DRAFT REGULATIONS

CERTIFICATION PROCEDURES FOR ENERGY AUDITORS AND ENERGY MANAGERS

1. Short title and commencement –

(1) These regulations may be called the National Energy Efficiency and Conservation Authority (Certification Procedures for Energy Auditors and Energy managers) Regulations 20XX

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions: - (1) In these regulations, unless the context otherwise requires**: -**

(a) "Act" means the National Energy Efficiency and Conservation Act, 2016 (XXX of 2016)

(b) "Advisory Committee" means a committee constituted by the National Energy Efficiency and Conservation Authority under sub-regulation (1) of regulation 13;

(c) "Agency" means an institution appointed by National Energy Efficiency and Conservation Authority for the purpose of holding National Examination for certification of energy auditors and energy managers

(d) "Certified energy auditor" or "Certified energy manager" means a person who has been issued a certificate as such under regulation 8

(e) "Form" means a form appended to these regulations;

(f) "National Examination" means a National Examination defined in clause (g) of sub-rule (1) of rule 2 of the Energy Efficiency and Conservation (Minimum Qualification for Energy Auditors and Managers) Rules, 20XX and conducted accordingly under regulation 3;

(g) "Register" means a Register of Certified Energy Auditors, and Certificated Energy Managers maintained by the Authority under sub-regulation (1) of regulation 9

(**2**) Words and expressions used herein and not defined but defined in the Act or the rules made there under shall have the meanings respectively assigned to them in the said Act or rules.

3. **Conduct of National Examination** – **(1)** For the purpose of certification of energy auditor or energy managers, the Authority shall, either by itself or through an agency, conduct the National Examination referred to in clause (f) of sub-regulation (1) of regulation 2.

   (2) The Authority shall, by publication in the newspaper or NEECA website, notify the date, time and place where such National Examination shall be conducted.

   (3) The National Examination shall be conducted in English Medium.

   (4) The Authority may change the examination dates due to some unforeseen circumstances beyond its control.

4. **Eligibility for appearing in National Examination** – No person shall be eligible to appear for National Examination unless he/she is a citizen of Pakistan, possesses qualifications specified in sub-rule (2) of rule 3 of the Energy Conservation (Minimum Qualification for Energy auditors and Energy Managers) Rules 20XX.

5. **Application for admission to National Examination** –

   (1) A person who is eligible to appear for the National Examination under regulation 4 shall seek admission for such examination by making an application to the Authority in **Form- I /** online application through NEECA website.

   (2) Each application shall be accompanied by the following amount of fee payable by online payment gateway/demand draft drawn in favour of the National Energy Efficiency and Conservation Authority, Islamabad, namely: -

   (a) Application Fee:

(i) For All Candidates, excluding supplementary candidates and candidates applying for up-gradation from energy manager to energy auditor – Rs. Five Hundred only

(b) Certification fee including Examination fee for candidates appearing for Certified Energy Auditor or Certified Energy Manager Examination

(i) For All Self Sponsored Candidates - Rs Five Thousand only

(ii) For Company Sponsored Candidates- Rs Ten Thousand Only

(c) For Upgradation of certification from energy manager to energy auditor the certification fee shall be as under (applicable to those candidates who have registered earlier as Energy Managers and have EM registration number):

(i) For All Self Sponsored Candidates - Rs One Thousand five hundred only

(ii) For Company Sponsored Candidates- Rs Three Thousand Only

(d) For all eligible supplementary candidates irrespective of self-sponsored or company sponsored:

(i) Per Paper - Rs One Thousand five hundred only

(3) Subjects for National Examination for certification of energy auditor or energy manager shall be as specified in the prospectus. Such subjects shall also be displayed on the website of Authority, namely www.neeca.gov.pk. Preparatory material/books based on subjects specified in the prospectus and aforesaid website shall be provided to new candidates for the examination and latest version of books shall be available on aforesaid Authority's website for candidates appearing in the supplementary examination. Candidates appearing in the supplementary examination may purchase hard copy of these books from Authority or the agency, with an additional cost, if any, as may be specified by the Authority from time to time.

(4) A prospectus containing scheme and modalities for the National Examination including eligibility, syllabus and reference material for such examination, shall be made available by the Authority at least three months before the actual date of examination.

