NORTHERN STATES GOVERNORS' FORUM

REQUEST FOR PROPOSAL FOR A TECHNICAL ADVISER TO CARRY OUT SOLAR PV FEASIBILITY STUDY FOR THE NORTHERN STATES GOVERNORS' FORUM 2 GW SOLAR POWER PLANTS PROJECT IN NIGERIA

1. Introduction

The Technical Implementation Committee of the Northern States Governors' Forum (the "Sponsor" or "Client") requires the services of qualified and experienced Technical Firm (the "Technical Adviser") to provide technical feasibility studies in connection with the proposed establishment of 100 MW solar power plants in each of the 19 Northern States and one in the Federal Capital Territory of Nigeria (the "Project" or "Proposed Transaction").

Potential financiers (equity and debt providers) will also be relying on the reports in assessing the overall viability of the project, and to this end, you are invited to submit a competitive proposal including a detailed estimate of fees and billing arrangements, to act as the Technical Adviser to the Sponsor on the proposed transaction.

The Sponsor will be directly responsible for payment of all professional fees of the Technical Adviser, costs, expenses, and disbursements incurred by the Technical Adviser or in connection with its engagement (including in each case any taxes thereon).

2. Confidentiality

Documents relating to the Proposed Transaction are confidential and must be treated as such. Documentation or information shall not be disclosed without the prior written consent of the Sponsor except:

I. As required by law or by any applicable governmental or other regulatory authority or by any applicable stock exchange.

II. To employees, for the Proposed Transaction, who have been made aware of and agree to be bound by the obligations under this paragraph or are in any event subject to confidentiality obligations as a matter of law or professional practice.

III. Documents which are or become public knowledge through no breach of either your firm or the Parties under the obligations of confidentiality herein.

IV. The information which was known to your firm prior to disclosure in terms hereof.

3. Sponsor Requirements

The details of the services required are defined in the attached **TOR in Appendix A**. The proposals received would form the basis of future negotiations of a contract between the selected firm (with the best commercially and technically evaluated proposal) and the Sponsor.

The Sponsor also requires a confirmation that there is no conflict of interest by the participating firm.

The assignment is expected to commence by **April 1st, 2022.**

4. Skills and Experience Required

The successful technical firm must meet the following requirements:

I. Provision of adequate and qualified personnel and other resources as deemed necessary in the execution of the assignments outlined in the Terms of Reference.

II. Experience of the personnel in providing the outlined services to renewable projects (especially grid-scale solar power plants) over the last 10 years with special reference to Africa or developing countries.

III. Experience of the firm with providing technical due diligence services to (bi)multilateral financial institutions and/or government.

IV. Ability to commence and complete the assignment promptly.

V. Ability to visit/ arrange visits to the project site(s) in Nigeria.

5. Technical Proposal

Your technical proposal should:

I. Provide comments on the Scope of Work, if any, to improve the effectiveness and efficiency of carrying out the assignment to achieve the Proposed Transaction's required objectives.

II. Specify experience in providing technical services to similar projects over the last 10 years (i.e., renewable power assets, especially solar power plants), stating role, the client, contract value and completion dates (or current status for ongoing projects).

III. Specify general approach, methodology, work plan, and the timeline for carrying out the services within the required schedule, to an accepted industry standard and quality.

IV. Confirm that the proposed team can visit the project site(s) in Nigeria; should the proposed team not be able to do so, detail alternative arrangements.

V. Specify proposed organization and staffing arrangements; including details of key personnel that will be allocated to each specialist area/activity in work-plan, reporting lines and the team decision-making process.

VI. Name, background and summary CV of the key staff and experts to be assigned for providing the proposed services: On-site and at home / regional office(s). Please note that a minimum of 5 years post-qualification professional experience will be required.

6. Financial Proposal

The financial proposal should be prepared on a lump sum fixed price basis in US Dollars and Naira, inclusive of all professional fees, in accordance with the TOR. The financial proposal should show in detail:

I. lump-sum price (in US Dollars and Naira) for the proposed scope of work.

II. A breakdown of all time-based rates including site and off-site work.

III. An estimate, together with a detailed breakdown, of the cost of reimbursable items, such as expenses for personnel of the technical adviser and associates in respect to the scope of work, international travel, per diem, accommodation, transportation expenses, including vehicles, office supplies, communication expenses and the like.

IV. Proposed payment milestones and terms.

7. Responsibilities

In carrying out this mandate and for the avoidance of doubt, the Technical Adviser's duty and responsibility shall be to all Parties involved in the Project and the principal task shall be the protection of all interests. The requested service is to support the Parties' project decision.

8. Submission

Please submit your proposal and any clarification requests to the Secretariat of the Northern Governors' Forum via email **ONLY** to salis.othman@kdsg.gov.ng.

We look forward to receiving your submissions on or before **1700hrs (WAT), on March 15th, 2022**. Note that**, late submissions** will be **disqualified**.

