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An Institute of the Polytechnic of Namibia

Request for Proposal

PRE-FEASIBILITY STUDY FOR THE ESTABLISHMENT OF A PRE-COMMERCIAL CONCENTRATED SOLAR POWER PLANT IN NAMIBIA

TENDER NO. 20/2011

Letter of Invitation

1. Introduction

The Pre-Feasibility Study for the Establishment of a Pre-Commercial Concentrated Solar Power Plant in Namibia is funded by the **MINISTRY FOR FOREIGN AFFAIRS OF FINLAND** through the **ENERGY AND ENVIRONMENT PARTNERSHIP WITH SOUTHERN AND EASTERN AFRICA (EEP S&EA)**, and the **MINISTRY OF MINES AND ENERGY OF NAMIBIA**, to identify the most viable site for installation of a Concentrating Solar Power (CSP) technology and the appropriate technology for energy generation.

The Renewable Energy and Energy Efficiency Institute (REEEI) at the Polytechnic of Namibia in co-operation with its partners has embarked on a solar thermal power programme so called Concentrated Solar Power Technology Transfer (CSPP TT NAM). The objective is to increase the share of renewable energies in the Namibian energy mix by developing the necessary technological framework and conditions for the successful transfer and deployment of Concentrating Solar Power (CSP) technology for on-grid power generation. The REEEI implements CSP TT NAM on the behalf of the Ministry of Mines and Energy with funding from the Global Environment Facility (GEF) through United Nations Development Programme (UNDP) of Namibia.

In the scope of CSP TT NAM, the **ENERGY AND ENVIRONMENT PARTNERSHIP PROGRAMME WITH SOUTHERN AND EASTERN AFRICA (EEP S&EA)** and REEEI have initiated a project focused on identifying the most viable CSP technology for use in Namibia as well as identifying options for stimulating technology transfer. An important component of this study would be to complete a national solar resource assessment to determine in substantial detail the extent of Namibia's solar energy resource. Based on the outcome of the technology selection and solar resource assessment, the study would recommend the best potential locations for CSP power generation in the country and the most appropriate technology.

2. Namibian Background

Namibia's peak demand for electricity is approximately 590MWe of which more than 50% is oftentimes imported from the Southern African Power Pool—mostly South Africa and Zimbabwe. Of its 393 MW of in-country generating capacity, a mix of base load and peaking capacity, the majority is supplied by hydropower and a substantial part is fossil fuel based. Adding to this shortfall in capacity is an expected average annual growth in electricity demand estimated to be 3% over the next 30 years.

The Namibian Government is pursuing a policy of energy security by promoting a diversified energy mix to ensure that the country does not become overly dependent on electricity imports or on one source of energy. Renewable energy is playing an increasingly important role given the country's abundance of natural wind, solar and hydro resources. Given the practical day-to-day limitations of wind power and the capacity limits, extraterritorial and drought risks inherent with hydro, the strategic implications of Namibia's natural resources are such that solar presents the most potential.

Due to capacity constraints in South Africa, the regional powerhouse in installed and generation capacity, Namibia, being an importer of electricity from South Africa, is extremely vulnerable to potential supply problems and is therefore willing to take into serious consideration viable options in closing this gap, including power produced by independent power producers.

The country's only coal-fired plant, a 120 MW peak-load facility located in its capital, Windhoek, is in the process of being evaluated by the utility Nampower to either be retired or to receive a major overhaul due to its age, on-going breakdowns and high maintenance demands. Building a new coal plant is not a desired option because importing coal from South Africa is more expensive than importing electricity and coal, in addition to adding CO₂ and other emissions to the atmosphere.

Namibia's solar regime is considered to be one of the best (averaging 2,200kWh/m²/year) in the world. CSP plants in Namibia can have substantially better efficiency as a result of higher solar irradiation—compared to other areas of the world with lower irradiation—resulting in increased plant performance. This in turn can provide for a substantially higher return on investment. The Namibian Government realizes the importance of having a competitive tariff structure for grid-tied Independent Power Producers (IPPs) and is making significant and progressive steps towards implementation thereof.

Through the White Paper on Energy Policy (1998), the Namibian Government has committed itself to modifying its power infrastructure to incorporate the establishment of a renewable energy component. As a result, recent advances have been made in Namibia in establishing or augmenting renewable energy generation capabilities (grid as well as off-grid). Wind, solar photovoltaic, biomass and hydropower projects have either been installed or approved for construction. Other developments include a hydro power Master Plan and the launch of a Ministry of Mines and Energy (MME) Programme in 1993 called the "Promotion of the Use of Renewable Energy Sources in Namibia" and the Namibia Renewable Energy Programme (NAMREP) (2004-2010).

