

# **CENTRAL ELECTRICITY REGULATORY COMMISSION**

## **NEW DELHI**

### **“Draft Central Electricity Regulatory Commission (Terms and Conditions for Exchange of Energy Savings Certificates), Regulations, 2016”**

#### **Explanatory Memorandum**

#### **1. INTRODUCTION – ENERGY CONSERVATION ACT , PAT RULES**

- 1.1 The Energy Conservation Act ( EC Act ) was notified on 29<sup>th</sup> September 2001 . The primary purpose of the EC Act is to provide for efficient use of energy and conservation of energy . For this purpose, the EC Act provides for establishment of Bureau of Energy Efficiency ( BEE) by the Central Government which shall discharge various functions as envisaged under the Act and also assigns specific responsibilities to the Central Government and State Governments to achieve the objective of efficient use of energy and conservation of energy . The EC Act was amended on 12<sup>th</sup> March 2007 to specify the energy conversion values for various types of fuel in the industry to Metric tonne of oil equivalent.
- 1.2 The National Action Plan on Climate Change (NAPCC) was released by the Central Government on 30<sup>th</sup> June 2008 which in turn released eight Missions, one of which was the National Mission for Enhanced Energy Efficiency (NMEEE) . NMEEE laid emphasis on promoting innovative policies and regulatory regimes for creating and sustaining markets for energy efficiency to be achieved in a time bound schedule .
- 1.3 One of the initiatives under the NMEEE was the introduction of the Perform Achieve and Trade (PAT) Scheme which is a market based mechanism to enhance the cost effectiveness of improvements in energy efficiency in energy intensive large industries.

Among other measures taken by the Central Government to facilitate the implementation of the NMEEE, the EC Act was amended on 24<sup>th</sup> August 2010 to give powers to the Central Government to issue Energy Savings Certificates ( ESCerts) u/s 14 A while also giving powers u/s 14 B to specify the value of energy.

- 1.4 Consequently, the Energy Conservation ( Energy Consumption Norms and Standards for Designated Consumers, Form, Time within which, and Manner of Preparation and Implementation of Scheme, Procedure for Issue of Energy Savings Certificate and Value of Per Metric Ton of Oil Equivalent of Energy Consumed ) Rules 2012 were notified by the Ministry of Power ( MoP) on 30<sup>th</sup> March 2012. The Rules also identified 478 Designated Consumers ( DCs) in each sector such as Aluminium, Chlor-Alkali, Textile, Pulp & Paper, Iron & Steel, Fertilizer, Cement and Thermal Power plants who would be given a target baseline energy consumption which would be translated into energy efficiency .
- 1.5 Section 4 (b) of the EC Rules 2012 ( in common parlance known as PAT Rules) , gives the procedure for calculating the energy inputs for the plants by converting various forms of energy into 1 tone of oil equivalent which includes electricity in addition to other fuels. A brief on the PAT Scheme is detailed at **Annexure 1**
- 1.6 Section 12 of the PAT Rules 2012 gives powers to the Central Government to issue the ESCerts in electronic form with each ESCert being equivalent to one metric ton of oil equivalent of energy ( MTOe) consumed. The Power exchanges have been designated as the platforms through which the ESCerts would be traded and the certificates issued in a cycle period ( 3 years) would be valid till the completion of the compliance period of the next cycle
- 1.7 Section 16 of the PAT Rules details the valuation of 1 MTOe with the average price of coal , oil ( as declared by Indian Oil Corporation Ltd), gas ( as declared by Gas Authority of India Ltd) and average price of one unit of electricity for industrial sector in the States of Chhattisgarh, Gujarat, Maharashtra, Madhya Pradesh and Tamil Nadu ( as specified by the respective Electricity Regulatory Commissions ) .

## **2. ELECTRICITY ACT, 2003**

2.1 The Electricity Act 2003 was enacted with the intent of consolidating the earlier Electricity laws for the development of the power sector . The Electricity Act ( EA) 2003 encompassed the generation, transmission, distribution, trading as also protecting the interest of the consumers and development of the sector by formulating various policies . Section 61 of the EA 2003 empowers the Central and State Commissions to make regulations on the terms and conditions of tariff in accordance with the principles laid down under the said section . Sec 61 (c ) of the Act specially stresses that the Tariff Regulations are to be specified considering the factors which would encourage competition, efficiency, economical use of resources, good performance and optimum investments.

