

# Request for Proposals

## Project Title: Promoting Access to Clean Energy Services in St. Vincent and the Grenadines (PACES)

1. The government of St Vincent and the Grenadines has received funding from the Global Environmental Facility (GEF) to support its climate change mitigation thrust. The UNDP is implementing a medium size project entitled “Promoting Access to Clean Energy Services in St. Vincent and the Grenadines (PACES)” on behalf of the government. Under the component of *Establishment of a Clean Energy Policy Framework* a contract will be awarded for the **Supply and Installation of 5kW Grid Connected Solar PV Carport Structure and the Installation of a Chargemaster Electric Vehicle charging unit at the Argyle International Airport, St. Vincent and the Grenadines**
2. The Promoting Access to Clean Energy Services in St. Vincent and the Grenadines (PACES) Project now invites sealed Tenders from eligible bidders for the; **Supply and Installation of 5kW Grid Connected Solar PV Carport Structure and the Installation of a Chargemaster Electric Vehicle charging unit at the Argyle International Airport, St. Vincent and the Grenadines**

Interested eligible bidders may obtain further information from:

*PACES Project  
Energy Unit, Ministry of National Security Air and Seaport Development  
Corner of Higginson and Lower Middle Street  
Kingstown  
St. Vincent  
Telephone Number: 1 784 451 2338  
Email: [leshan.monrose@undp.org](mailto:leshan.monrose@undp.org)  
[dandre.jackson@undp.org](mailto:dandre.jackson@undp.org)*

### 3. Proposals

Any suitable format may be used but must include the following items;

- Relevant qualifications and experience
- Consultancy Execution: methodology and project schedule
- Financial offer – **Quoted in Eastern Caribbean Dollars (XCD)**

Tenders must be sent to the following address:

*The Secretary  
Central Supplies Tenders Board  
Ministry Of Finance And Economic Planning  
Government Of St. Vincent And The Grenadines  
3rd Floor, Financial Complex  
Kingstown  
St. Vincent and the Grenadines*

Attention: *Secretary Central Supplies Tenders Board*

**4. Tenders must comply with the following conditions:**

All tenders must be submitted in one envelope, marked 'original', and three (3) copies with double side printing; copies signed in the same way as the original and marked 'copy'.

The envelope shall be addressed to:

Tenders must be delivered to the address below on or before **MAY 18, 2018 at 2:00 pm**

*The Secretary  
Central Supplies Tenders Board  
Ministry Of Finance and Economic Planning  
Government of St. Vincent and the Grenadines  
3rd Floor, Financial Complex  
Kingstown  
St. Vincent and the Grenadines*

Attention: *Secretary Central Supplies Tenders Board*

Bear the name **“Supply and Installation of 5kW Grid Connected Solar PV Carport Structure and the Installation of a Chargemaster Electric Vehicle charging unit at the Argyle International Airport, St. Vincent and the Grenadines”** and the words **“DO NOT OPEN BEFORE 2:00 PM ON MAY 18, 2018**

Electronic bidding will not be permitted.

Late tenders will be rejected.

The deadline for the submission of tenders is: **MAY 18, 2018 at 2:00 pm**

**5. Clarifications**

If the Contracting Authority, on its own initiative or in response to a request from a prospective tenderer, provides additional information on the tender, it must send such information in writing to all other prospective tenderers at the same time.

Request for clarification must be submitted in writing to

**PACES Project  
Promoting Access to Clean Energy Services (PACES) Project  
Energy Unit, Ministry Of National Security Air and Seaport Development  
Corner of Higginson and Lower Middle Street  
Kingstown,  
St. Vincent and the Grenadines**

OR via email to [leshan.monrose@undp.org](mailto:leshan.monrose@undp.org) / [dandre.jackson@undp.org](mailto:dandre.jackson@undp.org) by **MAY 7, 2018**.

Clarifications will be posted on <http://energyunit.gov.vc/energyunit/index.php/opportunities> on **MAY 9, 2018**.

## **6. Period of validity**

Tenderers will be bound by their tenders for a period of 90 days from the deadline for the submission of tenders.

In exceptional cases and prior to the expiry of the original tender validity period, the Contracting Authority may ask tenderers in writing to extend this period by 10 days. Such requests and the responses to them must be made in writing. Tenderers that agree to do so will not be permitted to modify their tenders and they are bound to extend the validity of their tender guarantees for the revised period of validity of the tender.

