

2009

**Request for Proposal for
Revision and Updation of the
Course Material (All four books)
for the National Certification
Examination for Energy
Managers and Auditors as per
the Revised Syllabus**



Director General
Bureau of Energy Efficiency
Ministry of Power, Government of India



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Letter of Invitation

This Request for Proposal (RFP) Document is for the “Selection of Consultant/Institution for Revision and Updation of the Course Material (All four books) for the National Certification Examination for Energy Managers and Auditors as per the Revised Syllabus”.

The Government of India set up Bureau of Energy Efficiency (BEE) (Website: <http://www.bee-india.nic.in>) on 1st March 2002 under the provisions of the Energy Conservation Act, 2001. The mission of the Bureau of Energy Efficiency 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.

The objective of the engagement is to “Revise and Update the Course Material (All four books) for the National Certification Examination for Energy Managers and Auditors as per the Revised Syllabus”

EOI document may be purchased from BEE from August 06 , 2009 to August 21 , 2009 on payment of Rs. 10,000/- (Rs Ten Thousand only) from BEE office, 4th Floor, Sewa Bhavan, Sector 1, R.K. Puram, New Delhi. The same may also be downloaded from the website **www.bee-india.nic.in** however the fee may be remitted along with the bid.

In case of downloading the EOI, bidders must, intimate in writing their willingness to undertake the work and must send an email to the address given below latest by 21th August, 2009. In case such acknowledgement is not received, the final bid may be deemed to be non-responsive

Thereafter, the interested bidders which have informed BEE about their willingness to undertake the work shall submit a technical and financial bid in the format as given in subsequent sections of the Bid documents. Last Date for Submission of EoI: 1600 hours (IST) on August 31, 2009

You may contact **Rajiv Garg, Energy Economist**, BEE (Tel: (+91)-11-2617-9653, Fax: (+91)-11-2617-8352 Email: rgarg@beenet.in) for any clarification.

Dr. Ajay Mathur
Director General, BEE

Highlights of the RFP

S No	Details	By When
1	Publishing of the RFP	August 06 , 2009
2	Submission of Willingness to undertake the work	August 21, 2009
3	Clarifications to Pre-Bid queries	August 24, 2009
4	Bid submission	August 31, 2009
5	Bid Opening	August 31, 2009

Background

About the Organization

The Bureau of Energy Efficiency (the Bureau) has been established with effect from March 1, 2002 under the Societies Registration Act, 1860, under the Ministry of Power. During the setup of the organization, the erstwhile Energy Management Centre was merged with the Bureau.

Mission

The mission of Bureau of Energy Efficiency 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 activity. This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

Objectives

- ✓ Provide a policy framework and direction to national energy conservation activities
- ✓ Coordinate policies and programmes with stakeholders on efficient use of energy
- ✓ Establish systems and procedures to measure, monitor and verify energy efficiency improvements
- ✓ To leverage multilateral, bilateral and private sector support in implementation of programmes and projects on efficient use of energy and its conservation
- ✓ To coordinate policies and programmes on efficient use of energy and its conservation with the involvement of stakeholders

- ✓ To plan, manage and implement energy conservation programmes as envisaged in the Energy Conservation Act
- ✓ To demonstrate energy efficiency delivery mechanisms as envisaged in the Energy Conservation Act, through public private partnership
- ✓ To establish systems and procedures to measure, monitor and verify energy efficiency results in individual sectors as well as at the national level

Thrust Areas

- ✓ Indian Industry Programme for Energy Conservation
- ✓ Demand Side Management
- ✓ Standards and Labeling programme
- ✓ Energy Conservation Building Codes
- ✓ Energy Efficiency in Building and Establishments
- ✓ Professional Certification and Accreditation
- ✓ Manuals and Codes
- ✓ Energy Efficiency Policy Research Programme
- ✓ Energy Conservation Awareness in School Education
- ✓ Delivery Mechanisms for Energy Efficiency Services

Activities of the Bureau

The Energy Conservation Act, 2001 has mandated the functions of the Bureau. They have been broadly divided into Regulatory and Promotional functions for the Bureau.

BEE co-ordinates with designated consumers, designated agencies and other organizations and recognize, identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

Regulatory Functions as per EC Act

- ✓ Recommend to the Central Government the norms for processes and energy consumption standards required to be notified for any equipment, appliance which consumes, generates, transmits or supplies energy.
- ✓ Recommend to the Central Government on details required to be displayed on equipment or on appliances and manner of their display
- ✓ Recommend to the Central Government for notifying any user or class of users as designated consumers
- ✓ Take suitable steps to prescribe guidelines for energy conservation building codes
- ✓ Specify qualifications for the accredited energy auditors
- ✓ Specify the manner and intervals of time in which the energy audit will be conducted
- ✓ Specify certification procedures for energy managers to be designated is appointed by designated consumers
- ✓ Activities focusing on designated consumers
 - ⇒ Develop specific energy conservation norms
 - ⇒ Certify Energy Managers and Energy Auditors
 - ⇒ Accredite Energy Auditors
 - ⇒ Define the manner and periodicity of mandatory energy audits
 - ⇒ Develop reporting formats on energy consumption and action taken on the recommendations of the energy auditors

Promotional Functions as per EC Act

The EC Act has outlined major promotional activities for Bureau of Energy Efficiency to undertake:

- ✓ Create awareness and disseminate information on energy efficiency and conservation
- ✓ Arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation

- ✓ Strengthen consultancy services in the field of energy conservation
- ✓ Promote research and development
- ✓ Develop testing and certification procedures and promote testing facilities
- ✓ Formulate and facilitate implementation of pilot projects and demonstration projects
- ✓ Promote use of energy efficient processes equipment, devices and systems
- ✓ Take steps to encourage preferential treatment for use of energy efficient equipment of appliances
- ✓ Promote innovative financing of energy efficiency projects
- ✓ Give financial assistance to institutions for promoting efficient use of energy and its conservation
- ✓ Prepare educational curriculum on efficient use of energy and its conservation
- ✓ Implement international co-operation programmes relating to efficient use of energy and its conservation
- ✓ Levy Fee for services provided for promoting efficient use of energy and its conservations

Powers accorded to the Bureau

The EC Act has accorded the following powers to the Bureau:

- ✓ The Bureau may, by general or special order in writing, delegate to any member, member of the committee, officer of the Bureau or any other person subject to such conditions, if any, as may be specified in the order.
- ✓ Every designated consumer or manufacturer of equipment or appliance specified under Clause b of Section 14 shall supply the Bureau with such information, and with such samples of any material or substance used in relation to any equipment or appliance as the Bureau may require. However the Central or the State Governments can decide whether any of the identified designated consumers are exempt from supplying this information to the Bureau keeping public interest in mind
- ✓ The Bureau, with the prior approval from the Central Government can undertake all the below mentioned activities:

- ⇒ The times and places of meetings of the Governing Council and the procedure to be followed at such meetings
- ⇒ The members of the advisory committees constituted
- ⇒ The power and duties that may be exercised and discharged by the Director General of the bureau
- ⇒ The levy of fee for services provided for promoting efficient use of energy and its conservation
- ⇒ The list of accredited energy auditors
- ⇒ The qualifications of accredited energy auditors
- ⇒ The manner and the intervals of time in which the energy audit shall be conducted
- ⇒ Certification procedure for energy managers
- ⇒ Particulars required to be displayed on label and the manner of their display
- ⇒ The manner and the intervals of time for conducting an energy audit by an auditor
- ⇒ Any other matter which is required to be, or may be specified