2.2 Section 3 of the EA 2003 empowers the Central Government to issue the National Electricity Policy ( NEP) , which is a guiding document for the Central and State Electricity Regulatory Commissions for framing various Regulations and Codes for development of the power sector .

- a) Section 5.8.5 of the NEP emphasizes on the need to improve efficiencies in the industry by way of incentives and disincentives to the consumers by prescribing suitable norms.
- b) Section 5.9.5 of the NEP seeks the agriculture sector to use energy efficient pump sets and water delivery systems. Similarly, the industrial sector is to use energy efficient technologies and carry out energy audits for energy conservation.
- c) Section 5.9.6 of the NEP gives importance to various load management techniques to be adopted .

2.3 Section 66 of the EA 2003 empowers the Appropriate Commission to promote the development of a market ( including trading ) in power . In accordance with the mandate of the EA 2003, Central Electricity Regulatory Commission ( Power Market) Regulations , 2010 has been specified under which two power exchanges have been registered and are currently functioning.

2.4 While the EC Act included the electricity sector for measurement of energy efficient measures in specific industries and also devised a formula to enable conversion of MTOe into MUs., the PAT Rules specify that the transactions of ESCerts have to be done through the Power Exchanges . Since the power exchanges are regulated by CERC, it is therefore imperative for CERC to take necessary measures to create appropriate regulatory framework for transaction of ESCerts on the power exchanges.

2.5 The Ministry of Power in its Advisory No 10/4/2015 dated 05.01.2016 has given the mandate to CERC to discharge the functions of a Market Regulator in accordance with its Power Market Regulations, 2010 . It has also advised CERC to issue necessary Regulations / Orders/Guidelines for development of market of ESCerts and facilitate its trading / exchange on Power Exchanges ( **Annexure II** )

2.6 Considering the above, the Commission has proposed to make Central Electricity Regulatory Commission (Terms and Conditions for Exchange of Energy Savings Certificates), Regulations, 2016 (hereinafter referred in as ESCerts Exchange Regulations) to facilitate the trading mechanism of Energy Savings Certificates (ESCerts) on the Power Exchanges. Accordingly, draft regulations is published to invite the comments / suggestions/objections of the stakeholders in accordance with Section 178(3) of the EA 2003 read with Electricity ( Procedure for previous publications) Rules, 2005.

### **3. SALIENT FEATURES OF THE DRAFT REGULATIONS**

**3.1 Scope of the Regulations :** In line with the powers conferred on CERC to regulate the ESCerts market, these Regulations define the framework of exchange of ESCerts on the Power Exchanges

#### **3.2 Roles of various entities**

The draft Regulations proposes to assign the responsibilities to BEE, CERC and POSOCO :

**3.2.1. BEE :** BEE shall discharge the role of Administrator of ESCerts and shall

- (a) define procedure(s) for interface activities between Power Exchanges and Registry, Administrator and Registry, and Registry and Designated Consumer(s) in pursuance of the Energy Conservation Rules with the approval of the Commission;
- (b) provide assistance to the Commission in the matters involving exchange of ESCerts on Power Exchanges.
- (c) disseminate relevant market information to all stakeholders
- (d) discharge such other functions as may be assigned under these Regulations
- (e) ensure that exchange in ESCerts take place in a transparent manner
- (f) issue a detailed procedure with the approval of Commission for registration of eligible entities, exchange, transfer, banking, extinguishment of ESCerts and other residual matters ;
- (g) shall coordinate with the Power Exchanges and Registry for smooth interface for Exchange of ESCerts

**3.2.2. CERC :** ESCerts shall be exchanged on the Power Exchanges, regulated by CERC . As per the advisory issued by MoP in this matter, CERC would function as the Market

Regulator. In its role as Market Regulator, the draft Regulations proposes to vest the following functions on CERC :

- a) approve the procedure(s) for interface activities between Power Exchanges and Registry, Administrator and Registry, and Registry and Designated Consumer(s) in pursuance of the Energy Conservation Rules ;
- b) monitor the operations and performance of Power Exchanges with regard to exchange of ESCerts ;
- c) issue directions to the Bureau in regard to the discharge of its functions related to exchange of ESCerts.

