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## Hiring of an Agency for Energy Mapping of Thermal Power Plants

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### *Request for Proposal*

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Last Date of Submission:  
22/02/2019

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Bureau of Energy Efficiency  
Ministry of Power, Government of India,  
4<sup>th</sup> Floor Sewa Bhawan, R. K. Puram,  
New Delhi – 110066.

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## 1. Critical Information

1	Availability of Request for Proposal Document	31.12.2018
2	Date & Time for Pre-bid Meeting	15.01.2019 -at 15:00 hours
3	Issuance of revised RFP Documents, if required	25.01.2019
4	Date & Time for Pre-bid Meeting on revised RFP	11.02.2019 at 15:00 hours
5	Issuance of revised RFP Documents, if required	15.02.2019
6	Last date for submission of bids	22.02.2019 by 5 PM
7	Venue for Pre-Bid Meeting	Conference Hall, Bureau of Energy Efficiency 4th floor, Sewa Bhawan, R K Puram New Delhi - 110066 Tel No.: -91-11-26179699
8	E-mail address for queries	1. <a href="mailto:ravinder.yadav@beenet.in">ravinder.yadav@beenet.in</a>
9	Place for Submission of Proposal/Bid	Bureau of Energy Efficiency 4th floor, Sewa Bhawan, R K Puram New Delhi – 110066 Tel No.: -91-11-26179699
10	Date of Opening of Financial Proposal for qualified Bidders	Will be informed by e-mail at least 5 days prior to the date of opening of financial bid

11	Contact Person for Clarification	<p>1. Mr. Ashok Kumar, Director, Bureau of Energy Efficiency 4th floor, Sewa Bhawan, R K Puram New Delhi – 110066 Tel No.: -91-11-26179699 Email : <a href="mailto:kumara@beenet.in">kumara@beenet.in</a></p> <p>2. Mr. Ravinder Yadav, Project Engineer, Bureau of Energy Efficiency 4th floor, Sewa Bhawan, R K Puram New Delhi – 110066 Tel No.: -91-11-26766777 Email: <a href="mailto:ravinder.yadav@beenet.in">ravinder.yadav@beenet.in</a></p>
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## **2. Bureau of Energy Efficiency (BEE)**

### **2.1. About BEE**

The mission of Bureau of Energy Efficiency (BEE) is to develop policy and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act (EC 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.

The setting up of Bureau of Energy Efficiency (BEE) provides a legal framework for energy efficiency initiatives in the country. The 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 State Governments to 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 Energy Conservation Act, 2001 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**

Under the provisions of the Energy Conservation Act, 2001, Bureau of Energy Efficiency has been established with effect from 1st March, 2002 by merging



into it, the erstwhile Energy Management Centre, being a society registered under the Societies Registration Act, 1860, under the Ministry of Power.

### **2.3. Functions of BEE**

BEE co-ordinates with designated consumers, designated agencies and other organization; recognizes, identifies and utilizes the existing resources and infrastructure, in performing the functions assigned to it under the E.C Act, 2001. The Act provides for regulatory and promotional functions:

The major functions of BEE include:

- Develop and recommend to the Central Government the norms for processes and energy consumption standards.
- Develop and recommend to the Central Government minimum energy consumption standards and labeling design for equipment and appliances.
- Develop and recommend to the Central Government specific energy conservation building codes.
- Recommend the Central Government for notifying any user or class of users of energy as a designated consumer.
- Take necessary measures to create awareness and disseminate information for efficient use of energy and its conservation.

### **2.4. The Energy Conservation Act, 2001**

The Energy Conservation Act, 2001 (ECA) forms the core of the legal framework put in place by India to promote energy efficiency and conservation. ECA came into force with effect from March 1, 2002. Some important sections of ECA relevant to BEE are:

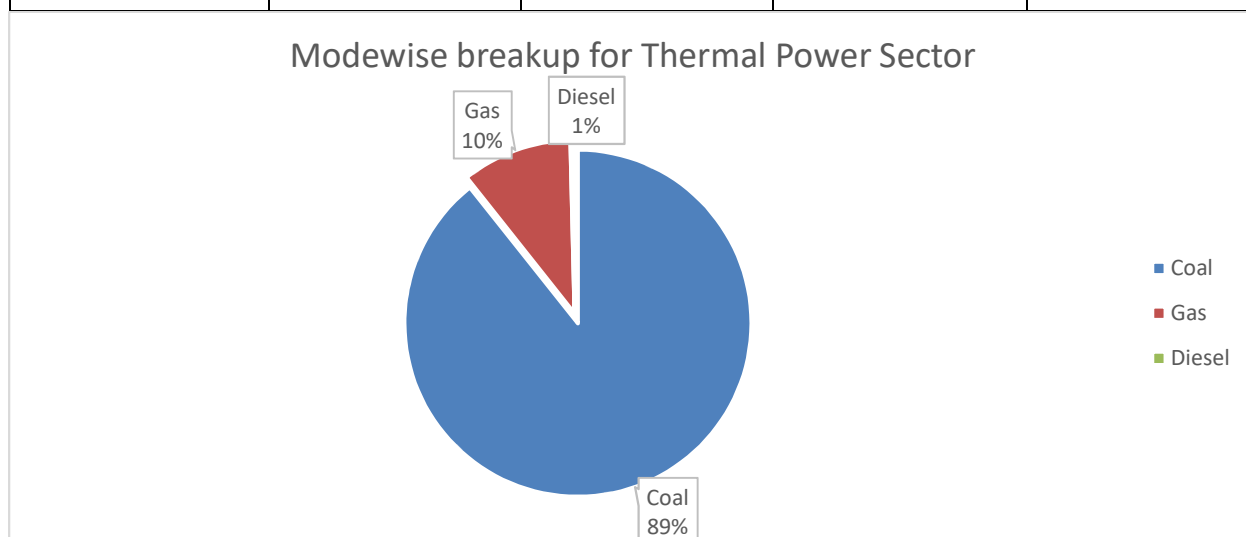
- Section 1 – Short title, extent and commencement
- Section 2 – Definitions
- Section 3 – Bureau of Energy Efficiency-creation, administration
- Section 12 – Transfer of Assets and Liabilities of Energy Management Center to BEE
- Section 13 – Powers and functions of the BEE
- Section 14 – Power of Central Government to Facilitate and Enforce Efficient use of Energy and its Conservation
- Section 15 -Power of State Government to Facilitate and Enforce Efficient use of Energy and its Conservation
- Section 16 – Constitution of State Energy Conservation Fund
- Section 17 – Power of Inspection
- Section 18 – Power of Central Government to issue directions
- Section 41 – Restriction on Civil Courts
- Section 42 –Appeal to High Court
- Section 44 – Offences triable by Special Courts
- Section 48 –Authorities under the Act
- Section 26 – Penalties and Adjudication
- Section 30 – Appellate Tribunal for Energy Conservation
- Section 48 – Default by Companies
- Section 52 – Power to obtain Information
- Section 56 – Power of Central Government to make rules