### **Alteration or withdrawal of tenders**

Tenderers may alter or withdraw their tenders by written notification prior to the deadline for submission of tenders. No tender may be altered after this deadline. Withdrawals must be unconditional and will end all participation in the tender procedure.

Any such notification of alteration or withdrawal must be prepared and submitted in accordance with the procedure for receiving Tender Clarifications. The outer envelope must be marked 'Alteration' or 'Withdrawal' as appropriate.

No tender may be withdrawn in the interval between the deadline for submission of tenders referred to in and the expiry of the tender validity period.

## **8. Cancellation of the tender procedure**

If a tender procedure is cancelled, tenderers will be notified by the Contracting Authority. If the tender procedure is cancelled before the tender opening session the sealed envelopes will be returned, unopened, to the tenderers.

Cancellation may occur, for example, if:

- i. the tender procedure has been unsuccessful, namely where no qualitatively or financially worthwhile tender has been received or there has been no valid response at all;
- ii. the economic or technical parameters of the project have changed fundamentally;
- iii. exceptional circumstances or *force majeure* render normal implementation of the project impossible;
- iv. all technically compliant tenders exceed the financial resources available;
- v. there have been irregularities in the procedure, in particular where these have prevented fair competition;
- vi. the award is not in compliance with sound financial management, i.e. does not respect the principles of economy, efficiency and effectiveness (e.g. the price proposed by the tenderer to whom the contract is to be awarded is objectively disproportionate with regard to the price of the market).

**In no event will the Contracting Authority be liable for any damages whatsoever including, without limitation, damages for loss of profits, in any way connected with the cancellation**

**of a tender procedure even if the Contracting Authority has been advised of the possibility of damages.**



## **TERMS OF REFERENCE**

**Supply and Installation of 5kW Grid Connected Solar PV Carport Structure and the Installation of a Chargemaster Electric Vehicle charging unit at the Argyle International Airport, St. Vincent and the Grenadines**

## **BACKGROUND INFORMATION**

### **Beneficiary Country**

St. Vincent and the Grenadines

### **Contracting Authority**

Government of St. Vincent and the Grenadines

### **Relevant Country Background**

St. Vincent and the Grenadines (SVG) is a multi-island state comprising of the main island of St. Vincent and seven smaller inhabited islands as well as about 30 uninhabited islets constituting the Grenadines. The islands are home to a population of 110,000 people and cover a land area of 389 square kilometres. Apart from the main island of St. Vincent, other Grenadine islands with significant energy demands include, Bequia, Union Island and Canouan. The country is almost completely dependent on imported petroleum products such as diesel (for transport and electricity generation), gasoline (for transport), kerosene (for cooking) and butane/LPG (for cooking and water heating).

### **Current State of Affairs in the Relevant Sector**

From 2014 to 2016 there has been a downward trend in the cost of oil, with prices remaining below USD 50 per barrel the first and second quarters of 2016. In the Caribbean most electricity companies are allowed to pass on fluctuating cost to consumers in the of a fuel surcharge. The import value of petroleum products and related products into SVG rose to over USD 68 million (EC\$ 186 million) in 2014; this represents an increase in expenditure of over USD 26 million (EC\$71 million) between 2010 and 2014. Despite the increased national expenditure on the importation of petroleum products consumers have been able to enjoy a decrease in prices at the pump which coincides with the decline in global oil prices. Gas prices at the pump fell from USD 5.09 (EC 13.81) per gallon in December of 2014 to USD 3.80 (EC \$10.30) in December 2015.

Despite global reductions in the cost of petroleum based products fuel costs in SVG remains relatively high. This may be due to factors such as a high dependence on imported fossil fuels, 80 per cent of SVG's installed generation capacity is based on diesel with the other 20 percent generated from hydro. Renewable Energy technologies present a viable alternative to reducing the dependence on imported petroleum products but they are however being underutilised.

Energy diversification in transportation is constrained both by the lack of economically viable substitutes for fossil fuels and the need for retrofitting of existing transport systems to accommodate alternative forms of energy. Nevertheless, a recent cost-benefit assessment of the potential of the electric vehicle sector revealed significant net benefits in the areas of foreign exchange savings, reduced GHG emissions, national income savings and reduced costs of ownership for car owners. The analysis further suggested that savings would increase by more than 50% if the move toward EV is coupled with renewable-based electricity.

