

GOVERNMENT OF ASSAM
INSPECTORATE OF ELECTRICITY
OFFICE OF THE CHIEF ELECTRICAL INSPECTOR -CUM- ADVISER, ASSAM
MABHAIRAB BUILDING : PUB-SARANIA ROAD : GUWHATI – 781 003 : ASSAM

No.CEIA/EC.30/2010/19,

Dated Guwahati, the 15th June 2010.

REQUEST for QUOTATION

The Chief Electrical Inspector -cum- Adviser, Govt. of Assam being the State Designated Agency (SDA) for the State of Assam for the purpose of the Energy Conservation Act, 2001 and upon receipt of fund from the Bureau of Energy Efficiency (BEE), Government of India for carrying out a demo project of Investment Grade Energy Audit of the Lakwa Thermal Power Station, Maibela, Sivsagar District, Assam requests for quotation (RfQ) from reputed energy auditing firms empanelled by the Bureau of Energy Efficiency.

Details of RfQ Documents can be obtained from the office of the undersigned on written request accompanied by payment of Rs.300/- (Rupees Three Hundred Only) in the form of crossed Demand Draft drawn in favour of CHIEF ELECTRICAL INSPECTOR -CUM- ADVISER, GOVT. OF ASSAM and payable at par at GUWAHATI, during office hours on all working days from 15.06.2010 to 22.06.2010. The EoI documents can also be downloaded from the SDA's website www.asda.gov.in. Last date of receipt of Quotations is 14.00 Hrs on 24th June 2010.



(S.Barooa)

Chief Electrical Inspector -cum- Adviser,
Govt. of Assam.

Memo No.CEIA/EC.30/2010/19-A,

Dated Guwahati, the 15th June 2010.

Copy to:

1. Shri Kamran Shaikh, Project Engineer, Bureau of Energy Efficiency, 4th floor, Sewa Bhawan, R.K. Puram, New Delhi-110 066 for information.
2. M/S Web.Com India Pvt. Limited, GNB Road, Guwahati-781 00, Assam 3 for uploading this Notice and the relevant RfQ document to SDA Assam's website.
3. Office Notice Board.



(S.Barooa)

Chief Electrical Inspector -cum- Adviser,
Govt. of Assam.

**GOVERNMENT OF ASSAM
INSPECTORATE OF ELECTRICITY
OFFICE OF THE
CHIEF ELECTRICAL INSPECTOR -CUM- ADVISER, ASSAM
MAHABHAIRAB BUILDING, PUB-SARANIA ROAD
GUWAHATI - 781 003, ASSAM.
&
STATE DESIGNATED AGENCY FOR THE STATE OF ASSAM.
UNDER ENERGY CONSERVATION ACT, 2001**

Phone: +91 361 2529611

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www.asda.gov.in

**Request for Quotation (RfQ) for conducting
Investment Grade Energy Audit (IGEA)
of the 120MW Natural Gas based
Lakwa Thermal Power Station (LTPS)
at Maibella, Sibsagar, Assam.**

JUNE 2010

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1 LETTER OF INVITATION

1.1 Advertisement

This Request for Quotation (RfQ) Document is for conducting Investment Grade Energy Audit (IGEA) of the 120MW Natural Gas based Lakwa Thermal Power Station (LTPS) at Maibella, Sibsagar, Assam, as a Demo project funded by the Bureau of Energy Efficiency, New Delhi (BEE).

The Chief Electrical Inspector -cum- Adviser, Assam being the State Designated Agency (SDA) for the State of Assam (hereinafter referred to as the "ASDA") under the provisions of the Energy Conservation Act, 2001 (hereinafter referred to as the "EC Act") is committed to the mission to assist the BEE in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the EC Act with the primary objective of reducing energy intensity of the Indian economy. This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