- Section 57 – Power of State Government to make rules
- Section 58 – Power of BEE to make regulations
- Section 62 – Power to remove difficulties

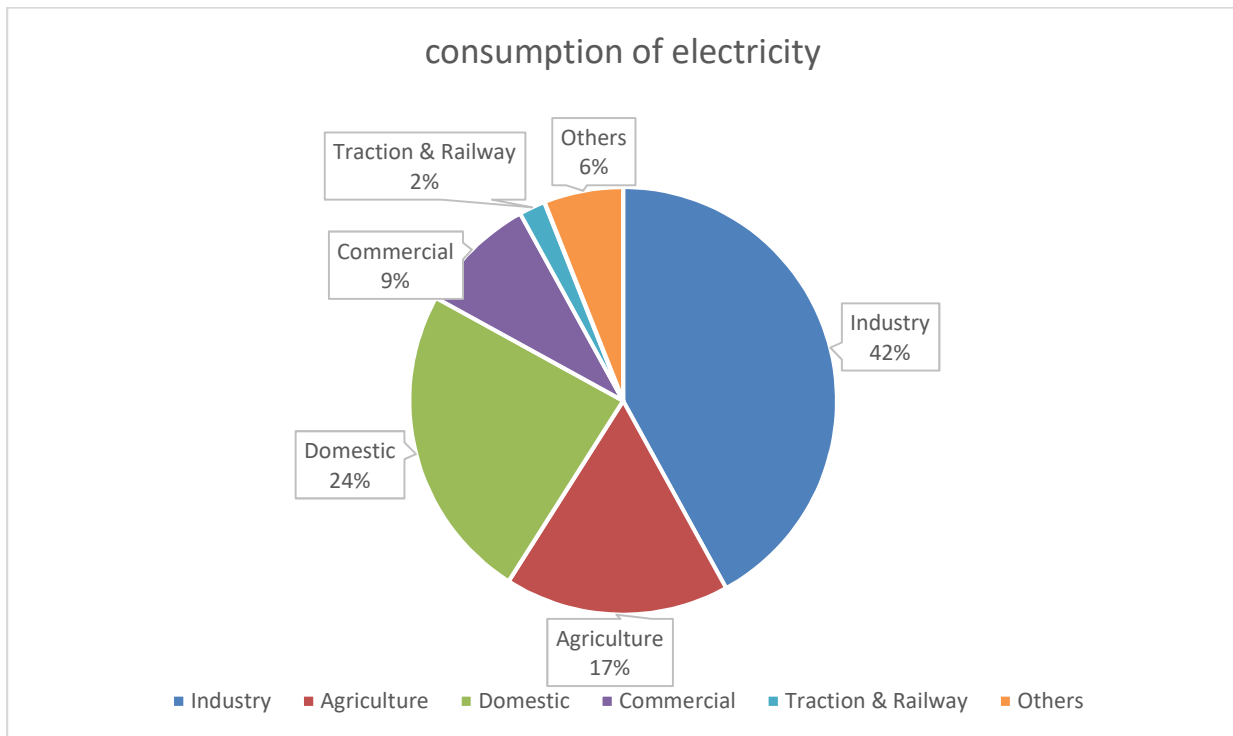
### 3. Objective of Study

India’s thermal power sector is one of the most critical components of an infrastructure that effects India’s economic growth and therefore is also one of the largest industries in India. India’s energy demand has grown at 3.6 % pa over the past 30 years. According to CEA, electricity consumption (demand) in the country will grow at 7.1 % (CAGR) between FY17 and FY22 and then slow to 6 % in the subsequent five years. The installed capacity of India’s Power sector is 345 GW in Aug 2018 (CEA source). Mode wise breakup for Indian Thermal power installed capacity is as under-

	Coal (GW)	Gas (GW)	Diesel (GW)	Total (GW)
State	64.4	7	0.3	71.7
Private	75	10	0.4	85.4
Central	56	7	0	63
<b>Total</b>	<b>196</b>	<b>24</b>	<b>0.7</b>	<b>221</b>



### Consumption of Electricity by sectors-



Keeping in view the climate change commitments made by Government of India during the COP21 Summit held at Paris to reduce emission intensity by 33- 35% by 2030 from 2005 levels, it is pertinent to introduce energy efficient means in the thermal power sector which can be coupled with India’s rapid economic growth and country’s energy security. Energy mapping of thermal power stations presents a viable alternative in addressing these challenges, when packaged with appropriate technology and support.

