REQUEST FOR PROPOSAL (RFP)

SOLAR PV ROOFTOP PROJECT

DFSNRESD 2021/22 – 011

Sir William Ingram's, Bird Research Centre, Little Tobago.

THE DEPARTMENT OF ENERGY WITHIN THE DIVISION OF FOOD SECURITY, NATURAL RESOURCES**, THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

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1 INTRODUCTION

This Request for Proposal (RFP) is designed to procure a solar developer to supply and install a 40gallon solar water heater and a 4kW solar photovoltaic (PV) rooftop system for the Sir William Ingram's Bird Research Centre located on Little Tobago.

The Division of Food Security, Natural Resources, The Environment, and Sustainable Development, within the Tobago House of Assembly (THA), hereinafter referred to as the "Awarding Authority", is seeking qualified and experienced solar developers to tender for this RFP.

Bidders are requested to provide a proposal which includes the design, procurement, installation, commissioning, and maintenance of both the solar PV and solar water heating systems for the Sir William Ingram's Bird Research Centre, Little Tobago.

1.1 About Little Tobago

Little Tobago, an island nestled approximately 3.2km east of Speyside, was declared a prohibited area in April 1999 under the Forests Act. This Wildlife Sanctuary:

- has the largest Deciduous Seasonal Forest Footprint in Tobago,
- has globally unique, endangered and endemic plants and animals; and,
- is a home to, and breeding habitat for a plethora of regional seabird species.

Little Tobago is famous for bird watching, but its embrace of the North East Trade winds, inherent nature treks, magnificent lookouts, and pristine environment presents an opportunity for an all-encompassing therapeutic eco-tourism and research experience.

The island was drafted into the North- East Tobago Marine Protected Area to improve the sustainability of Protected Area Systems, and forms part of the UNESCO Man and the Biosphere designation which serves to promote biodiversity conservation, environmental education, research, and sustainable blue and green economic activities.

In order to facilitate the impending research and eco-friendly economic activities on the island, the Sir William Ingram's Bird Research Centre will be electrified with a clean, green, reliable renewable energy (solar) solution to house the custodian, and Forest Office(s) to monitor activities, curtail any looming adverse impacts, facilitate research, and protect the island's resources.

1.2 RFP Timeline

The timeline of this project will be based on the major milestone dates for this RFP process as shown in Table 1 below. The Awarding Authority may adjust the schedule at its discretion.

Table 1: Major milestone dates for RFP.

EVENT	TARGET DATES
SITE VISIT	**August 10th 2022**
DEADLINE FOR ENQUIRIES	**August 15th 2022**
CLOSING DATE	**August 19th 2022**

1.3 Site Description and Location

Little Tobago, an islet nestled 3.2km east of Speyside, has an area of approximately 1 square kilometre. The Sir William Ingram's Bird Research Centre is the main structure situated on the island of Little Tobago, and has a roof area of approximately 149.2m^2. The average annual sun hours in that particular area according to solargis.com are 1643 kWh/kWp. Table 2 provides the exact address and location of the Sir William Ingram's Bird Research Centre..

Table 2: Name, address, and location of the site.

Site Name	Address	Location
Sir William Ingram's Bird Research Centre	Little Tobago.	Island 3.2km east of Speyside, Tobago

2 SCOPE OF WORKS

The description of the FULL scope of works is articulated in SCHEDULE A of this RFP

2.1 Site Visit prior to submission of Proposal

- The Division will coordinate a site visit on the island of Little Tobago. The Division **WILL NOT** be responsible for getting tenderers to the island, in other words, tenderers have to make their own arrangements to get to the island. The site visit on the island will commence at **10:00 am, on the 10th August 2022**. All

Bidders **MUST ATTEND** the site visit as **a requirement of the bidding process**. Failure to, Bidders will be denied eligibility.

- Before submitting a proposal, Bidders must ascertain the size, design, material, labour, location and fencing requirements of the solar PV system, inclusive of the battery component based on site visit findings.