1.2 Critical Information

Availability of Invitation for Bid	15.06.2010 up to 22.06.2010 between 10-00 Hrs and 15-30 Hrs
Last date for receipt of Queries	1500 hours on 23.06.2010
Last date for receipt of Bid	1400 hours on 24.06.2010
Time & Date of opening of Bid	1500 hours on 24.06.2010
Place of opening of Bid	Office of the Chief Electrical Inspector -cum- Adviser, Govt. of Assam, Mahabhairab Building, Pub-Sarania Road, Guwahati - 781 003, Assam.
Contact Person (Nodal Officer) for queries & submission of Bid	Sri Md.N.Huda, Dy.Chief Electrical Inspector -cum- Adviser, Govt. of Assam. Ph: 0361-2529611
Contact E-Mail ID & FAX	assam.sda@hotmail.com +91 361 2464796

2 BACKGROUND INFORMATION

2.1 About State Designated Agency (SDA)

The mission of State Designated Agency (SDA) and Bureau of Energy Efficiency (BEE) is to develop policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the EC Act with the primary objective of reducing energy intensity of the Indian economy. This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

The EC Act came into force in March 2002. The setting up of Bureau of Energy Efficiency (hereinafter referred to as the “BEE”) and subsequently ASDA as one of the SDA provides a legal framework for energy efficiency initiatives in the country. The EC Act empowers the Central Government and in some instances the State Governments to:

Notify energy intensive industries, other establishments, and commercial buildings as designated consumers;

Establish and prescribe energy consumption norms and standards for designated consumers;

Direct designated consumers to –

- Designate or appoint certified energy manager in charge of activities for efficient use of energy and its conservation.
- Get an energy audit conducted by an accredited energy auditor in the specified manner and intervals of time;

Furnish information with regard to energy consumed and action taken on the recommendation of the accredited energy auditor to the designated agency;

Comply with energy consumption norms and standards, and if not so, to prepare and implement schemes for efficient use of energy and its conservation;

Prescribe energy conservation building codes for efficient use of energy and its conservation in commercial buildings;

Amend the energy conservation building codes to suit regional and local climatic conditions;

Direct owners or occupiers of commercial buildings to comply with the provisions of Energy Conservation Building Codes;

Direct mandatory display of label on notified equipment and appliances;

Specify energy consumption standards for notified equipment and appliance;

Prohibit manufacture, sale, purchase and import of notified equipment and appliances not conforming to standards.

The EC Act defines the powers of the State Government to facilitate and enforce efficient use of energy and its conservation. The State Governments have to designate State Designated Agencies in consultation with the Bureau of Energy Efficiency to coordinate, regulate and enforce the provisions of the Act in the State. Thus the State Designated Agencies are the strategic partners for promotion of energy efficiency and its conservation in the country.

2.2 Organization: Chief Electrical Inspector -cum- Adviser, Assam.

Under the provisions of the EC Act, State Designated Agency has been established with effect from 06th September 2002.

The mission of the State Designated Agency is to assist in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act, 2001 with the primary objective of reducing energy intensity of the Indian economy. This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

3. OBJECTIVE OF THE DEMO PROJECT (IGEA):

The objective of the demo project in general is to carry out an in depth IGEA of the LTPS to improve its overall energy efficiency leading to cost reduction/savings and in particular to review the present energy consumption scenario, monitor and analyze the use of energy and explore the energy conservation options in its various load centers, submission of a detailed project report containing recommendations for improving energy efficiency with cost benefit analysis and technical specifications for any retrofit options with list of suppliers/ manufacturers of energy efficient technologies.

4. INVITATION OF TECHNICAL & FINANCIAL BIDS:

The Technical and Financial Bids are invited for conducting an in depth Investment Grade Energy Audit (IGEA) of the 120MW Natural Gas based Lakwa Thermal Power Station (LTPS) at Maibella, Sibsagar, Assam. The IGEA is to include and require to have bearing upon review of energy consumption for the last 3 years covering areas and items as Natural Gas, Fuel Oil, Electricity besides energy consumption in various load centers like the gas compressors, lighting, air-conditioning, water pumping, fans for cooling the turbine Lubricating oil etc.

“Annexure – GIoP” may be referred to for general information relating to LTPS. Specific and deeper details, as may be required, are to be gathered by Auditing firm as part of the work.

