

Terms of Reference (TOR)
CONSULTING SERVICES
for
100 MW Kom Ombo Concentrated Solar Power Project in Egypt

I. BACKGROUND/INTRODUCTION

Electricity demand in Egypt is growing at about 7% per year, which implies adding about 1,500-2000 MW generation capacity per year over the next several years. The increase in energy demand has been met primarily by increased use of fossil fuels, leading to the high energy and carbon intensity of the economy. The Government's power generation expansion plan is based primarily on natural-gas fired combined-cycle and steam technologies, supplemented by wind power.

However, to meet the growing electricity demand, the Ministry of Electricity and Energy (MoEE), with endorsement from the Cabinet, adopted the following power sector development strategy: (i) increased use of efficient fossil-fuel generation technologies (CCGT and supercritical steam boilers); (ii) large scale development of Egypt's renewable resources with the goal of having 20% of its electricity generation in the form of renewable by 2020; and (iii) stepping up efforts for more efficient consumption of electricity.

Since the renewable energy electricity generation technologies, particularly wind and Solar Thermal have been developed tremendously during the last two decades and are approaching maturity, the Renewable Energy strategy of Egypt has given the utmost priority to the large scale renewable energy electricity generation projects which can serve both national and regional objectives for saving fossil fuels, environmental protection, creation of jobs and technology transfer.

Egypt as one of the Sunbelt countries possesses largest potentials of solar energy reaches almost 30% of the total potential in the region. MED-CSP, a study carried out for MENA countries, states that Egypt has a Technical Solar Thermal Electricity Generating Potential of about 73656 TWh/year.

Presently, a 140 MW Integrated Solar Combined Cycle (ISCC) power plant has been completed and expected to be operative by the end of March 2011. The solar share is about 20 MW capacity. The project's implementation is undertaken by Egyptian company ORASCOM for the Solar Island and the Spanish company IBERDROLA for the combined cycle island.

The Egyptian long-term vision includes the implementation of CSP power projects for developing new communities in the vast desert as well as exporting the green energy to Europe via Mediterranean interconnection links, taking into consideration the enhancement of local manufacturing of CSP components to improve the economics of solar thermal power projects.

In order to assist the GoE in its ambitious agenda, the Clean Technology Fund, through its implementing partners, the AfDB and the World Bank, is supporting regional upscaling of CSP in the MENA region. On 2 December 2009, the Clean

Technology Fund Trust Fund Committee (CTF TFC) endorsed the CTF Investment Plan for Concentrated Solar Power in the Middle East and North Africa Region, supporting the development of the first giga-watt of solar power in the region. The CTF Investment Plan includes a 100 MW CSP project to be implemented in Kom Ombo, 65 km north of Aswan along the Nile River. This is in line with the electricity generation expansion plan for Egypt includes implementing a CSP project with capacity of 100 MW during the period (2012-2017).

II. PURPOSE OF REQUIRED CONSULTING SERVICES

In the context of the MENA CSP Investment Plan, the Government requested AfDB/CTF/IBRD support for the implementation of the **100 MW Kom Ombo CSP project in May 2010**. This project will be implemented as a public sector project and will be fully owned and operated by the New and Renewable Energy Authority (NREA). NREA will enter into a contract with the Egyptian Electricity Transmission Company (EETC) to sell the power from this plant.

The pre-feasibility work for this project has been completed in August 2010 (as part of the Empower program executed by UNEP and the BMZ) and the feasibility study is expected to be completed in Dec.2011/Jan.2012, financed by the Kreditanstalt fuer Wiederaufbau (KfW). The African Development Bank (AfDB) and World Bank (WB) are working closely with other donors in the preparation of this project.

In order to further support the development activities of the Kom Ombo CSP project, NREA seeks the services of a qualified consultant to undertake, in close collaboration with NREA, the whole process of procuring the main EPC contractor to implement the project as well as provide capacity building to NREA in the area of solar energy applications.

III. SCOPE OF THE SERVICES

General

The required consultancy services include two main components: A) procurement of EPC contractor to construct the Kom Ombo CSP plant, and B) capacity building for NREA.

Component A: Procurement of EPC Contractor

This component will be executed in three main stages: Bidding, Bid Evaluation and Contracting. The procurement process will build on the findings of the feasibility study.

