



United Nations Industrial Development Organization

TERMS OF REFERENCE (TOR)

Feasibility study and development of an action plan for the promotion of manufacturing of components of small power wind turbines in Benin

CTCN request reference number: 2015000071

Requests for Technical Assistance (TA) are being submitted to the CTCN by the National Designated Entity (NDE) of the respective country. The scope of services under these Terms of Reference describes the response to such a request. By mandate, only accepted Members of the CTC Network are eligible to execute the required services to implement the response.

In case you are not a CTCN network member yet, you may bid for implementation of the technical assistance, subject to the condition that you submit your completed application for CTC Network membership before the bid closure and the same is acknowledged by the CTCN. Furthermore, the contract award – should your bid be selected – is conditional to your network membership application having been successfully approved by the Director of CTCN. Should the bidder partner with another institution to deliver the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.

1 BACKGROUND INFORMATION

The Climate Technology Centre and Network (CTCN) is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism and hosted by the United Nations Environment Programme (UNEP) in collaboration with the United Nations Industrial Development Organization (UNIDO) and supported by 11 partner institutions with expertise in climate technologies. The mission of the CTCN is to promote accelerated deployment and transfer of climate technologies at the request of developing countries for energy-efficient, low-carbon and climate-resilient development.

These requests for Technical Assistance (TA) are being submitted to the CTCN by the National Designated Entity (NDE) of the respective country. The scope of services under these Terms of Reference shall be executed based on a restricted solicitation process where only accepted Members of the CTC Network, are eligible to submit proposals. Should the bidder partner with another institution to deliver a minor part of the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.

The budget range for this contract is USD 77.000.



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2 CONTEXT OF THE ASSIGNMENT

Like most sub-Saharan African countries, Benin has low electricity access rates among households with 31 % at national level, 58 % in urban areas and 6.8 % in rural areas (2014 data). The Government of Benin began a rural electrification program in 1993 with the goal of increasing access to electricity for rural populations. This program consisted of installing solar photovoltaic systems in small isolated communities as an alternative to extending the national electric grid. Building on these initial efforts, The Benin Agency for Rural Electrification and Energy Management (ABERME) was created in 2004 to implement a coordinated national rural electrification policy, which has so far supported the development of several rural electrification projects. In June 2013, the National Development Agency of Renewable Energies was established to implement renewable energy and energy efficiency policies, including a 25% renewable energy goal. For Benin to achieve its sustainable development, environmental preservation, greenhouse gas emission reduction, and energy independence goals, the government and other energy institutions must support increased deployment of renewable energy. In addition to solar and hydro resources, studies have shown that Benin also has good small wind resources in its coastal areas that could be a source of power to rural populations in those areas. However, thus far, wind resources remain underutilized in Benin with only a few existing facilities.

In order to accelerate and expand renewable energy based electrification Benin aims to also utilize its wind resources to complement solar, hydro and biomass energy. In spite of the carried out studies that concluded sound potential for small scale wind in coastal areas deployment of the technology has not taken off. Stated as reasons for this were a lack of commitment to plans and strategies, a general lack of interest in wind energy, as well as very limited capacity both within the public and private sector to identify and address current barriers. One known barrier is the cost of small wind technology, which is why investment activities have been limited. To respond to this the request aims at creating a local industry using materials and components that can be sourced locally and therefore easily and cheaply, as well as easy to maintain. The power size of the turbines is expected to be up to 10 kW, however the feasibility study will provide a final indication on the definition of the targeted power size.

3 OBJECTIVE OF THE CONTRACT

This assistance seeks to advise Benin on the question whether or not kick-starting a local wind manufacturing and deployment market by first analyzing feasibility of local manufacturing of equipment. Then, if the results of the feasibility study are positive, a second phase of the intervention will produce recommendations to Benin as to how to create a manufacturing market as well as how to spur the installation of small wind turbines through capacity building, policies, regulations, programs, and other measures. The anticipated outcome is that Benin stakeholders will be informed about the potentials of local small wind component manufacturing and a market to sell the produced technology to generate renewable energy in rural areas that were previously lacking reliable energy access. Should the technology be deemed feasible stakeholders will furthermore be advised on how to plan a pilot manufacturing plant. In case feasibility cannot be concluded stakeholders will be advised about alternative opportunities to improve access to renewable energy based electricity in rural areas.



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Scope and Activities of the Proposed Contracted Services

The Contractor is expected to undertake the following line of activities:

Output 1:

A report of the feasibility study on local manufacturing of small wind technology in Benin. The study will take into account the current state-of-play for a small wind market in Benin including barriers to growth, current and planned regulatory actions and information on human capacity needs, based on an in-country assessment in collaboration with local experts including government, private sector, and other stakeholders; additional online research; and conversations with development partners.