A total of 208 Thermal Power plants, also known as Designated consumers (DCs) are participating under the National Mission for Enhanced Energy Efficiency (NMEEE), a market-based mechanism known as Perform Achieve and Trade (PAT). 132 of these DCs have completed PAT I and entered the PAT II cycle along with 22 new DCs. Currently 154 DCs are participating in PAT 2 cycle, which will end in March 2019.

PAT III and PAT IV cycle are also notified by BEE in 2017 & 2018 respectively with 37 new DCs in PAT cycle III and 17 new DCs in PAT cycle IV.

The present scope envisages conducting mapping studies of Thermal Power Plant DCs. The mapping study is aimed to inform the power plant operator and the management the status of the current heat rate of plant, when compared to their design value and the targeted value.

#### **4. Scope of Work**

- The number and details of thermal power plants identified for mapping study is at **(Annexure-1)**.
- The mapping studies must be carried out scientifically using a diagnostic tool or through instruments to assess the total energy saving potential of the plant including auxiliaries and balance of plant (BOP).
- Mapping should be done at different load (100%, 80% and 60%). If plant doesn't agree to run on different load due to scheduling or another reasons, data can be taken from records / DCS from last 6 months operation summary.
- The Mapping studies shall conduct the performance evaluation of process, sub-process, equipment etc.
- The mapping study must calculate the heat rate and equipment efficiency and also identify the gaps in operating parameter as compared to design for each equipment.
- The thermodynamic model must clean the input DCS data for bad / missing values.
- For all the Actual operating parameters, its corresponding Expected values must be calculated. Expected values, derived from the thermodynamic model, is the value under current operating condition if the plant was new and clean.

- Expected values and Operating values of the parameters must be compared, from which the degradation must be derived.
- Quantify the current degradation at each equipment which will help the plant to prioritize steps to mitigate them.
- The model must use the existing measured data from the station DCS. No modification to existing instrumentation is envisaged for this mapping studies.
- The model must be developed for 3 scenario-
  1. Design values
  2. Expected values considering current scenario
  3. Operating value
- Mapping studies must cover the process, sub-process, for eg-
  - a. All Turbine (HPT, IPT and LPT) performance evaluation considering efficiency, enthalpies, steam flow and gland leakage flow estimation.
  - b. Boiler performance evaluation considering efficiency, excess air and cleanliness factor of super heater, evaporator, re-heater and economizer.
  - c. Mill system performance evaluation.
  - d. Air pre-heater performance involving efficiency and pressure loss
  - e. Condenser performance
  - f. Deaerator performance
  - g. LP and HP heater performance
- All the above calculations must be based on relevant ASME PTC Standards
- Below table will summarize the performance & gap analysis expected out of the mapping studies.

Boiler	Boiler efficiency and its heat losses with intermediate calculation
Turbine	Turbine efficiency, Heat rate and its intermediate calculations
Condenser	Condenser cleanliness factor and its intermediate calculations

Condensate, Feed Water Heater	Terminal temperature difference, Drain cooler approach, Extraction flows and its intermediate calculations, Effectiveness & heat load etc
Deaerator	Heat duty and its intermediate calculations
Economizer	Economizer effectiveness and its intermediate calculations
Air Heater	Air side leakage, gas side leakage, pressure drop, corrected gas temperature, air side effectiveness, gas side effectiveness and its intermediate calculations
Generator	MW, MVA and MVAR and excitation system
Pumps	Major Pump efficiency and its intermediate calculations
Fans	Major Fan efficiency and its intermediate calculations
Heat Exchanger	Heat transfer coefficient for all Heat exchangers.
ESP	Performance of ESP

- Agency have to recommend measures for gaps identified during study.
- Agency will provide the technical support in capacity building or training program, organized by BEE to demonstrate the outcome from this mapping activity.

## 5. Deliverables

The agency will deliver a gap analysis and recommendation report to the DC and BEE. The reports will be a performance evaluation of heat rate, plant and equipment efficiency and the report should have acceptance of the DC..

The agency can use their standard report and graphs template to cover all performance parameters shown in above table, however the report format must be approved from BEE.

The Mapping report must compare the Actual Operating values with Expected value. However, the vendors are free and encouraged to use any of their

methodology to highlight equipment degradation and the concept of deviation from the Design value.

The reports must be delivered in an editable format MS Word/Excel and in pdf. Supply and License of the software / thermodynamic model is not in the scope of this project.

1. The Gap analysis shall imply a detailed description with identification of areas of improvement as a result of mapping study. The chapter of final report shall contain the following items:
  - Introduction
  - General overview of plant and plant details
  - Main parameters of unit
  - Methodology
  - Operating parameter at the commencement
  - Major observation on process, sub process mentioned in table.
2. Based on gap analysis adequate saving measure shall be developed, considering technical and operational issue. The sequence of recommended measures shall be according to priority in consideration of economic parameter. Each position shall be described within the final report as follow:
  - Description of each measure
  - Description of steps for its implementation
  - Expected reduction of heat rates (Kcal/kWh) and improvement of efficiency (%).
  - Reduction of oil/coal consumption (tonnes/year)
  - Reduction of Co<sub>2</sub> (tonnes/year)
  - Estimation of investment (INR)
  - Reduction of costs for fuel and operation / maintenance (INR/year)
  - Payback period (years)



## 6. Timeline

S. No	Activity	Timeline	Submissions
1	Inception Phase	2 weeks from the issuance of work order	Inception Report*
2	Interim Phase	3 months from the issuance of work order	Interim preliminary findings report
3	Draft Final Phase	5 months from the issuance of work order	Draft Report**
4	Final Phase	6 months from the issuance of work order	Final report along with other relevant documents.

