EOI DOCUMENT
FOR
Consultancy Services/Assistance From National Consulting Firm(s)/Institute(s) For Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study For
(A) Saidpur 150 ± 10% MW Simple Cycle (HSD Based) Power Plant Project, Nilphamari, (B) Shahjibazar 100 MW Gas Turbine (Aeroderivative) Power Plant Project, Hobiganj and (C) Raozan 500 -600 MW Hi Efficient Combined Cycle Power Plant Project, Chittagong, Bangladesh.

1.0 Introduction:
As per Power System Master Plan (PSMP)-2010 electricity demand will be 24,000 MW by 2021 and 40,000 MW by 2030. With the objective of sustainable power generation and reliable electricity supply to meet the demand, Bangladesh Power Development Board has planned to install (A) Saidpur 150 ± 10% MW Simple Cycle (HSD Based) Power Plant Project, Nilphamari, Bangladesh. (B) Shahjibazar 100 MW Gas Turbine (Aeroderivative) Power Plant Project, Hobiganj, Bangladesh and (C) Raozan 500-600 MW Hi Efficient Combined Cycle Power Plant Project, Chittagong, Bangladesh.

A. Saidpur 150 ± 10% MW Simple Cycle (HSD Based) Power Plant Project:
Bangladesh Power Development Board has planned to install 150 MW ±10% Simple Cycle (HSD based) Power Plant Project in Saidpur, Nilphamari having net output of 150 MW ± 10% at Site conditions of 35°C, 1.013 bar, 98% R.H. The Power Station will be connected with the Saidpur 132 kV Grid Sub-Station through underground cable.

The Project Site is located in the city of Saidpur in Nilphamari district, Bangladesh. The proposed Plant consisting of 1or 2 Gas Turbine Generating Unit(s) will be installed in the existing space of Diesel Plant adjacent to the existing power station. Around 18 acre of land is available in the existing power station premises. Portion of this land will be used for construction of 150 MW ± 10% capacity (around 8 acres) and the remaining space will be used for future conversion of this simple cycle to combined cycle power plant. For construction purpose some demolition of existing structures and removal of debris from the site and land filling will be done. The Project will be implemented on turnkey basis under Tenderer’s financing. This project is under tendering stage.

B. Shahjibazar 100 MW Gas Turbine (Aeroderivative) Power Plant Project:
Bangladesh Power Development Board intends to set up aeroderivative type Gas Turbine Power Station of 100 MW capacity at the specified space within existing Shahjibazar Power Station, Shahjibazar, Hobiganj. For construction purpose some demolition of existing structures and removal of debris from the site and land filling will be done. The Power Station will be connected with the Shahjibazar 230 kV Grid Sub-Station through underground cable. The configuration of the plant will be single unit Aeroderivative type Gas Turbine with Simple cycle operation (Swing Mode) with capacity of 99.132 MW in natural gas at Site conditions (350C, 1.013 mbar, 98% R.H.). The source of financing of this project is Maintenance & Development Fund (BERC). EPC Contract for Shahjibazar 100 MW Gas Turbine Power Plant Project will be signed after the Project approval from Government.

C. Raozan 500-600 MW Hi Efficient Combined Cycle Power Plant Project:
Bangladesh Power Development Board intends to set up a high efficient H-Class Gas Turbine based combined power plant having capacity of 500-600 MW in the vacant place adjacent to Chittagong Power Station, Rajjan, Chittagong. Around 38 Acres land is available north side of Chittagong Power Station outside the boundary wall which is belong to Bangladesh Power Development Board. Portion of the land will be used for this project. Government of Bangladesh has already given consent to implement this project and BPDB will float tender very soon.
Due care shall be undertaken concerning the environmental impact out of these Plants and sufficient protective measures shall be incorporated in the design of the Plant for environment protection especially on air pollution, water pollution and noise. The environment protection measures shall be done in accordance with the Environment Protection Guidelines of World Bank and Environmental Protection and Emission Control Standards of Bangladesh. Above the Power Plants shall be of most efficient technologies among their respective size & class and minimum pollution level. With the purpose of obtaining Site Clearance and Environmental Clearance Certificates from Department of Environment of Bangladesh, it is required to carry out Initial Environmental examination (IEE) and Environmental Impact Assessment (EIA) studies.

