**Terms of Reference**

**Ref 17: Implementation a Feasibility Study on technical & financial potentials of Commercial & Industrial Sector for solar rooftop deployment in Hue & Danang**

1. **Background**

WWF was one of the first International non-government organizations working in Vietnam. In 1985, WWF began working on a national conservation strategy and since then has worked closely with the Vietnamese Government on a diverse range of environment issues and implemented field activities across the country. Find out more at <http://vietnam.panda.org/>.

WWF-Vietnam is starting a new Corporate Renewable Energy Program. Under this program, WWF-Vietnam is exploring opportunities to accelerate the corporate sector’s uptake of renewable energy solutions, particularly solar rooftop. This program provides the opportunity for WWF to leverage off its unique value proposition as Vietnam’s leading international NGO working with the corporate sector on Renewable Energy (RE).

WWF would like to commission the implementation of a Feasibility Study on the bankability of rooftop solar application to factories/buildings in the Commercial & Industrial (C&I) sector in Hue and Danang cities.

1. **Objectives of the consultancy**

The Feasibility Study is conducted to understand the feasibility and bankability of C&I sector for solar rooftop installation and to find opportunities for solar rooftop acceleration in C&I sector in Hue & Dang cities. It also provides the vital information base for overall renewable energy mapping to identify key areas/sectors which are technically and financially available for solar rooftop in Hue and Da Nang City. The selected consultant will contribute to WWF’s endeavor to develop solar map in industries in central of Vietnam and further engage in WWF’s future RE activities.

1. **Scope of works/ activities**

The Consultant is required to carry out a Feasibility Study for C&I in Hue & Dang Nang city with the ***technical and financial potential*** for solar rooftop installation. The study will be guided by *WWF’s Survey on Quantifying rooftop solar PV potential for Hue city* in 2018, assessments undertaken by the World Bank, EU, Danang Energy Efficiency Centre, and any other relevant information. Identification of solar rooftop potential for C&I sector in Danang shall be identified and proposed by Consultant in his/her proposal. Expected outputs for the assignment are as below:

* Provide an analysis of the most-up-dated RE regulatory frameworks, RE targets, existing/planned installations, potential demand, and potential RE supply (especially by solar rooftop); Understanding the perception of relevant governmental agencies and businesses regarding the new and existing policies on encouraging and promoting the development of renewable energy, especially the contribution of solar rooftop in the C&I sector (businesses, industry zone owners etc)
* Conducting survey on C&I sector in central Vietnam (Hue and/or Danang) for rooftop solar application to identify factories/areas which are technically and financially/economically suitable for solar rooftop. This will include:
* Develop questionnaire for technical & financial potentials of solar investment of C&I sector; Questionnaire to be sent to the factories and follow up with interviews and/or data collection; Consultant to propose sampling approach and rationale in his/her proposal, including number of buildings/areas, type of occupant (e.g. owner, lease, etc), and other relevant groupings proposed by the consultant;
* Conduct assessment on received data to determine number and names of potential factories, estimate technical & financial potential for solar installation capacity, energy savings and CO2 emission reduction; Produce simple assessment tool that enables users to enter key parameters in order to estimate solar rooftop potential of a particular site
* Identify the needs and capabilities for installing rooftop solar energy system in C&I sector; actual demand, including aggregated totals by city level and other useful groupings (e.g. sector, building type, etc). This should consider industrial zones in Thua Thien Hue and Da Nang, including the electricity demand and other energy supply types (that solar energy could potentially replace e.g. grid or biomass? supply);
* Identify the varying electricity demand (load profile) of C&I sector, (if appropriate) e.g. energy consumed during a day as well as the variance among seasons in the year. Clarify the stability of power supply for production and domestic purposes and particularly peak consumption of energy situation (high ranking electric payment and potential lack of electricity) that the enterprises might face.
* Work with local relevant partners to understand the requirements of the existing grid to absorb new RE systems/requirements of new RE systems in IZs/buildings, including liaising with relevant units such as EVN Central Power Corporation, EVN Thua Thien Hue, Da Nang, DOIT Thua Thien Hue, Da Nang, Economic-Infrastructure division of the districts/cities, relevant donors and experts (e.g. World Bank, EU) etc.;
* Provide case studies that provide typical examples of particular buildings and/or groups of buildings (e.g. by sector, building type, etc) that have the potential for bankable solar rooftop deployments;
* Prepare final report with indicative high-level findings on rooftop technical & financial potentials, estimated solar capacities, recommendations and relevant case studies by the consultant based on the data, which includes approaches for WWF to help improve solar rooftop deployment for identified buildings/ IZs (and other useful groupings); working mechanism with relevant partners (e.g. local government) to accelerate the policy; and making the cases compelling to RE investors/developers.
* A technical workshop held (e.g. to present and interact with enterprises in IZs of TT.Hue and Da Nang that help them recognize realistic financial solutions [such as loans or subsidies] and deployment solutions (such as CAPEX, OPEX, DPPA, etc), upon WWF’s request.
1. **Contract duration**

The contract is expected for 3 months, starting from 1 Jan 2020 to 31 Mar 2020.

1. **Required Qualifications**
* Perform by a group (2-3 people) or independently (1 person)
* At least 10 years’ experience in energy sector and renewable energy; good understanding of current energy using status of enterprise sector, buildings, etc
* Good understanding of government policies, legal framework to promote the development of renewable energy; practical application of solar PV on rooftop in Central area and other provinces in Vietnam;
* Good relationship and network working with relevant partners at the province, district and city in Hue & Danang would be an advantage;
* Master degree in science of technology such as energy, electrical, electronic, economics, environment;
* Profound understanding of energy issues, especially perspectives about energy efficiency and renewable energy in private sectors in Vietnam.
1. **Budget:**

Total budget for Consultant under this assignment shall not exceed USD7,500, including consultancy fees, travel expenses, workshops and other related costs.

1. **Query during proposal preparation**

Should interested consultants have any query during proposal preparation, please kindly send request to Ms. Pham Thi Viet Ha, Senior Project Officer via email ha.phamthiviet@wwf.org.vn

1. **Proposal Format**
* Proposal Cover Letter signed by a person authorised to sign on behalf of the Applicant;
* CV & Summary of relevant experience and projects;
* Technical Approach/Proposal for completing the deliverables;
* Work plan
* Financial proposal
1. **How to apply**

All proposals must clearly indicate the tender reference: **“Ref. 17: Implementation a Feasibility Study on technical & financial potentials of Commercial & Industrial Sector for solar rooftop deployment in Hue & Danang”** and send **via email:** procurement@wwf.org.vn

***The deadline for proposal submission is at 10 AM 9th December 2019.***

*Late bids will be declared invalid.*

*“WWF is an equal opportunity employer and committed to having a diverse workforce.”*