2.2 Design Requirements and guidelines for Solar PV system

- The PV system must include solar panels, smart inverters, charge controllers, batteries, electrical conduits, , a disconnect switch, weather and temperature sensors, performance and monitoring units, mounting racks and all other appurtenances necessary for a fully functional system.
- Proposals are to include one (1) design with their corresponding cost and other technical information. The design must comprise of a lithium-ion battery bank that should allow for a maximum Depth of Discharge of 80%.
- The battery bank (Lithium-ion) voltage is to be 48V, and a minimum battery bank capacity of 720 Ah.
- A battery rack or enclosure that can safety store the batteries and meets NEC 2020 electrical code is to be provided and installed.
- Bidders may choose to submit an AC coupled design as most of the research activities may take place during sunlight / daytime hours. Please note that an AC coupled design is not mandatory.
- Inverter requirements are as follows:
    - Power output of 4 kW
    - Output voltage is 120 VAC / 240 VAC
    - Software that facilitates communication with a remote monitoring system for monitoring and acquisition of:
        - Incoming and output voltage
        - Incoming and output current
        - Incoming and output power
        - Output frequency
        - The battery system SoC
        - Operation Mode
        - Status (system error, system producing/not producing)
        - Daily Solar Radiation
    - Frequency correction to 60 Hz (wave smoothing of sinusoidal wave)

- Voltage correction

- The solar panels shall meet the following requirements:
  - The size of the solar generator shall be at a minimum 4 kW;
  - Solar PV modules should be of the mono-crystalline type ONLY.
  - Panels must be rated to perform at peak efficiency for temperature ranges that are in keeping with local weather conditions;
  - The panels' orientation or azimuth must be aligned to extract optimum solar energy and maximize energy production (based on roof orientation, site latitude and wind conditions); and,
  - Panels must be edge sealed.
- Disconnect switches shall be installed at all locations as outlined in the NEC 2020 electrical code.
- Signage shall be provided and installed as outlined by NEC 2020 electrical code.
- Bidders shall provide a single line diagram specific to their proposed system and project requirements showing details of how the solar PV system will be interconnected to the building's proposed electrical system and loads.
- Cut sheets on the PV system's components must be provided including details of the brand, model, and country of manufacture.
- The design of the solar PV system must be modular allowing for future add-ons.
- Bidders shall provide a proposed layout of the solar PV system on the property.

The system shall be roof mounted. Please note the following:

- The mounting system shall have sealed roof penetrations to prevent possible leakage and shall be fully ballasted, bolted and anchored to withstand torrential rainfall and wind speeds of 100km/h.
- On a slanted roof, the highest part of the PV system shall not be higher than the highest part of the roof to which it is attached.
- On a flat roof, the highest point of the PV system shall be 1.8m above the roof to which it is attached.
- The PV system should not extend more than 450mm beyond the roof slope.
- There shall be adequate room to facilitate servicing or maintenance of the panels. Roof access points shall be secured.
- The mounting system design needs to meet applicable local building code requirements with respect to wind, rainfall, flood, hurricanes (category 2/3), earthquakes, salt, and sea blast factors.

- The entire system design and its individual components must comply with NEC 2020 electrical code and the local TTS 171-3:2011, Trinidad and Tobago Electrical Wiring Code – Part 3: Renewable Energy Systems and Interconnection Requirements. See Section 4 for additional information

2.3 Electrical Guidelines

The general guidelines for the solar PV system are as follows:

- The electrical wiring system must be neat and protected with trunking;
- Areas where wiring passes through ceilings, walls or other areas of the building from the electric/control panel shall be well restored, booted, sealed and returned to their original condition;
- All electrical components, source and destination wiring, PV system components including the AC disconnect, and the DC disconnect switch for the PV system must be clearly labelled; and
- Ensure all paperwork for project permitting, construction, and interconnection are in compliance with all applicable laws, regulations, ordinances, and best industry practices.