Activity 1.1

Prepare an outline for the feasibility study and identify key stakeholders in collaboration with NDE and proponent

Activity 1.2

Organize and set up conference call to discuss and confirm the outline and scope of the study and identify local experts for subcontracting.

Activity 1.3:

Contract local experts and conduct preparatory research online and through phone calls with development partners and others; make arrangements for in-country meetings

Activity 1.4:

Conduct in-country data collection and stakeholder consultations.

Activity 1.5

Evaluate results from the data collection and consultations and write report

Activity 1.6:

In-country meeting to present and discuss study results; start discussion on next steps and the action plan (see Activity 2.1)

Deliverables under Output 1

- Deliverable 1.1: Study outline and list of key stakeholders
- Deliverable 1.2: Conference call minutes with conclusions; list of local experts
- Deliverable 1.3: Expert contracts and work plan
- Deliverable 1.4: Data collection and stakeholders consultation report
- Deliverable 1.5: Draft summary report for review by the proponent and NDE
- Deliverable 1.6: Final study report; Draft outline and scope for action plan



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Output 2:

If the results of Output 1 are positive and a small wind manufacturing and deployment market is considered feasible: An Action Plan will be developed that will consist of details of small wind industry goals for the 2020 and 2030 timelines, a summary of small wind industry opportunities and pathways to fulfil these opportunities, and a high-level plan for implementation of a pilot manufacturing project. (If the results of Output 2 are negative and a small wind manufacturing and deployment market is considered not feasible: A set of recommendations about alternative opportunities to generate access to and/or produce renewable energy technology locally.)

Activity 2.1:

Identify and invite additional key stakeholders (if necessary), and host an initial stakeholder meeting to determine aim and scope of next steps (in coordination with Activity 1.6)

Activity 2.2:

Develop draft action plan

Activity 2.3:

Incorporate feedback to develop final draft action plan and prepare final meeting to present plan to stakeholders

Deliverables under Output 2

Deliverable 2.1: Action Plan outline and initial recommendations, and stakeholder input on plan requirements.

Deliverable 2.2: Advanced draft action plan to be shared with stakeholders for their review.

Deliverable 2.3: Meeting report and final action plan.

Throughout all activities the contractor is asked to ensure gender equality both in terms of involvement of women in the activities as well as the outcomes and impacts of the activities. This has to be explicitly reflected in the budget and implementation plan. The contractor will furthermore be asked to regularly report progress to the CTCN and national stakeholders based on previously agreed milestones and to fill a final closure report. These monitoring and evaluation activities should be provisioned in the budget.

4 GENERAL TIME SCHEDULE AND ACTIVITY/DELIVERY PLAN

The activities under this contract should be completed within a period of six (6) months from signing the contract. The proposed plan for implementation of activities and deliveries:



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| Activities and Deliverables | Month | | | | | |
|------------------------------|-------|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Activity and deliverable 1.1 | | | | | | |
| Activity and deliverable 1.2 | | | | | | |
| Activity and deliverable 1.3 | | | | | | |
| Activity and deliverable 1.4 | | | | | | |
| Activity and deliverable 1.5 | | | | | | |
| Activity and deliverable 1.6 | | | | | | |
| Activity and deliverable 2.1 | | | | | | |
| Activity and deliverable 2.2 | | | | | | |
| Activity and deliverable 2.3 | | | | | | |

All draft and final deliveries are subject to approval from the CTCN Climate Technology Manager before these can be concluded.

5 PERSONNEL IN THE FIELD (PROFESSIONAL EXPERIENCE AND QUALIFICATIONS)

The Contractor is expected to provide the services of a team that should ideally comprise the following competencies:

- Experience with and understanding of the technical components of wind systems, installation and operations requirements, wind resource assessments and key market drivers
- Experience with manufacturing process design, especially in the small wind technology sector
- Understanding and experience with the needs and limitations developing countries are facing in this regard
- Experience with leading technical assistance projects in developing countries, including M&E reporting and budget supervision
- Experience with industrial economics and supply chains and sound understanding of local markets and socio-economic circumstances
- Strong communication and organizational skills

Working experience in Benin and West Africa is preferred for all of the above items. Furthermore, having national Beninese experts as part of the implementation team is required. The CVs of the respective experts assigned to this assignment by the Contractor must be provided.

6 LANGUAGE REQUIREMENTS

The working language for the purposes of this assessment is French, thus an excellent command of French is required of the proposed personnel. English language will also be required for the engagement



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with the CTCN. All final deliverables must be submitted in French with selected sections subsequently translated to English by the Contractor.

All delivered documents must be of sufficient enough quality so that no further editing shall be required.