contract
Design report (DR),	Format: 2 hard copies and one electronic copy	21 days after contract effectiveness.
Project's, cost estimates, implementation schedule (PSCI) and draft bidding document for **the transmission lines** (DBD),	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1 month after contract effectiveness;
Project's, cost estimates, implementation schedule (PSCI) and draft bidding document for **the substations** (DBD),	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1 month after contract effectiveness;
Project's cost estimates, implementation schedule (PSCI) and draft bidding document for the Battery Energy Storage System (BESS)	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1 month after contract effectiveness*;*
Final bidding documents (FBD) for transmission lines	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1.5 months after contract effectiveness.

Final bidding documents (FBD) for BESS	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1.5 months after contract effectiveness
Final bidding documents (FBD) for the substations	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	4 months after the effective date of the Contract
Bid Evaluation Report (BER) for transmission lines	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1 month after the submission of bids i.e. after Tender Period
Bid Evaluation Report (BER) for BESS	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1 month after the submission of bids i.e. after Tender Period
Bid Evaluation Report (BER) for Substation	Format: 2 hard copies and one electronic copy Content: to follow the World Bank RfB template	1 month after the submission of bids i.e. after Tender Period
Contract Documents (CD) for each project package	2 Hard Copies + 1 soft copy	As per time schedule
Detailed(master)Implementation Schedule (DIS)	2 Hard Copies + 1 soft copy	As per time schedule
Minutes of progress meetings' reports	Format: 1 electronic copy Content: Meeting minutes	Within one week after the meeting
E&S monitoring reports	Following the requirements of the ESMP	Following the requirements of the ESMP

Monthly reports	Format: 2 hard copies and one electronic copy Frequency: Every month after the effective date of the Contract Content: Report on all monthly activities and monthly progress	Within 7 working days from the end of the month
Quarterly report	Format: 2 hard copies and one electronic copy Frequency: Every quarter after the effective date of the Contract Content: Report on all quarterly activities	Within 15 working days from the end of the month
Draft Project Completion/Close-Out Report	2 hard copies + 1 soft copy	One month before the end of the assignment
Final Project Completion/Close-Out Report	Format: 2 hard copies and one electronic copy	2 weeks after commissioning and Hand-Over

The Client shall review and provide comments on all Project Reports and Deliverables within fourteen (14) days from the date of submission by the Owner's Engineer. The Owner's Engineer will send project deliverables to:

6. Client's Input and Counterpart Personnel

The Consultant/firm will have access to a project team made of up experts from the Client (see table below). This client team will facilitate client's access to data required for effectively executing the work.

Client Team	**Phase**	**Duration**
Deputy Project Manager	I, II, III	Throughout the Project
Planning and Engineering Manager	I, II, III	Throughout the Project
T&D Engineer	II	Throughout Phase II
T&D Supervisor	II	Throughout Phase II
SCADA Engineer	II & III	Throughout Phase II & III
Protection and Controls Engineer	II & III	Throughout Phase II & III
Substation Engineer	II & III	Throughout Phase II & III

Time Schedule

The project will be implemented over a period of 36 months including defect liability period commencing with the recruitment of the Consulting Engineering Firm to act as Owner's Engineer.
For details, please see Project Schedule (below):

Project Scope	**Period**
Phase 1	August to September 2025
Phase 2	November 2025 to February 2027
Phase 3	March 2027 to February 2028

Appendix A: Project Scope:

- Grenlec prefers the NFPA 70 Electrical Code and IEEE standards be used in developing this project.

Grand Anse Substation:

- Structural designs to extend the existing 33kV outdoor bus to accommodate 2 additional bays.
- Electrical designs to extend the 33kV bus to accommodate 2 additional bays:
  - 33kV outdoor breakers.
  - Protection for breakers.
  - Protection for transmission lines (differential and distance using SEL relays).
  - Fiber optic termination (minimum 24 count) to support SCADA.

33Kv Transmission lines:

- EPC for two 33kv Transmission lines:
  - One overhead using an established route of an existing 11kV feeder.
  - One underground route using a route to be determined. Please consider the following options:
    - Direct burial using a 3-core cable.
    - Single core cable in 4" conduits.
  - Fiber optic cable linking the Grand Anse and MBIA substation for SCADA and CCTV.
  - SEL protection relays.