5. Scope of the Work:

- a) Systematic review of Process flow chart diagram of the plant and the auditing team's self examination of the plant;
- b) Reviewing process & instrumentation diagram to identify all equipment & Instrument specifications required for measuring power, energy consumption & Energy generation;
- c) Identifying all energy generating and energy consumption systems & equipment with respect to both thermal and electrical energy;
- d) Measurement & Collection of all plant operational Data such as gas flow, temperatures & pressure at various critical process points, gas composition, fuel consumption, energy generated in KWHrs, etc;
- e) Material & Energy Balance for each of the 7 Turbo generators, energy losses at different locations by giving the Sankey Diagrams for each of the 7 turbo Generators;
- f) Above analysis of clause (e) for each of the 8 Gas Compressors systems supplying Natural Gas to the Turbines, 7 nos Step Up & 13 numbers of step down transformers feeding the main Outgoing Feeders;
- g) Efficiency evaluation of the entire Plant as well as each of the seven turbo generators as per the following Efficiency definitions:
 - (i) Nett KWHr output / Energy input as GCV,
 - (ii) Gross KWHr output / Energy input as GCV,
 - (iii) Nett KWHr output / Energy input as NCV,
 - (iv) Gross KWHr output / Energy input as NCV.
- h) The GCV & NCV of the fuel are to be verified for evaluating the correct efficiency figures;
- i) Evaluation of the LOSSES of the Auxiliaries (including the lighting system) of the Plant and recording the same;
- j) Operating results are to be compared to the benchmarking of such systems elsewhere in this state or country;
- k) Identifying major energy cost reduction opportunities, and recommending Remedial Measures/Schemes with detailed commercial viability analysis, indicating simple payback period, return on investment (ROI), internal rate of return (IRR). Total energy savings possible from the identified measures/schemes is to be given in a Tabular form;
- l) Preparation & Submission of the preliminary Audit report (3 copies);

- m) Finalization & Preparation of the *final Audit Report* after reviewing & incorporating the views & comments of LTPS Management and the SDA;
- n) Submission of the Final Audit Report (6 copies).

5.1 DELIVERABLES IN THE DETAILED AUDIT REPORT (DAR).

5.1 The DAR should contain the following information:

- a) **Methodology** adopted for the study.
- b) **Present energy scenario** of the LTPS.
- c) **Detail analysis of data or the Preliminary Audit Report** obtained through field visits, trial measurements by appropriate instruments (having Valid test & calibration reports by NABL accredited labs), calculations made and the basis thereof, keeping in view the scope of work, discussions with concerned PLANT executive personnel etc.
- d) **Recommendations for energy saving options** in all possible areas with cost benefit analysis.
- e) **Technical specifications** for any retrofit options.
- f) **List of suppliers/ manufacturers** of energy efficient technologies.

6. INSTRUCTIONS TO BIDDING FIRMS

6.1 Procedure for Submission of Bid

The Bidder should submit one hard copy of Bid and one soft copy in a sealed cover. The bids will be in two envelopes marked **A** and **B**. Envelope **A** should contain only technical qualifications as specified and Envelope **B** should have the price bid. Though no specific format for price bid is prescribed, over and above the bid is to be per unit of item to be supplied covering the work. Any other form of price bid may become liable for rejection of bid.

The copy of bid should be a self-contained and self-explanatory complete document bound as a volume. The document should be page numbered, appropriately flagged and contain the list of contents with page numbers, different copies bound separately. Deficiency in documentation may result in the rejection of the Bid. Soft copy of the bid should be submitted in the form of a non-re-writeable CD (Compact Disc). The CD media must be duly signed by the Bidder using a "Permanent Pen/Marker" and should bear the name of the Bidder. The sealed cover should be super scribed with the wordings "**BEE's Demo Project - IGEA of LTPS, Maibela, Sivasagar, Assam - 2010**".

Bidder must ensure that the information furnished by him/her in respective CDs is identical to that submitted by him/her in the original paper document. In case of any discrepancy observed in the contents of the CDs and original paper documents, the information furnished on original paper document will prevail over the soft copy.