3.2.3. POSOCO : During the introduction of Renewable Energy Certificates ( RECs) , POSOCO was mandated to act as the Registry. Considering its experience with regard to REC trading and management of integrated operation of Regional and National Power Systems with reliability, security and economy, the Ministry of Power in its advisory No 10/4/2015 dated 05/01/2016 of the Ministry of Power has assigned the function of Registry of ESCerts trading to POSOCO for the exchange of ESCerts on the Power Exchanges . ( **Annexure III** )

3.2.4. In its capacity as the Registry for ESCerts, POSOCO is envisaged to discharge the following functions :

- a) Assistance in registration process of ESCerts including crediting of ESCerts to DCs after approval from MoP, for which list of approved ESCerts shall be maintained in PATNET. They may collect fees and charges ,approved by the Commission in consultation with Bureau, payable by the Eligible entities for the purpose of meeting the cost and expense towards the management of Registry and software platform
- b) Guidance on dealing in the process of ESCerts trading/ exchange

- i. Develop methodology for settlement of trades with all operating power exchanges including blocking and freezing of trading of defaulters
  - ii. Seamless settlement of ESCerts based on trades on Power exchanges
  - iii. Tracking transactions & ownership of ESCerts
  - iv. Handling redemption and extinguishment of ESCerts
  - v. Record keeping of banking of ESCerts
- c) Coordination and information dissemination with DCs, Power Exchanges, BEE and Regulator (i.e. CERC)
  - i. Communicate the obligation status of DCs accounts to Power exchanges
  - ii. ESCerts account status reporting for DCs
  - iii. Maintain records of price discovered for ESCerts at power exchanges and annual energy savings details
  - iv. Periodic reporting to DCs, administrator, regulator
- d) Assistance in development of IT platform along with guidance on hardware infrastructure for maintaining database of ESCerts and records of trading of ESCerts
- e) Any other function, as assigned by CERC in consultation with BEE, after assessment of the real market conditions and execution of the trading mechanism.
- f) Make the Draft Procedure in accordance with draft Regulations 6 (a) for approval of the Commission

### **3.3 Issuance of Energy Savings Certificate (ESCerts)**

3.3.1 ESCerts are instruments issued to those Designated Consumers who achieve a prescribed reduction in their specific energy consumption.

### 3.3.2 The Designated Consumer :

- (a) would be issued ESCerts in electronic form in a cycle period for achieving specific energy consumption less than the energy consumption norms and standards notified by the Central Government for the cycle period, under Energy Conservation Rules, and subsequent cycles, who have held such certificates in Registry accounts;
- (b) whose specific energy consumption shall be more than the prescribed energy consumption norms and standards specified for a cycle period as aforesaid in clause (a) and subsequent cycles and who wish to comply with the prescribed energy consumption norms and standards using ESCerts in lieu of implementing energy conservation and energy efficiency improvement measures shall be entitled to purchase the ESCerts to meet compliance with the norms and standards prescribed under clause (g) of section 14 of the EC Act;

3.3.3 The reduction targets shall be set by the Government of India in consultation with BEE under section 14 (a) of the Energy Conservation Act 2001. The Central Government in exercise of the power conferred upon it under clause (1) of section 14A of the EC Act 2001 and Rule 11 of the PAT Rules, 2012 shall issue the energy savings certificates to these Designated Consumers whose energy consumption is less than the prescribed norms and standards .

## **3.4 Dealing in the Certificates**

3.4.1 The Certificate issued to eligible entities by the Government on the recommendations of the Bureau could be transacted on any of the Power Exchanges by the ESCerts holder.

The same would be dealt in accordance with the rules and byelaws of such Power Exchanges.

3.4.2 As the ESCert exchange is a market mechanism, its price would be discovered on the Power Exchanges.

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**OVER VIEW OF PAT SCHEME :**

1. PAT scheme establishes a market to achieve twin objectives of financial incentives, thereby reducing cost and compliance of energy efficiency targets, through certification of energy savings that can be traded. PAT scheme flows out of the Energy Conservation Act, 2001, provisions made under section 14 A, inserted vide amendment by Act No. 28 of 2010, of the Energy Conservation Act, 2001, empowers Central Government to implement PAT scheme and measures thereof.
  
