



## REQUEST FOR EXPRESSIONS OF INTEREST

(INDIVIDUAL CONSULTANTS)

**Country: Multinational – Intergovernmental Authority on Development (IGAD)**

**Project Name: Desert-to-Power, East Africa Regional Energy Project (EAREP)**

**Sector: Energy**

**Grant Reference No.: 2100155041474)**

**Project ID No.: P-Z1-F00- 129**

1. This Request for Expression of Interests follows General Procurement Notice (GPN) published on UNDB, AfDB and IGAD websites dated 7<sup>th</sup> September 2022.
2. The Intergovernmental Authority on Development (IGAD) *has received* financing from the African Development Fund toward the cost of the **Desert-to-Power, East Africa Regional Energy Project (EAREP)** and intends to apply part of the agreed amount for this *grant* to payments under the contract for consultancy assignment to **Solar Mapping (The Detailed Terms of Reference (ToRs) are attached to this REoI) in the following seven members states (Djibouti, Ethiopia, Kenya, Somalia, Sudan, South-Sudan, Uganda).**
3. The objective of these consultancy assignments is to promote the development of large-scale solar grid connected PV projects in IGAD member states.
4. Intergovernmental Authority on Development (IGAD) Secretariat, located in Djibouti, is an Executing Agency responsible for facilitating and manage fiduciary functions of the project.
5. IGAD now invites eligible consultants to indicate their interest in providing these services. Interested qualified applicants should send letters Expressing their Interests, updated Curriculum Vitae, and Copies of academic and work experiences.
6. Eligibility criteria, for the establishment of the short-list and the selection procedure shall be in accordance with the African Development Bank's "[Procurement Framework](#) dated 1<sup>st</sup> January 2016", which is available on the Bank's website at <http://www.afdb.org>.

7. Interested consultants may obtain further information at the address below during office hours from Sunday to Thursday, 7:30 AM to 2:30 PM East African time.
8. Consultants who have applied to previous postings on the same are not required to apply again.
9. Expressions of interest must be delivered to the address below by **30<sup>th</sup> August 2024** at or before 12:30 local time and mention consultancy services to “**Solar Mapping**” for country **X, (please name the country you want to apply for).**

CC to:

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## **Desert-to-Power, East Africa Regional Energy Project (EAREP)**

### **Terms of Reference for the Recruitment of 7 National Consultants Undertake National Solar Mapping**

#### **1. Background**

Desert to Power (“DtP”), a flagship renewable energy and economic development initiative led by the AfDB, aims to accelerate socioeconomic development through the deployment of solar technologies at scale in the 11 countries of the Sahel region (Burkina Faso, Chad, Djibouti, Eritrea, Ethiopia, Mali, Mauritania, Niger, Nigeria, Senegal and Sudan).

**The second phase of the DtP programme, namely, East Africa Regional Energy Project (EAREP),** aims to develop and harmonize a regional Renewable Energy policy for the East Africa Sahel countries (namely, Djibouti, Eritrea, Ethiopia, Sudan) in collaboration with the **Intergovernmental Authority on Development (IGAD)**. Specifically, the project aims to develop technical studies for regional solar parks and associated battery storage near the regional interconnectors as well as strengthen the technical capacity of IGAD in the operationalization of the AfDB-financed Regional Infrastructure Master Plan (IRIMP) completed in December 2021.

Under the EAREP, the project specifically aims to set indicative Renewable Energy targets at regional level that are to be harmonized with national targets. It will also propose a portfolio of policy measures, laws, regulations and incentives to be implemented at national and – where applicable – regional levels in the East Africa Sahel region. It is expected that the project will contribute to increasing access to electricity in Ethiopia, Eritrea, Djibouti, and Sudan countries by launching several regional on-grid solar energy electricity programs with associated battery storage for stabilizing the grid interconnectivity. Developing on-grid solar will also contribute to reducing GHG emissions in the respective countries, thereby enabling them to achieve their mitigation targets for the energy sector as outlined in their respective Nationally Determined Contributions under the Paris Agreement. Lastly, the project will strengthen the capacity of the IGAD Secretariat, and relevant stakeholders on policy frameworks, energy planning, climate change screening, project agreements negotiations and drafting.

Energy sector challenges across the EAREP Sahel region are similar and include (i) poor energy security due to fluctuating fossil fuel prices and import shortages, (ii) energy poverty in rural and peri-urban areas, (iii) lack of sustainable energy policies, planning capacities and investments, (iv) unsustainable use of local energy resources, (v) increasing barriers for renewable energy development and energy efficiency, (vi) dependence on fossil fuels for energy such as petroleum and kerosene which contribute to GHG emissions, and (vii) climate change impacts such as the frequent and prolonged droughts that reduce hydro-electric generation and erosion and landslides that threaten established energy infrastructure. These limitations inhibit the potential for the

development of economic activities, the delivery of performing health and social services, the improvement of the education system and the overall poverty reduction in the region and the achievement of the SDGs.

In these countries, high quality data on the technical and economic, potential, and geographic concentration, or seasonal availability of renewable energy sources does not exist. This challenge will constrain the ability of these countries to properly undertake their strategic planning and commercial investments. Evidence shows us that the impact of these limitations includes poor planning, increased site prospecting costs, higher financing costs due to increased resource risk, and a lack of transparency in relation to land compensation. Therefore, assessment and mapping of these renewable resources is a critical input to any sound and comprehensive generation and transmission planning processes especially in identifying future private investments. This will as well, be important for purposes of informing government policy and can be utilized to inform individual project development decisions.

Compared to generation of electricity from fossil fuels, generation of electricity from renewable energy sources differs in that the location and sufficient availability are crucial factors in planning and costing.

To this end, IGAD has received a grant of UA 4 million for a period of four years to implement the project.