\*submission of report template/format, methodology, timeline etc.

\*\*Submission of draft report to BEE and DC with a timeframe of 15 days for comments/input. If the DC doesn't respond within 15 days, an intimation must be sent to BEE.

## 7. Selection Process

### 7.1. Pre-Qualification Criteria

The agencies interested in being considered for this task preferably shall fulfill the following criteria:

- Should be a firm/company registered/incorporated in India with atleast 4 offices in India.
- Should have the work experience of at least 5 years in either O&M of coal based Thermal Power Plants or diagnosis energy efficiency or energy auditing in coal based Thermal Power Plants.

- Technical team leader should have experience of minimum 15 years in relevant field.
- Team members should have experience of minimum 5 years in relevant field.
- Should have a minimum annual turnover of INR 05.00 Crores in the last three (3) years i.e. FY 2015-16, 2016-17, 2017-18.
- Should have been profitable for at least two (2) of the last three (3) years.
- Outsourcing of work related to this assignment is not permitted.
- Consortium is permitted. The consultancy firm / agency may involve one more agency and MoU/agreement for such must be submitted with the proposal. The consortium partner should not have been black-listed by any Central / State Government or Public-Sector Undertakings.

## 7.2. 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 in order, and whether the bidder meets all the pre-qualification criteria.

Proposals not conforming to these requirements will be rejected.

## 7.3. Evaluation of Proposals

BEE will evaluate proposals and will give marks to all the successful bidders from preliminary scrutiny on the following basis:

S. No	Category	Max. Marks	Criteria
1	Turnover	10	Turnover between Rs 06-10 crore: 7 Marks Turnover > 10 crore: 10 Marks

<b>2</b>	<b>Team</b>		
	Team Leader (Years of experience in relevant area)	10	Years of Experience between 16-20 years: 5 Marks Years of Experience between 21-25 years: 8 Marks Years of Experience more than 25 years: 10 Marks
	Team Strength (with relevant experience)	10	Team between 5-10: 5 Marks Team between 10-20: 8 Marks Team more than 20: 10 Marks
<b>3</b>	<b>Experience</b>		
	Energy Mapping of Thermal power plants through diagnostic tool	30	Each Project will have 5 marks subject to maximum of 30 marks
	Thermal power generation, O&M, Erection	20	Each Project will have 5 marks subject to maximum of 20 marks
	Energy auditing of Thermal power plants	20	Each Project will have 5 marks subject to maximum of 20 marks
	<b>TOTAL TECHNICAL SCORE</b>	<b>100</b>	

**Note: Only agencies with minimum of 70 marks will be qualified for the financial bid opening.**

## **7.4. Selection of Bidder**

1. The bidder with lowest commercial bid against the plant shall be declared as the successful bidder for that particular plant and will be called as L1 bidder. BEE reserves the right to place the order with the L2 bidder, in case the L1 bidder refuses to accept the order or otherwise gets disqualified as per the terms of the RFP, provided the L2 bidder matches the price quoted by the L1 bidder. In case the 2nd lowest bidder is unable to match the L1 price, BEE reserves the right to place order with the shortlisted L3 bidder and so on.
2. Bidders can apply in any/all of the plant and submit the financial proposal against individual plant. Bids will be opened in sequence number (first for serial number 1 to 22 for each plant as mentioned in the list of plants...).
3. Any bidder who is successful in at least five plants will not be considered for the rest of the plants. Evaluation will be based on the total lump sum cost quoted by the bidder against individual plant.
4. In case more than one bidder quotes the same value, then the bidder having maximum technical evaluation marks will be reckoned as L1. A list of L1, L2, L3 ... and so on will be prepared.
5. In case of selected L1 bidder refuses to work within the time frame given by BEE, the offer would be treated as withdrawn and the bidder's EMD will be forfeited and L2 bidder shall be reckoned as L1 for further process. If other bidders refuses to work, their EMD will be forfeited and offer will be extended to another qualified bidder. The defaulted bidder may also be debarred from participating in BEE tenders for a period of 3 years.
6. If there is discrepancy between words and figures, the amount in words will prevail.

7. The decision of BEE arrived at above will be final and no representation of any kind shall be entertained.

## **8. Other Conditions**

### **8.1. Procedure for Submission of Proposal**

The Consultant should submit following document with Cover Letter in two separate envelopes marked as ENVELOPE-A and ENVELOPE-B.

1. **COVER LETTER:** - The cover letter must clearly mention the name, address, telephone and fax no., and email id of the authorized person who will serve as the primary point of contact for all communication. The person who is signing the cover letter and the proposal should have authorization.
2. **ENVELOPE- A:** - One Hard Copy of Technical Proposal, in original with signature of authorized personnel and stamp/seal of the organization. The sealed envelope should be super scribed with the wordings "Technical Proposal for Hiring of Agency for Energy Mapping of Thermal Power Plants".
3. **ENVELOPE- B:** - One Hard Copy of Financial Proposal, in original with signature of authorized personnel and stamp/seal of the organization. The sealed envelope should be super scribed with the wordings "Financial Proposal for Hiring of Agency for Energy Mapping of Thermal Power Plants".

