

Background Information and Terms of Reference

1. Background Information

- 1.1 The Government of Timor-Leste is inviting interested eligible Power Consulting Companies to submit Expression of Interest and Proposal for the **Construction Supervision Works of the Nationwide Electrical Power Grid and Power Plant and its Facilities** that will be constructed to supply a capacity of **180 Megawatt (MW)**.

This work will include the construction supervision of the works to be done by the company that is contracted to do the design, supply, installation, testing and commissioning of the two (2) power plants, ten (10) sub-stations and 630 KMs of nationwide power grid for the Country.

For implementation purposes, the Ministry of Infrastructure will be the Executing Agency (EA) for the Project.

- 1.2 Democratic Republic of Timor-Leste is one of the new countries in the world that needs development. This is an island country which lies at the east end of the Nusa Tenggara Timur (Lesser Sunda Islands), covering the eastern part of the Timor Island, and Oecussi in north coastal area in the west, as well as some isles. Land area 14,874 square kilometers, population is about 1,000,000. This is a mountainous country with littoral plains and valleys. Most of the land is of tropical rainforest climate, with the annual mean temperature at 26°C, and the mean annual precipitation at 1200-1500 mm. The country is divided into 13 districts. The capital Dili lies in the northeast coast of Timor Island, with population of more than 170 thousand, and it is the country's center of politics, economy, and culture.

Total length of highway is 3800 kilometers, with highways connecting all the districts, but a part of the road are open only in the dry season. Dili Port is deepwater port. Dili Airport is an international airport.

Based on the national economic development plan of Timor-Leste, the northern coastal area will be mainly used to develop tourism, and the southern coastal area will be the source development areas for petroleum, natural gas and mineral products. Some of the west areas are mainly used to develop food and agriculture products.

- 1.3 At present, all the generators in Timor-Leste are thermal generator sets using diesel fuel. The total national installed capacity for the whole of Timor-Leste is about 44-MW of which the installed capacity in Dili alone is 28-MW, and in all other places are between 1.0 - 1.5 MW. There is a separate independent 50Hz 20kV local power network in Dili.

The power supply in Dili Capital is not enough and has been often in a situation of limited power supply with frequent power outage and timing of power supply.

It's very popular that the government departments, enterprises, shops and some residential areas are using generators. The other areas can only keep the generators running in the

night for illumination, and there are many countryside villages that have no power to use at all. Serious power shortage has become the bottleneck for Timor-Leste to recover and develop its economy.

1.4 To meet the demands for electric power requirements within the recent situation and taking into consideration Timor-Leste's 10-year economic recovery and development plans, the two thermal power plants with total capacity of 180MW, and power transmission line of 110KV for nationwide use will be started to construct by the Company contracted by the Government of Timor Leste. The need for a Power Consulting Company to supervise the construction and installation of the plants, support transformer substations and trunk transmission lines between the districts, central switching station, and normal switching stations is necessary to assure that the works to be done by the power company are in accordance in what was agreed in the power EPC contract.

2. Project Description and requirements of the EPC Contract that will be supervised by the Power Consulting Company

2.1 The Project and specification:

- 2.1.1 Heavy oil power plants to be constructed in two strategic places of the Country;
- 2.1.2 Transmission line network covering the whole country;
- 2.1.3 Transformer control system supporting the network of the power plants.

2.2 Equipments to be provided shall be well known brands for its durability.

2.3 In the submitted documents, the following basic information are included:

2.3.1 Power Plant

- Name of master unit and related technical data
- Slave units
- Other support facilities
- Workshop plan and design
- Other support building plan and design

2.3.2 Transmission and transformer system

- Point Layout of Power Supply
- Trunk transmission lines
- Transformer substations and switching stations

2.3.3 Maintenance of equipments and technicians training.

3. Qualification of the Power Consulting Company

3.1 Power Consulting Company (the Consultant) and their cooperators shall be capable to do construction supervision and it must be a corporate body with at least 10 years experience in undertaking supervision works in international capacity.

3.2 Engineering experiences for the power consultant company and their cooperators should have carried out the construction supervision of normal thermal power plant with total capacity not lower than 500MW, and has a supervision experience in heavy oil generator plant of over 50MW.

4. Scope of Work of the Power Consulting Company

- 4.1 The Consultant shall represent the interest of the Government vis-à-vis the contract in any matter related to the construction contract and proper execution thereof;
- 4.2 Provide guidance and directions to the power contractor and supervise their work;
- 4.3 Review the detailed design and indicate to the contractor on how to do the work properly;
- 4.4 Assist the EA to prepare additional standard drawings as necessary and furnish the same to the contractor on timely basis;
- 4.5 Furnish for the use of the Contractor all necessary ground and topographic data for the establishment of grid alignments and plant sites, etc.;
- 4.6 Review and recommend for approval of the MOI the Contractor's work schedule or revision thereto including a critical path diagram for the construction of the project;
- 4.7 Establish proper standardized quantity and quality control programs;
- 4.8 Assume responsibility for the certification (quality and quantity) of completed works in the project;
- 4.9 Assess the adequacy of all inputs such as materials, plant, equipment and labor provided by the Contractor and his method of work in relation to the required rate of progress, and when required to take appropriate action in order to expedite progress. Keep and regularly update a list of the Contractor's equipment (and its condition) to insure compliance with date of completion provided in his contract;
- 4.10 Review the Contractor's working drawings, erection drawings, and temporary works and act appropriately thereon;
- 4.11 Provide effective and regular supervision of the works, and ensure their quality and conformity with the plan and specifications prescribed in the contract;
- 4.12 Examine and make recommendation on all claims from the Contractor or other similar matters;
- 4.13 Review the computation of accomplishments of approved/accepted works and materials, and check/certify the contractors payment certificates;
- 4.14 Prepare Monthly Reports in ten (10) copies showing the progress of the works, the contractor's performance, quality of works and the project financial status and projections;
- 4.15 Maintain representatives at the project site at all times the contractors are working. Supervise the work and issue the instruction as required;
- 4.16 Propose to the EA for approval any changes in the plans deemed necessary for the completion of the work, indication any effect the changes may have on the contract amount and any additional time required to complete the project. Submit all necessary

change orders including revisions and/or alteration of plans and specifications and other details;