## **Progress made in Reducing Barriers**

To improve the energy security of SVG, the GoSVG issued its National Energy Policy (NEP) in 2009 and National Energy Action Plan (NEAP) in 2010 that identifies specific strategies in Section 4.3 to develop renewable energy as a means to reduce the country's dependence on imported fossil fuels for electricity generation. This includes actions to scale-up development of geothermal, hydropower, wind energy, biomass and waste-to-energy, solar electricity and solar thermal. Additionally, the NEAP identifies actions to be taken to deploy de-centralized renewable energy applications for the Grenadine Islands as well as buildings and households that have costly connections to the grid. These actions result in benefits to local air quality and public health through the reduction of harmful atmospheric air pollutants from burning of fuels.

The NEAP also specifically identified electric mobility as a major area for reducing GHG emissions and the national agenda has targeted hybrid and electric vehicles into the island, with Government playing a leading role by introducing electric vehicles into its own fleet.

## **Project Background**

The government of St Vincent and the Grenadines has received funding from the Global Environmental Facility (GEF) to support its climate change mitigation thrust. The UNDP is implementing a medium size project entitled "Promoting Access to Clean Energy Services in St. Vincent and the Grenadines (PACES)" on behalf of the government.

The Project will seek to reduce GHG emissions from fossil fuel-based power generation by exploiting the renewable energy resources for electricity generation in St. Vincent and the Grenadines (SVG). It will promote clean energy decentralized electricity solutions in SVG, from unutilised Renewable Energy (RE) resources including inter alia, hydropower, wind, and solar. It is envisaged that through the project activities there will be a greater share of RE in the islands' energy mix by (i) the strengthening of the country's clean energy policy framework including the streamlining of processes for RE investment approvals; (ii) increasing the capacities of appropriate institutions and individuals to support clean energy developments in SVG; and (iii) mobilizing investments for RE demonstration projects utilizing solar resources for electricity generation.

Under component 3 of the PACES a pilot demonstration project for the use of electric and hybrid vehicles has been implemented. Under this demonstration project the following activities have been executed;

- a Nissan Tekna Electric Vehicle has been purchased for testing and data collection
- a 5kW Solar PV carport charging station has been installed at the Administrative Complex to charge the vehicle
- local mechanics have been trained and received level 2 IMI Certified
- a Macroeconomic Analysis to assess the economic impact of e-mobility in SVG has been completed
- an Electric Mobility Readiness Assessment for SVG has been completed
- several awareness activities

## **PURPOSE AND OBJECTIVES**

### **Objectives of the Consultancy**

The objective of the project is to extend the electric vehicle charging network in SVG by installing an additional Solar PV carport charging station at the Argyle International Airport while simultaneously increasing the awareness of Electric Vehicle and Renewable Energy technologies.

### **SITE LOCATION**

The proposed site for the Carport installation is located within the public parking lot at the front of the AIA terminal building as shown on the map below. The site is comprised of two (2) standard parking spaces as shown below.





## **KEY DELIVERABLES**

Bidder shall provide the following

- Project schedule
- A detailed description of all the necessary components, with related quantities and sizes for the 5kW Solar PV charging carport. This will include but is not limited to; the carport structural frame, PV modules, inverter, monitoring devices and balance of system components (wires, screws bolts etc). Detailed data sheets for all components must be provided.
- Details of surge/lightning protection (data sheets for equipment to be provided).
- Electrical wiring schematic
- Itemised pricing proposal
- Key personnel

## **SCOPE OF WORK**

The Bidder shall be responsible for all aspects of the detailed engineering investigations, design, manufacture, procurement, supply, shipping and importation, delivery, storage, construction, labour, supervision, proper staffing, all costs related and applicable for the general conditions, erection, installation, commissioning and testing of the complete project. The Bidder shall also be responsible for the establishment of appropriate operations and maintenance procedures, quality management system documentation and warranties for the project.

## **Specific Activities**

The Bidder will be required to undertake the following activities to fulfil his/her obligations under this contract:

- Conduct site assessment(s) of the proposed site to inform system design;
- Procure a 5kW PV grid connected solar carport, most suitable for given conditions
- Successfully install the carport, solar PV system and charging unit (which will be provided) within agreed time frame
- Prepare the PV system so that it can be Grid connected (connection done by VINLEC)
- Test and ensure system is fully functional after grid connection by VINLEC
- Provide a list of materials for maintenance purposes with names and contact of suppliers
- Provide all equipment and system warranties

## **TECHNICAL SPECIFICATIONS**

### **General Electrical Requirements**

Voltage insulation levels, grounding, equipment interrupting and continuous current capacities, circuit protection, and mechanical strengths shall be selected and coordinated in accordance with calculations and the recommendations of the National Electrical Safety Code (NESC), International Electro-technical Commission (IEC) or other applicable codes and standards as noted (with IEC taking precedence if conflicting code requirements). Any variation from the aforementioned codes will be noted. Electrical systems shall be designed for the expected environmental conditions at the site, including temperature, humidity, elevation, and corrosion.