## **8.2. Cost of RfP**

The Agency shall bear all costs associated with the preparation and submission of its RfP, including cost of presentation for the purposes of clarification of the bid, if so desired by the purchaser. BEE will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

## **8.3. Earnest Money Deposit**

An Earnest Money Deposit (EMD) of Rs.2,00,000 (Rupees Two lac only) is to be deposited by the bidders by way of Banker's Cheque/ Demand Draft drawn in favour of "Bureau of Energy Efficiency" payable at New Delhi. This should be enclosed in the same cover as that of the Technical Bid.

8.3.1. EMD will not carry any interest.

8.3.2. EMD will be forfeited if:

- i. A bidder withdraws from the tender, or amends its tender, or impairs, or derogates from the tender in any respect within the validity period of his tender.
- ii. If a bidder having been notified of the acceptance of his tender by BEE during the period of its validity.
- iii. Fails to furnish the performance security within the specified period for the due performance of the contract, or
- iv. Fails or refuses to accept/execute the contract.

8.3.3. EMD furnished by the unsuccessful bidders would be returned without any interest on completion of the tender process, i.e., after award of the contract.

8.3.4. EMD of the successful bidder would be returned without any interest after receipt of the Performance Security as per the terms of the contract.

8.3.5. Bids received without EMD will be rejected.

#### **8.4. Performance Security**

The successful bidder would be required to deposit an amount equivalent to 10% of the value of the contract. This should be furnished through the Demand Draft in favour of “Bureau of Energy Efficiency”, payable at Delhi. The Performance Security amount furnished by Demand Draft will be returned without interest within 60 days of completion of all obligations under the contract. The Performance Security will be returned after adjusting for penalties on account of deficiencies, if any, in the performance of the contract.

#### **8.5. Liquidated Damages**

Liquidated damages would be imposed @0.5% per week or part there off or the delay in delivery (refer section 6 for Timeline) as may be attributed to the successful bidder for each payment milestone as defined in the contract, subject to a maximum of 10% of the contract value. Recoveries through such Liquidated Damages are to be without any prejudice to the other remedies as available to BEE under the terms of the contract.

#### **8.6. Contents of the RfP**

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

#### **8.7. Conflict of Interest**

The Agency who is selected for the work will have to maintain the confidentiality of the information compiled. In no case the Agency would be allowed to use the data or share the information with anyone else, except for the BEE.

BEE shall hold the copyrights over any of the data collected or compiled during the course of the awards.

### **8.8. Language of Bids**

The Bids prepared by the Agency and all correspondence and documents relating to the bids exchanged by the Agency and the Purchaser, shall be written in the English language, provided that any printed literature furnished by the Consultant 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.

### **8.9. Confidentiality**

BEE require 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.

### **8.10. Disclaimer**

BEE 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 BEE and/or any of its officers, employees.

### **8.11. Authorized Signatory (Consultant)**

The "Consultant" as used in the RfP shall mean the one who has signed the RfP document forms.

The Consultant should be the duly Authorized Representative of the Consultant, for which a certificate of authority will be submitted. All certificates and documents (including any clarifications sought and any subsequent correspondences) received hereby, 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 Consultant shall be annexed to the bid. BEE may reject outright any proposal not supported by adequate proof of the signatory's authority.

### **8.12. Contact details of the Consultant**

Consultant who wants to receive BEE's response to queries should give their contact details to BEE. The Consultant should send their contact details in writing at the BEE's contact address indicated above.

### **8.13. Amendment of RfP**

At any time prior to the last date for receipt of bids, BEE, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Consultant, modify the RfP Document by an amendment. In order to provide prospective Consultants reasonable time in which to take the

amendment into account in preparing their bids, BEE may, at their discretion, extend the last date for the receipt of Bids and/or make other changes in the requirements set out in the Invitation for RfP.

#### **8.14. Bid Processing Fee**

All bids must be accompanied by a bid processing fee of INR 5,000 (INR Five Thousand only) in the form of a crossed demand draft drawn on any nationalized/ scheduled bank payable at par in New Delhi, in favour of “Bureau of Energy Efficiency, New Delhi” for applying for the task.

#### **8.15. Documents Comprising the RfP**

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

- Form 1: Letter Pro-forma
- Form 2: Minimum Eligibility
- Form 3: Team Composition
- Form 4: CV of team leader
- Form 5: List of Projects implemented by the bidder organization
- Form 6: Prior Experience
- Form 7: Comments and Suggestions
- Form 8: Approach and Methodology
- Form 9: Declaration Letter
- Bid processing fee of INR 5,000 (INR Five Thousand only)
- Financial Proposal

## 8.16. Power of Attorney

Registered Power of Attorney executed by the Consultant in favour of the Principal Officer or the duly Authorized Representative, certifying him/her as an authorized signatory for the purpose of this RfP.

BEE shall not be responsible for non-receipt / non-delivery of the RfP due to any reason whatsoever.

Consultants are advised to study the RfP document carefully. Submission of RfP shall be deemed to have been done after careful study and examination of the RfP document with full understanding of its implications.

- 8.17.** BEE has all the rights to change/rescind/cancel the tender at any stage before award of the contract to any bidder without any explanation.