Proposals are valid for at least 90 days from the date of submission and during such validity period, the firm should undertake to maintain without change, the proposed staffing (including named personnel) and the commercial conditions.

We will evaluate submitted proposals and make the necessary contact to the selected firm and then issue a formal letter of appointment to undertake the assignment. For the avoidance of doubt, the appointment is subject to the outcome of our internal approval process.

Please note that the Sponsor is not bound to select any of the submitted proposals. Fee Proposal, quality, and compliance with the RFP requirements will be the principal selection criteria. The Parties also does not in any way bind themselves to select the firm offering the lowest fee.

Please do not hesitate to contact the Secretariat of the Northern Governors' Forum salis.othman@kdsg.gov.ng should you have any questions regarding the RFP.

Signed
The Secretariat,
FOR: NIGERIA NORTHERN STATE GOVERNORS' FORUM

APPENDIX A

TERMS OF REFERENCE

1. **Scope of Work**

The expected scope of work for the Technical Firms is to develop technical and commercial feasibility studies for the overall viability of the grid-connected 20X100MW solar power project. We expect several firms will be engaged to complete these tasks.

Phase I

a. Solar-resource radiation, yield assessment and projections as well as the expected degradation over time; provide a level of confidence in the results.
b. Comment on the PV site location, viability, and resource potential. Identify seasonality of radiation levels on the identified project site, and/or identify appropriate project site options also considering logistics.
c. Comment on the possible losses e.g., transmission/connectivity losses and dispatch constraints, if any.
d. Identify any issues that may compromise the installation of a solar PV or limit its performance, whether these issues are technical, financial, or logistical.
e. Suggest the appropriate tariff structure (taking into account existing regulations)
f. Provide a detailed financial assessment and modelling of the costs and revenues associated with the proposed project.
g. Comment on the process for procuring equipment and parts and transportation of same to Northern Nigeria. It will be useful to identify any risks to economically completing the tasks and identify mitigants for the same.
h. Assess the readiness of the Nigeria grid to take 2,000MW of solar energy by 2024-28.
i. Drone imagery of the site to overlay on the topographic survey/map.
j. Provide an initial cost estimate for each plant.
k. Carry out a Battery Storage assessment and comment on the same.
l. Develop a road map for the next steps going forward.

Any additional requirements at this stage that the consultant is aware of should be included in your proposal.

Following the results of the Site and Commercial Feasibility Assessments, the following technical feasibility studies covering the detailed design and development will be required.

Phase II

Civil Works

a. Study land contour and profile for deciding ground levels, site development and solar project layout with the road, drains, boundary walls–cum-fencing (perimeter boundary survey coordinates).
b. Study the soil investigation report and interpret the technical data for the foundation of various equipment.
c. Design of sub-system like roads, cable corridors, drains, stone pitching, watchtowers, boundary walls–cum-fencing, landscaping & horticulture, entrance façade, security gate and shelter, water bore wells and water supply system throughout the plant for various purposes including cleaning of PV panels.
d. Design of foundation and structure design for equipment with software calculation sheets.
e. Design of control room building, storage shed and dwelling units.
f. Provide BOQ with quantity for civil work of all items.
g. Provide Field Quality Plan for civil work.
h. Carry out a hydrological assessment to determine groundwater availability and assess the flood risk of the site. The groundwater study shall inform the availability and quality of water for construction and operation periods including the suitability of water for module washing. The flood risk assessment shall inform the plant layout, drainage infrastructure and water management plan.
i. Carry out a geotechnical study at the proposed plant site. The study will be used to determine the recommended type of foundations for PV module mounting structures, buildings, and roads to receive accurate and binding EPC quotations.
j. Assess any seismic risk.

Electro-Mechanical Works

a. Design and integration of solar power equipment with optimal rating and size to save cost and provide maximum output.
b. Provide a master list of drawings and engineering schedule, if applicable.
c. The layout of the solar plant in minimum ground space.
d. Solar PV panel layout, direction, and height according to latitude /longitude of location and solar irradiation intensity
e. To provide a specification of equipment to call bids.
f. Detailed BOQ of equipment, hardware, structures, cable etc. to take procurement action.
g. Structure design of ground-mounted solar PV Panels and substation equipment with software calculation sheets
h. Design of substation layout and BOQ.
i. Overall lightning protecting and earthing system of the solar plant.
j. Design of auxiliary power supply system throughout the plant along with lighting, pole & illumination system, if applicable.
k. Design, drawing & BOQ of firefighting system as per local country specification and rules.
l. Provide Design Criteria Document (DCD) for grid-connected solar system with justification and payback period.
m. Schematic drawing of state-of-the-art relay protection system following IEC61850 with SCADA and communication protocol within and outside the plant.
n. To provide a metering system and Interlock philosophy for safe operation.
o. GPS compliance ethernet connectivity, Hardware and Software design to transmit data to regional and national load dispatch centres.
p. Design of solar PV panel tracking system and compare the economics of providing the same.
q. To provide a Manufacturing Quality Plan (MQP) of all equipment.
r. To provide testing & commissioning schedule and protocol of each sub-system as well as an integrated system.
s. Review & verify suppliers drawing and accord approval.
t. To provide a list of mandatory spares against each piece of equipment.
u. To provide Operation and Maintenance (O&M) schedule of Solar plant for successful operation.