2. The PAT Scheme, which is one of the components of NMEEE, is structured to help improved energy efficiency in energy intensive sectors, thereby contributing to substantial energy saving and avoidance of CO<sub>2</sub> for public benefit.
  
3. The details of socio-environmental benefits of NMEEE in public interest are :
  - i. Energy savings of 6.686 million tonnes of oil equivalent (million TOE) over 1<sup>st</sup> PAT cycle.
  - ii. Estimated avoided electricity generation of 19000 MW which indirectly provide more access of electricity to the public
  - iii. Minimize environmental pollution with an estimated Co2 reduction of 98.55 million tonnes annually
  - iv. Estimated fuel savings of 23 million tonnes of oil equivalent which result in reduced fuel import and saving of import fuel cost
  - v. Increased cost effectiveness of industrial production
  
3. The scheme covers 478 designated consumers (DC) in 8 sectors viz. thermal power stations, iron and steel plants, cement, fertilizer, textile, pulp and paper, chlor alkali and aluminum, in the first phase. In 2009-10, together , these designated consumers used about 36% of the fossil fuel consumed in India . Each designated consumer has been

mandated to achieve a prescribed reduction (targets notified in March, 2012) in its specific energy consumption (SEC).

**Minimum Annual Energy Consumption & Number of Designated Consumers (DCs) in Select Sectors**

SECTOR	MINIMUM ANNUAL ENERGY CONSUMPTION FOR THE DESIGNATED CONSUMER (TONNES OF OIL EQUIVALENT )	NO. OF DESIGNATED CONSUMERS
Aluminium	7500	10
Cement	30000	85
Chlor-alkali	12000	22
Fertilizer	30000	29
Iron and Steel	30000	67
Pulp and Paper	30000	31
Textile	3000	90
Thermal power plant	30000	144
<b>TOTAL</b>		<b>478</b>

- Under PAT mechanism, quantified energy savings are converted into Energy Saving Certificates (ESCerts). When a designated consumer achieves and surpasses its target, it is permitted to sell its excess savings in the form of Energy Savings Certificates(ESCerts). Moreover, if a designated consumer fails to achieve its targets, it necessarily needs to purchase the appropriate number of ESCerts to meet its energy savings targets. Monitoring and verification of the energy savings would need to be conducted by Accredited Energy Auditors through a transparent system as prescribed under PAT Rules, 2012.



5. The target year of the first PAT cycle has been completed in March 2015. DCs , within three months after the end of the target year of the relevant cycle, would submit performance assessment documents to BEE for issuance of proportionate ESCerts covering the performance for a period of one complete cycle
6. In case any DC has over-achieved the notified target, ESCerts would be issued to such DC. Once the status of achievement for individual entities are established, the entities who have not achieved the notified targets would be provided with an opportunity to achieve the same through purchase of ESCerts from those DCs who have over achieved their targets.
7. At the end of each PAT cycle and subsequent to trading of ESCerts , the DCs would submit necessary documents to BEE for compliance of the targets set in that cycle. The establishment of baseline for the next PAT cycle would be based on such documents
8. In this manner, a robust monitoring, reporting and verification process will ensure effective and credible assessment of energy efficiency achieved by industries covered under PAT.

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Annexure II



No. 10/4/2015  
Government of India  
Ministry of Power  
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'F' Wing, II<sup>nd</sup> Floor, Nirman Bhavan  
New Delhi - 110 011

Date: 5/1/2016

To,

The Secretary,  
Central Electricity Regulatory Commission (CERC),  
3<sup>rd</sup> & 4<sup>th</sup> Floor,  
Chanderlok Building, 36 Janpath,  
New Delhi -110001

**Subject: Advisory for discharging the function of a Market Regulator for trading/exchange of Energy Saving Certificates (ES Certs) under Perform Achieve and Trade (PAT) Scheme by CERC-reg.**