(5) The details of papers, the duration of examination, in such papers and maximum marks for each of them shall be as specified in the Table below:

Paper No	Subject of the paper	Duration of the examination	Max Marks
I	General Aspects of Energy Management & Energy Audit.	3 Hrs	150
II	Energy Efficiency in Thermal Utilities	3 Hrs	150
III	Energy Efficiency in Electrical Utilities	3 Hrs	150
IV	Energy Performance Assessment for Equipment and Utility systems (Open Book Examination)	2 Hrs./2.5 Hrs./3 Hrs	100

The topics covered for each paper is specified in Schedule I annexed to these regulations

(6) The scheme for the national examination shall be as under: -

(a) The candidate appearing in national examination for energy manager shall be required to qualify the three papers specified in the above Table - Paper-I, Paper -II and Paper-III.

(b) The candidate appearing in the national examination for energy auditor shall be required to qualify the four papers specified in the above Table as Paper-I, Paper -II, Paper-III and Paper-IV

(c) Candidate registering for Energy Auditor Examination and clearing paper I, II and III, shall qualify as Certified Energy Manager

(d) A qualified certified energy auditor is also a qualified certified energy manager

6. Admission for the National Examination –

(1) The Authority, or the agency, as the case may be, shall, after scrutiny of application form and being satisfied that the applicant is eligible to appear for the National Examination, admit him for the National Examination by issuing him registration number EA or EM as the case may be, an admission card stating the place, date and time of the National Examination at least fifteen days before the date of the National Examination. The admit card can also be downloaded from the Authority website.

(2) Where on scrutiny of the application under sub-regulation (1) of regulation 6, an applicant is found ineligible to appear for National Examination, his application shall be rejected for reasons to be recorded in writing and he shall be intimated accordingly.

7. Passing of National Examination –

(1) A candidate shall be declared to have passed the National Examination if he secures a minimum of fifty per cent marks in each paper for the National Examination.

(2) An unsuccessful candidate shall be allowed to take a maximum of three/four attempts per paper within six consecutive examinations held by the Authority or the agency, as the case may be, on payment of supplementary fee of rupees one thousand and five hundred per paper by means or demand draft drawn or through payment gateway on authority website in favour of National Energy Efficiency and Conservation Authority, Islamabad. Registration of the candidate for the National Examination will be treated as first attempt irrespective of the fact whether candidate writes the examination or not.

(3) An unsuccessful candidate shall undertake examination as per the latest version of books based on syllabus in force, which may be downloaded from Authority's website, namely www.neeca.gov.pk.

8. Certification of energy auditors, and energy managers –

(1) For the purpose of certification of energy auditors and energy manager, the Authority shall issue a certificate in **Form-II**. to the person who has passed the said National Examination

(2) The certified Energy Auditor and certified Energy Manager shall be eligible for appointment or designation as Energy Manager in-charge of activities for efficient use of energy and its conservation by any user or class of users of energy in the energy intensive industries.

(3) The certified Energy Manager or certified Energy Auditor shall perform the functions and duties as specified in Schedule II annexed to these regulations.

9. Register of certified energy auditors and certified energy managers –

(1) The Authority shall maintain a Register of Certified Energy Auditor and Certified Energy Manager in **Form-III and Form-IIIA** respectively and include in the said registers the name of persons to whom certificates have been issued under regulation 8.

(2) On being registered as certified energy auditor and certified energy manager under sub-regulation (1) of regulation 9, the certified energy auditor and certified energy manager shall be issued an identity card in **Form-IV**.

(3) Each certified energy auditor and certified energy manager shall be eligible to be designated or appointed as energy manager by the designated consumer under clause (l) of section 10 of the Act.

10. Validity of certification – The certification made under regulation 8 shall be valid for a period of five years and renewable after every five years on an application made to the Authority in **Form V**.

Provided that no such renewal shall be made unless the certified energy manager has attended a short-term refresher training course conducted by the Authority or the agency, as the case may be, and has produced a certificate of participation issued in that behalf.

11. Cancellation of certification –

(1) The Authority may cancel the certification of energy auditor or energy manager on a complaint made against him for –

(a) any commission or omission amounting to professional misconduct;

(b) any misrepresentation of facts, data or reports on energy consumption;

(c) any act amounting to fraud;

(d) failure to attend the refresher course

Provided that no such cancellation shall be done by the Authority without giving an opportunity of being heard to such energy manager or energy auditor as the case may be.