About the National Certification Examination for Energy Auditors and Managers

Background

The Government of India has enforced **The Energy Conservation Act, 2001** (No 52 of 2001, 29th September 2001) with effect from 1st March 2002. The Act provides mainly for efficient use of energy and its conservation and for matters connected therewith or incidental thereto. As per the Energy Conservation Act 2001, it is mandatory for all the **designated energy consumers** to get energy audit conducted by an **Accredited Energy Auditor** [under clause 14(h) and 14(i)] and to designate or appoint an **Energy Manager** [under clause 14(l)]. The Government of India has notified the list of designated consumers and the details are available at the following link: [http://www.bee-india.nic.in/sidelinks/Exams07/Gazette_of_IndiaPartIIsec3Sub-sec\(ii\)19_03_2007.pdf](http://www.bee-india.nic.in/sidelinks/Exams07/Gazette_of_IndiaPartIIsec3Sub-sec(ii)19_03_2007.pdf) . **Bureau of Energy Efficiency (BEE)**, Ministry of Power, Government of India, is empowered to specify the regulations and mechanism to meet the above objectives.

Need for National Level Certification Examination

The essential qualification for a Certified Energy Manager and Certified Energy Auditor would be the passing of a National Level Certification Examination, which will be conducted under the aegis of Bureau of Energy Efficiency. The national level certification examination, conducted by a National Certifying Agency, will establish a uniform criterion for the certification of energy managers/energy auditors and will also ensure that services of qualified persons, having the requisite knowledge on the subject, are available to the industry.

The certification examination will be conducted based on the syllabus/curriculum approved by the Bureau. The proposed syllabus will go under modifications from time to time based on the feed back received and future developments. The requisite modifications will be incorporated by the national level certification agency in the syllabus in consultation with the Bureau from time to time.

Energy Manager – Role & Importance

Energy manager occupies an important position and is the focal point of all the activities pertaining to energy management in the organization. The energy manager provides leadership in the development of policy on Energy Management Action Plan and plays a key role in the formulation of corporate energy policy. Energy managers also perform the activities related with Energy Management, Project Management, Personnel Management and Financial Management at the plant level. He also prepares the information to be submitted to the Designated Agency with regard to the energy consumed and action taken on the recommendation of the Accredited Energy Auditor [Clause 14(k)].

Responsibilities and Duties of Energy Manager are highlighted below:

- Establish an energy conservation cell & prepare an annual activity plan
- Develop and manage training programme for energy efficiency at operating levels
- Develop integrated system of energy efficiency and environmental improvement
- Initiate activities to improve monitoring and process control to reduce energy costs
- Co-ordinate implementation of energy audit/efficiency improvement projects through external agencies
- Establish / participate in information exchange with other energy managers of the same sector through association
- Provide information to BEE and Designated Agency of the respective States as demanded in the Act

Energy Auditor – Role and Importance

Energy audit involves a systematic study undertaken on major energy consuming sections and equipments including construction of heat and mass balance with a view to identify the flow of energy, efficient use of energy in each of the steps and pin-point wastage of energy. A well-conducted energy audit would reveal the areas of wastage of energy and it would lead to suggestions for possible energy savings in all sectors.

The Energy Conservation Act requires that the every designated consumer, as notified, may get the energy audit done through an Accredited Energy Auditor in a manner and interval of time as specified. **The Certified Energy Auditor, as such, is not authorized to conduct such mandatory energy audits under the EC Act. (Certification may be one of the prerequisites along with other conditions, which have to be fulfilled by an energy auditor before applying for accreditation)** The energy audit report is to contain recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption [Clause 14(i)]. The conduct of energy audit and implementation of its recommendations on cost-benefit basis through accredited energy auditors is expected to help the designated energy consumers to achieve significant reduction in their energy consumption levels.

Responsibilities and Duties of Energy Auditor are highlighted below:

- Carry out a detailed energy audit
- Quantify energy consumption and establish base line energy information
- Construct energy and material balance
- Perform efficiency evaluation of energy & utility systems
- Compare energy norms with existing energy consumption levels
- Identify and prioritization of energy saving measures
- Analyse technical and financial feasibility of energy saving measures
- Recommend energy efficient technologies and alternate energy sources
- Report writing, presentation and follow up for implementation

Eligibility Criteria for appearing in the examination : As per the existing practice the Eligibility Criterion for appearing in the certification examination is as follows

a) Energy Managers:

1. a graduate Engineer (Bachelor of Engineering/Bachelor of Technology) or equivalent with **three years** of work experience involving use of energy in operation, maintenance, planning, etc.; or
2. a post-graduate Engineer (Master of Engineering/Master of Technology) or equivalent with **two years** of work experience involving use of energy in operation, maintenance, planning, etc.; or
3. a graduate Engineer with post-graduate degree in Management or equivalent with **two years** of work experience involving use of energy in operation, maintenance, planning, etc.; or
4. a diploma Engineer or equivalent with **six years** of work experience involving use of energy in operation, maintenance, planning, etc.; or
5. a post-graduate in Physics or Electronics or Chemistry (with Physics and Mathematics at graduation level) with **three years** of work experience involving use of energy in operation, maintenance, planning, etc.

b) Energy Auditors:

1. a graduate Engineer (Bachelor of Engineering/Bachelor of Technology) or equivalent with **three years** of work experience involving use of energy in operation, maintenance, planning, etc.; or
2. a post-graduate Engineer (Master of Engineering/Master of Technology) or equivalent with **two years** of work experience involving use of energy in operation, maintenance, planning, etc.; or
3. a graduate Engineer with post-graduate degree in Management or equivalent with **two years** of work experience involving use of energy in operation, maintenance, planning, etc.

Examination Papers and Scheme

a) The examination Papers for Energy Managers and Energy Auditors are given below:

Paper No	Name of the Paper	Duration	Max Marks
I	General Aspects of Energy Management & Energy Audit.	3 Hrs	150
II	Energy Efficiency in Thermal Utilities	3Hrs	150
III	Energy Efficiency in Electrical Utilities	3Hrs	150
IV	Energy Performance Assessment for Equipment and Utility systems (Open Book Examination)	2Hrs	100

- b) The candidate appearing for Energy Manager Examination has to pass all the above **THREE papers**, viz., Paper-I, Paper-II and Paper-III and obtain a minimum of 50% of the maximum marks in each paper.
 - c) The candidate appearing for Energy Auditor Examination has to pass all the above **FOUR papers** viz., Paper-I, Paper-II, Paper-III & Paper-IV and obtain a minimum of 50% of the maximum marks in each paper.
 - d) **Question Papers for Energy Manager and Energy Auditor are common for the first three papers viz. Paper-I, Paper-II and Paper-III. Energy Auditor candidate passing the above three papers shall be eligible for award of Energy Manager Certification.**
 - e) **The degree of difficulty in Paper-IV will be comparatively much higher than other papers.**
 - f) Medium of examination is English.
 - g) Paper-I, Paper-II and Paper-III shall consist of objective and descriptive type questions.
 - h) The Paper-IV for Energy Auditors will be an open book examination and shall consist of descriptive and numerical questions.
- ** The candidates can refer only the guide books supplied, at the time of their registration, during the paper IV examination. No other reference books and written material will be allowed.**

Scope of Work

The Bureau envisages the consultant/ institution to **revise and update the existing Books (All four books)**, according to new revised syllabus. The existing and the revised syllabus for each book is as given below. The topics in red colour are indicative of the changes to be incorporated in the existing books.