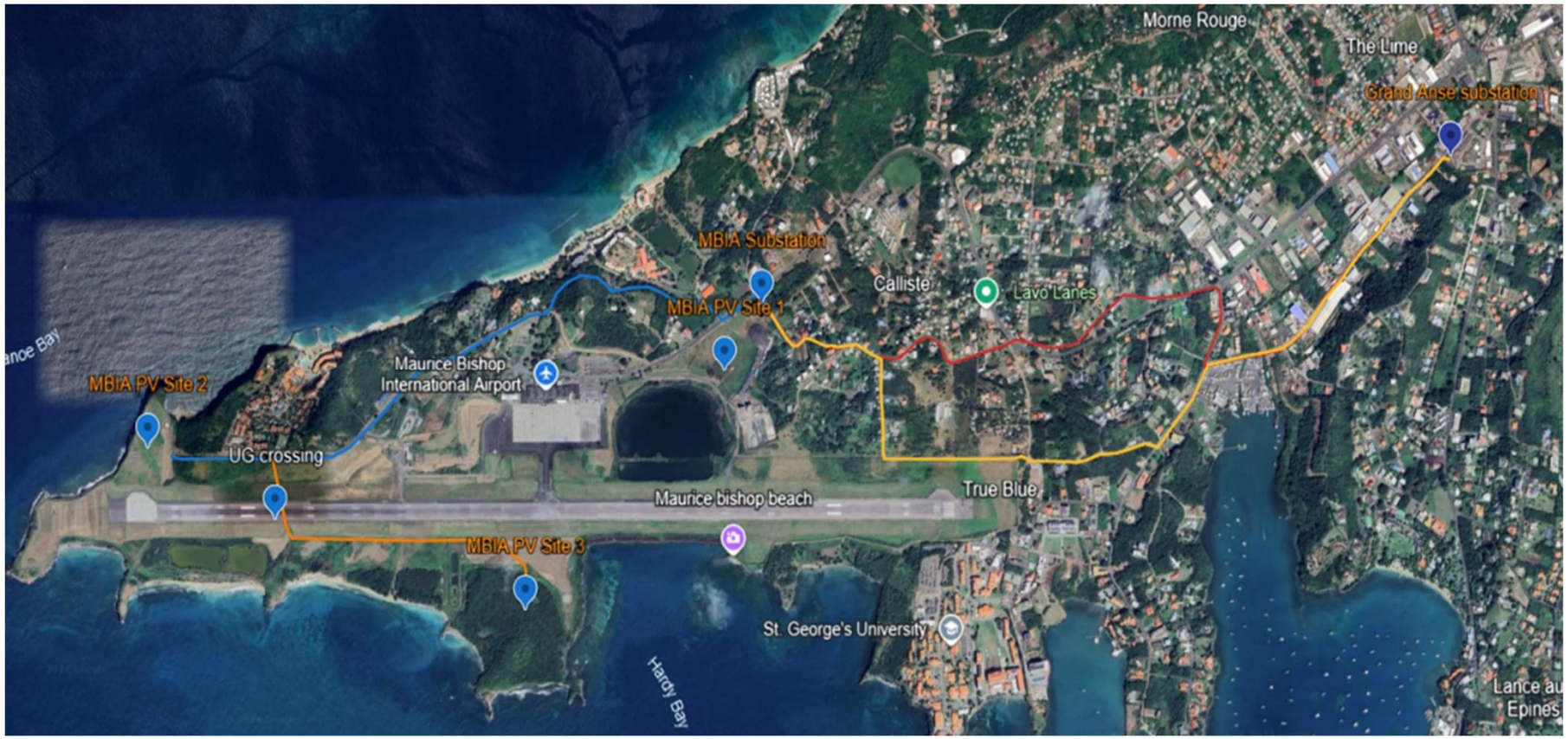
MBIA substation:

- 20,000 sqft of land is being acquired for this substation.
- EPC for a 33kV substation to be used as the point of connection for 15MW of Solar PV from three different sites at MBIA.

- Substation must be adequately sized to house 11kV switchgear for future feeder development.
- SEL relays for protection.
- Use of SEL RTAC for all SCADA data aggregation.
- Arc flashing sensing and bus differential protection must be included on the switchgear
- ION 7400 for metering.
- Finalised one-line diagram has not yet been approved.
- Structural designs for category 5 hurricanes, and the risk of flooding (hydrology and geotech studies were conducted and the results will be shared with the consultant).
- 125 VDC for Control voltages.
- Environmental controls within switchgear and relay rooms.
- 33kV will be stepped down to 11kV to allow for interconnection to existing feeders.
- Both 33kV and 11kV switchgear must be housed indoors.