3 PROPOSED PV SYSTEM OPERATING PRINCIPLES

This section shall be read and construed with Section 2.4 and 2.5 of this document. The functional components of the system supplied by the Contractor shall include the following, or their functional equivalents:

- A PV array;
- A battery bank;
- A charge controller;
- A power inverter; and,
- A power management system having supervisory control over the system.

System operating principles shall be as follows:

- The PV system shall be designed such that it will provide power to the load in Section 2.1.
- The power output of the PV array shall, normally, via the charge controller, power the specified PV system load and simultaneously charge the batteries. When the battery

bank is fully charged, the charge controller shall maintain a float battery charging current.

- The power management system shall manage the battery state based on defined and programmed battery bank State of Charge (SoC) limits as articulated in Schedule A.

4 CODES, STANDARDS AND PRACTICES

The solar PV system installed for the solar project at the Sir William Ingram's Bird Research Centre shall meet the undermentioned codes, which shall include but are not limited to:

- IEC 60364-7-712 - Electrical installations of buildings - Part 7-712: Requirements for special installations or locations - Solar photovoltaic (PV) power supply system.
- IEC 61194 - Characteristic parameters of stand-alone photovoltaic (PV) systems.
- TTS 171-3:2011 – Trinidad and Tobago Electrical Wiring Code – part 3: Renewable Energy Systems and Interconnection Requirements. Trinidad & Tobago and TTS 171: Part 1:2015: Low Voltage Installations.
- IEEE 1562-2007-IEEE: Guide for array and battery sizing in standalone photovoltaic (PV) systems.
- NFPA 70 – National Electric Code and NFPA 1 – Fire Code.
- Wind – SEI/ASCE 7.

5 LICENCE AND INSPECTION

The following are required for the commissioning of the PV system:

1. An inspection certificate from the Government Electrical Inspectorate at the Division of Settlements, Public Utilities, and Rural Development which must be obtained by the Bidder.
2. An RE licence obtained from the Ministry of Public Utilities. The Division of Food Security, Natural Resources, the Environment and Sustainable Development shall apply for the RE licence and pay all requisite licence fees.

6 MAINTENANCE

The successful Bidder will provide operation, inspection, and maintenance (OI&M) services once every 6 months for a period of eighteen months; as well training of OI&M

services must be provided to persons selected by the DFSNRESD at least twice during the eighteen months. Maintenance services and training activities shall include:

- Management of weeds or any greenery that may grow on, under or around the solar panels;
- Regular cleaning of the Solar Panel Array;
- Shut down and start-up of the system; and
- Any activity including fixing, replacing or upgrading of system components that would ensure the solar PV system continues to function according to design specifications and power output.

7 INSURANCE AND WARRANTY

The Bidder shall provide proof of worker's compensation insurance for employees involved in the project. The successful Bidder shall also ensure all materials are adequately insured against loss, theft or damage during transportation, delivery, and storage of equipment.

The successful Bidder's standard system warranty coverage should cover solar panels, inverter, and workmanship.

- The successful Bidder/installer shall warranty the PV system for two (2) years workmanship which shall include material and labour.
- A manufacturer's warranty of two (2) years must be obtained for the solar panels, inverters, charge controllers, batteries, weather and temperature sensors, and the performance and monitoring units. Supporting documents must be provided to the Awarding Authority.
- Solar panels must have a 25-year limited warranty that guarantees a minimum performance, under standard test conditions (STC), of no less than 80% of the original power and rated output for a minimum of twenty-five (25) years. Solar PV panels that do not satisfy the warranty condition must be replaced.

8 CONFLICT OF INTEREST

The DFSNRESD will ensure there is no Conflict of Interest in this tender. As such, any direct family relationship involving Tenderers and Members of Division's Management and Staff must be fully disclosed. A member and/or officer of the DFSNRESD or the relative of any such person shall not tender for the supply of items and or services stated herein. For the purposes of this tender the term *"relative"* means the father, mother, brother, sister, son or daughter of a person and includes the spouse of a son or a daughter of such person The Bidders shall disclose any conflicts of interest or potential conflicts of interest.