BOOK NO.	EXISTING SYLLABUS	REVISED SYLLABUS
1. General Aspects of Energy Management & Energy Audit	1.1 Energy Scenario: Commercial and Non-commercial energy, primary energy resources, commercial energy production, final energy consumption, energy needs of growing economy, long term energy scenario, energy pricing, energy sector reforms, energy and environment, energy security, energy conservation and its importance, re-structuring of the energy supply sector, energy strategy for the future, air pollution, climate change. Energy	1.1 Energy Scenario: Commercial and Non-commercial energy, primary energy resources, commercial energy production, final energy consumption, Indian energy scenario, Sectoral energy consumption (domestic, industrial etc, - industrial sector wise fertilizer, steel etc), energy needs of growing economy (integrated energy policy planning report), energy intensity on PPP basis,

<p>Conservation Act-2001 and its features.</p> <p>1.2 Basics of Energy and its various forms: Electricity basics-DC & AC currents, electricity tariff, Thermal Basics-fuels, thermal energy contents of fuel, temperature & pressure, heat capacity, sensible and latent heat, evaporation, condensation, steam, moist air and humidity & heat transfer, units and conversion.</p> <p>1.3 Energy Management & Audit: Definition, need and types of energy audit. Energy management (audit) approach-understanding energy costs, bench marking, energy performance, matching energy use to requirement, maximizing system efficiencies, optimizing the input energy requirements, fuel & energy substitution, energy audit instruments.</p> <p>1.4 Material and Energy balance: Facility as an energy system, methods for preparing process flow, material and energy balance diagrams.</p> <p>1.5 Energy Action Planning: Key elements, force field analysis, Energy policy purpose, perspective, contents, formulation, ratification, Organizing – location of energy management, top management support, managerial function, roles and responsibilities of energy manager, accountability. Motivating-motivation of employees: Information system-designing barriers, strategies; Marketing and communicating-training and planning.</p> <p>1.6 Financial Management: Investment-need, appraisal and criteria, financial analysis techniques-simple pay back period, return on investment, net present value, internal rate of return, cash flows, risk and sensitivity analysis;</p>	<p>long term energy scenario, energy pricing, energy sector reforms, energy and environment, energy security, energy conservation and its importance, energy strategy for the future, air pollution, climate change.</p> <p>1.2 Energy Conservation Act 2001 and related policies (to be fine tuned)</p> <p>Energy conservation Act 2001 and its features, Notifications under the act Schemes of Bureau of Energy Efficiency (BEE) – ECBC, S & L, DSM, BLY, SMEs, Designated consumers, State Designated Agencies, Electricity Act 2003, Integrated energy policy, National action plan on climate change,</p> <p>1.3 Basics of Energy and its various forms: Electricity basics- DC & AC currents, electricity tariff, Thermal Basics-fuels, thermal energy contents of fuel, temperature & pressure, heat capacity, sensible and latent heat, evaporation, condensation, steam, moist air and humidity & heat transfer, units and conversion. MTOE conversions</p> <p>1.4 Energy Management & Audit: Definition, energy audit, need, types of energy audit. Energy management (audit) approach-understanding energy costs, bench marking, energy performance, matching energy use to requirement, maximizing system efficiencies, optimizing the input energy requirements, fuel & energy substitution, energy audit instruments and metering (more details, place of measurement, precautions, thermography, smart metering etc . Manner and intervals of</p>
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	<p>financing options, energy performance contracts and role of ESCOs.</p> <p>1.7 Project Management: Definition and scope of project, technical design, financing, contracting, implementation and performance monitoring. Implementation plan for top management, Planning Budget, Procurement Procedures, Construction, Measurement & Verification.</p> <p>1.8 Energy Monitoring and Targeting: Defining monitoring & targeting, elements of monitoring & targeting, data and information-analysis, techniques -energy consumption, production, cumulative sum of differences (CUSUM).</p> <p>1.9 Global environmental concerns: United Nations Framework Convention on Climate Change (UNFCCC), sustainable development, Kyoto Protocol, Conference of Parties (COP), Clean Development Mechanism (CDM), Prototype Carbon fund (PCF).</p>	<p>EA regulation ?</p> <p>1.4 Material and Energy balance: Facility as an energy system, methods for preparing process flow, material and energy balance diagrams.</p> <p>1.5 Energy Action Planning: Key elements, force field analysis, Energy policy purpose, perspective, contents, formulation, ratification, Organizing – location of energy management, top management support, managerial function, roles and responsibilities of energy manager, accountability. Human resource development (techniques like 5S, TPM, TQM, Kaizen, small group activities etc.) Motivating-motivation of employees: Information system-designing barriers, strategies; Marketing and communicating-training and planning.</p> <p>1.6 Financial Management: Investment-need, appraisal and criteria, financial analysis techniques-simple pay back period, return on investment, net present value, internal rate of return, cash flows, risk and sensitivity analysis; financing options, energy performance contracts and role of ESCOs. (more detailing, case studies, typical ESCO contract building, municipality)</p> <p>1.7 Project Management: Definition and scope of project, technical design, financing, contracting, implementation and performance monitoring. Implementation plan for top management, Planning Budget, Procurement Procedures, Construction, Measurement & Verification.</p> <p>1.8 Energy Monitoring and Targeting: Defining monitoring</p>
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		<p>& targeting, elements of monitoring & targeting, data and information-analysis, techniques -energy consumption, production, cumulative sum of differences (CUSUM). EMIS</p> <p>1.9 Energy Efficiency and Climate change: energy and environment, air pollution, climate change United Nations Framework Convention on Climate Change (UNFCCC), sustainable development, Kyoto Protocol, Conference of Parties (COP), Clean Development Mechanism (CDM), CDM Procedures ? Prototype Carbon fund (PCF). (update COP 12, no of projects, case of CDM-BLY, industry</p> <p>1.10 New & Renewable Energy Sources (NRES) Concept of renewable energy, Solar energy, wind energy, biomass boilers and gasifiers, biogas, bio fuels, hydro, fuel cells, energy from wastes, bio-methanation, wave, tidal, geothermal</p>
<p>2. ENERGY EFFICIENCY IN THERMAL UTILITIES</p>	<p>2.1 Fuels and Combustion: Introduction to fuels, properties of fuel oil, coal and gas, storage, handling and preparation of fuels, principles of combustion, combustion of oil, coal and gas.</p> <p>2.2 Boilers: Types, combustion in boilers, performances evaluation, analysis of losses, feed water treatment, blow down, energy conservation opportunities.</p> <p>2.3 Steam System: Properties of steam, assessment of steam distribution losses, steam leakages, steam trapping, condensate and flash steam recovery system, identifying opportunities for energy savings.</p> <p>2.4 Furnaces: Classification, general fuel economy measures in furnaces, excess air, heat</p>	<p>2.1 Fuels and Combustion: Introduction to fuels, properties of fuel oil, coal and gas, storage, handling and preparation of fuels, principles of combustion, combustion of oil, coal and gas. Agro residue/biomass handling, preparation and combustion</p> <p>2.2 Boilers: Types, combustion in boilers, performances evaluation, analysis of losses, feed water treatment, blow down, energy conservation opportunities. Segregate oil, coal/biomass, gas, change boiler efficiency calculation, evaporation ratio and efficiency for coal, oil and gas. Soot blowing and soot deposit reduction, reasons for boiler tube failures, start up, shut down and preservation, Thermic fluid heaters, super critical</p>