- 4.17 Inform the EA of the problems or potential problems which might arise in connection with the execution of the contract and recommend possible solutions;
- 4.18 Extend timely assistance and directions to the contractors in all matters related to interpretation of the contract documents, plans, quality control testing, and other matters relating to contract compliance and progress;
- 4.19 Organize the supervision of the works with proper allocation of responsibilities to consultant's personnel and ensure that it is effectively executed;
- 4.20 Prepare and maintain inspection and engineering report, and records to adequately document the progress and performance of the work;
- 4.21 Assume the receipt of, and maintain as permanent records, all warranties required under the terms of the contract documents for material and equipment accepted and incorporated in the project. All materials incorporated in the project and their source, including as-built drawings which shall be prepared by the contractor are also to be recommended for approval by the EA;
- 4.22 Supervise all testing of materials and equipment products to ensure that the quality as required by the contract specifications is obtained, and maintain proper records of all testing performed;
- 4.23 Inspect the safety aspects of construction works methods to ensure that every reasonable measure has been taken to protect life and property;
- 4.24 Monitor environmental impacts of the project. Ensure compliance with the Environmental Management Plan (EMP) by the contractors;
- 4.25 Upon substantial completion of works, inspect the works and inform the contractor in writing regarding the items needing certification for full completion. Upon full completion, the consultant shall assist the EA in doing the inspection of the project in connection with the issuance of the Completion Certificate stating the date or dates from which the Maintenance Period shall commence;
- 4.26 Perform any and all other items of work not specifically mentioned above, but which are necessary and essential to successfully supervise and control the construction activities in accordance with the plans, specifications and terms of contract;
- 4.27 Provide assistance in developing maintenance training procedure to the EA in order to have smooth turn-over of facilities after the maintenance period;
- 4.28 Assist the EA in finalizing the project accounts and provide recommendations on any outstanding claims of the contractors;
- 4.29 Ensure that "as-built drawings" prepared for all works as the work progresses are finalized;

- 4.30 Submit within one (1) month from the completion of the project ten (10) copies of the Final Report summarizing the construction activities indicating among other things, disbursement, accomplishment, activities, contract changes, claims or disputes or any other substantive matters having an effect on the amount, cost and progress of the work;
- 4.31 Assist the EA in the preparation of the Project Completion Report, providing inputs particularly in the areas of the project progress and environment.

5. TIME SCHEDULE, REPORT AND DOCUMENTS

- 5.1 The Consultant shall commence work within thirty (30) days of issuance of a Notice to proceed by the EA.
- 5.2 The Consultant shall prepare the following reports and documents, all in English:
- a. By the tenth (10th) day of each month prepare and submit ten (10) copies of the Monthly Progress Report for the previous month. Problems encountered or problems anticipated shall be clearly stated, together with the steps taken or recommendations for their correction. This report shall list the Contractor's equipment and work force. It will also indicate the work to be performed during the coming month. The use of Bar Chart, PERT/CPM with S-Curve, percentages of progress or slippage shown graphically and photos on illustration points will be expected.
 - b. Within one (1) month after completion of the project, submit a Final Report in a format agreed upon with the EA.
 - c. Within one (1) month after completion of construction the project, submit one (1) full size set of "As-built Drawings".

6. FACILITIES TO BE PROVIDED BY THE CONSULTANT

- 6.1 Office and living facilities for the Consultant key staff should be provided by the Power Consulting Company hired for this supervision work. It is expected that the minor support staff would be recruited locally. Likewise service vehicle inclusive of drivers for carrying out the services will be provided through the consultancy works contract together with equipment for office and quarters plus the monthly operating and maintenance costs of all the above.

7. DATA AND ASSISTANCE TO BE PROVIDED BY THE GOVERNMENT

- 7.1 During the performance of the services for the work of the consultant that requires the cooperation of other government agencies, the Government will provide liaison and will ensure that the consultant have access to all information as may be allowed by law.

8. RESPONSIBILITY OF THE GOVERNMENT

- 8.1 The Government shall assist in the maintenance of peace and order on the project when and if necessary upon the request of the consultant;
- 8.2 The EA shall allow the consultant the use of their equipment/facilities when needed to carry out investigation/work that are not provided for under the contract;
- 8.3 The Government shall assist in obtaining the necessary work permits, visas and other documents necessary to the international consultant for carrying out the services under the contract;
- 8.4 The Consultant, the Sub-Consultants and the Personnel shall pay the four percent (4%) withholding tax under the Applicable Law on the Consulting Services. The local personnel are liable to pay all taxes and duties that are applicable in the Democratic Republic of Timor-Leste.

9. PERIOD OF SERVICES / MOBILIZATION

- 9.1 The services of the Consultants shall be required for the initial period of twelve (12) months, and for the number of personnel as determined necessary to complete the work and qualification as shown in this invitation. Mobilization of any of the Consultants staff shall be subject to the EA prior notice to commence.