(2) Where the certification of any of the aforesaid professionals is cancelled on the grounds specified in clause (a) to clause (c) of sub-regulation (1), the certification of the said professional shall be placed under suspension immediately on coming to notice or happening of an event specified in such clauses until inquiry is completed and the allegations levelled against such professional is conclusively proved in the said inquiry, the certification of the said professional shall be cancelled and his name shall be removed from the register containing the list of such professionals with the approval of the competent authority.

(3) Where the certification has been cancelled and his name has been removed on grounds specified in clause (a) to clause (c), of sub-regulation (1) no restoration of his name in the register shall be made by the Authority.

(4) In case the cancellation has been done on grounds specified in clause (d) of sub-regulation (1), cancellation of the certificate shall be restored as soon as he informs the Authority that he has attended the refresher course.

12. Issue of duplicate certificate or identity card –

(1) Where the certificate or identity card issued respectively under regulation 8 and sub regulation (2) of regulation 9 has been lost by the Energy auditor or certified

energy manager; the Authority may, on an application made by him in this behalf, duly supported by a copy of first information report lodged with the concerned police station, issue a duplicate certificate or identity card, as the case may be, on payment of a fee of rupees one hundred/five hundred by demand draft drawn in favour of National Energy Efficiency and Conservation Authority, Islamabad.

(2) Where any certificate or identity card issued by the Authority is damaged, the Authority may on an application made in this behalf and on surrender of damaged certificate or identity card, issue a duplicate certificate or identity card on payment of a fee of rupees one hundred by demand draft drawn in favour of National Energy Efficiency and Conservation Authority, Islamabad.

13. Constitution of Advisory Committees –

(1) The Authority may, for the purpose of these regulations, national examination for energy auditors and energy managers and for their certification and registration constitute an Examination Advisory Committee, a Technical Advisory Committee and a Certification and Registration Advisory Committee.

(2) Each Advisory Committee shall consist of a Chairperson and not more than six other persons to be nominated by the Authority.

FORM – I

[Refer regulation 5(1)]

APPLICATION FOR NATIONAL EXAMINATION

Examination you are appearing for - O Energy Auditor
O. Energy Manger

Candidature ( ) Company Sponsored ( ) Self-sponsored

Signature of Candidate: _____	Passport size Photograph of the candidate with signature across the photo.
For Office Use Only Remarks if any	

3. Name of the Applicant* …… …… ……
(First Name) (Middle Name) (Last Name)

4. Fathers Name* ……

5. Present Address* Permanent Address*
…… ……
…… ……
…… ……
City* …… Code* ……. City* …… Code* …….
Province …… Province ……

6. Date of Birth* …… …… ……
(Date) (Month) (Year)

7. Sex*: ( ) Male ( ) Female ( ) Others

8. Employment Status: ( ) Employed ( ) Self Employed ( ) Unemployed

9. Present Company= Address
Designation ……
Company Name& Address……
……
……
City* …… Pin Code*…
State ……..

10. Contact Details
Office Phone ……
Fax ……
Res. Phone ……
Email* ……
Mobile* ……

11. Total Work Experience: Years …… Months ……

12. Examination Centre preferred

(a) 1st Preference ……. (b) 2nd Preference …… (c) 3rd Preference ……

Present Position ( )

13. Requisite Educational Qualifications

Sr. No.	Name of Degree/Diploma	Subject/Branch	Year of Passing (eg: 1988)	University
1				
2				
3				
4				

14. Requisite Experience for fulfilling the eligibility criteria*:

S. No	Name of Employer/ Organisation	Designation	Year		Nature of work
			From	To	
1.					
2.					
3.					

15. DD No.*: …….. Amount (Rs)*: ……. Date*: ……
Bank Name*: …….

16. I agree to forward my name to any Training Agency conducting preparatory Training Courses

( ) Yes ( ) No

DECLARATION BY THE CANDIDATE

I hereby declare that all the information given in the application form and enclosure are true to the best of my knowledge. I agree that if any information or any statement is found to be incorrect, my admission to the examination would be cancelled. I also understand that it is my responsibility to cross check information from the websites as mentioned in the prospectus for the allotted examination centre and issue of hall

admission card. I shall inform the Authority, or the agency, as the case may be, about any change in my mailing address, telephone number and e-mail ID, if any, at the earliest. I also abide by the examination scheme and conditions as mentioned in the prospectus.

Place: ..... Signature: …….
Date: ..... Name: …….