	<p>distribution, temperature control, draft control, waste heat recovery.</p> <p>2.5 Insulation and Refractories: Insulation-types and application, economic thickness of insulation, heat savings and application criteria, Refractory-types, selection and application of refractories, heat loss.</p> <p>2.6 FBC boilers: Introduction, mechanism of fluidized bed combustion, advantages, types of FBC boilers, operational features, retrofitting FBC system to conventional boilers, saving potential.</p> <p>2.7 Cogeneration: Definition, need, application, advantages, classification and saving potentials.</p> <p>2.8 Waste Heat Recovery: Classification, advantages and applications, commercially viable waste heat recovery devices, saving potential.</p>	<p>boilers, 2.8 case study check !!!!!!!</p> <p>2.3 Steam System: Properties of steam, assessment of steam distribution losses, steam leakages, steam trapping, condensate and flash steam recovery system, identifying opportunities for energy savings. Steam utilization, Performance assessment more details, installation, thermocompressor, steam pipe insulation, PRDS, condensate pumping, steam dryers</p> <p>2.4 Furnaces: Classification, general fuel economy measures in furnaces, excess air, heat distribution, temperature control, draft control, waste heat recovery. Forging furnace heat balance, Cupola, non ferrous melting, Induction furnace, performance evaluation of a furnace (check!!!!!!), hot air generators</p> <p>2.5 Insulation and Refractories: Insulation-types and application, economic thickness of insulation, heat savings and application criteria, Refractory-types, selection and application of refractories, heat loss. Cold insulation</p> <p>2.6 FBC boilers: Introduction, mechanism of fluidized bed combustion, advantages, types of FBC boilers, operational features, retrofitting FBC system to conventional boilers, saving potential. Biomass FBC – application and operation, AFBC, CFBC, PFBC</p> <p>2.7 Cogeneration: Definition, need, application, advantages, classification, saving potentials. heat balance, steam turbine efficiency, trigeneration, microturbine</p> <p>2.8 Waste Heat Recovery: Classification, advantages and applications, commercially viable waste heat recovery devices, saving potential.</p> <p>2.9 Heat Exchangers: Types, networking, pinch analysis,</p>
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		<p>multiple effect evaporators, condensers, distillation column, etc</p>
<p>3. ENERGY EFFICIENCY IN ELECTRICAL UTILITIES</p>	<p>3.1 Electrical system: Electricity billing, electrical load management and maximum demand control, power factor improvement and its benefit, selection and location of capacitors, performance assessment of PF capacitors, distribution and transformer losses.</p> <p>3.2 Electric motors: Types, losses in induction motors, motor efficiency, factors affecting motor performance, rewinding and motor replacement issues, energy saving opportunities with energy efficient motors.</p> <p>3.3 Compressed Air System: Types of air compressors, compressor efficiency, efficient compressor operation, Compressed air system components, capacity assessment, leakage test, factors affecting the performance and savings opportunities</p> <p>3.4 HVAC and Refrigeration System: Vapor compression refrigeration cycle, refrigerants, coefficient of performance, capacity, and factors affecting Refrigeration and Air conditioning system performance and savings opportunities. Vapor absorption refrigeration system: Working principle, types and comparison with vapor compression system, saving potential</p> <p>3.5 Fans and blowers: Types, performance evaluation, efficient system operation, flow control strategies and energy conservation opportunities.</p> <p>3.6 Pumps and Pumping System: Types, performance evaluation, efficient system operation, flow control strategies and energy conservation opportunities.</p> <p>3.7 Cooling Tower: Types and</p>	<p>3.1 Electrical system: Electricity billing, electrical load management and maximum demand control, power factor improvement and its benefit, selection and location of capacitors, performance assessment of PF capacitors, distribution and transformer losses. Information from S&L programme on distribution transformers, Demand side management, Assessment of transmission and distribution efficiency, losses due to harmonics and voltage unbalance, Maximum demand controllers, automatic power factor controllers, energy efficient transformers</p> <p>3.2 Electric motors: Types, losses in induction motors, motor efficiency, factors affecting motor performance, rewinding and motor replacement issues, energy saving opportunities with energy efficient motors. Information from S&L programme on energy efficient motors, squirrel cage and slip ring and their characteristics, Table for motor history sheet (new, I rewind, ii rewind), Star operation separate paragraph, voltage unbalance check formula, shift chapter 5 from book 4 , shift from chapter 10, energy efficient motors, soft starters with energy saver, variable speed drives,</p> <p>3.3 Compressed Air System: Types of air compressors, reciprocating vs screw, compressor efficiency, efficient compressor operation, Compressed air system components, capacity assessment, leakage test, factors affecting the performance and savings opportunities, Air Driers elaboration,</p> <p>3.4 HVAC and Refrigeration System: Introduction to Psychrometrics, Vapor compression refrigeration cycle, refrigerants,</p>

	<p>performance evaluation, efficient system operation, flow control strategies and energy saving opportunities assessment of cooling towers.</p> <p>3.8 Lighting System: Light source, choice of lighting, luminance requirements, and energy conservation avenues.</p> <p>3.9 Diesel Generating system: Factors affecting selection, energy performance assessment of diesel conservation avenues.</p> <p>3.10 Energy Efficient Technologies in Electrical Systems: Maximum demand controllers, automatic power factor controllers, energy efficient motors, soft starters with energy saver, variable speed drives, energy efficient transformers, electronic ballast, occupancy sensors, energy efficient lighting controls, energy saving potential of each technology.</p>	<p>coefficient of performance, capacity, factors affecting Refrigeration and Air conditioning system performance and savings opportunities. Vapor absorption refrigeration system: Working principle, types and comparison with vapor compression system and saving potential, heat pumps and their applications, section on ventilation system, ice bank system, performance assessment of window and split room airconditioners, Standards & Labeling, cold storage refrigeration, humidification system</p> <p>3.5 Fans and blowers: Types, performance evaluation, efficient system operation, flow control strategies and energy conservation opportunities. Pressure drop calculation</p> <p>3.6 Pumps and Pumping System: Types, performance evaluation, efficient system operation, flow control strategies and energy conservation opportunities. Energy conservation in boiler feed water pump, pumping systems for municipal drinking water, and sewerage, agriculture pumpsets.</p> <p>3.7 Cooling Tower: Types and performance evaluation, efficient system operation, flow control strategies and energy saving opportunities assessment of cooling towers. fan less cooling tower, elaborate on natural draft cooling tower, elaborate on cooling water treatment</p> <p>3.8 Lighting System: Light source, choice of lighting, luminance requirements, and energy conservation avenues. LEDs, metal halides, T5, T8, T 12 definitions, CFL, labeling scheme, high efficiency street lighting, electronic ballast, occupancy sensors, energy efficient lighting controls,</p>
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		<p>3.9 Diesel/Natural gas Power Generating systems: Factors affecting selection, energy performance assessment of diesel conservation avenues. Waste heat recovery, strengthen this chapter</p> <p>3.10 Energy Efficient Technologies in Electrical Systems: Maximum demand controllers, automatic power factor controllers, energy efficient motors, soft starters with energy saver, variable speed drives, energy efficient transformers, electronic ballast, occupancy sensors, energy efficient lighting controls, energy saving potential of each technology.</p> <p>3.11 Energy conservation in Buildings and ECBC: About ECBC, building envelope, insulation, lighting, HVAC, fenestrations, water pumping, inverter and energy storage/captive generation, elevators and escalators, star labeling for existing buildings, ESCO based case studies</p>
<p>4. ENERGY PERFORMANCE ASSESSMENT FOR EQUIPMENT AND UTILITY SYSTEMS</p>	<p>4.1 <i>Boilers, Furnaces</i> 4.2 <i>Cogeneration, Turbines (gas, steam),</i> 4.3 <i>Heat Exchangers,</i> 4.4 <i>Electric Motors, Variable Speed Drives,</i> 4.5 <i>Fans and Blowers, Water Pumps, Compressors,</i> 4.6 <i>HVAC systems</i> 4.7 <i>Lighting Systems,</i> 4.8 <i>Performing Financial Analysis.</i> 4.9 <i>Applications of Non-conventional & Renewable Energy Sources (NRES)</i> 4.10 <i>Waste minimization and resource conservation</i></p>	<p>4.1 Boilers, 4.2 Furnaces 4.3 Cogeneration, Turbines (gas, steam), 4.4 Heat Exchangers, 4.5 Electric Motors, Variable Speed Drives, 4.6 Fans and Blowers 4.7 Water Pumps 4.8 Compressors, 4.9 HVAC systems 4.10 Performing Financial Analysis. 4.11 Energy Performance assessment in power plants 4.12 Energy Performance assessment in steel industry 4.13 Energy Performance assessment in process industry (cement and fertilizer) 4.14 Energy Performance assessment in buildings and commercial establishments</p> <p><i>The Chapters 4.11 to 4.14 must include :</i></p>

