



CONSULTANCY TO UNDERTAKE RESEARCH ON THE POTENTIAL, UPTAKE AND BUSINESS CASE FOR SOLAR ENERGY IN GHANA AS AN ALTERNATIVE ENERGY SOURCE

TERMS OF REFERENCE

Introduction

The objective of the Ghana Climate Innovation Center (GCIC) is to establish local institutional capacity to support Ghanaian entrepreneurs and new ventures involved in developing profitable and locally-appropriate solutions to climate change mitigation and adaptation. Through its programs, activities and financing, the GCIC and its network of partners and stakeholders are providing a country-driven approach to solving climate, energy and resource challenges and support economic development through job creation. The United Nations University Institute for Natural Resources in Africa (UNU-INRA) is coordinating the Policy and Regulatory framework of the Programme. The main objective of the Policy and Regulatory Programme is to improve the overall enabling environment for climate technology industries in Ghana.

To achieve this, UNU-INRA seeks to undertake a research on ***“The Potential of Solar Energy in Ghana: Stakeholder Uptake and Business Case as Alternative Energy Source”***.

Background to Assignment

Ghana as a developing country has had some energy challenges in both the demand and supply side. These challenges had serious impacts on the national economy. Various policies have been formulated and proposals were made in an attempt to solve the energy issues including the use of solar energy as a major source of energy for various uses. The National Energy Policy of Ghana for example states that, by the year 2030, renewable energy is expected to constitute about 10% of Ghana’s total energy mix. Ghana’s Nationally Determined Contributions also emphasizes an attainment of installed capacity of 150MW-250MW solar electricity by the year 2030. Following the launch of the Scaling-up Renewable Energy Program in 2015, public and private support has fairly increased for solar energy production, uptake and use, as it currently provides the best option for achieving the above energy target. However, the expected patronage of solar energy as an alternative source of renewable energy has not been encouraging.

The Solar Energy Sector

The Energy Commission (EC) confirmed the existence of about 87 provisional solar photovoltaic (PV) installation and maintenance license holders and 56 projects across the country which have received siting and/or construction permits for solar PV plants. However, of these only the VRA’s 2MW plant (since 2014) and the BXC 20MW plant (since April, 2016), are currently supplying electricity to the national grid.

The EC is currently implementing the National Rooftop Solar Programme which is also captured as part of Ghana’s national Determined Contribution in the Paris Agreement. This programme seeks to primarily provide 200MW peak load relief on the national grid in the medium term through solar PV technology. In line with this, the commission in 2016 set out to install 20,000 rooftop solar PV systems in residential homes under a capital subsidy system. This programme since its inception has however not received the needed attention and patronage by Ghanaians.

There is a gap in policy, production, uptake and use of solar technologies. This assignment is therefore meant to undertake a comprehensive research into the uptake of solar energy in Ghana, and explore the potential and the enabling environment needed to ensure green business operating in the solar energy business are profitable.

Objectives of Assignment

The objectives of the assignment are:

- ❖ To obtain information on solar energy technology production, uptake and use in Ghana
- ❖ To identify sustainable ways of creating an enabling environment for active stakeholder participation in solar technology initiatives
- ❖ Recommend policies and a systematic approach that policy makers could adopt to ensure Solar energy businesses are profitable and Ghanaians patronize solar energy as alternative energy for domestic and industrial purposes

Detailed Scope of Assignment

Specifically, the team of Consultants / consulting firm shall carry out, among others the following tasks to achieve the deliverables of this assignment:

Task 1: Mapping of the Current Solar Energy Sector in Ghana

Information and analysis include:

- ❖ Profiling of key actors in the Solar Energy sector in Ghana: This shall include private institutions, government agencies, enterprises, etc. Information to be obtained include the respective roles the various actors play.
- ❖ Mapping of solar technology installations across Ghana. Specifically, this shall focus on solar PV installers in Ghana, and the installations undertaken thus far. Information gathered shall be placed in a GPS orientation to provide general overview of progress made and ground to be covered.
- ❖ Profiling of solar energy technology end-users in Ghana. To facilitate this, a field survey to interview end users shall be conducted; to obtain their perceptions on the benefits of adopting solar energy technology and/or otherwise.

Task 2: Local Trends

Information and analysis include:

- ❖ Intelligence on prevailing solar energy technologies. This shall consider the types of installations being carried out across Ghana. Information gathered should include an analysis of how well the various installations have performed, and the challenges they face; and recommendations for the Ghanaian context.
- ❖ Business model and financing. Knowledge gathering shall focus on business models and marketing frameworks being employed by successful solar energy technology companies, and how financing is done for these models. It shall also include relevant recommendations for the Ghanaian context.
- ❖ Solar energy projects and funding. This shall seek to scope out ongoing solar energy projects within the sector, and what type of funding opportunities are available

Task 3: Market Size and Segmentation

Information and analysis include:

- ❖ Potential market for the Solar Energy sector in Ghana. This shall seek to gather information on the willingness of end users to adopt solar energy technologies across the country.
- ❖ Market segments. The essence of this task is to identify the specific market segments to focus on adoption (e.g. urban households, rural households, institutions, agro-processors).

Task 4: Policy Interventions

Information and analysis include:

- ❖ Current government policies, targets, standards and regulations for the Solar Energy sector in Ghana. Information gathered shall focus on requirements (eg. registration and certification) for actors of the sector, as well as opportunities they could explore in their operations.
- ❖ Recommendations for consideration in proposing further policy and regulatory interventions for the sector.

Task 5: Report

The team of Consultants / consulting firm shall be expected to write a comprehensive market assessment report on the Solar Energy sector in Ghana that will be relevant for all stakeholders in the sector. The report will be based on all activities undertaken within the survey, as stipulated under the various tasks and in conformity with the outlined assignment objectives.

Deliverable: The team of Consultants / consulting firm shall deliver the following:

- ❖ A final report
- ❖ A PowerPoint presentation of key findings (to be shared with all interested key stakeholders) at a validation workshop

Duration

The level of effort required for this assignment is 35 input days over the period November to December, 2017.

Qualification and Requirement

A team of Consultants / consulting firm with the relevant skills and competencies will be needed to undertake the assignment. The team members should have at least:

- ❖ MSc preferably in energy-related field
- ❖ MSc Environmental Economics, Marketing
- ❖ Six (6) years of demonstrated experience in data collection and analysis
- ❖ Six (6) years of demonstrated experience in evaluation of projects
- ❖ Demonstrated report writing skills

Application process

To apply for this consultancy, interested individuals / consulting firms should submit the team's CVs and a proposed daily rate (in USD) to twum@unu.edu latest by **15hrs GMT, 20th November, 2017**.