Conductor colour codes shall be in compliance with the existing St. Vincent and the Grenadines regulations based on IEE BS7671 – British Standard.

Direct current (DC) and alternating current (AC) conductors shall be labelled to match wiring diagrams

### **PV Modules**

- Modules installed shall conform to the manufacturer's published data sheet(s).
- Manufacturer shall provide test data that quantify initial light-induced degradation (LID).
- The average power ratings of all modules shipped, based on the manufacturer's flash test data, shall be greater than or equal to the nominal rating of the module as specified in the published data sheet.
- Modules shall be listed to Underwriters Laboratories (UL) 1703 and/or IEC and individually marked as such.
- Modules shall be independently certified to qualification standard IEC 61216 (crystalline silicon flat plate modules) or to IEC 61646 (thin film flat plate modules), as appropriate (anti-glare panels are to be used).
- Module string configuration must be compatible with the proposed inverter (provide name of inverter or list of possible inverters).

- PV module connectors must be designed for environmental exposure, be polarized, not interchangeable, and have an ampacity rating not less than the maximum series fuse rating of the module

### **Disconnects**

- Disconnects must be listed to the appropriate UL and/or IEC standard for the application.
- Disconnects must be provided at locations required by the IEC.

### **Inverters**

- PV inverter systems shall be commercial grade, pure sine wave, and specifically designed for PV installations.
- Minimum inverter warranty shall be 10 years, design life shall be 25 years (inverter exchange every 10 years shall be included in the bid).
- Inverter systems shall be designed for the expected environmental conditions at the site, including temperature, humidity, elevation, and corrosion.
- The PV inverter system shall be designed and materials shall be furnished in accordance with the latest revisions of applicable sections of UL, IEC and IEEE.
- Inverter voltage, current, and frequency capability are to be selected in accordance with the PV technology used and conditions local to the generating facility

### **Warranties and Guaranties**

The contractor shall include a plan for comprehensive Project Warranty including but not limited to;

- PV modules, workmanship, and long-term performance
- Inverter materials, workmanship, and long-term performance
- Balance of System (BoS) materials, workmanship, and long-term performance
- Energy performance guarantee at point of interconnection

### **Personnel**

#### **Qualifications and Experience**

- Bachelor Degree in Electrical Engineering or a related field from a recognised University.
- Candidate must have at least seven years of experience in solar PV installation and electrical installation
- Candidate must provide evidence of at least 5 previous PV system installations in the Caribbean that are functional;
- Experience working with donor and governmental agencies within the Caribbean Region in designing and installing PV systems will be an asset would be an asset

## **LOGISTICS AND TIMING**

### **Location**

The Bidder will be located at his/her usual place where he/she conducts business. However, he/she will be required to visit the office of the Energy Unit and project site periodically as stipulated by the Project Director.

### **Commencement Date & Period of Implementation**

This exercise shall commence from the date of contract and will operate for a maximum period of three (3) months, consecutive.

A Project Implementation schedule, with specific milestones, must be submitted with the proposal. Requests for extensions must be submitted to the Project Director for approval.

The services of the contractor (Consultant) will be retained for the duration of the project.

## **CONTRACT PAYMENT STRUCTURE**

The consultancy will be developed according to the following structure of payments

| Deliverable  | Deadline | Percentage Payment (%) |
|--|----------|------------------------|
| Mobilisation   | TBD      | 10                     |
| Procurement (payable upon submission of purchase orders for equipment) | TBD      | 40                     |
| Commissioning of the Solar Carport Charging station                    | TBD      | 40                     |
| Performance period (payable one month after commissioning)             | TBD      | 10                     |

## **RESPONSIBLE BODY**

The Consultant shall report to the Project Director of the PACES project within the Energy Unit of the Ministry of National Security, Air and Sea Port Development.

## **TAXATION**

All **non-nationals** of St. Vincent and the Grenadines are required to pay a 20% Withholding Tax for all services rendered in the country in accordance with the Third Schedule of the Income Tax Act of St. Vincent and the Grenadines. The Agreement Among The Governments Of The Member

States Of The Caribbean Community For The Avoidance Of Double Taxation And The Prevention Of Fiscal Evasion With Respect To Taxes On Income, Profits Or Gains And Capital Gains And For The Encouragement Of Regional Trade And Investment is applicable to CARICOM nationals as a safeguard against double taxation. Refer to the documents cited for further information.