		<ul style="list-style-type: none"> • <i>Introduction to the Sector/ Industry</i> • <i>Process Flow Diagram and mapping of various processes in the sector</i> • <i>Equipments/ technologies / utilities used in the sector</i> • <i>Performance assessment of unique equipment used in the industry sector</i> • <i>New and Advanced technologies available</i> • <i>Best Practices Adopted in Industries</i>
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2) In addition to this the Chapters 4.1 to 4.10 of the revised syllabus may be suitably updated and revised but they should be in conjunction with the existing Chapters in Book 1 to 3.

NOTE : the existing Books can be downloaded from
<http://www.em-ea.org/gbook1.asp>

MOST IMPORTANT NOTE :

1) *The revised books would be accepted by the Bureau only if the committee formed by the competent authority is satisfied with regards to the contents , quality and the language used for description. The decision of the committee in this respect shall be final and the consultant would have to abide by the decision of the committee and would revise the contents as suggested by the committee.*

2) **The last date for completion of the work is 31st DECEMBER 2009**

Instructions for Preparation of Proposal

1. Introduction

- a. BEE will select a consultant from among those bidders who are submitting bids in accordance with the method of selection by limited tenders

- b. The name of the engagement has been mentioned in the Data Sheet.
- c. Detailed scope of work has been defined in the Section on Scope of Work
- d. The date, time and address for submission of the proposals has been given in the data sheet.
- e. The Proposal will be the basis for contract negotiations and ultimately for a signed Contract with the selected Consultant.
- f. Without limitation on the generality of this rule, the consultant shall not be hired under the circumstances set forth below:
 - The consultant shall observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the Client defines, for the purposes of this provision, the terms set forth below as follows:
 - “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution; and
 - “Fraudulent practice” means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the Client, and includes collusive practices among bidders / consultant (prior to or after submission of proposals) designed to establish prices at artificial, noncompetitive levels and to deprive the Client of the benefits of free and open competition
 - BEE will reject a proposal for award if it determines that the vendor selected for award has engaged in corrupt or fraudulent activities in competing for the contract in question;

- Bidders shall furnish information as described in the financial proposal submission form on commissions and gratuities, if any, paid or to be paid to agents relating to this proposal, and to contract execution if the firm is awarded the contract.
- Bidders shall be aware of the provisions on fraud and corruption stated in the standard contract under the clauses indicated in the Data Sheet.

2. Pre-qualification criteria

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

- Demonstrated capability in compiling Books , Training Manuals of similar nature and must have produced at least 20 such manuals / books/guidelines in the last 5 years both nationally and at international level.
- Demonstrated capability in Conducting Energy Audit Training for personnel from Industries in various sectors and must have conducted at least 50 training programmes in the last 3 years in the area related to energy efficiency.
- Demonstrated capability in conducting energy audits in various industrial sectors and other establishments including buildings and hospitals and must have conducted at least 30 energy audits in the last 3 years.
- Should have a team of at least 25 engineers trained and working in the area of energy efficiency on permanent payrolls out of which at least 10 should be Certified Energy Auditor.
- Should have an annual turnover from Consultancy business of at least Rs. 20 crores in the last 2 of the three financial years
- Should have been profitable for at least two (2) of the last three (3) years i.e. FY 2006- 07, 2007-08 and 2008-09. For NGOs and other not for profit organizations, this clause is null and void.
- No consortia or sub contracting is allowable.
- 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.
- Should not be black-listed by any Central / State Government / Public Sector Undertaking in India

Preliminary Scrutiny

Preliminary scrutiny of the proposal will be made to determine whether they are complete, 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.

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. However, BEE 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. The price bid should only include a lump sum quote.

Evidences of all points in pre-qualification criteria should be submitted in the form of supporting documents or lists signed by CEO or top executive of the company/firm/institution.

3. Eligibility of Consortium of Vendors and sub vendors

Consortium is not allowed.

4. Important Dates

S No	Details	By When
1	Publishing of the RFP	August 06 , 2009
2	Submission of Willingness to undertake the work	August 21, 2009
3	Clarifications to Pre-Bid queries	August 24, 2009
4	Bid submission	August 31, 2009
5	Bid Opening	August 31, 2009

5. Clarification and Amendment of RFP Documents

- o The bidder may request clarifications on any clause of the RFP documents up to the date as indicated in the Data Sheet. Any request for clarification must be sent in writing, or by standard electronic means to BEE's address indicated in the Data Sheet.

- o The Client will respond in writing, or by standard electronic means and will send written copies of the response (including an explanation of the query but without identifying the source of inquiry) to all prospective bidders. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure mentioned below.

- o At any time before the submission of Proposals, the Client may amend the RFP by issuing an addendum in writing or by standard electronic means. The addendum shall be sent to all bidders and will be binding on them. The bidders may acknowledge receipt of all amendments. To give the bidders, reasonable time in which to take an amendment into account in their Proposals, the Client/ Purchaser may, if the amendment is substantial, extend the deadline for the submission of Proposals.

6. Address of Correspondence

The Bidder shall send correspondence / communication at the official mailing address, e-mail and fax number as mentioned by the Client in the Data Sheet.

7. Cost incidental to RFP Preparation

Bidders shall bear all costs associated with the preparation and submission of their proposals and contract negotiation. BEE is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the bidders.