v. To support and clarify the testing & commissioning team for any technical clarification and data requirement.
w. To provide a list of maintenance tools and testing equipment as part of O&M.
x. To provide CCTV and other protection system design like a fire alarm, fire extinguisher etc.
y. To provide cable selection criteria and cable schedule of power and control for the entire plant.
z. Design of solar plant must be according to local weather conditions and comply with country-specific standards and code, while equipment must comply with IEC and IEEE Standards (list attached)
aa. To provide a manual for human safety during execution and a list of environmentally hazardous materials and activities.
bb. To provide a list of preferred suppliers for major equipment.
cc. Weather monitoring system specification Review and comment on the manufacturing process, spare parts program, certifications, technical references, engineering resources, guarantees and warranties
dd. Prepare probability-based forecasts for the expected power production in MWh (including P50, P75 and P90 estimates based on the available data).

Other Terms

a. Consultant to revise the drawing as and when required as per the requirement of client & changed situation within project execution period without extra price implication.
b. If required, the Consultant will visit the project site(s) at Sponsor's cost.
c. At the contract closing stage, the Sponsor shall become the owner of project drawings; the AutoCAD version of drawings shall be handed over to the Project Parties.
d. This engineering consultancy would be on a hand holding basis, which means that the consultant shall be responsible for troubleshooting and resolving technical snags in case of any eventuality.
e. Engineering consultants may have to attend meetings occasionally as per requirement.
f. Contract price shall be firm, and payment shall be on monthly basis as per milestone break up of drawing, documents, and services.

g. The delivery period is 3 months from the date of contract award or engineering inputs as per contract whichever is later.
h. Training of site engineers on solar system equipment, integration, and operation for maximum output.

Site Visits
As part of the assignment, the Technical Adviser is expected to visit the project site(s) in Nigeria and provide an assessment on the overall suitability of the project and detailed commentary on all key bankability aspects of the Project.

Where possible virtual devices shall be used to obtain and verify project information. The Technical Adviser should have regional or local resources which will assist the completion of the assignment.

2. Reporting

The Technical Adviser will be required to provide the Parties with comprehensive reports largely based on the scope of work outlined above. The reporting will be conducted in three stages, as follows:

i. **Stage 1 – Viability assessment of the individual projects**
The Technical Adviser will be expected to deliver the Energy Yield Assessment report, grid hosting capacity study and site assessment report.

ii. **Stage 2 – Preliminary Feasibility study**
The Technical Adviser will be expected to provide site surveys, designs, grid integration study, financial assessment of the CAPEX and OPEX.

A copy of the full feasibility report will be provided to the Parties for review, at least three (3) weeks before the issuance of the final report. The Parties shall have the right to review the report and require any modifications thereto.

iii. **Stage 3 – Final Report**
The Final Report shall be issued within 14 business days from the date on which the Parties communicate their comments on the Preliminary Report.

Reporting Requirements
The Technical Adviser will report equally and exclusively to all Parties. The reports shall be of a quality and standard that would allow a financier of international standing to make a judgement as to the financial strength of the projects. The Technical Adviser will not release any professional opinions or reports, or any certificates required to be issued pursuant to this Contract to any other party other than the Sponsor, without consent.
Support to the Beneficiaries individually on all technical related issues

The Technical Adviser will be required to provide knowledgeable staff to respond to questions and comments by the Parties.

3. Others

The Technical Adviser will be expected to work in coordination with other advisors of the Parties, as required.

APPENDIX B

EVALUATION METHODOLOGY

The evaluation comprises a combined technical and financial score. The technical score will be given a weight of 70% of the total score and the financial score will be given a weight of 30%.

1. Technical Evaluation

The technical proposal to be submitted by the short-listed firm(s) will be evaluated based on the following criteria:

a. Key professional staff (including those to carry out the site visit) qualifications and competence in the relevant fields of the assignment, including expertise comments on the TOR to improve the delivery of the assignment efficiently and cost-effectively (40 points).

b. The proposed team's experience representing investors in the financing of key renewable energy markets in Africa and developing countries. This must include solar projects (35 points).

c. The proposed team's experience representing the government and development finance institutions in the financing of power projects in Africa (20 points).

d. Availability/ flexibility of staff to visit the site(s) and accomplish short assignments promptly (5 points).

Only consultants scoring a mark of 75 points or more for the technical evaluation will be considered for the financial evaluation.

2. Financial Evaluation

The lowest financial proposal (Fm) shall be given a financial score (Sf) of 100 points. The financial scores of the proposals shall be computed as follows:

Sf = 100*Fm/Fi

(Fi = amount of financial proposal converted in the common currency).

The firm with the highest combined score shall be selected for the assignment.