- * = Mandatory

Form-II

[See regulation 8]

NATIONAL ENERGY EFFICIENCY AND CONSERVATION AUTHORITY

Examination Registration No……. Serial Number……..

Certification Registration No…….

CERTIFICATE FOR CERTIFIED ENERGY AUDITOR/ENERGY MANAGER

Photograph

This is to certify that Mr./Mrs./Ms……..Son /Daughter of……..who has passed the National Examination for certification of energy auditor/energy manager held in the month of……..(Year) is qualified as certified energy auditor/energy manager subject to the provisions of the National Energy Efficiency and Conservation Authority (Certification Procedures for Energy Auditors and Energy managers) Regulations 2018.

This certificate shall be valid for five years with effect from the date of award of this certificate and shall be renewable subject to attending the prescribed refresher training course once in five years.

His/Her name has been entered in the Register of certified energy manager at Serial Number…… being maintained by the National Energy Efficiency and Conservation Authority under the aforesaid regulations.

Mr./Mrs./Ms…….is deemed to have qualified for appointment or designation as energy manager under clause (l) of section 10 of the Act.

Given under the seal of the National Energy Efficiency and Conservation Authority,

this…….day of ……20……..

(Signature and Seal)

Secretary

National Energy Efficiency and Conservation Authority

Dates of attending the refresher course	**Secretary's signature**	**Dates of attending the refresher course**	**Secretary's Signature**

From-III

[See regulation 9 (1)]

National Energy Efficiency and Conservation Authority

REGISTER OF ENERGY AUDITOR

		As on ……..(DD/MM/20YY)	
A.	Certification Information		
1	Name of certified energy auditor		
2	Father's name		Photograph
3	Examination Registration No.		
4	Certificate Registration No.		
5	Date of entry in the Register		
6	Date of issue of certificate		
7	Date of re-validation of Certificate		
8	Revalidation record		
		1	
		2	
		3	

B.	Communication Links	
1.	Postal address with Pin Code	……..I……..I…….. ……..I……..I…….. ……..I……..I…….. ……..I……..I…….. ……..I……..I……..
2	e-mail address	……..I……..I…….. ……..I……..I……..
3	Telephone numbers. with STD Code (R) (O) Cell phone	……..I…….. ……..I…….. ……..I……..

C.	Work Experience from the date on which eligibility criteria has been fulfilled						
	from		to		Brief details of work experience		
	Month	Year	Month	Year	Employer's name and address	Self employment	Job content/ experience
1							
2							
3							
4							

D	Personal Information			
1	Date of birth		DD/MM/YY	
2	Nationality			
3	Educational qualification (record only after schooling)			
	Educational course		Institution/University	Year of Passing
1				
2				
3				
4				
5				

E	Remarks

From-III A

[See regulation 9(1)]

NATIONAL ENERGY EFFICIENCY AND CONSERVATION AUTHORITY

REGISTER OF ENERGY MANAGER

		As on ……..(DD/MM/20YY)	
A.	Certification Information		
1	Name of certified energy manager		
2	Father's name		Photograph
3	Examination Registration No.		
4	Certificate Registration No.		
5	Date of entry in the Register		
6	Date of issue of certificate		
7	Date of re-validation of Certificate		
8	Revalidation record		
		1	
		2	
		3	

B.	Communication Links			
1.	Postal address with Pin Code			
2	e-mail address			
3	Telephone numbers with STD Code			
	(R)			
	(O)			
	Cell phone			

C.	Work Experience from the date on which eligibility criteria has been fulfilled						
1.	from		to		Brief details of work experience		
	Month	Year	Month	Year	Employers name	Self employment	Job content/ experience

D	Personal Information			
1. Date of birth	DD/MM/YY			
2 Nationality				
3. Educational qualification (record only after schooling)	Institution/University		Year of Passing	
1				
2				

3				
4				

E	Remarks

Form –IV
[Refer regulation 9(2)]
FORMAT FOR IDENTITY CARD
NATIONAL ENERGY EFFICIENCY AND CONSERVATION AUTHORITY

CERTIFIED ENERGY AUDITOR/ CERTIFIED ENERGY MANAGER

Photograph

Examination Registration No:
……
…
Certificate Registration No:
……
……
Name:
……
……
Son/Daughter of:
……
…
Address:
……
……

Signature of Certified Energy Manager

(Backside of Identity Card)

Date of Issue: …… Validity up to
……
Issuing Authority
Name: ……
Designation: ……
Office Address: ……
Signature: ……

Office Seal

FORM –V
[Refer regulation 10]
Application for Renewal of Certification

Date: ……..