8. Preparation of Proposal

The bidders are requested to submit a Proposal written in the language(s) specified in the Data Sheet. **The bidder is requested to confirm by e-mail to rgarg@beenet.in . IT IS INTIMATED THAT FALIURE TO SEND THE E-MAIL WILL LEAD TO REJECTION OF THE BID INSTANTANEOUSLY.**

Technical Proposal

- a. In preparing the Technical Proposal, the bidders are expected to examine the documents comprising this RFP in detail. Material deficiencies in providing the information requested may result in rejection of a Proposal.
- b. While preparing the Technical Proposal, the bidder must give particular attention to the following:
 - The proposal shall involve the number of key professionals and Support team staff-months estimated by the firm.
 - It is desirable that the key professional staff proposed be permanent employees of the firm or has an extended and stable working relation with it.
 - Proposed key professional staff must at a minimum have the experience indicated in the Data Sheet, preferably under conditions similar to those prevailing in Delhi.
 - Alternative key professional staff shall not be proposed, and only one curriculum vitae (CV) may be submitted for each position
 - Curriculum Vitae (CV) of Support team to supplement the key professionals have to be submitted.
- c. The Technical proposal should provide the following information using the attached Technical Forms:
 - Any additional information requested in the Data Sheet.
 - The Technical Proposal shall not include any financial information.

Financial Proposal

- a. In preparing the Financial Proposal, the bidders are expected to take into account the requirements and conditions of the RFP document. The Financial Proposal should follow Standard Forms. It lists all costs associated with the Assignment.

- b. The Financial Proposal should clearly identify, as a separate amount, the local taxes (including social security), duties, fees, levies, and other charges imposed under the applicable law, on the bidders.
- c. The Bidders should express the price of their services in Indian Rupees.
- d. Commissions and gratuities, if any, paid or to be paid by consultants and related to the Assignment will be listed in the Financial Proposal submission form.
- e. The Data Sheet indicates how long the proposals must remain valid after the submission date. During this period, the bidder is expected to keep available the key professional staff proposed for the assignment. The Client will make its best effort to complete negotiations within this period. If the Client wishes to extend the validity period of the proposals, the bidders who do not agree, have the right not to extend the validity of their proposals.

9. Earnest Money Deposit

- a. An Earnest Money Deposit (EMD) of Rs. 1 lakh in the form of DD drawn in favor of Bureau of Energy Efficiency and payable at New Delhi must be submitted along with the Proposal.
- b. Proposals not accompanied by EMD shall be rejected as non-responsive.
- c. No interest shall be payable by the Client for the sum deposited as EMD.
- d. No bank guarantee will be accepted in lieu of the earnest money deposit.
- e. The EMD of the unsuccessful bidders would be returned within one month of signing of the contract

The EMD shall be forfeited in case of the following events:

- a. If Proposal is withdrawn during the validity period or any extension agreed by the bidder thereof.
- b. If the Proposal is varied or modified in a manner not acceptable to the bidder after opening of Proposal during the validity period or any extension thereof.
- c. If the bidder tries to influence the evaluation process.

10. Submission, Receipt and Opening Of Proposals

- a. The original proposal, both Technical and Financial Proposals shall contain no interlineations or overwriting, except as necessary to correct errors made by the bidders themselves. The person who has signed the proposal must initial such corrections. Submission letters for both Technical and Financial Proposals should respectively be in the formats.
- b. An authorized representative of the bidder shall initial all pages of the original Technical and Financial Proposals. The authorization shall be in the form of a written power of attorney accompanying the Proposal or in any other form demonstrating that the representative has been duly authorized to sign.
- c. Two copies of the Technical and Financial proposals should be submitted.
- d. The signed Technical and Financial Proposals shall be marked "ORIGINAL". The original and all copies of the Technical Proposal shall be placed in a sealed envelope clearly marked "TECHNICAL PROPOSAL"
- e. Similarly, the original Financial Proposal shall be placed in a sealed envelope clearly marked "FINANCIAL PROPOSAL" followed by the name of the Assignment/job. The envelopes containing the Technical Proposals, Financial Proposals, EMD and bid processing fees shall be placed into an outer envelope and sealed. This outer envelope shall bear the submission address, reference number and shall be clearly marked "DO NOT OPEN, BEFORE hrs on, 2009". The Bidders shall seal and mark the original and each copy of the Bid strictly as stipulated. The Client shall not be responsible for misplacement, loss or premature opening if the outer envelope is not sealed and/or marked as stipulated. This circumstance may be case for proposal rejection.
- f. Telegraphic / Tele fax / Telex / E-mail submissions / quotations will not be accepted.

- g. If the Financial Proposal is not submitted in a separate sealed envelope duly marked as indicated above, this will constitute grounds for declaring the Proposal non-responsive.
- h. The Proposals must be sent to the address/addresses indicated in the Data sheet and received by the Client no later than the time and the date indicated in the Data sheet, or any extension to this date. Any proposal received by the Client after the deadline for submission shall be returned unopened.

11. Last Date of Submission for Bids

The bids should be submitted no later than 16:00 on August 31, 2009.

12. Late Bids

Any bid received by the Client after the appointed time on the last date for receipt of bids prescribed by the Client, will be rejected and/or returned unopened to the Bidder.

13. Period of validity of Bids

Bids shall remain valid for 180 days after the date of submission of the proposal. A bid valid for a shorter period may be rejected as non-responsive.

In exceptional circumstances, the Client may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by fax). A Bidder may refuse the request without forfeiting its bid security. A Bidder accepting the request will not be required nor permitted to modify its bid.

14. Modification & Withdrawal of Bids

The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification or withdrawal is received by the Client prior to the

last date prescribed for receipt of bids.

a Amended Proposals

A Bidder may submit an amended proposal before the deadline for receipt of proposals. Such amended proposals must be complete replacements for a previously submitted proposal and must be clearly identified as such in the transmittal letter. BEE personnel will not merge, collate, or assemble proposal materials. No bid shall be modified subsequent to the last date for receipt of bids.

b. Bidder's Rights To Withdraw Proposal

Bidders will be allowed to withdraw their proposals at any time prior to the deadline for receipt of proposals. The Bidder must submit a written withdrawal request signed by the Bidder's duly authorized representative addressed to the concerned authority mentioned in the datasheet.

The withdrawal requests received after the deadline for receipt of the proposals will not be accepted.

No bid shall be withdrawn in the interval between the last date for receipt of bids and the expiry of the bid validity period specified herein. Withdrawal of a bid during this interval shall result in the Bidder's forfeiture of its bid security.

15. Terms & Conditions for Bidders

Printed terms and conditions of the Bidders will not be considered as forming part of their bids. In case terms and conditions of the contract applicable to this tender are not acceptable to any Bidder, he should clearly specify deviations in its bid in the stipulated format "Statement of Deviations from General Conditions of Contract" given in this Tender Document.

16. Clarifications on Bids

When deemed necessary, the Bidder may seek clarifications on any aspect from the Bidder. However, if price change is envisaged due to any clarification, supplementary bid in a separate sealed cover, commensurate with addition/ deletion only, shall be submitted prior to price bid opening only if agreed by the Bidder.

17. Contract Deviations

Any additional terms and conditions that may be the subject of negotiation will be discussed only between BEE and the selected Bidder and shall not be deemed an opportunity to amend the Bidder's proposal.

18. Bidder Qualifications

The Evaluation committee may make such investigations as necessary to determine the ability of the Bidder to adhere to the requirements specified within this RFP.

The Evaluation committee will reject the proposal of any Bidder who is not a responsible Bidder or fails to submit a responsive offer.