9 PERFOMANCE PERIOD

- The performance period for this project shall last until sixty (60) days following the handover of the solar PV system. Within this time period the contractor **MUST** make themselves available for any operational issues encountered with the solar PV system.

10 DEFECTS LIABILITY

- The Defects Liability Period for this project shall be for eighteen (18) months after the PV system has been completed and installed. Five percent (5%) of the bid cost shall be withheld until the end of this period.
- The Bidder shall be responsible for making good any defect in, or damage to, any part of the PV system which may appear or occur during the defects liability period and which:
    - Results from the use of defective equipment or materials or faulty workmanship or design of the PV system by the Bidder;
    - Results from any act or omission of the Bidder during the defects liability period; or
    - Is reported during an inspection made by, or on behalf of, the Awarding Authority.
- Failure to remedy a defect or damage within the time limit stipulated in the notification from the Awarding Authority during the defects liability period may result in:
    - Employment of another contractor to complete the works at the Bidder's risk and cost, in which case the costs incurred by the Awarding Authority shall be deducted from monies due to or from guarantees held against the Bidder or from both; or

- Termination of the contract.

11 COMMERCIAL TERMS

The disbursement of funds will be phased as shown in Table 3.

Table 3: Terms of Payment

Description	Required Documents for disbursement and time	Time	Percentage of funds disbursed %
Mobilisation	• Mobilisation Plan, • Bill of Quantities (BOQ)	3 weeks	10
Design	Detailed design of the solar PV system inclusive of the single line diagram.	4 weeks	15
Procurement of material and equipment	• Bills of materials and equipment purchased • Proof of insurance coverage for all employees.	8 weeks	40
Installation	List of: • All installed components; • Timesheets; and • Proof of compensation for employees.	4 weeks	10
Testing and Commissioning	All signed check lists ensuring correct operation of Solar PV system.	3 weeks	5
Handover of Solar PV System	• All documentation for the Solar PV System inclusive of specifications and warranties. • Report of completed works signed by a technical officer at the Division.	1 week	5
Defects Liability	Replacement of any defective equipment within this period following completion of solar PV system.	18 months	5

Maintenance	Training and Maintenance schedule for periodic checks on system over the two-year period submitted and signed by a technical officer from the Division.	2 years	10

12 INSTRUCTIONS TO BIDDERS

- Provide a proposal that includes:
  - A statement or letter from a financial institution verifying that the Tender has accessible finances no less than 60% of the sum tendered. The financial institution must state the amount or the range e.g. mid six-digit figure range etc.
  - Proof of all required business certifications (business registration certificate, VAT number, BIR number), list all directors, qualification of employees, Company experience (references, letter(s) of award) and contractor certifications in accordance with the equipment, construction and insurance requirements included in Section 4 of this RFP.
  - Excel spreadsheets with calculations of energy output of the PV system and all the factors taken into account (e.g., efficiency, irradiance, temperature etc.)
  - Details of the Warranty Period of all PV system components.
  - An ability to respond to the Environment and Social Safeguards related to Little Tobago.
- All costs whether directly or indirectly related to the preparation of a proposal in response to this RFP shall be borne by the bidder(s). The Bidder accepts all risks and costs incurred in the completion and submission of the proposal and/or in negotiating an agreement as a consequence of this proposal, without financial guarantee.
- Failure to ascertain material, labour and overall capacity needs required to fulfil the project through a site visit, will not absolve a successful Bidder from the contractual obligations to execute requisite duties of the Solar Project.