From

Mr./Mrs./Ms ……
Registration No ……
Postal Address: ……

To

The Secretary
National Energy Efficiency and Conservation Authority

Address: ……

Dear Sir/madam,
Subject: Renewal of certification as energy manager/ energy auditor

This is to inform you that I have attended the short-term refresher training course and enclose here with the certificate of participation issued in this behalf.

I hereby apply for renewal of my certification as energy manager. The certificate for doing the needful is enclosed.

Yours faithfully,
(Signature)……
(Name)……

Schedule I

SUBJECTS FOR NATIONAL EXAMINATION

Paper I: General Aspects of Energy Management & Energy Audit

1.1 Energy Scenario: Global and Pakistan energy scenario, Fuel wise consumption – Natural Gas, Oil, Coal, Nuclear Energy, Renewable Energy, Electricity, Pakistan Energy Balance, National Energy Efficiency and Conservation Act 2016, Key Energy efficiency Policies in Pakistan Vision 2025, Pakistan's Nationally Determined Contributions, Sectoral energy consumption (domestic, industrial and other sectors), energy needs of growing economy, energy intensity, long term energy scenario, energy pricing, energy security, energy conservation and its importance, energy strategy for the future.

1.2 Energy Management and Audit: Definition, scope of energy audit, types of energy audit, detailed energy audit methodology, Implementing energy efficiency measures, detailed project report, understanding energy cost, bench marking and energy performance, plant energy performance, matching energy usage to requirement, maximizing system efficiencies, energy audit instruments and metering.

1.3 Energy Management System: Introduction, ISO50001 for effective management of energy, Energy performance approach, Relationship between Energy Performance and EnMS, Plan do check act cycle, Benefits of implementing ISO50001, Why New ISO50001version.

1.4 Financial Management: Introduction, investment-need and appraisal, financial analysis approach - profit revenue and cost, Time value of money, Financial analysis techniques- simple payback period, return on investment, cost benefit, profitability index, Discounted cash flow methods - net present value, internal rate of return, modified internal Comparison of project evaluation methods.

1.5 Financing Options: Energy performance contracting and role of ESCOs – What are performance contracts, Self-financing energy management, Ensuring continuity.

Paper II: Energy Efficiency in Thermal Utilities

2.1 Fuels and Combustion: Introduction to fuels, properties of liquid fuels, properties of coal, properties of gaseous fuels, properties of agro residues, Combustion, Combustion od coal, Combustion of gas.

2.2 Boilers: Introduction, Boiler system, Types of boilers, performance evaluation of boilers, boiler blow down, Boiler water treatment, energy conservation opportunities.

2.3 Steam System: Introduction, Properties of steam, steam distribution system, efficient steam utilization, Proper selection, operation and maintenance of steam traps.

2.4 Industrial Furnaces: Introduction, Types of Furnace, Classification of different furnaces.

2.5 Insulation and Refractories: Insulation – Purpose of insulation, types and application, thermal resistance, economic thickness of insulation, heat savings and application criteria, Refractories – Selection of refractories, classification of refractories, High Emissivity coating.

2.6 Fluidized bed combustion (FBC) boilers: Introduction, fundamentals of fluidized bed combustion, advantages of FBC – Fuel flexibility, operational reliability, environmental acceptability, economic viability, Types of FBC boilers- AFBC boilers, CFBC boilers, Pressurized FBC, retrofitting FBC system to conventional boilers .

2.7 Cogeneration: Introduction, Classification of cogeneration system – Topping cycle, Bottoming cycle, Types of cogeneration system _ Steam turbine, Gas turbine, Diesel engine systems, Method of calculating CHP system efficiency, Typical cogeneration performance parameters, Heat to Power Ratio, Factors for selection of cogeneration system, Operating strategies for cogeneration plant, Relative merits of cogeneration system, case study.

2.8 Waste Heat Recovery: Introduction, Opportunities and benefits of waste heat recovery – direct and indirect benefits, Factors affecting waste heat recovery, Overview of waste heat recovery methods and technologies, heat exchanger configuration and heat transfer augmentation.

Paper III: Energy Efficiency in Electrical Utilities

3.1 Electrical system: Introduction to electrical power supply 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, automatic power factor controllers, energy efficient transformers, assessment of transmission, distribution and transformer losses, harmonics and its effects.

