

## Terms of Reference – International Consultant

Reference: 22/TCD/07/2021/IC

Date: July 18, 2021

- **Services/Work Description:** Independent Solar mini-grid expert to oversee and advise UNDP Chad Country Office on the implementation of one solar mini-grid in Chad, Municipality of Mandalia.
- **Project/Programme Title:** Development of Sustainable Energy Solutions.
- **Consultancy Title:** Solar Mini-grid Expert.
- **Duty Station:** Home-based with one possible trip to Chad.
- **Duration:** 9 months.
- **Expected start date:** August 2021.

Interested candidates are invited to submit their offers (technical and financial) for service by email in separate files to the following address: [procurement.td@undp.org](mailto:procurement.td@undp.org) no later than Monday, July 26, 2021 at 12 p.m. sharp, N'Djamena time, indicating the reference 22/TCD/ 07/2021/IC

(If this reference is not indicated in the subject line of your email, your offer cannot be considered).

Requests for clarification can be sent to [faq.td@undp.org](mailto:faq.td@undp.org)

### 1. BACKGROUND

UNDP is engaged to support the Government of Chad in the Development of Sustainable Energy Solutions to address: Economic and Industrial development, Empowering women, increase health, increase security and reduce deforestation, among others, through the establishment of a mini solar grid to supply households, public establishments and businesses in Mandalia.

The UNDP is in charge of procuring goods and services for the implementation of the solar mini grid through existing Long-Term Agreements established with International Engineering Companies for the provision of Turnkey Solar PV solutions.

The LTA Holders will be invited to submit a proposal to provide the following services:

1. Feasibility study, which includes:
  - Sites and Needs assessment (site conditions and potential users and consumptions)
  - Organizational and management model for the operation of the minigrid
  - Regulatory and Legal framework assessment
  - Energy financing and economic model (assessing user's capacity and willingness to pay, among others and predefining the final tariff model and amounts)
  - Environmental and Social Impact Assessment (ESIA)
  - Technical design based on the above (sizing of the overall system taken into consideration)
2. Procurement of the goods,
3. Installation,
4. Commissioning,
5. Operation and Maintenance.

In order to ensure the long-term sustainability of the solution implemented, UNDP Chad would like to engage an International and Independent Consultant to oversee and advise the different steps of the project and validate its suitability and quality.

Energy and Climate Change Specialists as well as specialized Engineers from centralized units in UNDP will also be involved and support during project implementation.

## 2. SCOPE OF WORK, RESPONSIBILITIES AND DESCRIPTION OF THE PROPOSED WORK

An independent mini-grid expert is sought to support UNDP Chad and UNDP Procurement Service Unit (PSU) in the following steps during the project implementation:

1. Define a preliminary size (rough estimate) for the main minigrid's components (i.e. PV capacity, power output, Energy Storage System's capacity, overall electricity distribution system and preliminary assessment on the number of meters and related type). The inputs required to pre-size the system will be provided by the team from UNDP Chad.
2. The tender documents will be elaborated by UNDP based on the preliminary sizing provided. The final documents will have to be reviewed by the mini-grid Expert to provide their comments, if any.
3. The mini-grid expert will be engaged as one of the Evaluation panel members and will conduct, together with UNDP Chad and the engineers in PSU, the technical evaluation of the offers.
4. The mini-grid expert will review the Feasibility Study elaborated and provide comments and recommendations.
5. The mini-grid expert will conduct an overall oversight of critical steps during the implementation of the mini-grid.
6. Independent approval of the final system commissioned by conducting the Site Acceptance Test (SAT).

## 3. EXPECTED OUTPUTS AND DELIVERABLES

#	Deliverable	Person-days	Expected deadlines
1	Pre-sizing of the mini-grid	4	20/08/2021
2	Tender documents' review	1	31/08/2021
3	Technical Evaluation of Proposals	2	24/09/2021
4	Review of Feasibility study conducted	5	31/12/2021
5	Implementation Oversight	10	31/07/2022
6	Commissioning oversight and certification of overall solution (Site Acceptance Test)	3	31/07/2022
	TOTAL	25	

## 4. INSTITUTIONAL ARRANGEMENTS/REPORTING LINES

The Individual Contractor will report to the Sustainable Development Programme Team in UNDP Chad. At minimum, bi-weekly progress reporting should be provided via email. Additional reporting will be required though meetings during the pre-sizing of the mini-grid, the technical evaluation of the proposal, the finalization of the review of the Feasibility Study and during the critical steps while the mini-grid is being implemented. While reporting to UNDP Chad, the Individual Contractor will be required to interact with UNDP Bureau for Policy and Programme Support (BPPS), UNDP Procurement Service Unit (PSU) and the supplier in charge of the implementation for the feasibility study and consequent mini-grid.

## 5. EXPERIENCE AND QUALIFICATIONS

### Academic Qualifications:

- Hold a University Diploma or Equivalent (Bac +5): Electrical Engineer, or similar, with a specialization in renewable energy, project development, environment or a similar field

### II. Years of experience:

- Have at least 5 years of professional experience in the design of photovoltaic mini-grids with batteries, preferably in Africa.
- Proven experience in the design of at least 3 photovoltaic mini-grids with batteries, supported by certificates of completion or other equivalent documents.
- Have a good understanding of the financing and risks of (energy) projects in developing countries.

### III. Language:

- Fluency in French is required
- Fluency in English is highly desirable

### IV. Competencies:

- Strong analytical and reporting skills.
- Planning and organization.
- Team work.
- Flexibility and adaptability

## 4. CRITERIA OF EVALUATION

Qualifications and experience
Hold a University Diploma or Equivalent (Bac +5): Electrical Engineer, or similar, with a specialization in renewable energy, project development, environment, or a similar field
Have at least 5 years of professional experience in the design of photovoltaic mini grids with batteries, preferably in Africa
Proven experience in the design of at least 3 photovoltaic mini grids with batteries, supported by certificates of completion or other equivalent documents
Have a good understanding of the financing and risks of (energy) projects in developing countries
Fluency in French and English are required
Understanding the TOR and methodology
Clear description of the expected results and products of the mission
Quality and consistency of the proposed approach in relation to the terms of reference points)
The work plan and timeline are consistent with the approach
Total

### Payment modality

Payment to the individual contractor will be made based on the following deliverables accepted and upon

certification of satisfactory completion by the manager:

1. Deliverable 1: Pre-sizing of the mini-grid
2. Deliverable 2: Tender documents' review
3. Deliverable 3: Technical Evaluation of Proposals
4. Deliverable 4: Review of Feasibility study conducted
5. Deliverable 5: Implementation Oversight
6. Deliverable 6: Commissioning oversight and certification of overall solution (Site Acceptance Test)

Applicable Terms and Conditions are available at:

<http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html>