- Bidders will submit proposals in alignment with the two envelope system; such that Envelope 1 shall contain the original and four enveloped copies of the technical proposal, and Envelope 2 shall contain the original and two enveloped copies of the commercial proposal. The two envelopes must then be placed in one single envelope for submission.
- Tenders shall comprise a Single-Envelope System, this means a single envelope containing both the financial and technical/quality information for evaluation.
- A justification for each component of the design criteria must be made available

13 FORMAT OF PROPOSAL

13.1 Cover Page

The cover page of the submitted proposal shall include the "[Company's /Sole Trader's name] Solar Proposal Response," primary address, communication liaison's name, contact information (email, phone number, postal address), and on the bottom left, the tender designation number **DFSNRESD 2021/21-11**. Thereafter, a table of contents as stipulated below must be presented.

13.2 Company's Background and Qualifications

The prospective bidder will in no more than three (3) pages provide a summary of the company's background in this section. This must be followed by a summary of:

1. The Bidder's competencies in executing this Solar Project.
2. The Bidder's Background and experience in completed solar projects of similar or greater magnitude.
3. Qualifications and experience of key team members who would be involved in the Solar Project, whether technical and/or under business development as it relates to agreements to be fulfilled under this RFP.
4. Number of Projects/kW installed grid tied as well as off-grid –Caribbean
5. Number of projects/kW installed grid tied as well as off-grid – Outside of Caribbean
6. Number of projects/kW grid tied as well as off-grid currently in construction. Two (2) examples, at minimum, of renewable energy technology projects undertaken having similar capacity to that of the Solar Project with references (inclusive of pictures) and contact information. References shall consist of at least two solar installations less than 5 years (<5 years) and one installation greater than 5 years (>5 years).
7. Experience in solar installations (both solar photovoltaic and/or solar water heaters).

13.3 Execution Plan

Bidders shall submit:

1. A PV system design in accordance with sections 2.4, 2.5 and 3.
2. Details of the execution and scheduling plans (how, when and by whom deliverables are to be achieved, key performance indicators and plans for contingencies and emergencies) to complete the project within a favourable timeline.
3. A management plan that specifies the initiation, planning, execution, monitoring and control and commissioning phases of the project.
4. Details of plans to reasonably and prudently maximize the installed capacity of the PV system.
5. A safety plan/safety record.
6. A quality plan/quality record.
7. Any legal issues or ongoing litigation.
8. An execution plan to supply and install the solar PV system within 30 days of the awarded contract.

13.4 Bill of Quantities/Cost Proposal

Bidders shall submit all costs, in accordance with commercial terms in section 11, giving details following the Bill of Quantities table (See Appendix) associated with the Solar PV project. The cost proposal (Table 4) must give details as listed below:

Table 4: Template of Cost Proposal.

Description	Cost Per Unit	Total
Mobilisation		
Design		
Procurement of material and equipment		
Installation (Labour)		
30- day Performance Period		
Defects Liability		
Maintenance		
	Subtotal	
	VAT	
	Total	

Bidders must include the following optional PV system components in the cost proposal:

- A monitoring system for the solar panel array composed of temperature and irradiance sensors, to facilitate data acquisition and troubleshooting.

The Awarding Authority will determine whether the optional components can be included based on the proposed cost by the Bidder.

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14 EVALUATION CRITERIA

The Awarding Authority based on the requirements of this RFP has designated the following items in Table 5 below to weigh heavily on the selection criteria for the prospective Awardee.

Evaluation Criteria		**Maximum Score**
1.	**Tenderer Experience**	**10**
	a. General Experience in RE technology.	2
	b. Similar Experience:	
	i. Three successfully completed commercial solar projects of similar scope to RFP.	4
	ii. Local / Regional Content	2
	iii. Track Record	2
2.	**Methodology and Work Plan**	**25**
	a. Approach for the various phases of the works	4
	b. Project Schedule & Gantt Chart	3
	c. Site Management /Site Restoration /Quality Management/Assurance Plan	6
	d. Concept Design – Electrical Work/ Technical/Single Line Drawings	3
	e. Propose equipment based on concept design	2