19. Right To Waive Minor Irregularities

The Evaluation Committee reserves the right to waive minor irregularities. The Evaluation Committee also reserves the right to waive mandatory requirements provided that all of the otherwise responsive proposals fail to meet the same mandatory requirements and/or doing so does not otherwise materially affect the procurement. This right is at the sole discretion of the Evaluation Committee.

20. Change in Contractor Representatives

BEE reserves the rights to require a change in contractor representatives if the assigned representatives are not, in the opinion of the Agency, meeting its needs adequately.

21. Right To Publish

Throughout the duration of this bidding process and contract term, potential Bidders and contractors must secure from BEE written approval prior to the release of any information that pertains to the potential work or activities covered by this procurement or the subsequent contract. Failure to adhere to this requirement may result in disqualification of the Bidder's proposal or termination of the contract.

22. Compliance with Mandatory Requirements

All proposals will be reviewed for compliance with the mandatory requirements as contained within the RFP. Proposals deemed non-responsive will be eliminated from further consideration.

23. Requests for Bidder Clarifications

The Evaluation Committee may at its sole discretion contact the Bidder for clarification of the response.

24. External Information Sources

The Evaluation Committee may use other sources of information in proposal evaluation as required

25. Legal Relationship

"Nothing contained in this Contract shall be construed as establishing or creating between the Parties, a relationship of master and servant or principal and agent.

26. Collusive Proposal

Bidders and their employees, agents, advisors and any other person associated with the bidder, must not engaged in any collusive proposal, anti competitive conduct or any other similar conduct with any other bidder or any other person in relation to the preparation or lodgment of response.

In addition to any other remedies available under any law or any contract, BEE reserves the right, in its sole and absolute discretion, to reject any submission lodged by a bidder that engaged in any collusive proposal, anti competitive conduct or any other similar conduct with any other bidder or any other person in relation to the preparation or lodgment of proposals.

27. Return of Information to BEE

BEE reserves the right, in its sole and absolute discretion, to demand that at any stage all written information provided by BEE (whether confidential or otherwise and without regard to the type of media on which such information was provided to any bidder, including all copies of such information) be:

- Returned to BEE, in which case the bidder must promptly return all such information to the address identified by BEE; or
- Destroyed by the bidder, in which case the bidder must promptly destroy all such information and provide BEE with written certification that it has been destroyed.

28. Conflict of Interest

The Client requires that Vendors provide professional, objective, and impartial advice and at all times hold the Client's interests paramount, strictly avoid conflicts with other Assignment/jobs or their own corporate interests and act without any consideration for future work.

Without limitation on the generality of the foregoing, Vendors, and any of their affiliates, shall be considered to have a conflict of interest and shall not be recruited, under any of the circumstances set forth below:

Conflicting Activities:

- a. A firm that has been engaged by the Client to provide goods, works or Assignment/job other than consulting Assignment/job for a project, and any of its affiliates, shall be disqualified from providing consulting Assignment/job related to those goods, works or Assignment/job.
- b. Conversely, a firm hired to provide consulting Assignment/job for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or Assignment/job other than consulting Assignment/job resulting from or directly related to the firm's consulting Assignment/job for such preparation or implementation. For the purpose of this paragraph, Assignment/job other than consulting Assignment/job are defined as those leading to a measurable physical output.
- c. A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any Assignment/job that, by its nature, may be in conflict with another Assignment/job of the Consultant to be executed for the same or for another Client. For example, a Consultant hired to prepare engineering design for an infrastructure project shall not be engaged to prepare an independent environmental assessment for the same project, and a Consultant assisting a Client in the privatization of public assets shall not purchase, nor advise purchasers of, such assets. Similarly, a Consultant hired to prepare Terms of Reference for an Assignment/job should not be hired for the Assignment/job in question.
- d. A Consultant (including its Personnel and Sub-Consultants) that has a business or family relationship with a member of the Client's staff who is directly or indirectly involved in any part of (i) the preparation of the Terms of Reference of the Assignment/job, (ii) the selection process for such Assignment/job, or (iii) supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Employer throughout the selection process and the execution of the Contract.

- e. The vendor have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client , or that may reasonably be perceived as having this effect. Any such disclosure shall be made as per the Standard forms of technical proposal provided herewith. If the consultant fails to disclose said situations and if the Client comes to know about any such situation at any time, it may lead to the disqualification of the Consultant during bidding process or the termination of its Contract during execution of assignment.
- f. No agency or current employees of the Client shall work as Consultants under their own ministries, departments or agencies.

29. Improper Assistance

Proposals, which in the opinion of BEE, have been completed with the improper assistance of employees of BEE and ex-employees of BEE, or with the utilization of information unlawfully obtained from BEE, will be excluded from further consideration.

30. False or Misleading Claims

BEE may in its absolute discretion exclude or reject any proposal that in the reasonable opinion only of BEE contains any false or misleading claims or statements. BEE has no liability to any person or agency for excluding or rejecting any such proposal.

31. No Reliance

Bidders must form independent judgments about any information and other figures in the RFP. Bidders must make their own enquiries to form their judgments. BEE has no liability to any person who acts or fails to act in reliance on any information or figures in this RFP.

32. Proposal Evaluation

a. General

- From the time the Proposals are opened to the time the Contract is awarded, the Bidders should not contact the Client on any matter related to its Technical and/or Financial Proposal. Any effort by bidders to influence the Client in the examination, evaluation, ranking of Proposals, and recommendation for award of Contract may result in the rejection of the bidder's Proposal.
- The client will constitute an Evaluation Committee that will carry out the entire evaluation process.
- The evaluation will take into account the bidder's financial, technical and production capabilities and past performance based on an examination of the documentary evidence of the bidders qualification submitted by the bidder as well as any other information that the purchaser deems necessary and relevant.
- A positive determination will be a prerequisite for the client to continue with the evaluation of the technical proposal. A negative determination will result in the rejection of the bidder's Bid.

b. Evaluation of financial Proposals

- The financial proposals of the bidders whose bids are technically acceptable and whose financial proposal is responsive shall only be opened and further evaluated for arriving at evaluated bid price considering cost compensations for deviations, if any.
- BEE will examine the financial proposals to determine whether any arithmetic errors have been made, whether the documents have been signed, and whether the proposals are generally in order.
- If there is a discrepancy between words and figures, the amount in words will prevail. If a bidder does not accept the correction of errors, its proposal will be rejected and its bid security may be forfeited.
- The Evaluated Bid Price (P) for each responsive bid will be the total quoted bid price inclusive of one year AMC.

The award of the contract will be purely on lowest cost basis after the bidder has qualified as per the technical evaluation

33. Amendment to the Contract

No variation or modification of the terms of the Contract shall be made except by written amendment signed by both the parties i.e. the Vendor and the Client.

34. Assignment sub contract

The Bidder shall not assign or sub contract, in whole or in part, its obligations to perform under the Contract, except with written prior permission of the Client.

35. Taxes & Duties

All Custom Duties, Excise Duties, Sales Taxes, levies, local taxes, VAT work contract tax and other Taxes and Duties, Levies payable by the bidders in respect of the transaction between the bidders and their vendors/sub-suppliers while procuring any components, sub assemblies, raw-materials and equipment shall be included from the bid price and no separate claim on this behalf will be entertained by the owners.

As regards the Income Tax, surcharge on Income Tax and other taxes including tax deduction at source, the Bidder shall be responsible for such payment to the concerned authorities within the prescribed period.

