



PURC
QUEEN'S PARK ST. GEORGE
P.O Box 2443
Email: sgapplication@purc.gd
Tel: +1(473) 437 1602
+1(473) 546 7877

ANNEX 1

TERMS OF REFERENCE

The Public Utilities Regulatory Commission (PURC) as part of its objective to increase the penetration of Renewable Energy Generation in Grenada has commenced its Small Scale Independent Power Producer Pilot Program for an accumulated Distributed Generation of 2 MW.

When the Commission is not tendering a specific generation project but the modification of generation capacity from small to medium scale Independent Power Producers, the selection criteria may vary in accordance with the following:

- (a) The Commission may invite potential Independent Power Producers with specific generation projects to participate in a tender for a maximum generation capacity.
- (b) Depending on the financial evaluation criteria all eligible bidders might turn out to be winners provided that their combined generation capacity does not exceed the overall volume of the tender.

This selective tender is being issued through this offer for the supply and installation of the proposed measures.

The PURC now invites sealed bids from eligible bidders for the supply and installation of various measures as indicated below. Bidder may choose to participate in this selective tender for the implementation of these measures pertaining to the criteria herein outlined under, 'Qualification Requirements and Evaluation Criteria'.

SCOPE

- The Independent Power Producer shall provide all labor, materials, tools, equipment, transportation; mounting, hoisting, fitting, installation, testing, insurance, etc. for all work herein specified and or required to complete the project to the Network Licensee satisfaction.
- All work shall be in accordance with IEC 60364-1, UL 1741, IEEE 1547 and IEEE 929, the Caribbean Uniform Building Code (CUBIC), the Electricity Supply Act of Grenada, the Grenada Electricity Sector Grid Code and any required Environmental Assessment (EA), Environmental Management Framework (EMF) and (Environmental Management Plan) EMP.
- Ground mounted solar PV systems shall comply with:
 - IEC 60364-1 - Low-voltage electrical installations
 - IEC 62446 - Grid connected photovoltaic systems
 - IEC 62548 - Installation and safety requirements for photovoltaic generators
 - IEC 61829 - Crystalline silicon photovoltaic array
 - IEC 61727 - Photovoltaic systems

Wind Energy Systems shall be compliant with IEC 61400.
- All work under this contract shall be guaranteed for the project lifetime of 25 years and/ or the duration of the generation license, as determined by the PURC.
- The project representative shall submit plans and technical drawings to the PURC technical office or as otherwise directed, for review, and record drawings for all work provided under this contract for his/her use.
- The IPP shall ensure that the project site is capable of handling the desired system size with the system located to minimize shading from foliage, vent pipes, and adjacent structures or other factors which can impact energy production.
- The Distributed Generation system shall be designed in such a way to ensure a minimum of electrical losses due to wiring, fuses, switches, and inverters.
- The IPP shall ensure the design meets the Network Licensee's interconnection requirements.
- Project sites in Grenada, mainly due to its location and size, makes the country vulnerable to contamination, specifically corrosion from sea blast. Grenada can be classed C3-C4 relevant to norms ISA 71.04-1985 and IEC 60721 and therefore all equipment shall be capable of withstanding conditions relevant to that categorization. Exposed structural metal components shall be stainless steel or aluminum, 6061 or 6063 hot dip galvanized steel per ASTM A123, or be coated at a bare minimum with Zinc rich epoxy primer 40µm, Zinc phosphate epoxy primer 80µm, High build epoxy MIO 100µm, Zinc phosphate epoxy sealer coat 50µm or High build glass flake epoxy 300µm and approved sealing methods used where necessary to avoid component degradation due to corrosion.
- Equipment shall be installed according to manufacturer's specifications, using Installation Requirements and Procedures from the manufacturers' specifications.
- System components MUST be properly grounded to reduce the threat of shock hazards and induced surges. This includes adequate protective devices against surges at the PV module.

- After installation and during the commissioning phase the Network Licensee and Electrical Inspectorate shall test for proper PV system operation by following the checkout procedures on the Networks Licensee’s and the Electrical Inspectorate’s PV System Installation Checklist. The Energy delivered to the Network Licensee’s Network during this phase and prior to the official Commercial Operation Date (further referred to as the “COD”) will be at a rate defined in the Power Purchase Agreement (further referred to as the PPA).

DELIVERABLES

The Design, Engineering, Procurement, Installation and Operation of a fully functional Distributed Generation Renewable Energy System to provide a stable supply of Electrical Energy to the Network Licensee.