	f. Commissioning and Drainage Plan g. Operations and Maintenance ("O&M") Plan h. Contingency Plan	2 4 1
3.	**Commercial** a. Letter from Financial Institution verifying availability of capital expenditure b. Cost/Price Proposal to the Awarding Authority c. Confirmation that price proposed not subject to change d. Project Readiness	**42** 3 30 5 4
6.	**Health, Safety and Preservation** a. Safety Procedure/Plan for the project from mobilisation to electrification. b. Environmental and Social Safeguards relating to the Wild Life Sanctuary and restoration of structure c. Observation of COVID-19 Protocols	**10** 3 6 1
7.	**Training** a. Installation Training Plan b. Maintenance Training plan and Schedule	**8** 3 5
8.	**Warranty and Insurance**	**5**
	TOTAL SCORE	**100**

Table 5: Selection criteria for the prospective Awardee.

15 SCHEDULE A

15.1 Load to be powered by Solar System

The Sir William Ingram's Bird Research Centre currently has no existing electrical distribution infrastructure i.e. panels, wiring, switches and or outlets; same will form

part of another project. The solar project is however intended to supply electricity to the proposed loads provided below:

Devices and equipment to be powered by the PV system include:

- 2 Standing Fans
- 15 LED Bulbs
- 1 Gas Stove
- 3 Laptops
- Internet
- 5 Cameras
- 1 DVR
- 1 Refrigerator

The load to be accommodated on the system is estimated to be 13 kWh per day.

15.2 Works to be accomplished

The Scope of the project is as follows:

- Provide a fully functional "turnkey" solar PV system.
- Size, design, procure, install, commission and maintain a stand-alone solar PV system at the Sir William Ingram Bird Research Centre to power the loads as indicated in Section 15.1.
- Include a battery storage system in the design. The battery system must be (deep cycle batteries) sized to power 100% of the load for 24 continuous hours.
- Incorporate a power management system to monitor and control:
    - Overvoltage that can affect the inverter, load and battery system by including surge protection devices;
    - The State of Charge (SoC) of the battery storage system.
- Identify a secure area for the battery storage system with suitable ventilation away from thoroughfare.
- Install anti-theft mechanisms for all components of the system.
- Apply corrosion resistant coating to the PV system's supporting structures.
- Supply and install a thermosiphon 40 gallon solar water heater.
- Provide operation and maintenance manuals for the entire system inclusive of each individual component.

- Provide training for five resident Tobago technicians, who shall shadow the installation process, for the purpose of capacity building and transfer of green energy knowledge and skills to locals on the island. Training must also encompass maintenance of the solar PV system as indicated.

16 POST EVALUATION PROCEDURES

The Awarding Authority will notify the selected/successful Awardee within ten business days of the completion of the evaluation. Unsuccessful applicants will receive notification of these results by email within 30 days of the date the name of the Awardee is posted.

17 TENDER ENQUIRIES

Tenderers requiring a clarification of the bid documents **MUST** do so by contacting the Procurement Unit **ONLY** by sending email to the following email address: lizanne.greenidge@gov.tt. All queries should be addressed to:

Lizanne Greenidge
Supervisor, Public Procurement
Procurement Unit
Division of Food Production, Forestry and Fisheries

Replies to any request for clarification or additional information (including all previous requests) shall be circulated to all parties participating in this tender process via the THA'S website.

18 ELIGIBILITY TO TEND

a. Bidders have the legal capacity to enter into the procurement contract;
b. Bidders are not insolvent, in receivership, bankrupt or being wound up, their affairs are not being administered by a court or a judicial officer, their business activities have not been suspended and they are not the subject of legal proceedings for any of the foregoing;
c. Bidders have not, and their directors or officers have not, been convicted of any criminal offence;
d. Bidders must be a part of the list of pre-qualified contractors for the THA or have initiated the pre-qualification process. Should Bidders not be prequalified with the

THA, please apply to the Procurement Control Office (PCO) by downloading and completing the relevant documents from the PCO's website: www.pco.tha.gov.tt, or contact the procurement control office at 6393421 ext. 1021; and,

e. This RFP is opened to Bidders in both Tobago and Trinidad.