BESS:

- EPC for 10.6MW, 21.2MWH Battery energy storage system using Lithium iron phosphate chemistry.
- Strict compliance to UL 9540A, NFPA 69, NFPA 855 etc.
- C5 corrosion class.
- Transformers for stepping up BESS voltage to 33kV.
- BESS be located within the substation


Morne Rouge
The Lime
Grand Anse substation
MBIA Substation
MBIA PV Site 1
Calliste
Lavo Lanes
MBIA PV Site 2
Maurice Bishop
International Airport
UG crossing
Maurice bishop beach
True Blue
MBIA PV Site 3
St. George's University
Hardy Bay
Lance au
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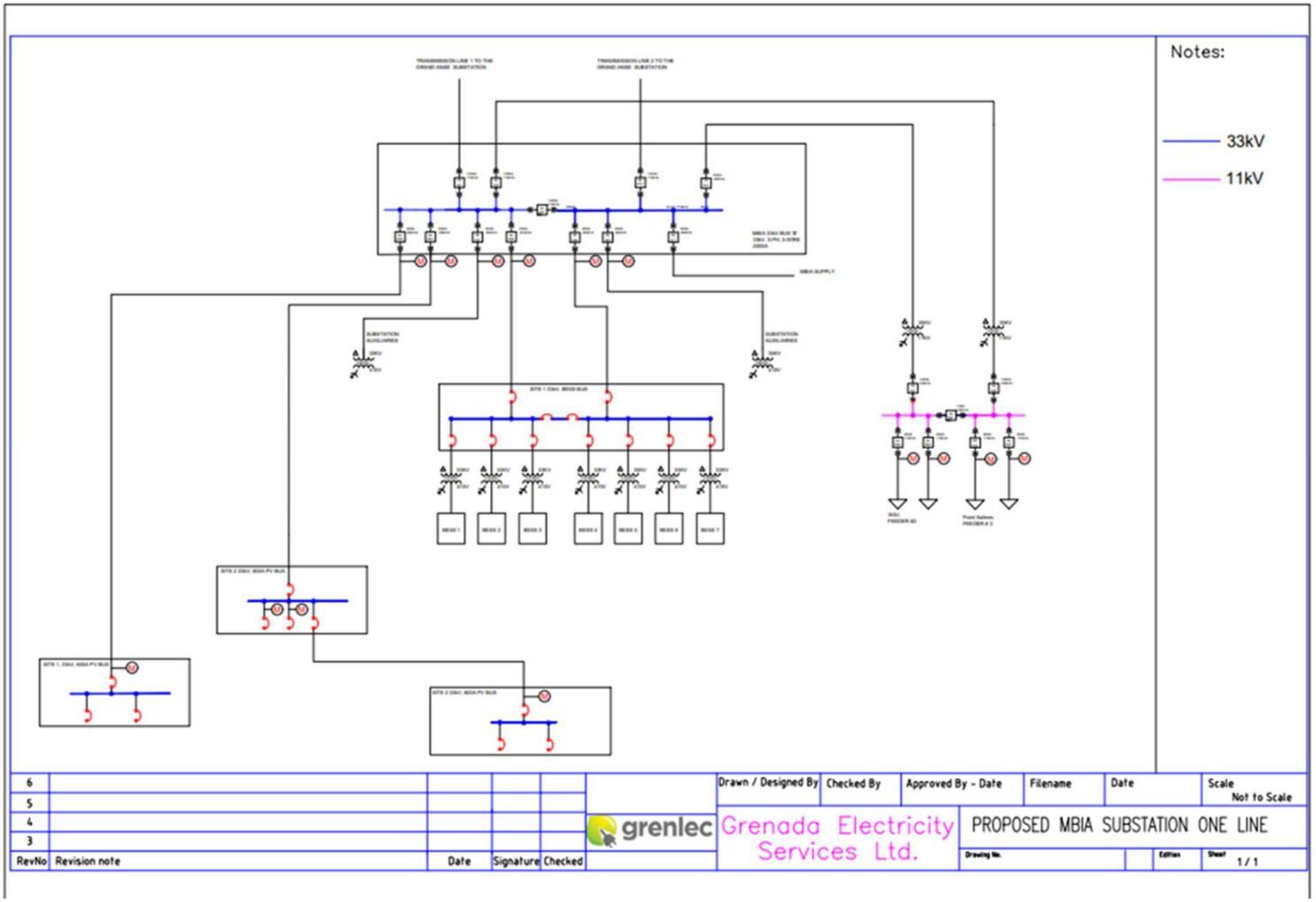
Notes:
33kV
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