## 9. Terms of Payment

1. Payment authority will be Bureau of Energy Efficiency.
2. The successful bidder shall raise the invoice in favour of “The Secretary, Bureau of Energy Efficiency, 4th Floor, Sewa Bhawan, Sector– 1, R.K. Puram, New Delhi”.
3. Payment will be made as per the timeline mentioned below:

Sl. No.	Payment Terms	Payment Percentage
1	After issuance of LOI and submission of Performance Security	10%
2	After submission of interim report	40%
3	After submission of final report	40%
4	Final payment after 6 months of submission of final report	10 %

**\*Note:** BEE shall process the payment after the receipt of the invoice at the end of each phase. However, the work schedule shall be adhered and shall not be affected due to payment related process.

4. Quoted prices shall be inclusive of duties, taxes etc. except GST. GST as applicable shall be payable extra.
5. Travelling, boarding and lodging expenses will be supposed to include in price quoted.
6. No extra amount shall be paid on any ground whatsoever.

## **10. Forms to be submitted**

RfP is to be submitted in the following format along with the necessary documents as listed. The RfP shall be liable for rejection in the absence of requisite supporting documents. RfP should provide information against each of the applicable requirements. In absence of the same, the RfP shall be liable for rejection.

### **10.1. Form 1: Letter Pro-forma**

To

Secretary  
Bureau of Energy Efficiency  
4th Floor, Sewa Bhawan,  
R.K. Puram,  
New Delhi -110066  
India.

Sir/ Madam,

**Sub: Hiring of Agency for Energy Mapping of Thermal Power plants.**

The undersigned Consultants, having read and examined in detail all the RfP documents in respect of appointment of a Consultant for BEE do hereby express their interest to provide Consultancy Services as specified in the scope of work.

Our correspondence details are:

1	Name of the Consulting Firm	
2	Address of the Consulting Firm	
3	Name of the contact person to whom all references shall be made regarding this RfP	
4	Designation of the person to whom all references shall be made regarding this RfP	
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)	

We have enclosed the following:

- Form 1: Letter Pro-forma
- Form 2: Minimum Eligibility
- Form 3: Team Composition
- Form 4: CV of team members
- Form 5: List of Projects implemented by the bidder organization
- Form 6: Prior Experience
- Form 7: Comments and Suggestions
- Form 8: Approach and Methodology
- Form 9: Declaration Letter
- Bid processing fee of INR 5,000 (INR Five Thousand only)
- Form 10: Financial Proposal

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- Registered Power of Attorney executed by the Consultant in favor of the Principal Officer or the duly Authorized Representative, certifying him/her as an authorized signatory for the purpose of this RfP.

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

Thanking you,

Yours faithfully

(Signature of the Consultant)

Name :  
Designation :  
Seal :  
Date :  
Place :  
Business Address:

Witness:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Date \_\_\_\_\_

Consultant:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Company \_\_\_\_\_  
Date \_\_\_\_\_

**10.2. Form 2: Minimum Eligibility**

1	Name of Firm/Company			
2	Year of Registration/Incorporation			
3	Year of Registration/Incorporation in India*			
4	Number of Employees in India as on March 31, 2018			
		FY 2015-16	FY 2016-17	FY 2017-18
5	Annual Turnover from Consultancy Services**			
6	Annual Profits **			

\* Enclose a copy of Registration document

\*\*Enclose a copy of Audited Financial Statement

Witness:  
 Signature \_\_\_\_\_  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 Date \_\_\_\_\_

Consultant:  
 Signature \_\_\_\_\_  
 Name \_\_\_\_\_  
 Designation \_\_\_\_\_  
 Company \_\_\_\_\_  
 Date \_\_\_\_\_

**10.3. Form 3: Team Composition**

S. No	Name of Person	Role (Team Leader/ Team Member/ Other) <sup>1</sup>	Year of relevant experience <sup>2</sup>	List of projects (Related to Energy sector) <sup>3</sup>	List of other relevant projects <sup>4</sup>	Signature of the person <sup>5</sup>
				1. 2. 3.	1. 2. 3.	
				1. 2. 3.	1. 2. 3.	

<sup>1</sup>Role of the person in this project

<sup>2</sup> Year of relevant experience and same should also be depicted in the attached resume of the person.

<sup>3</sup> List of Projects relevant to Energy mapping or any other exercise should also be depicted in the attached CV (Curriculum Vitae) of the person.

<sup>4</sup> List of projects related to energy efficiency and same should be depicted in the attached CV of the person

<sup>5</sup> Signature should be original and signed in ink by all team members and also attach self-attested copy of PAN card/Passport etc. for verification of signature. Bid will be rejected, if signatures are not valid/not signed in original.



### **10.4. Form 4: CV of Team Members**

Provide CVs of the proposed team for undertaking the current assignment. The CVs to be included in the following format:

#### **FORMAT**

1. Name:
2. Proposed Position:
3. Name of Firm:
4. Date of Birth:
5. Nationality:
6. **Education (In Reverse Chronology):**

<b>Name of Degree</b>	<b>Year</b>	<b>Name of Institution</b>

7. Membership of Professional Associations:
8. Other Training:
9. Countries of Work Experience:

#### **10. Languages**

<b>Language</b>	<b>Speak</b>	<b>Read</b>	<b>Read</b>

**11. Employment Record:**

<b>Firm/Organization</b>	<b>From – To</b>	<b>Designation/Role</b>

**12. Projects undertaken**

<b>Name of Project</b>	<b>Role in the project</b>	<b>Duration (From – To)</b>	<b>Organization Name</b>	<b>Relevant to Energy Sector</b>	<b>Details of the Assignment</b>

**13. Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

\_\_\_\_\_ Date: \_\_\_\_\_

[Signature of staff member or authorized representative of the staff]

Day/Month/Year Full name, Signature and designation of authorized representative:

\_\_\_\_\_

**10.5. Form 5: List of Projects implemented by the bidder Organization**

<b>Type of Projects</b>	<b>List of Projects</b>
<b>Energy Mapping Study of any sector/Plant.</b>	1. 2. 3.
<b>International Experience</b>	1. 2.
<b>Energy Efficiency/auditing Projects</b>	1. 2.
<b>Any Other relevant Project</b>	1. 2.