19 CONFIDENTIALITY AND RESERVED RIGHTS

This RFP is not an offer of contract and should not be construed as intent, commitment, or promise to acquire products or services presented by any Bidder.

All proposals shall become the property of the Awarding Authority. The Awarding Authority will not disclose information contained in any proposal that is clearly labelled as "CONFIDENTIAL" to third parties unless such disclosures are required by law or by order of a court or government agency having appropriate jurisdiction. The Awarding Authority reserves the right to disclose proposals to legal and/or engineering consultants for the purpose of assisting in evaluating proposals but will mandate the confidentiality of the document be maintained. This RFP is an invitation to submit proposals. The Awarding Authority reserves the right to:

- Reject any and all proposals received in response to this RFP for any reason.
- Waive any requirement in this RFP.
- Negotiate solar PV system arrangements with more than one bidder simultaneously.
- Terminate negotiations.
- Not select the proposal with the lowest price.
- Request clarifications from Bidders at any time; and,
- Negotiate with the next highest ranked Bidders if the successful select is unable and/or unwilling to execute the Contract.

The Awarding Authority also reserves the right to, at its sole discretion, accept a response that does not satisfy all requirements, but which adequately establishes the ability to size, design and install the solar PV rooftop system that is able to satisfy the major requirements set forth in this RFP.

The Awarding Authorities intent is to award the Project to one Bidder; however, rights are retained to award one or more separate contracts to one or more Bidders.

20 SUBMISSION DEADLINE AND DETAILS

All tenders must be submitted in sealed envelopes, labelled in **BOLD** letter and addressed as follows:

The Administrator

Division of Food Security, Natural Resources, the Environment and Sustainable Development

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Little Tobago solar PV Rooftop

And deposited in the tender box (Box Opening dimensions are approx.14" long x ¾" wide) located in the Procurement Unit on the Second Floor of the Division's Main Office Building at Shirvan Administrative Complex. Shirvan Road, Shirvan Tobago on or before **19th August 2022 at 1:30pm.**Tenderers MUST submit **one (1) original, four (4) copies in one sealed envelope and one (1) softcopy on a flash drive** of their bid. The envelope of the original bid MUST be labelled as "ORIGINAL" in BOLD font and the envelopes containing copies MUST be labelled "COPY". Envelopes must be properly sealed with the Tenderer's returning address and contact number at the back of the envelope. **Tenderers MUST also affix their company's stamp at the front of the Envelope, the Bill of Quantities and on the Tender Submission Form and duly signed by the Principal.**

21 Tender Opening

Tenders shall be opened at Division's Main Office Building, Shirvan Administrative Complex, Shirvan Road, Shirvan Tobago and virtually on 19th August 2022 at 1.40 pm

All tenderers are invited to be present for the opening. Please note ALL covid-19 Regulation would be observed at the Main Office opening.

22 APPENDIX

22.1 CERTIFICATE OF NON-COLLUSION

The undersigned certifies, under penalties of perjury, that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in

this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club or other organization, entity, or group of individuals.

_____(Signature)

_____(Name of person signing proposal)

_____ (Name of business)

22.2 FORM OF TENDER

(NOTE: THE APPENDIX HEREIN FORMS PART OF THE TENDER)

Tender for:

To: **"SECRETARY OF THE TENDERS COMMITTEE"**

Sir/Madam,

Having examined the Tender Document issued by the "Awarding Authority" and having also visited the site, I do hereby, offer to execute and complete the whole of the said works described and referred to therein for the sums herein proposed:

NAME OF PROJECT:

Proposed Price
(Words)…….
……
..……..……
……..…… Trinidad and Tobago Dollars.
(TT$.....(Figures)) exclusive of VAT.

VAT:
(Words)……
……...Trinidad and Tobago Dollars (TT$.....(Figures)).

Proposed Price VAT inclusive:
(Words)……
……...Trinidad and Tobago Dollars (TT$.....(Figures)).