## APPENDICES

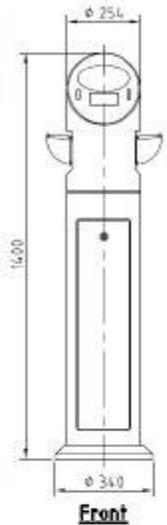
### 1. Existing Solar Carport Charging Station



## 2. Specifications of Charging Unit to be installed



Specifications. Chargemaster plc Mulberry House 750 Capability Green Luton LU1 3LU. 01582 400 331; [sales@chargemasterplc.com](mailto:sales@chargemasterplc.com)

|   |  |
|---|--|
| <p><b>FDf:</b> Floor mounted dual type 2 socket with single phase output per socket providing up to 7.4 kw charging rates. Suitable for all mode 3 enabled electric vehicles. These intelligent units are managed remotely over the GPRS network or via Ethernet access to the internet. Require the Chargevision or OCPP service to operate. Ideal for commercial locations, such as car parks, retail and business parks, hotels and fleet depots. A robust proven design for the Public or Commercial Sector and part of the 6000 plus Chargemaster points already deployed.</p> <ul style="list-style-type: none"> <li>➤ Charging cable locked to socket while charging</li> <li>➤ Host selects charging time allowed</li> <li>➤ Remote management &amp; diagnostics</li> <li>➤ Web access to usage information</li> <li>➤ Automatic carbon footprint and management reports</li> <li>➤ Option for extended warranty</li> <li>➤ Option for bespoke colours &amp; graphics</li> <li>➤ Custom configuration with option for OCPP 1.5</li> <li>➤ Approved Renault ZE Ready configuration available</li> <li>➤ Multiple payment options for Host Scheme, Subscription, Pay by text, PAYG, mobile phone, credit card touch and go plus host revenue share options</li> </ul> |   |
|---|--|

|                                 |  |
|---------------------------------|--|
| Charge Point Model              | <b>FDf</b> FLOOR Mounted, intelligent unit with GPRS communication<br><b>FDfe</b> FLOOR Mounted, intelligent unit with Ethernet communication<br>For ZE ready specification, add ZER to the above, e.g. FDf/ZER<br>Add the standard colour code, BLACK or WHITE to the above, e.g. FDf/ZER/WHITE |
| Outlet Sockets                  | 2 x EV Socket, Type 2, (EN62196)   |
| Input Voltage                   | 2 x 230v AC  |
| Input Current                   | 1 x 64Amps   |
| AC Charging Output              | 2 x 7.36kW (2 x 32Amps @ 230v)   |
| Over Current Protection         | 2 x 32Amp fuses  |
| Safety Protection (RCD)         | 2 x 30mA earth fault current detection devices   |
| Environmental Protection        | IP54 (EN60529:1991 + A2:2001)  |
| RFID Access Tag Standard        | ISO / IEC 14443A   |
| Control                         | 'Mode 3' SELV DC & PWM control signaling, Conforming to ISO/IEC 61851-1 Annex B, Validated by Nissan, Renault, Ford, BMW, PSA and Mitsubishi   |
| Wireless Communications         | GPRS Cellular Data Network RTT & E Directive   |
| Network Communications Protocol | TCP/IP 2 way communication with secure central server, Full 'handshake' between charging post and server   |
| Network Security                | HTTPS, 128 bit encryption  |
| Min Operating Temperature Range | -20°C to +70°C (LCD Display remains fully operational at -20°C but may have a slower response below 0°)  |
| Operating Humidity              | To 95% RH Non-condensing   |
| EMC Compliance                  | EN 61000-6-3:2007, EN 61000-6-2:2005   |
| ESD Compliance                  | EN 60950   |
| Safety Compliance               | EN 61851-1:2001, EN 61851-21:2002, EN 61851-22:2002, IEC 62196-1:2003, Low Voltage Directive (LVD) 2006/95/EC, EN 60950-1:2006 + A11, BS 7671 (IEE 17 <sup>th</sup> Edition)   |
| ZE READY                        | ZE 1.2 ready   |
| OCPP                            | OCPP 1.5 compliant where option requested  |
| Pay As You Go Service           | See the additional service description document  |
| Warranty                        | See the Chargemaster standard warranty statement   |