6.2 Cost of Bid documents

The Bidder shall bear all costs associated with the preparation and submission of bids, including cost of presentation for the purposes of clarification of the bid, if so desired by SDA. SDA will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering process.

6.3 Contents of the Bid documents

The Bidder is expected to examine all instructions, forms, terms & conditions and Statement of Work in the Bid documents. Failure to furnish all information required or submission of Bid Document not substantially responsive to the RfQ in every respect will be at the Bidder's risk and may result in the rejection of the bid.

6.4 Language of Bids

The Bids prepared by the Bidder and all correspondence and documents relating to the bids exchanged by the Bidder, shall be written in English language, provided that any printed literature furnished by the Bidder may be written in another language so long the same is accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern.

6.5 Confidentiality

SDA requires that recipients of this document to maintain its contents in the same confidence as their own confidential information and refrain from any public disclosure whatsoever.

6.6 Disclaimer

SDA and/or its officers, employees disclaim all liability from any loss or damage, whether foreseeable or not, suffered by any person acting on or refraining from acting because of any information including statements, information, forecasts, estimates or projections contained in this document or conduct ancillary to it whether or not the loss or damage arises in connection with any omission, negligence, default, lack of care or misrepresentation on the part of SDA and/or any of its officers, employees.

6.7 Authorized Signatory (Bidder)

The "Bidder" as used in the RfQ shall mean the one who has signed the bid document forms. The Bidder should be the duly Authorized Representative of the Company/firm. All certificates and documents (including any clarifications sought and any subsequent correspondences) received thereby, shall, as far as possible, be furnished and signed by the Authorized Representative.

The power or authorization, or any other document consisting of adequate proof of the ability of the signatory to bind the Bidder shall be annexed to the bid in case of a tenderer not being a Government body/undertaking/PSU. SDA may reject outright any proposal not supported by adequate proof of the signatory's authority.

6.8 Contact details of the Bidder

Bidder, who wants to receive SDA's response to queries, should give their contact details to SDA. The Bidder should send their contact details in writing the SDAs contact address indicated in Para 1.2 of this document.

6.9 Queries on the Bid Document

Bidder requiring any clarification on this Document may send a query in writing at the SDA's contact address indicated in Para 1.2 of this document. SDA's response (including an explanation of the query) to all the queries, received not later than the dates prescribed by the SDA in Para 1.2 of this document, will be made available and sent to the Bidders who have given their contact details. SDA may also hold a conference to give clarifications and invitation of the same will be sent to the Bidders who have given their contact details.

6.10 Amendment of Bid document

At any time prior to the last date for receipt of bids, SDA, may, for any reason, whether at its own initiative or in response to a clarification requested by prospective Bidder(s), modify the Bid Document by an amendment. In order to provide prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, SDA may, at its discretion, extend the last date for the receipt of Bids and/or make other changes in the requirements set out in the Invitation for Bid.

6.11 Bid Processing Fees

All bids must be accompanied by a bid processing fee of Rs.1,000/- (Rupees One thousand only) and cost of Bid document amounting Rs.300/- (Rupees Three Hundred Only) (*in case of the Bid document downloaded from SDA's website*) in the form of crossed Demand Draft(s) drawn in favour of the CHIEF ELECTRICAL INSPECTOR -CUM- ADVISER, GOVT. OF ASSAM and payable at par in GUWAHATI.

6.12 Earnest Money Deposit (EMD)

- (i) The Earnest Money amounting to Rs.10,000/- (Rupees Ten Thousand Only) shall be paid by each tenderer, in the form of crossed Demand Draft drawn in favour of CHIEF ELECTRICAL INSPECTOR -CUM- ADVISER, GOVT. OF ASSAM and payable at par in GUWAHATI, to be enclosed along with the sealed tender;
- (ii) Any category of tenderers specifically exempted by the Government from the payment of Earnest Money Deposit are not required to make such a deposit provided they enclose copies of documents proving exemption;
- (iii) The Earnest Money Deposit will be refunded to the successful tenderer only after satisfactory completion of the ordered works and on proper fulfillment of contract; In the case of unsuccessful tenderers, the Earnest Money Deposit will be refunded to them within three months of finalising the tender;
- (iv) The Earnest Money Deposit will not carry any interest.