3.2 Electric motors: Introduction, Types of motors – Induction, DC motor, Synchronous motor, Motor characteristics – motor speed, V/Hz relationship, power factor, motor efficiency parameters, Motor selection – field test for determining efficiency, Energy efficient motors – Stator and rotor copper losses, core losses, friction and windage losses, stray load losses, Factors affecting energy efficiency – power supply quality, motor loading, power factor correction, maintenance, age, rewinding effects, speed control of AC motors, Harmonics, Other operating concerns, transmission efficiency, soft starters.

3.3 Compressed Air System: Introduction, Types Of air compressors, positive displacement compressors, centrifugal compressors, system components, compressor performance, efficient compressor operation, energy efficiency practices in compressed air system.

3.4 Heating, ventilation, air conditioning (HVAC): Introduction, Types of refrigeration and air conditioning, assessment of refrigeration and air conditioning, energy efficiency opportunities, option checklist.

3.5 Fans and blowers: Introduction, Types of fans and blowers, assessment of fans and blowers, energy efficiency and conservation opportunities, option checklist.

3.6 Pumps and Pumping System: Introduction, Pumping system characteristics, Pump performance characteristics, Types of pumps, assessment of pumps, energy efficiency and conservation opportunities, option checklist.

3.7 Cooling Tower: Introduction, Components of a cooling tower, materials used,

Types of cooling towers, Assessment of cooling towers, energy efficiency and conservation opportunities.

3.8 Lighting System: Introduction, Definitions, Types of lighting system, Lighting Fixtures, Assessment of Lighting Systems, Energy efficiency and conservation opportunities, options checklist.

3.9 Energy conservation in Buildings: Introduction, Energy Conservation Building Codes, Types of electric loads in buildings, Energy efficiency and conservation opportunities.

Paper IV: Energy Performance Assessment of Different Industrial Sectors

4.1 Thermal Power Plants: Introduction, Open and closed cycle power plants, Boiler efficiency calculation, Draft system, Water pumping system, Turbine heat rate calculation, Case studies.

4.2 Cement Plants: Introduction, Cement manufacturing process, Material and Energy balance, Raw Mill, Coal Mill and Case Studies.

4.3 Textile Plants: Introduction, Textile manufacturing process, Performance evaluation of process equipment, Performance evaluation of utilities, Case studies.

4.4 Pulp and Paper Industry: Introduction, Pulp and Paper manufacturing process, Energy consumption pattern, Performance evaluation of equipment, Case Studies.

4.5 Steel Re-rolling Mill: Introduction, Steel re-rolling process, Heat balance of reheating furnace, Case studies

Schedule II

Functions and responsibilities of Energy Professionals specified in the National Energy Efficiency and Conservation Act, 2016 (XXX of 2016)

01. Certified Energy Manager (CEM)

Certified Energy Manager occupies an important position and is the focal point of all the activities pertaining to energy management in the organization. The certified 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. Certified Energy managers also perform the activities related with Energy Management, Project Management, Personnel Management and Financial Management at the plant level. He also Further

1.1 Functions and Responsibilities of Certified Energy Manager (CEM) are highlighted below include:

- Establish an energy conservation cell, formulate corporate energy policy, prepare an annual activity plan pertaining to energy management in the organization;
- prepare a report on status of Energy Consumption at the end of every financial year and submit to the Provincial/Federal body constituted for this purpose, with a copy to the Authority, under the (Clauses 10(l);
- Ensure direction issued to his Designated Consumer vide sub-regulation (1) regulation 3 regarding conduct of energy audit conducted by an accredited energy auditor in accordance with the Manner and Interval of time for conduct of energy audit Regulations, 20XX is complied with and details of the action taken on the recommendations of accredited energy auditor is furnished to the concerned Provincial/Federal body, with a copy to the Authority, in accordance with the ……[10(k))].
-
- 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;

02. Functions and Responsibilities of Certified Energy Auditor (CEA)

Certified Energy Auditor involves a systematic study undertaken on major energy consuming sections and equipment 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 sections of a plant

02.1 Functions and Responsibilities of Certified Energy Auditor (CEA) include-

- Carry out a detailed energy audit under the direction of Accredited Energy Auditor as an associate or member of energy audit team;
- 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;
- Analyze technical and financial feasibility of energy saving measures;
- Recommend energy efficient technologies and alternate energy sources;
- Report writing, presentation and follow up for implementation.