General Terms & Conditions

1. Payment Terms

S.No	Deliverables	Payment Terms
1	Mobilization Advance.	10% of contract value
2	Draft of 1st Book approved	5% of contract value
3	Draft of 2 nd Book approved	5% of contract value
4	Draft of 3 rd Book approved	5% of contract value
5	Draft of 4th Book approved	25% of contract value
6	Finalized version of 1, 2, 3 and 4th Books	Remaining 50%

2. Signing of Contract

At the same time as BEE notifies the successful bidder that its bid has been accepted, a Letter of Intent (LoI) will be asked for by the consultant and the consultant will submit a non-judicial stamp paper of Rs 100 (or as applicable at the time of signing the contract) for execution of the contract.

Failure of the successful bidder to sign the contract proposed through the award letter/LoI, shall constitute sufficient grounds for the annulment of the award, in which event, BEE may make the award to the next successful bidder.

3. Modification of Scope of Work

The Client may at any time, by a written order given to the Vendor, make changes within the general scope of the Contract.

If any such change causes an increase or decrease in the cost of, or the time required for, the vendor's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall

accordingly be amended. Any claims by the Vendor for adjustment under this Clause must be asserted within seven (7) days from the date of the Vendor's receipt of the Client's changed order.

4. Copyright

The Intellectual Property Rights in the Implementation and associated material shall remain vested in BEE of such rights.

BEE's contractual rights to use the implemented solution or elements of the software may not be assigned, licensed or otherwise transferred voluntarily except in accordance with the relevant license agreement.

Data Sheet

1. Information for bidders regarding Proposal

Sno	Particulars	Details
1.	The name of the Client is:	Bureau of Energy Efficiency 4 th floor , Sewa Bhawan New Delhi
2.	Method Of Selection	Lowest Cost Bidding System
3.	Technical and Financial Proposal are requested	As specified
4.	Name of Assignment	Proposal for Developing Monitoring and Verification Protocols for Implementation of PAT Scheme
5.	Description of assignment scope	Kindly refer to the scope of work and requirements of functionalities
6.	Contact Person	Shri Rajiv Garg Energy Economist

		Bureau of Energy Efficiency 4 th floor , Sewa Bhawan New Delhi Phone number – 26179653 e-mail: rgarg@beenet.in
7.	Bid Processing Fees	NIL
8.	Clarifications	August 24, 2009
9.	Language of Proposal and all reports	English
10.	Submission of Proposal	One original and one additional copy of the Technical proposal Financial Proposal.
11.	Validity of Proposal	Proposals must remain valid for 180 days from the date of submission of the proposal.
12.	Submission date for proposal	Proposals must be submitted not later than August 21, 2009 and 16:00 pm
13.	Date and time of Opening the Technical Bid	August 31, 2009 and 16:30 pm
14.	Date and time of Opening the Commercial Bid	Will be intimated after evaluation of technical bids

2. Authorised Representative:

The proposals submitted would be opened at the Delhi office on August 31, 2009 at 16.30 hrs to be specified and verified whether the submitted proposal are in line with the requirements provided in the bid document. The bidders may authorize their representative to be present during the opening of proposal.

Technical Proposal Forms

Technical Form – Cover Letter

[Location, Date]

FROM: (Name of Firm)

TO:

Secretary
BEE
4th floor, Sewa Bhawan
New Delhi

Dear Sir,

Subject: 'Proposal for Revision and Updation of the Course Material (All four books) for the National Certification Examination for Energy Managers and Auditors as per the Revised Syllabus'.

We, the undersigned, offer to provide the services for the above in accordance with your Request for Proposal dated [Date], and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under a separate envelope.

If negotiations are held during the period of validity of the Proposal, i.e., before [Date] we undertake to negotiate on the basis of the proposed effort. Our Proposal is binding upon us and subject to the modifications resulting from contract negotiations.

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

We remain,

Yours sincerely,

Authorized Signature:
 Name and Title of Signatory:
 Name of Firm:
 Address:

Technical Form 2: List of Similar Project executed in last 5 years

Using the format below, provide information on each reference assignment for which your firm/entity, either individually as a corporate entity or as one of the major companies within an association, was legally contracted.

Assignment Name:		Country:
Location within Country:		Professional staff Provided by Your Firm/entity (profiles):
Name of Client:		No. of Staff:
Address:		No. of Staff- Man Months Duration of assignment:
Start Date (Month/Year):	Completion Date (Month/Year):	Approx. Value of Services (in Indian Rupee):
Name of Associated Consultants, if any:		No. of Man Months of Key professional staff, provided by Associated Consultants :
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed:		
Narrative Description of Project:		
Description of Actual Services Provided by Your Staff:		

Signature: _____
 (Authorized Representative)

Full Name: _____

Title: _____

Name of Firm _____

Address: _____

Technical Form 3 – Comments and Suggestions on the Terms of Reference

Comments

Suggestions

Technical Form 4 – Methodology and Approach

- Methodology/ approach

Technical Form 5 – Team Composition

a. Key Professionals

Sl. No	Name	Position	Task	Reference page no of complete details in document
1.				
2.				
3.				

b. Support Team

Sl. No	Name	Position	Task	Reference page no of complete details in document
1.				
2.				
3.				

Signature: _____
(Authorized Representative)

Full Name: _____

Title: _____

Address: _____

Technical Form 6: Format of Curriculum Vitae

1	Proposed Position	
2	Name of the firm	
3	Name of staff and Nationality	
4	Date of Birth	
5	Profession	
6	Years with firm / Entity	
7	Key Qualifications Experience	4.1.2
8	Membership in Professional Societies	
9	Task assigned	

Technical Form 7: Activity Schedule

Proposed activities and time schedules:

S.No.	Item of Activity (Work)	Week wise Program (in form of Bar Chart)						
		1	2	3	4	5	6	7

Note: The task listing shown above is illustrative. The bidders may add tasks/ sub-tasks to the above as appropriate.

You are also required to state critical milestones in your work-plan in terms of deliverables.

Signature: _____
(Authorized Representative)

Full Name: _____

Title: _____

Address: _____

Financial Proposal Forms

Financial Proposal – Cover Letter

To

<Contact Person>

<Contact details>

Sir/ Madam (s),

Ref: Request for Proposal– ‘Proposal for Developing Monitoring and Verification Protocols for Implementation of PAT Scheme’

Sub: Financial Proposal for Revision and Updation of the Course Material (All four books) for the National Certification Examination for Energy Managers and Auditors as per the Revised Syllabus”.

We, the undersigned, offer to provide services for the above mentioned project, in accordance with your Request for Proposal <<write RFP number>> dated <<write RFP date>>, and our Bid Proposal (Technical and Financial Proposals).

Our attached financial proposal is for a Total fee of Rs [Insert Bid amount in words and figures] along with Rs [Insert amount in words and figures] as Incidental charges. The Total fee is inclusive of all taxes, duties, charges and levies, as applicable and payable under the local laws and subject to all statutory deductions applicable, if any.

Our financial proposal shall be binding upon us, subject to the modifications resulting from contract negotiations, up to expiration of the validity period of the Proposal, ie, [Insert date].



Selection of Consultant/Institution for Revision and Updation of the Course Material (All four books)

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

We remain,

Yours sincerely,

Signature: _____
(Authorized Representative)

Full Name: _____

Title: _____

Address: _____