Tenders received without the Earnest Money Deposit other than specified in sub-clause (ii) above will be summarily rejected.

7. TIMELINE AND DELIVERABLES

7.1 Broad Timeline for the demo Project is as under:

Issue of order	Commencement of IGEA	Expected completion date
By the SDA.	Within 15 days of receipt of order from SDA.	Within 60 days from the date of commencement of works.

7.2 Payment Schedule & Penalty/Damages for delay in work completion

The Payment will be made as per following schedule:

- a) **40%** after completion of field studies and measurements, submission of the **Preliminary Audit Report**,
- b) **20%** after submission of the **draft Audit Report**, and
- c) **40%** after acceptance of the final Audit Report by the **CEIA cum Adviser**.
- d) If the firm fails to complete the ordered works within the stipulated period, SDA may cancel the relevant order and in the event of SDA allowing the firm to carry on with the works upon such delay, penalty fee at the rate of 1% of the cost of incomplete works per week shall be deducted from the payment already due to the firm or the Earnest Money Deposit, whichever is higher, subject to the condition that such penalty shall not exceed the total value of incomplete portion of works.

Applicable taxes as deductible at source will be deducted from the bill amount.

No living accommodation and / or transportation for the personnel of the auditing firm shall be provided by the SDA.

7.3 Documents Comprising the Bid

The proposal prepared by the Bidder shall comprise the following components:

- i. Bid Form 1 : Bid Letter Proforma (refer Para 9.1)
- ii. Bid Form 2 : Comments and Suggestions (refer Para 9.2)
- iii. Bid Form 3 : Declaration Letter (refer Para 9.3)
- iv. Bid Form 4 : Financial Bid (refer Para 9.4)
- v. Bid processing fee of Rs.1,000/- (Rupees One Thousand only).
- vi. Earnest Money Deposit of Rs.10,000/- (Rupees Ten Thousand Only) (refer Para 6.12)
- vii. In case of a tenderer not being a Government body/undertaking/PSU, registered Power of Attorney executed by the Bidder in favor of the Principal Officer or the duly Authorized Representative, certifying him/her as an authorized signatory for the purpose of this Bid.
- viii. Memorandum of Understanding (MoU) / Agreement prepared on a stamp paper of requisite value with the subcontractor clearly indicating their relationship. (In case of subcontractors)
- ix. SDA shall not be responsible for non-receipt / non-delivery of the Bid due to any reason whatsoever. Bidders are advised to study the Bid document carefully. Submission of Bid shall be deemed to have been done after careful study and examination of the Bid document with full understanding of its implications.

8. SELECTION PROCESS

8.1 Pre-Qualification Criteria

The Consultant interested in being considered for this project must fulfill the following criteria:

- i. Should be a firm/company registered/incorporated in India.
- ii. Should be empanelled with BEE for carrying out Energy Audit works.
- iii. Should have adequate number of energy auditors on pay roll to carry out the works in issue.
- iv. Should have a successful track record of advising on the full scope of activities outlined
- v. Should have experience in working with Governments and Public Sector Undertakings
- vi. Experience of sub-contractor including parent company may be stated only if the relevant Memorandum of Understanding (MoU) is submitted.
- vii. Should not be involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract
- viii. Should not be black-listed by any Central / State Government / Public Sector Undertaking in India

8.2 Preliminary Scrutiny

Preliminary scrutiny of the proposal will be made to determine whether they are complete, whether required process fee has been furnished, whether the documents have been properly signed, and whether the bids are generally in order. Proposals not conforming to such preliminary requirements will be prima facie rejected.

8.3 Evaluation of Proposals

The proposals would be evaluated on the basis of the pre-qualification criteria and Consultant's prior experience in the areas mentioned above. The specific experience of the Consultant will be evaluated on the basis of the following information provided in ENVELOPE-A along with the prescribed documents:

- Evidence of having successfully carried out similar assignments.
- Evidence of having successfully carried out assignments with Government.
- Sufficient size, organization, and management to carry out the entire project.
- Specialized skills and creativity related to the assignment.

