



TERMS OF REFERENCE

**CONSULTANCY TO DEVELOP AND DELIVER TRAINING WORKSHOPS TO
PRIMARY SCHOOL ON TEACHERS RENEWABLE ENERGY TOPICS**

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BACKGROUND INFORMATION

Beneficiary Country

St. Vincent and the Grenadines

Contracting Authority

GEF/UNDP

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 the present (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 form 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) 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 contributed 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.

SVG has a global horizontal irradiance (GHI) that averages 5.8 kWh/m²/day throughout its low-lying areas. This is sufficient solar resource for flat-panel PV and solar hot water systems. Despite this viable resource, SVG has only developed initiatives utilizing solar energy since 2011. These solar initiatives were designed by the Government of St. Vincent and the Grenadines (GoSVG) using grant funds to demonstrate that solar energy can be used in the country to offset fossil-fuel based electricity generation.

Progress made in Reducing Barriers

To improve the energy security of SVG, the GoSVG has also issued its 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. In addition, NEAP also 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.

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.

PURPOSE, OBJECTIVES AND EXPECTED RESULT

Objective of the Consultancy

The objective of this consultancy is to provide training on selected renewable energy technologies to 70 primary school teachers of band 3 - 4 across St. Vincent and the Grenadines.

Deliverables to be achieved by the Consultant

The Consultant will be responsible for the following outputs:

- An Inception report detailing the methodology/approach to be used to deliver the workshop content and a work plan including schedule of activities to be submitted within one week of the signing of the contract.
- 70 trained primary school teachers in renewable energy technologies

SCOPE OF THE WORK

The Consultant will work within the framework of the objectives to be achieved. The activities

that are established as part of the work programme and the deliverables must be accomplished.

Specific Activities

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

- Participate in a briefing meeting with the PACES project team.
- Develop comprehensive teaching modules/materials with relevant content aimed at building capacity of the teachers to effectively transfer knowledge and skills on the topics of renewable energy to students.
- Compile a digital resource library where teachers may access information in different RE resources. The library may include experiment worksheets, activities, websites, etc.
- Conduct two (2), two (2) day workshops in the teaching of selected RE technologies for 70 primary school teachers (including demonstration of the development of relevant teaching aids). The RE topics presented must consistent with the OECS Primary Science and Technology curriculum for band 3-4.

RESPONSIBLE BODY

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

LOGISTICS AND TIMING

Location

The Consultant will be located at the usual place where he/she conducts business. He/She will be required to make him/herself present in St. Vincent and the Grenadines for the period of the course delivery/workshop.

Performance Period

The services of the Consultant will be retained for a period of 1 week from the date of the signing the contract.

PERSONNEL REQUIREMENTS

Qualifications and Experience

Lead Consultant

Candidate must possess at least:

- A Bachelor's degree in Electrical Engineering, Renewable Energy, or a related field from a recognised University.

- Candidate must have at least 5 years of experience in renewable energy and 5 years of experience conducting training at in the field level.
- Candidate must provide proof of experience, summary of training courses conducted, training materials developed, etc.
- Candidates should be fluent in the English Language with excellent analytical and communication skills. He/she must be computer proficient in MS Office Suite and a digital project management tool such as MS Project.
- Experience working with donor and governmental agencies within the Caribbean Region would be an asset

Other experts

CVs for experts other than the key experts should not be submitted in the tender. The Consultant shall select and hire other experts as required according to his needs. The selection procedures used by the Consultant to select these other experts shall be transparent, and shall be based on pre-defined criteria, including professional qualifications, language skills and work experience.

FACILITIES TO BE PROVIDED BY THE CONSULTANT

The consultant shall provide all the facilities that he/she requires to develop the course training modules. Facilities will be provided by the PACES Project for the delivery of workshop.

EQUIPMENT

No equipment is to be purchased on behalf of the Contracting Authority / beneficiary country as part of this service contract or transferred to the Contracting Authority / beneficiary country at the end of this contract.

REPORTS

Reporting Requirements

The Consultant shall submit to the Project Officer, one original report and one other copy along with an electronic file copy of all reports/modules generated from this consultancy, including but not limited to, Inception Report, Final report and Training Modules. The Project Officer will be responsible for the approval of these documents.

SUBMISSION & APPROVAL OF PROGRESS REPORTS AND TRAINING MODULES

- i. The Consultant shall submit to the Client any additional report(s) that may be reasonably requested in connection with the progress of the elements of the Project for which the Consultant has responsibility as outlined in the Terms of Reference.
- ii. All reports shall be deemed to be accepted by the Client if the Client does not provide the Consultant within ten (10) days from the date of receipt of reports, with written notice specifying in detail, recommended changes or corrections or deficiencies in the

quality of the report. The Consultant, on receipt of such written notice, shall thereupon promptly make any necessary corrections, amendments and/or adjustments to the reports which, shall be resubmitted to the Client for its approval.

MONITORING AND EVALUATION

Definition of Indicators

The indicators against which the Consultant will be evaluated on with respect to his/her performance include:

- i. Compliance with the schedule for the submission of reports on the outputs of the project.
- ii. Quality and comprehensiveness of training material developed and delivery of the training course

Adherence to established professional standards in clarity of thought, knowledge of the subject, vision, etc.