All procurement-related documents and procedures must conform with the requirements of the World Bank and African Development Bank, including the use of standard pre-qualification & bidding documents and prior review.

Stage I: Bidding

Task I-1: Conceptual Design

This task includes the following subtasks:

- Review the findings of the feasibility study with respect to the optimum range of technological and design configurations; confirm or revise their results as appropriate, identify any weaknesses or gaps.
- Technical Configuration and specifications.
- Conceptual Design
- Develop Project Time Schedules
- Update the preliminary cost estimate
- Prepare a bidding strategy and design an evaluation approach.

Task I-2: Prequalification of EPC Contractors

The Consultant will draft an announcement for pre-qualification of EPC contractors which will be in form of a newspaper advertisement. The Consultant will also send this advertisement directly to potential bidders. Finally, they shall prepare a prequalification evaluation report based on the responses received and a shortlist of qualified bidders.

Task I-3: Bidding Documents

The Consultant shall prepare complete bidding documents for requesting offers from the shortlisted EPC contractors. The bidding documents will include detailed technical specifications of the CSP project, bidding forms, bid evaluation methodology and criteria, and contract documents; in conformity with the requirements and standard documents of the WB and AfDB.

Task I-4: Pre-bid phase

The Consultant will participate in the pre-bid meeting, and shall prepare minutes of meeting and answers to the questions raised by the bidders. The Consultant shall also prepare any addendums to the bidding documents as needed.

Stage II: Bid Evaluation

The Consultant will work jointly with NREA staff in Cairo to evaluate the submitted proposals according to the criteria stipulated in the bidding documents, prepare the bid evaluation report and rank the offers according to the evaluation criteria.

Stage III: Contracting phase

The Consultant will prepare the points to be clarified with the successful bidder, attend the negotiations meetings and prepare the final contract document until contract signature.

Component B: Capacity Building for NREA Staff

The main objective of this component is to increase the capacity of NREA staff in dealing with solar energy projects, especially the concentrated solar power technology. The capacity building should include components targeting solar resource measurement and assessment, technical and economic/financial feasibility of utility-scale solar power projects, operation and maintenance of solar power plants.

The Consultant is to propose the most effective modalities for delivering the required capacity building, including on-the-job training, conducting training sessions and seminars, provision of reference material, case studies and computer models, etc. A minimum number of five technical staff from NREA are expected to fully benefit from this capacity building component.

As part of the solar resources measurement/assessment capacity building, the Consultant will be required to assist NREA in procuring a solar measurement station for the Kom Ombo project. The station will include all the equipment necessary for assessing the solar resource for applications such as the Kom Ombo project, including pyreheliometer; pyranometer; automatic solar tracker; pressure, temperature, humidity and wind measurements; data logger and communication modem. The station will be procured and installed during the first three months of the consultancy services, whereas the Consultant will be assisting NREA in manipulating, analyzing and interpreting the measured data for a period of four months after installation.

The capacity building component will be delivered at NREA premises in Cairo. NREA will provide office space for organized training sessions, seminars, etc. All travel-related costs should be covered by the Consultant. English shall be the main language used for all the activities, e.g. training sessions, printed material, etc.

IV. TIME SCHEDULE AND DELIVERABLES

A tentative time schedule for implementation of the required consultancy services, including list of the main deliverables/milestones, is provided below. The consultant will submit all deliverables and reports to NREA in five hard copies and one soft copy. The reports will be subject to approval by NREA and the financing institutions.

V. ORGANIZATION OF THE WORK

The consultant team shall be specifically composed to meet the needs of the project. The work will be in close coordination with NREA staff. The consultants should thus specify how to organize the work to ensure the minimum elapsed time and maximum efficiency and transfer of experience in the development of the three stages.

The work should be arranged as follows:

- i. NREA will participate in all activities of this project in coordination with the consultant.
- ii. Pertinent data will be supplied by NREA who will also provide such assistance as may be reasonably required for carrying out the services.
- iii. Report preparation and reproduction including word processing, drawing and editing shall be carried out at the offices of the Consultant at his own cost.
- iv. The consultant will be provided with an air-conditioned office, with enough space for four persons, and access to local calls.

- v. The consultant has to provide NREA with working copies of any computer models and software used to conduct the services. The consultant will also provide “User operation Manuals” for those computer models and provide NREA staff with sufficient training on those models.