However, SDA in its sole/absolute discretion can apply whatever criteria deemed appropriate in determining the responsiveness of the EoI submitted by the respondents. **The price bid for all pre-qualified bidders will be opened and the contract will be awarded to the lowest price bidder.**

8.4 Liquidated Damages

Should the supplier firm fail to complete the work within the period prescribed for, SDA shall be entitled to recover 50% of the Earnest Money Deposit on expiry of the first week of delay and the rest 50% of the Earnest Money Deposit on expiry of the second week of delay. **Quantum of liquidated damages as assessed for realization by SDA shall be final and not challengeable by the supplier firm.**

8.5 Jurisdiction

All legal proceedings in connection with this contract shall be subject to the territorial jurisdiction of local civil courts at Guwahati only.

8.6 Force Majeure

If, at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war or hostility, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts or act of God (hereinafter referred to as events) provided notice of happenings of any such eventuality is given by either party to the other within 5 days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate this contract nor shall either party have any claim for damages against other in respect of such non-performance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such an event come to an end or cease to exist, and the decision of SDA as to whether the deliveries have been so resumed or not shall be final and conclusive. Further that if the performance in whole or part of any obligation under this contract is prevented or delayed by reasons of any such event for a period exceeding 30 days, either party may, at its option, terminate the contract.

9 BID FORMS

Bid is to be submitted in the following format along with the necessary documents as listed. The Bid shall be liable for rejection in the absence of requisite supporting documents.

9.1 Bid Form 1 : Bid Letter Proforma

To

The Chief Electrical Inspector -cum- Adviser,
 Government of Assam,
 State Designated Agency for the State of Assam under EC Act,
 Mahabhairab Building, Pub Sarania Road,
 Guwahati - 781 003, Assam.

Sub: Carrying out of Investment Grade Energy Audit of 120MW Natural Gas based Lakwa Tharmal Power Station, Maibela, Sivsagar District.

Sir,

The undersigned Bidders, having read and examined in detail all the Bid documents in respect of appointment of a consultant for carrying out of Investment Grade Energy Audit of 120MW Natural Gas based Lakwa Tharmal Power Station at Sivsagar district of Assam, taken as a demo project for the State Designated Agency, Assam as specified in the scope of work

1. Correspondence Details

Our correspondence details are:

1	Name of the Bidder	
2	Address of the Bidder	
3	Name of the contact person to whom all references shall be made regarding this tender	
4	Designation of the person to whom all references shall be made regarding this tender	
5	Address of the person to whom all references shall be made regarding this tender	
6	Telephone (with STD code)	
7	E-Mail of the contact person	
8	Fax No. (with STD code)	

2. Document forming part of Bid

We have enclosed herewith the followings:

- i. Bid Form 2 : Comments and Suggestions (refer Para 9.2)
- ii. Bid Form 3 : Declaration Letter (refer Para 9.3)
- iii. Bid Form 4 : Financial Bid {refer Para 9.4}
- iv. Bid processing fee
- v. Earnest Money Deposit of Rs.10,000/- (Rupees Ten Thousand Only) (refer Para 6.12)
- vi. Registered Power of Attorney executed by the Bidder in favor of the Principal Officer or the duly Authorized Representative, certifying him/her as an authorized signatory for the purpose of this Bid. (In case of a tenderer not being a Government body/ undertaking/PSU)
- vii. Memorandum of Understanding (MoU) / Agreement prepared on a stamp paper of requisite value with the subcontractor clearly indicating their relationship. (Optional)

3. We hereby declare that our Bid is made in good faith and the information contained therein is true and correct to the best of our knowledge and belief.

Thanking you.