Of note, CSP projects have yet to be developed in Namibia and there is no institutional policy framework established for implementing CSP projects. It is projected that the pre-feasibility study would not only contribute to the development of the first CSP power plant in the country but would also act as a catalyst to initiate additional related projects.

3. Information to Consultants

a) Client and the source of the funds

The study is funded by the **MINISTRY FOR FOREIGN AFFAIRS OF FINLAND** through the **ENERGY AND ENVIRONMENT PARTNERSHIP WITH SOUTHERN AND EASTERN AFRICA (EEP S&EA)**, and the **MINISTRY OF MINES AND ENERGY OF NAMIBIA**. The lead client for the pre-feasibility study is the Renewable Energy and Energy Efficiency Institute (REEEI) at the Polytechnic of Namibia and **PLEASE NOTE THAT ALL CORRESPONDENCE REGARDING THIS STUDY SHOULD BE DIRECTED TO REEEI.**

b) Description of the objectives and the scope of the assignments

Recognizing the need for encouraging private sector participation in CSP electricity generation, in conjunction with encouraging broader public sector and government participation, EEP S&EA and REEEI have initiated a project focused on identifying the most viable CSP technology for use in Namibia as well as identifying options for stimulating technology transfer. An important component of this study is to complete a national solar resource assessment to determine in substantial detail the extent of Namibia's solar resource. Based on the outcome of the technology selection and solar resource assessment, the study recommends the best potential sites for CSP power generation in the country and the most appropriate and cost-effective technology. Furthermore, the study details the best practices on ground measurements for selected sites and gives recommendation for a successful CSP technology transfer.

c) Language of proposal

The language of proposal is English.

d) Partnership opportunity

The scope of the study being multi-disciplinary, the bidder is allowed to partner with other consultants. If the bidder is not Namibian, collaboration with local consultants would be recommended to be a first step of the technology transfer.

e) Official currencies

The official currencies of the bid are Namibian dollar, South African Rand, US dollar or Euro.

f) Due date and place of submission

The deadline for proposal submission is **16h30-Namibian Time, Monday, 16 January 2012.**

The proposal may be submitted in electronic - or hard copy format and shall be submitted on or before the closing time and - date to:

The Coordinator
Renewable Energy & Energy Efficiency Institute
Office of the Rector
 Polytechnic of Namibia
 13 Storch Street
 Private Bag 13388
 Windhoek-Namibia
 Tel: +264 (0)61 207 2154
 Fax: +264 (0)61 2072059;

or, e-mail your submission to the REEEI at: reeei@polytechnic.edu.na

Note: All submissions must clearly indicate **"TENDER NO. 20/2011: PRE-FEASIBILITY STUDY FOR THE ESTABLISHMENT OF A PRE-COMMERCIAL CONCENTRATED SOLAR POWER PLANT IN NAMIBIA PROPOSAL"** on the subject line

g) Request for clarification

Requests for clarification are allowed up to the deadline of **16h30 Namibian Time, Friday, 6 January 2012.**

h) Submission and Evaluation Process

The consultants are required to submit **TWO (2)** separate and clearly marked proposals; Technical and Financial. The proposals are evaluated based on their technical and financial strengths.

1. Technical Proposal Evaluation Criteria (with Total Possible **Score of 100%**):

Phase 1: Expertise of Firm/Organization Submitting Proposal in CSP feasibility research and implementation (with Total Possible **Score of 30%**)

Phase 2: Proposed Work Plan and Approach (with Total Possible **Score of 50%**)

Phase 3: Personnel; educational background and experience in similar assignment (with Total Possible **Score of 20%**).

2. Financial Proposal Evaluation Criteria:

The Firm(s)/Organization(s) with a score of **70%** and above in the Technical Proposal Evaluation proceed(s) to the Financial Proposal Evaluation, and the lowest bid is recommended.

i) Profile of the bidder

CV, academic and professional qualifications of the experts involved are expected as well as different references to similar studies/projects from the consultant(s). An overall experience of at least **TEN (10)** years is a necessary criteria.

j) Anti corruption and illegal practices

The tender can be rejected or the supply contract can be cancelled in case any illegal or corrupt practices are found to be connected with the award or the execution of the contract. No offer, gift, payment or benefit, which would or could be construed as an illegal or corrupt practice, shall be accepted, either directly or indirectly as an inducement or reward for the award or execution of procurement contracts.