2.0 Expression of Interest:
BPDB now invites experienced National Consulting Firm(s)/Institute(s) For Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study For (A) Saidpur 150 ± 10% MW Simple Cycle (HSD Based) Power Plant Project, Nilphamari, (B) Shahjibazar 100 MW Gas Turbine (Aeroderivative) Power Plant Project, Hobiganj and (C) Raozan 500 -600 MW Hi Efficient Combined Cycle Power Plant Project, Chittagong, Bangladesh.

3.0 Purpose of Inviting EOI:
Through this EOI, BPDB intends to prepare a short-list of experienced National Consulting Firm(s)/Institute(s) having requisite eligibility and experience in executing works of similar nature in line with scope at SL.No. 4.0 below. Separate Request for Proposal (RFP) shall be issued to short-listed Consulting Firms.

4.0 Scope of Services in brief:
The Selected National Consulting Firm(s)/Institute(s) will conduct Initial Environmental examination (IEE) and Environmental Impact Assessment (EIA) studies with the purpose of obtaining Site Clearance and Environmental Clearance Certificates from Department of Environment (DoE) of Bangladesh for the above mentioned power plant project. The bellow mentioned assignment is to be completed within 03 (Three) month for all three power plant project and the Intended Completion Date is within 06 (six) months from the date of commencement of service up to getting Environmental clearance from DOE for all three power plant projects.

Initial Environmental examination (IEE) and Environmental Impact Assessment (EIA) studies scopes are bellow, but not limited to:
The scope of services under the IEE study is as follows:
1. Review of the proposed site in consideration of involvement of minimum agricultural land, minimum habitats to be displaced, minimum/avoiding hilly area, use maximum Government land (if available) and develop suitable layouts/review proposed layout.
2. Land acquisition plan from the office of the Deputy Commissioner’s office (if required).
3. Land use/ Land cover including ecologically critical area, national parks, forest, orchard, cultural heritage site etc., if any, in the site selected for the power plant.
4. Topographical survey of the selected project site.
5. Meteorological data collection of the site from Bangladesh Meteorological Department (BMD).
6. Hydrological and morphological data collection from BWDB and BIWTA.
7. Agro-ecological zones data collection from AEZ report.
8. Agricultural data collection from BBS and DAE.
9. Water resources and soil salinity data collection from BWDB and SRDI.
10. Collection of data on access to site Bangladesh Railway and Roads and Highway Department.
11. Soil investigation of the selected site.
12. Seismicity analysis.
13. Sources of water during construction and operation.
14. Effluent disposal point(s).
15. Data on water quality, air quality and noise level.
16. Transportation of raw material and fuel.
17. Collection of Preliminary planning, design and drawing of power plants.
18. Specific statutory requirements applicable in Bangladesh.
19. Establishment of the environmental and social baseline condition in respect of water resources, air quality, noise level, land resources including land use/land cover, agriculture, fisheries, ecosystems and socio-economic condition.
20. Public consultation and disclosure
21. Identification of Important Environmental and Social Components (IESC).
22. Assessment of demolition of existing permanent and temporary structure in the existing boundary.
23. Environmental impact on demolition work or storage of the garbage.
24. Assessment of impacts of the proposed power plant on the environmental and social components.
26. Risk and hazard analysis.
27. Terms of Reference (TOR) for the Environmental Impact Assessment (EIA) study for approval by DOE.
28. Produce an IEE report, which shall form the basis of obtaining location/site clearance from the DOE.
29. Assist BPDB for obtaining location/site clearance and environmental clearance from DOE.

The scope of services under the EIA study is as follows:

1. Carry out environmental and social impact assessment considering the maximum generation capacity capable of being generated by the power plant that will satisfy the applicable environmental requirements, including the laws and bylaws of Bangladesh and World Bank Group’s health and safety guidelines.
2. Carry out hydrological investigation.
3. Elaborate project description and design and the activities at pre-construction, construction and post-construction phases as per the feasibility study report.
4. Establish environmental and social baseline condition in respect of water resources, land resources, agriculture, fisheries, ecology and socio-economic condition.
5. Carry out meteorological, noise level and air quality investigations for the proposed power plants and the necessary additional transmission lines.
6. Carry out environmental and social impact for demolish the existing permanent and temporary facility for plant construction.
7. Select environmental and social components likely to be impacts by the proposed power plants.
8. Identify suitable control measures to minimize CO, CO2, SOx, NOx etc. emission from the power plants, if any, that should be required the developer under the request of proposals.
9. Identify exhaust stack requirements (as per DOE rules) applicable to each plant so that concentration of SO2 and particulate matter in the surrounding area is uniform and minimum.
10. Thermal plume modelling will be completed considering the proposed power plant including nearby industrial installations (if any).
11. Ability for the developers of the power generation projects to satisfy all national regulatory requirements and international obligations related to health and human safety and the environment in the construction, operation, and maintenance of power projects of the anticipated size at the identified sites.
12. Ability to dispose efficiently and in a manner that complies with all national regulatory requirements and international obligations related to the effluent by the power generation facilities (and the development of a recommended plan for doing so).
13. Social/infrastructure facilities to be required.
14. Assess and evaluate the ability of each of the projects (and any expansion projects at the site) to comply with all health and safety and environmental laws of Bangladesh and the requirements of the World Bank group. Identify any restriction that should reasonably be imposed on the developers of the power generation projects to ensure that expansion projects can be designed, constructed and operated in compliance with all such laws, regulations and requirements and also international obligations.
15. Evaluate the impact on environment in line with Bangladesh and/or World Bank requirement for the respective power plant and transmission line to ensure that the power generation facilities and transmission facilities can be designed, constructed and operated in compliance with all applicable environmental requirements.
16. Preparation of Environmental Management Plan (EMP), which shall include mitigation measures, enhancement and contingency measures and compensation.
17. As per TOR approved by the DOE, produce an EIA report which shall form the basis of obtaining environmental clearance from the DoE for implementation of the power plant projects.
18. Study of siltration problem and migration of soil/sand in the proposed area if any.
19. Study of the township development of the area.
20. Study of salinity of the area if any.
Topographical and Engineering Survey Scope is as follows

i. Carry out Benchmark pillar from nearest established Benchmark Pillar
ii. Establishment of 5 numbers of Benchmark and 10 numbers of Reference Pillars (2 reference pillars for each BM)
iii. Survey on proposed acres area
iv. Producing maps of topographical information and features
v. Detail contour survey by taking spot levels at 20 Meter intervals constructing Bench mark, reference pillars and grid pillars of approved specifications at 100 meter grid points of the area surveyed.

Geotechnical Investigation Scope is as follows

i. Execution of minimum 7 numbers of exploratory borings for Shahjibazar 100 MW Gas Turbine (Aerodervative) Power Plant Project & Saidpur 150 x 10% MW Simple Cycle (HSD Based) Power Plant Project and minimum 15 numbers of exploratory borings for Raozan 500 -600 MW Hi Efficient Combined Cycle Power Plant Project. Exploratory borings depth up to 40 meters, recording of sub-soil stratification and position of ground water table.
ii. Execution of standard penetration test (SPT) at an interval of 1.5 m depth with collection of disturbed soil samples up to the final depth of exploration of each boring.
iii. Carried out laboratory test of required engineering properties of sub soil.

Note: The EIA report should be prepared following the DoE Approved TOR as well as TOR mentioned above.

5.0 Eligibility:
The National Consulting Firm(s)/Institute(s) must be registered in Bangladesh. Interested Applicants (National Consulting Firm(s)/Institute(s)) should have experience in performing Initial Environmental examination (IEE) and Environmental Impact Assessment (EIA) studies for minimum two (02) nos power plant projects in Bangladesh and these two (02) nos power plant projects has obtained Site Clearance and Environmental Clearance Certificates from Department of Environment (DoE) of Bangladesh within the last ten (10) years. Interested Applicants should provide information demonstrating that they have the required qualifications and relevant experiences to perform the Services.

Applicant should also have sound financial strength and competent / qualified manpower required to execute the works. An Applicant may form association/ joint venture with other Consulting Firms to enhance their qualifications/ capabilities to submit a single proposal in undertaking this assignment. No firm should form association/ joint venture with more than one Group.

6.0 Required Information:
Interested Applicants are required to submit the following documents complete in all respects with one original and three authenticated copies for each of the following:

<table>
<thead>
<tr>
<th>Sl. no.</th>
<th>Description of Document to be submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Application for Expression of Interest</td>
</tr>
<tr>
<td>2</td>
<td>Brochures, Company Profile and Organization Chart with in position experienced staff for each area</td>
</tr>
<tr>
<td>3</td>
<td>*Details of all “similar works” executed in the past 10 years</td>
</tr>
<tr>
<td>4</td>
<td>*Details of all ongoing “similar works” &amp; time period for completion of each work</td>
</tr>
<tr>
<td>5</td>
<td>*Details of any new “similar works” being finalized/ under process</td>
</tr>
<tr>
<td>6</td>
<td>Audited Financial statements for last 05 years viz. Balance Sheet, P&amp;L account etc.</td>
</tr>
<tr>
<td>7</td>
<td>Association/ Joint Venture Agreement on a non judicial stamp of value Bangladesh Taka 300 or Letter of Intent to enter into such agreement along with the proposed agreement duly signed by all partners of the intended Association/ Joint Venture and authenticated by a Notary Public. Otherwise EOI from a Association/ Joint Venture will not be considered for Short-listing</td>
</tr>
<tr>
<td>8</td>
<td>List of professional staffs and resources</td>
</tr>
<tr>
<td>9</td>
<td>Any Other Information/ Additional Information relevant to the work / assignment</td>
</tr>
</tbody>
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*Details to cover : (1) Project Owner (2) Location (3) Name of Project (4) Project details (5) Project Cost (6) Consultancy Contract Value (7) Project start and completion date (8) Consultancy Scope of works (9) DoE approval of EIA and Site clearance & Environmental clearance certificate from DoE (10) Project present status.

6.1 Each page of the documents submitted shall be duly authenticated by the applicant.
6.2 The language of submission of applications shall be in English.
6.3 Financial Data, Project Costs, Value of works shall be given in BDT.
6.4 Staff requirements:
The National Consulting Firm(s)/Institute(s) is free to determine the number of members working in the team apart from the following. For conducting initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) studies below mentioned staffs are to be deployed. Total staff man-month shall be not more than 48 (Forty Eight).

Required qualification and experience of the key personnel

The team members shall meet the following criteria:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Type of Staff</th>
<th>Number</th>
<th>Educational Background &amp; Experience</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil Engineer/Team Leader</td>
<td>1</td>
<td>Must have graduate in relevant subject with at least 10 years job experience in relevant</td>
</tr>
<tr>
<td>2</td>
<td>Water Resources Specialist</td>
<td>1</td>
<td>Must have graduate in relevant subject with at least 10 years job experience in relevant</td>
</tr>
<tr>
<td>3</td>
<td>Geotechnical Engineer</td>
<td>1</td>
<td>Must have graduate in relevant subject with at least 10 years job experience in relevant</td>
</tr>
<tr>
<td>4</td>
<td>Environmental Specialist</td>
<td>2</td>
<td>Must have graduate in relevant subject with at least 10 years job experience in relevant</td>
</tr>
<tr>
<td>5</td>
<td>Socio Economist</td>
<td>2</td>
<td>Must have graduate in relevant subject with at least 10 years job experience in relevant</td>
</tr>
<tr>
<td>6</td>
<td>Economist</td>
<td>1</td>
<td>Must have graduate in relevant subject with at least 10 years job experience in relevant</td>
</tr>
<tr>
<td>7</td>
<td>Jr. Engineer (Environmental/ Soil /Survey)</td>
<td>3</td>
<td>Must have graduate in relevant subject with at least 3 years Job experience in relevant</td>
</tr>
<tr>
<td>8</td>
<td>Field Supervisor</td>
<td>3</td>
<td>Must have graduate with at least 3 years Job experience in relevant</td>
</tr>
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7.0 Evaluation of EOI:

Evaluation of EOI (Short listing of Consulting Firms) will be done as per PPA 2006 & PPR 2008 and on the basis of the followings

(a) Brochures submitted by the Applicants summarizing their facilities and areas of expertise;
(b) Descriptions of similar assignments;
(c) Experience in similar operating environments and conditions;
(d) Availability of appropriate experience and professional qualifications among Applicant's staff and adequate resources to carry out the assignment; and
(e) Managerial strength and financial capacity.

BPDB reserves the right to accept any or reject any/all EOIs without assigning any reason thereof.

'Expression of Interest' shall be submitted within 22.11.2017, 11:30AM; in four (4) hard copies (1 Original + 3 Photocopies) in a sealed cover super scribing Expression of Interest (EOI) for "Consultancy Services/Assistance From National Consulting Firm(s)/Institute(s) For Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study For (A) Saidpur 150 ± 10% MW Simple Cycle (HSD Based) Power Plant Project, Nilphamari, (B) Shahjibazar 100 MW Gas Turbine (Aerodervative) Power Plant Project, Hobiganj and (C) Raozan 500 -600 MW Hi Efficient Combined Cycle Power Plant Project, Chittagong, Bangladesh" at the address given below:

Secretary
Bangladesh Power Development Board (BPDB)
WAPDA Building (1st floor), Motijheel Commercial Area,
Dhaka-1000, Bangladesh.
Tel: 880-2-9554209; Fax: 880-2-9564765