Project Plan which shall list all the tasks which are required to develop, evaluate, procure, and implement the project.

QUALIFICATION REQUIREMENTS AND EVALUATION CRITERIA

The system shall comply with local, regional and international construction and electrical standards. The details and listing of project requirements, such as reports, designs and plans as laid out below are required:

LIST OF REQUIREMENTS

Document		Responsibility	#
Business case	Printed or Electronic		01
Financial proposal	Electronic (pdf)		02
O&M Plan (Risk and issues Management included)	Electronic (pdf)		03
Physical Planning Authorization	Original		04
Business or 2 Personal ID documents	Copy		05

Applicants are required to consult with the Physical Planning Unit of the Ministry of Works regarding compliance procedures prior to submitting an application to determine the likelihood that their project can be reviewed for environmental acceptability and construction standards consistent with the desired timeline. Applicants are responsible for all costs associated with the conduct of, and preparation of documentation for the appropriate review.

MATERIALS RECOMMENDATIONS

- Components used in the construction process, including but not limited to exposed cables and/or conduits should be sunlight/UV resistant and materials used that are designed to withstand the temperatures to which they are exposed.

- Urethane sealants should be used for all non-flashed penetrations and only high quality fasteners should be used (stainless steel is preferred).
- Dissimilar metals (such as steel and aluminum) should be isolated from one another using non-conductive shims, washers, or other methods.
- Aluminum should not be placed in direct contact with concrete materials.
- All required overcurrent protection should be included in the system and should be accessible for maintenance.

EQUIPMENT RECOMMENDATIONS AND INSTALLATION METHODS

- All electrical equipment should be certified for the voltage and current ratings necessary for the application.
- For SPV Systems only panels meeting Tier 1 standards will be permitted. Panels shall be PID Resistant, Salt Corrosion Resistant and resilient to a tropical climate also being resistant to sand and ammonia.
- Equipment should be accompanied with quality certificates. PV modules with SGS, CE, IEC 61215, IEC 61730 and/or UL 1703.
- PV modules should be listed to and warranted for a minimum of 10 years.
- Inverters should be IEC62109/UL 1741/ IEEE 1547/ IEEE 929 and/or IEC 62116 certified, grid following with a nominal output of 230 V, 50 Hz, and warranted for a minimum of 5 years.
- Cables insulation shall be electron-beam, cross-linked polymers.
- All electrical terminations should be fully tightened, secured, and strain relieved as appropriate.
- All mounting equipment should be installed according to manufacturers' specifications.
- All cables, conduit, exposed conductors and electrical boxes should be secured and supported according to code requirements.
- The system shall be designed to avoid the overheating of components and allow for passive cooling. Innovative Active-cooling methods when possible and if desired are recommended but not compulsory once nominal standards are not contravened.

TEAM ROLES AND RESPONSIBILITIES

Project Team

Technical experience of principal personnel related to the performance of the requirement. Qualification related to the performance of the requirement should be provided in CV where deemed applicable.

Where applicable list the participants of the project: Project Owner(s), Legal Representative(s), Lead Engineer/Electrician/Project Manager/Installer (duly certified).

Project Team			Project Role
Name 1			
Name 2			
Name 3			
Name 4			
Name 5			

RISKS AND ISSUES MANAGEMENT

POTENTIAL EXCEPTIONS AND PROBLEMS

- List all potential problems that might arise during the project, and list their causes, symptoms, consequences, and possible solutions.

APPROPRIATE CORRECTIVE MEASURES

For each issue, identify the optimal way to resolve the issue and then identify the steps that your team needs to take in order to implement the resolution.

TRACKING RISKS AND ISSUES

In the following table, track the risks and issues that you identified.

Date recorded	Risk description	Probability	Impact	Mitigation plan
Date 1	Description	Probability	Impact	Plan
Date 2	Description	Probability	Impact	Plan
Date 3	Description	Probability	Impact	Plan

EVALUATION PROCESS

MANAGEMENT PROCESS STEPS

- Determination of project viability.
- Structuring the project: the project must achieve value for money, be marketable and is fiscally responsible.
- Evaluation of proposed project against project criteria.

AMENDMENTS OF BIDDING DOCUMENTS

At any time prior to the deadline for submission of bids, the PURC, for any reason, whether at its own initiative or in response to a clarification requested by a prospective participant, may modify the RfP documents by amendment.

All prospective participants who have received the RfP documents will be notified of the amendment in writing or via email, and it will be binding on them.

The PURC, at its discretion, may extend or curtail the deadline for the submission of documents from the Small Scale IPP program.