BEE has complete right to ask for relevant documents such as work order/completion certificate for these projects. Non availability of such document may lead to rejection of bid/contract at any stage of the project.

### 10.6. Form 6: Prior Experience

[Please indicate at least minimum requirement of assignment directly related to the experience as specified in this document. List of other similar assignments / studies firm feel is important may be furnished in a separate sheet mentioning name of the assignments, year, approx. Value in INR of work etc.]

Name of Consulting Firm:	
Assignment/job name:	
Nature of Assignment:	
Description of Project	
Approx. value of the contract (in Rupees):	
Country:	
Location within country:	
Duration of Assignment/job (months) :	
Name of Employer:	
Address and contact details:	
Total No of staff-months of the Assignment/job:	
Approx. value of the Assignment/job provided by your firm under the contract (in Rupees):	
Start date (month/year):	
Completion date (month/year):	
Name of associated Consultants, if any:	

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No of professional staff-months provided by associated Consultants:	
Name of senior professional staff of your firm involved and functions performed.	
Description of actual Assignment/job provided by your staff within the Assignment/job:	

**Note: Please attach Letter of Intent or Purchase Order or certificate of successful completion for each project, from the respective Client(s).**

Witness:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Date \_\_\_\_\_

Consultant:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Company \_\_\_\_\_  
Date \_\_\_\_\_

**10.7. Form 7: 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 Consultant 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 2 Pages)**

Witness:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_   
Date \_\_\_\_\_  
\_\_\_\_\_

Consultant:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Company \_\_\_\_\_  
Date \_\_\_\_\_  
\_\_\_\_\_

**10.8. Form 8: Approach and Methodology**

[Explain your understanding of the objectives of the Assignment/job, approach to the Assignment/job, methodology for carrying out the activities and obtaining the expected output, and the degree of detail of such output. You should highlight the problems being addressed and their importance, and explain the technical approach you would adopt to address them. You should also explain the methodologies you propose to adopt and highlight the compatibility of those methodologies with the proposed approach]

Witness:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Date \_\_\_\_\_

Consultant:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Company \_\_\_\_\_  
Date \_\_\_\_\_

### **10.9. Form 9: Declaration Form**

**Declaration Letter on official letter head stating the following:**

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

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

Witness:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Date \_\_\_\_\_

Consultant:  
Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Company \_\_\_\_\_  
Date \_\_\_\_\_



## **10.10. Form 10: Format for Financial Proposal**

(Should be sealed separately from technical proposal and super scribed **Financial Proposal for “Hiring of Agency for Energy mapping of Thermal Power Plants”**)

[Location, Date]

FROM: (Name of Firm)

TO

Secretary  
Bureau of Energy Efficiency  
4th Floor, Sewa Bhawan,  
R.K. Puram,  
New Delhi -110066  
India.

Sir/ Madam,

**Sub: Hiring of Agency for Energy mapping of Thermal Power Plants.**

I / We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated [Date], with our Technical and Financial Proposals.

Our attached Financial Proposal is for Hiring of Agency for Energy Mapping of Thermal Power Plant is for total sum of [Amount in words and figures] and is exclusive of all taxes.

\* Financial quote should be inclusive of all taxes levies and duties as applicable on the last date of submission of bids, any non-compliance will liable for rejection of the bid. Each Stage of payment will be released on submission of the deliverables as mentioned.

\*Note: GST will be paid extra as per the rules of Government of India.

Our financial proposal shall be binding upon us subject to the modifications resulting from contract negotiations, and are valid upto 1 year from the date of opening of financial bids.

We confirm that, contract may be cancelled at any stage by Bureau of Energy Efficiency without giving any reason and will be completely binding on us. We confirm that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

We understand you are not bound to accept any Proposal you receive.

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of the Firm:

Seal:

**Financial Bid Template**

Date XX/XX/2019

Financial Bid No. <<if any>>

Client: Bureau of Energy Efficiency, New Delhi – 110066

Validity of the proposal – <<date of 90 days after from the date of bid submission>>

**Summary of Costs**

<b>S. No.</b>	<b>Name of the plant</b>	<b>Cost (INR)</b>
1	Hasdeo Thermal Power Station	
2	Akrimota Thermal Power Station	
3	Gandhinagar Thermal Power Station	
4	Wanakbori Thermal Power Station	
5	Panipat Thermal Power Station	
6	Koderma Thermal Power Station	
7	Bellary Thermal Power Station	
8	Raichur Thermal Power Station	
9	Sanjay Gandhi Thermal Power Station	
10	Chandrapur Super Thermal Power Station	
11	Khaperkheda Thermal Power Statio	
12	New Parli Thermal Power Station	
13	Chhabra Thermal Power Project	
14	Suratgarh Super Thermal Power Station	
15	Harduaganj Thermal Power Station	
16	Parichha Thermal Power Station	
17	Bakreswar Thermal Power Station	
18	SIMHAPURI ENERGY LIMITED	
19	Jojobera Power Plant, (TATA power Co.)	