**The project has four main components:**

**Component I: Harmonization of the Regional Regulatory and Policy Framework**, which aims to propose a portfolio of policy measures, laws, regulations, and incentives to be implemented at national and – when applicable – regional levels in the East Africa Sahel region.

**Component II: Technical Studies for Development of Regional Solar Parks**, which aims to support the implementation of regional solar parks to respond to electricity demand in the region.

**Component III: Capacity Building** which aims to enhance IGAD skills in energy planning; technical, legal, financial, and environmental aspects of RE technologies.

**Component IV: Project Management:** comprises the quality control and supervision of the project.

IGAD intends to recruit seven national consultants in IGAD member states to undertake a consultancy for solar mapping exercise.

This assignment is intended to be done within Component Two of this project. The objective of this component is to support the preparation of technical studies for regional solar parks to respond to electricity demand in the region and corresponding transaction advisory. Within this component, Sub-component, 2.2 is planned to do solar mapping where solar maps are foreseen as one stop shop storing all relevant local information regarding available solar incentives and programs. They are interactive and user-friendly tools for planning and investment.

## **2. Objective**

The objective of this consultancy is to provide governments, industry, consumers, and communities with the methodology and tools to successfully plan and implement national and regional solar energy maps. It as well aims at assessing and mapping the solar potentials and resources with emphasis to promote public awareness about solar energy, enable consumers to discover solar potential of their own properties and facilitate increased solar usage among property owners. As well, these maps can be used as tools for planning, costing and investment purposes.

Given the importance of development of solar maps, this assignment is expected to be undertaken based on realization of the following specific objectives:

- Ensuring that commercial development is planned, coordinated, and focused on the best locations from a power system perspective, considering the magnitude and quality of the resource, proximity to demand centers, potential to reduce costs, and can permit streamlining.
- Obtaining good value for money when carrying out competitive bidding.
- Avoidance of adverse or minimized environmental and social impacts.
- Identifying alternative and potentially competing uses of available natural resources and land to avoid conflicts and promote sustainable resource management.
- Provide data in a sense that enable planners to use it for purposes of grid integration and grid interconnections.

### **Scope of work and Responsibility**

The consultant is expected to undertake a national solar mapping exercise. The solar mapping exercise will help the governments in the planning of large-scale solar PV projects.

This shall include the, but shall not necessarily be limited to the following:

- Undertake a desk review of available relevant information on solar mapping exercise to inform the methodology and approach of the assignment. This includes information available at country level on solar resources data, energy policy data, energy and power plans, historical weather data, performance of existing solar PV power plants, existing, ongoing, and planned large solar PV plants, regional interconnectors and in-country transmission lines relevant for large solar PV power plants.
- Identify key solar PV stakeholders and how they can be included in the mapping process including institutional, industry, finance, consumers, research institutions, civil society actors among others. This may entails proposing a communication strategy for them based on stakeholder analysis and ways of involving them.
- Produce country specific solar resources maps using primary and secondary data including satellite data.
- Discuss with identified key stakeholders including but not limited to the ministry of energy, the national utility, the ministry of finance, the ministry in charge of land, for the identification of suitable potential land and sites for large solar PV projects taking into consideration the proximity of national transmission lines and regional interconnectors.

- Use potential data identification tools to develop a plan for data gathering taking into consideration the issue of land use plans.
- Undertake the following tasks for the selected and/or suggested specific sites:
  - Collect solar irradiation (direct and global irradiances) data using ground-based measurements if available or satellite measurements data.
  - Analyze historical weather data to understand climatic conditions, temperatures and humidity variations, cloud cover that may impact solar PV production.
  - Conduct shading analysis taking into consideration the proximity of trees, mountains, hills, buildings ... etc.
- Prepare a national report which shall highlight the understanding of solar maps, their benefits, types, users, components, vision or road map and as well highlight some case studies for up scaling and improvement and make a case for mainstreaming such processes in planning and policy making processes.

### 3. Main deliverables

The main deliverables for this assignment are:

1. **Inception report** (1 month following the signature of the contract): contains the updated work plan, understanding of the assignment, methodology and tools that will be used including the solar PV modelling software and GIS software, analytical framework that will be used for questionnaires, structure of the final report, nature and sets of maps that will be produced.
2. **Interim report** (2 months after the signature of the contract): this is expected to give the preliminary findings of the assignment and recommendations for discussion and feedback.
3. **Draft final report** (3 months after the signature of the contract): this is expected to include the main findings and the details of the national proposed solar maps as per this ToR.

### 4. Required qualification and Experience

- **Qualification:** Advanced Degree (Msc and above) in renewable energy, energy policy, energy management, or other related fields
- Track-record of a minimum of seven years of work experience in the energy sector in the East Africa region, preferably in renewable energy.
- Proven experience in working in the field of energy and in renewable energy access, knowledge of technologies, and market trends, barriers and opportunities of energy access.
- Proven experience as expert in similar assignments on renewable energy-related work, mapping of renewable energy resources, data collection and preparation of reports
- Proven experience and good network with stakeholders in the energy sector including public, private sectors, business sector, sector associations, universities, and research institutions among others in the East Africa Sahel Region.

- Working experience in projects funded by the African Development Bank (AfDB) or other similar multilateral development partners.
- Strong communication, coordination, and time management skills.
- Ability to work pro-actively and independently with result-oriented attitude.
- Fluency in English is required for consultants applying for position in all IGAD countries except Djibouti.
- Fluency in French is required for consultants applying for position in Djibouti.

#### **5. Duration and Duty Station of the Consultant**

The duration for this assignment will be two months (60 working days) starting from the date of signing the contract. The assignment is a country-based consultancy where the consultant will be working within the country of assignment.