Yours faithfully

Seal:

Date:
Place:

Witness:

Signature

Name

Address

Date

(Signature of the Bidder)

Name :
Designation :
Business Address:

Bidder:

Signature

Name

Designation

Company/Firm

Date

9.2 Bid Form 2: Comments and Suggestions

[Suggest and justify here any modifications or improvement to the scope of work, tasks to be performed, timeline, deliverables, payment terms etc. to improve performance in carrying out the Assignment. The Bidder can suggest deleting some activity or adding another, or proposing a different phasing of the activities. Such suggestions should be concise and to the point.]

(Maximum two pages)

9.3 Bid Form 3: Declaration Letter.

Declaration Letter on official letter head stating the following:

- i. We are not involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract

- ii. We are not black-listed by any Central / State Government / Public Sector Undertaking in India

Witness:

Signature _____

Name _____

Address _____

Date _____

Bidder:

Signature _____

Name _____

Designation _____

Company _____

Date _____

9.4 Bid Form 4 : Financial Bid

To

The Chief Electrical Inspector -cum- Adviser,
 Government of Assam,
 State Designated Agency for the State of Assam under EC Act,
 Mahabhairab Building, Pub Sarania Road,
 Guwahati - 781 003, Assam.

Sub: Carrying out of Investment Grade Energy Audit of 120MW Natural Gas based Lakwa Thermal Power Station, Maibela, Sivsagar District.

Sir,

The undersigned Bidder, having read and examined in detail all the Bid documents in respect of appointment of Consultant for Carrying out of Investment Grade Energy Audit of 120MW Natural Gas based Lakwa Thermal Power Station, Maibela, Sivsagar District, a demo project for the State Designated Agency, Assam as specified in the scope of work, hereby quote an amount of Rs.....(Rupees.....) being total amount for carrying out the job covering scope of works in the bid document within the prescribed terms and conditions.

The above quoted amount of Rs.....(Rupees.....) is inclusive of all applicable Taxes and Duties.

In case of any difference of amount in figures and words, the amount in words will be considered.

Bidder:

Witness:

Signature

Signature

Name

Name

Address

Designation

Company/Firm

Date

Date

ANNEXURE "GIoP"

The **Lakwah Thermal Power Station** comprises a total of 7 nos of Gas Turbines with a plant installed capacity of 120 MW. All these seven units are of simple "Carnot thermodynamic cycle", single shaft design.

FUEL SUPPLY for the LTPS.

The Oil India Ltd (OIL), the Gas Authority of India Ltd (GAIL) and the Canadian company CANARO have been supplying Natural gas to the power station. The CANARO has been supplying gas to the plant from its Amguri field. The Natural Gas supplied by these Companies has a weighted average Nett Calorific Value of 8674 kcal/scum as per records available with the Plant Management. These 3 companies have supplied the following quantity of gas in the last 3 financial years generating the Electrical Energy as under:-

Period	Natural Gas(MMSCM)	Energy(MU)
2007/08	224.017	514.889
2008/09	278.084	682.114
2009/10	316.958	762.76

The Plant Infra structure can be shortly described as under:

- a. Gas receiving station: under phase1 & phase 11.
- b. Gas Compressors under phase1 & phase 11.
- c. Gas turbo-generators under phase1 & Phase 11.
- d. Plant Control Station
- e. Auxiliaries.
- f. Power step-up Transformers from 11 KV to 132KV
- g. Switching yard for power transmission by 7 nos outgoing 132kv feeders to different Cities, etc.

a) GAS RECIEVING STATION:

The N.Gas from the adjacent gas fields in supplied by OIL,GAIL AND CANORO to LTPS by 2 different 12" GAS LINES of phase1 & Phase 11.The pressure of gas supplied by the OIL & CANORO is 1.00 Kg/cm², and the Quantity is 0.5 &0.1 MMSCMD respectively. The pressure of gas supplied by the GAIL Is 4.00 Kg/cm², and the Quantity is 0.4 MMSCMD.

After reducing the gas pressure to 1kg/cm² by PRV, the gas is then sent to gas Compressors for compressing the gas to 5.0 kg/cm².

Both the lines are interconnected before the gas is fed to the Compressors for convenience and transfer of gas from line1 to line2 or vice versa should such a need arise.