Hiring of an Agency for Energy Mapping of Thermal Power plants

*Request for Proposal*

20	JSW Energy Ltd	
21	IND- BARATH THERMAL POWER LTD	
22	OPG Power Generation Pvt Ltd	

There is no other additional cost thereon.

Yours sincerely,

(Authorized Signatory)

Name of Firm

**Annexure-1 (List of Stations identified for Mapping Exercise)**

Sr. No.	Designated Consumers	State	Ownership	Station Capacity (MW)	Station unit Configuration (MW)	Units recommended for Mapping (MW)	Total Capacity for Mapping (MW)	Total number of units
1	1 X 500 MW, Hasdeo Thermal Power Station, Chhattisgarh State Power Generation Co. Ltd., Korba West Extn., Korba, Korba, Chhattisgarh-495450	Chhattisgarh	S	500	500 (1x500)	1x500	500	1
2	Akrimota Thermal Power Station, Kutch Nani Chher, Lakhapat, Kutch, Gujarat	Gujarat	S	250	250 (2x125)	2x125	250	2
3	Gandhinagar Thermal Power Station (Gujarat State Electricity Corp. Ltd ), Gandhi Nagar, Gujarat	Gujarat	S	870	870 (2x120+3x210)	3x210	630	3
4	Wanakbori Thermal Power Station , Kheda, Thasra, Kheda, Gujarat	Gujarat	S	1470	1470 (7x210)	7x210	1470	7
5	Panipat Thermal Power Station, HPGCL, Assandh, Panipat, Haryana	Haryana	S	1368	1367.8 (1x117.8+3x110 +2x210+2x250)	2x210 + 2x250	920	4
6	Koderma Thermal Power Station, Damodar Valley Corporation, Banjhedih, Koderma, Jharkhand-825421	Jharkhand	S	1000	1000 (2x500)	2x500	1000	2
7	Bellary Thermal Power Station Kudathini, Bellary, Karnataka	Karnataka	S	1000	1000 (2x500)	2x500	1000	2
8	Raichur Thermal Power Station, (Karnataka Power Corp. Ltd.), Shakti Nagar, Raichur, Karnataka	Karnataka	S	1720	1720 (7x210+1x250)	7x210 + 1x250	1720	8
9	Sanjay Gandhi Thermal Power Station MPPGCL, Birsinghpur , Umaria, Madhya Pradesh	Madhya Pradesh	S	1340	1340 (4x210+1x500)	4x210 + 1x500	1340	5
10	Chandrapur Super Thermal Power Station , MAHAGENCO, Urja Nagar, Chandrapur-442404, Maharashtra	Maharashtra	S	2340	2340 (3x500 + 4x210)	3x500	1500	3
11	Khaperkheda Thermal Power Station , MAHAGENCO, Khaperkheda, Nagpur, Maharashtra	Maharashtra	S	840	840 (4x210)	4x210	840	4
12	New Parli Thermal Power Station, MAHAGENCO Parli Vajjnath, Dist. Beed, Maharashtra	Maharashtra	S	500	500 (2x250)	2x250	500	2

**Annexure-1 (List of Stations indentified for Mapping Exercise)**

Sr. No.	Designated Consumers	State	Ownership	Station Capacity (MW)	Station unit Configuration (MW)	Units recommended for Mapping (MW)	Total Capacity for Mapping (MW)	Total number of units
13	Chhabra Thermal Power Project, RVUN, Chhabra,Shakti Parisar, Via Motipura Chowki, Chhabra,Baran,Rajasthan-325220	RAJASTHAN	S	1000	1000 (4x250)	4x250	1000	4
14	Suratgarh Super Thermal Power Station, Sri Ganga Nagar, Rajasthan	Rajasthan	S	1500	1500 (6x250)	6x250	1500	6
15	Harduaganj Thermal Power Station Kasimpur , Aligarh, Uttar Pradesh	Uttar Pradesh	S	665	665 (1x60+1x105+2x250)	2x250	500	2
16	Parichha Thermal Power Station, Jhansi, Uttar Pradesh	Uttar Pradesh	S	1140	1140 (2x110+2x210+2x250)	2x210 + 2x250	920	4
17	Bakreswar Thermal Power Station,Birbhum-731104, West Bengal	West Bengal	S	1050	1050 (5x210)	5x210	1050	5
18	SIMHAPURI ENERGY LIMITED, THAMMINAPATNAM, CHILLAKUR MANDAL, SPSR NELLORE, Andhra Pradesh -524002	Andhra Pradesh	P	600	600 (4*150)	4x150	600	4
19	Jojobera Power Plant, (TATA power Co.), Rahargora, Jamshedpur, Jharkhand	Jharkhand	P	428	427.5 (1x67.5 + 3x120)	1x67.5+3x120	427.5	4
20	JSW Energy Ltd,Nandiwade,Ratnagiri, Maharashtra-415 612	Maharashtra	P	1200	1200 (4x300)	4x300	1200	4
21	IND- BARATH THERMAL POWER LTD, Otapidaram Taluk / Saminatham Village, Thoothukkudi, Tamil Nadu-628402	Tamil Nadu	P	300	300 (2x150)	2x150	300	2
22	OPG Power Generation Pvt Ltd, Opg Nagar, Madharpakkam Road, Gummidipoondi, Thiruvallur , Tamil Nadu, Pin-601 201	Tamil Nadu	P	414	414 (2x77+1x80+1x180)	2x77 + 1x80	234	3

**21494**

**19402**

**81**