<u>Statement of truth</u>

I declare that to the best of my knowledge the answers submitted to these questions are correct. I understand that the information will be used in the selection process to assess my organisation's suitability to be selected for this tender. I also acknowledge that the Awarding Authority's authorised representative shall make any enquiries concerning the particulars of my submissions.

I understand that the Awarding Authority may reject my submission if there is a failure to answer all relevant questions fully or if I provide false/misleading information. I understand further that any discrepancies in the answers provided, and the evidence demonstrated may result in automatic disqualification.

Dated this……. day of……2022.

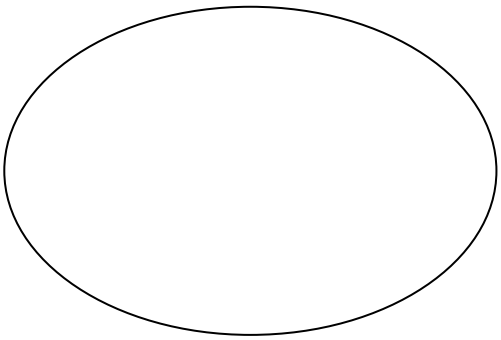
……..
Authorized Representative Signature

In the capacity of ……

Duly authorized to sign Tender for and on behalf of

……..

……..



Stamp

Tender Designation No:

22.3 BILL OF QUANTITIES

No.	Description	Brand	Qty.	Unit Cost (TTD)	Total Cost (TTD)
	Supply the requisite materials, skilled labour, equipment, and tools to install a solar Photovoltaic stand-alone power system of production capacity 4kW. The System should have the capacity to generate electricity from solar with stored energy from batteries having at least one day autonomy,				
1	a. Supply Solar Panel, monocrystalline PV Solar Modules internationally certified with required certificates.				
	b. Install Solar Panel, monocrystalline PV Solar Modules internationally certified with required certificates.				
2	a. Supply an Inverter with the following outputs: 60Hz, 120/240 Vac, and 4kW				
	b. Install an Inverter with the following outputs: 60Hz, 120/240 Vac, and 4kW				
3(i)	a. Supply charge controller				
	b. Install charge controller OR				
3(ii)	a. Supply integrated inverter and charge controller				

	b. Install integrated inverter and charge controller				
4(i)	a. Supply lithium batteries				
	b. Install lithium batteries				
5	a. Supply smart metering system				
	b. Install smart metering system				
6	a. Supply Secure Battery Storage Rack				
	b. Install Secure Battery Storage Rack				
7	a. Supply Combiner box, Solar AC Fuses				
	b. Install Combiner box, Solar AC Fuses				
8	a. Supply Solar DC Fuses				
	b. Install Solar DC Fuses				
9	a. Supply Cable Channels				
	b. Install Cable Channels				
10	a. supply correctly sized cable				
	b. install correctly sized cable				
11	a. Supply aluminium module support structure for Solar Panels with vandal proofing.				
	b. Install aluminium module support structure for Solar Panels with vandal proofing.				
12	a. Supply all required types & sizes of Electrical Cables with all connections between Solar Panels, Inverter, charge controller, and batteries. Terminal Electrical Boxes.				

	Copper Earth Cables with all required accessories				
	b. Install all required types & sizes of Electrical Cables with all connections between Solar Panels, Inverter, charge controller, and batteries. Terminal Electrical Boxes. Copper Earth Cables with all required accessories				
13	a. Supply AC protection panel,, & AC Cables from system cupboard to main panel				
	b. Install AC protection panel, & AC Cables from system cupboard to main panel				
14	a. Supply a 40-gallon thermosiphon water heater solar water heater				
	b. Install a 40-gallon thermosiphon water heater solar water heater				
15	a. Installation, Testing, and Commissioning of the solar PV system.				
	b. Training of 5 Tobagonians on the operation and maintenance of the solar PV system for a minimum of 3 days				
16	**TOTAL PROJECT COST**				