There is No facility at the plant to determine the Calorific Value of the N.Gas and Plant Officials have to depend on the Supplier Co's for this very vital parameter.

However, the Supplier Co's have installed Gas Chromatographs (in their own supply side infra structure facility) to determine the Calorific from time to time.

b) GAS COMPRESSORS:

There are 8 nos. of reciprocating type Gas Compressors of and most of the compressors are Ingersoll Rand make and the capacities are as under :

Compressor No.	Capacity(MMSCMD)	Motor Power Rating(Kw)	Discharge Pressure (kg/cm2)
1	0.12	522	15.00
2	0.12	522	15.00
3	0.12	522	15.00
4	0.18	825	15.00
5	0.18	825	15.00
6	0.20	1375	18.00
7	0.20	1375	18.00
8	0.20	1375	18.00

The compressed gas from the compressors is first transmitted to the Gas Conditioning skid from where it is fed to Turbine Nos.5, 6, 7 which are all **BHEL** make Turbines of Phase 2.

In a similar fashion the compressed N.Gas from Compressors Nos.1,2,3,4 & 5 is fed to Turbines 1, 2, 3 & 4 of Phase 1 after the gas been conditioned.

The motors driving the above described Compressors have a total rated Power of 7341 KW ,which works out to 6.11% of the Power sold.

c) GAS TURBO-GENERATORS:

Phase	Unit	Type	Make	Rated Capacity	Date of Commissioning
Phase 1	1	Gas Turbine	Westinghouse, Canada	15 MW	Jul-83
	2	Gas Turbine	Westinghouse, Canada	15 MW	Apr-81
	3	Gas Turbine	Westinghouse, Canada	15 MW	Aug-81
	4	Gas Turbine	Mitsubishi Corp., Japan	15 MW	Oct-86
Phase 2	5	Gas Turbine	BHEL	20 MW	Jan-94
	6	Gas Turbine	BHEL	20 MW	Jul-94
	7	Gas Turbine	BHEL	20 MW	May-99

All the above described Turbo Generators are single shaft units mounted on one base, and are of simple cycle.

Despite the age of the first 4 stages, the units are working satisfactorily,

d) Plant control station:

The working of the turbines, alternators, motors, transformers, etc, Power generated, consumed, energy transmitted, etc, is being monitored, and controlled by the system.

e) AUXILIARIES:

Some of the important Auxiliaries are:

- 1) Air Compressors with air storage tanks for instrumentation.
- 2) Lubricating oil cooling stations for BHEL Turbines.
- 3) DIESEL ENGINES for water pumps for water reservoir.
- 4) Lighting system at the Plant.
- 5) Power supply to LTPS colony.
- 6) DC Battery bank for DC POWER at 230V DC for instrumentation.
- 7) Cooling water Supply Arrangements.

The water storage system consists of storage tanks where in water is pumped from a neighbouring river and/or from deep tube wells. After the water is filtered, it is pumped to the Overhead tanks for further distribution and used in the Plant.

There are **12 pumping sets** of various types, with total rated power requirement of **179 KWs**.

f) Power transformers:

The undernoted Transformers are installed for outgoing feeders and other auxiliary equipment usage, which run round the clock.

STEP UP

CAPACITY	PRI - SEC	NOS.
30 MVA	11 KV / 132 KV	3
22.5 MVA	11 KV / 132 KV	4

STEP DOWN

CAPACITY	PRI - SEC	NOS.
7.5 MVA	132 KV / 33 KV	2
7.5 MVA	132 KV / 3.3 KV	2
3.0 MVA	33 KV / 11 KV	1
7.5 MVA	33 KV / 11 KV	1
3.0 MVA	33 KV / 3.3 KV	3
0.5 MVA	3.3 KV / 0.415 KV	4

g) SWITCHING YARD:

The switchyard consists of the transformers listed above as well as other switchyard equipments with following outgoing feeders:

Name of feeder	System voltage(KV)
Mariani	132
Nazira	132
Namrup1	132
Namrup2	132
Dibrugarh	132
ONGCL	33
SONARI	33
COLONY	11