Madam,

I am directed to refer to the above subject and to say that for facilitation of Trading/Exchange of Energy Saving Certificates on Power Exchange under the Perform Achieve and Trade (PAT) scheme (which is a market based mechanism to enhance cost effectiveness of improvements in energy efficiency in energy intensive large industries and facilitates through certification of energy savings) under National Mission for Enhanced Energy Efficiency (NMEEE), CERC may discharge the functions of a Market Regulator in accordance with its Power Market Regulations 2010, in view of the following:

- I. Whereas the National Action Plan on Climate Change (NAPCC) was released by the Central Government on 30th June 2008 which enunciates eight Missions, one of which was the National Mission for Enhanced Energy Efficiency (NMEEE); emphasizing on promoting innovative policies and regulatory regimes for creating and sustaining markets for energy efficiency to be achieved in a time bound manner.
- II. Whereas the Central Government inter-alia introduced the Perform Achieve and Trade (PAT) scheme under the under the National Mission for Enhanced Energy Efficiency (NMEEE), which is a market based mechanism to enhance the cost effectiveness of improvements in energy efficiency in energy intensive large industries on 30th March, 2012.
- III. Whereas the Central Government through the Ministry of Power vide S. O. number 687(E) dated 30th March, 2012 specified the Energy Consumption norms and standards for the 478 DCs for the period from 2012-2015 covering 8 sectors. Aluminium, Chlor-Alkali, Textile, Pulp & Paper, Iron & Steel, Fertilizer, Cement and Thermal Power plants under the Energy Conservation Rules 2012 (common parlance being PAT Rules) notified vide G.S.R. number 269 (E) dated 30th March 2012.

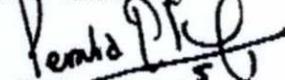
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Among other measures taken by the Central Government to facilitate the implementation of the NMEEE, the EC (Energy Conservation) Act was amended on 24th August 2010 to give powers to the Central Government to issue Energy Savings Certificates ( ESCerts) u/s 14 A while also giving powers u/s 14 B to specify the value of energy.

- IV. Whereas section 14A (1) of the EC Act and the Rule 12 of the PAT Rule 2012 gives powers to the Central Government to issue the Energy Saving Certificate (ESCerts) in electronic form with each ESCert being equivalent to one metric ton of oil equivalent of energy (toe) consumed and the Power exchanges are designated as the trading platforms through which the ESCerts shall be traded.
- V. Whereas the Rule 4 (b) of the PAT Rules 2012, gives the procedure for calculating the energy inputs for the plants by converting various forms of energy into 1 ton of oil equivalent (toe) which includes electricity in addition to other fuels.
- VI. Whereas the Rule 16 of the PAT Rules details the valuation of 1 mtoe (metric ton of oil equivalent) with the average price of coal, oil (as declared by Indian Oil Corporation Ltd), gas ( as declared by Gas Authority of India Ltd) and average price of one unit of electricity for industrial sector in the States of Chhattisgarh, Gujarat, Maharashtra, Madhya Pradesh and Tamil Nadu (as specified by the respective Electricity Regulatory Commissions).
- VII. Whereas the Ministry of Power has proposed to amend the Section 66 of the Electricity Act, 2003 and has introduced the Electricity (Amendment) Bill, 2014 in the Lok Sabha on 19th December, 2014 to promote development of a market (including trading) in power and a market for encouraging energy efficiency in power. Pending enactment of the said Bill, it has been decided by the Ministry of Power to issue an advisory authorizing Central Electricity Regulatory Commission (CERC) to discharge the function of market regulator to facilitate exchange of ESCerts on the Power Exchange.

2. Therefore in consideration of above and pending amendment in Electricity Act, 2003 advisory is issued to CERC by Central Government to discharge the functions of a Market Regulator of ESCerts and issue necessary Regulations/ Orders / Guidelines for development of market of Energy Saving Certificate (ESCerts) and facilitate its trading/ exchange on Power Exchanges.

Yours faithfully,

  
(P.T. Bhutia)  
Director EC

[Tele-fax :23063497]

Copy to :  
i) DG, BEE  
iii) Director (R&R)

Annexure III



No.10/4/2015  
Government of India  
Ministry of Power  
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'F' Wing, II<sup>nd</sup> Floor, Nirman Bhavan  
New Delhi - 110 011

Date: 5/1/2016

To,

The Chief Executive Officer,  
Power System Operation Corporation Ltd.,  
B-9, Qutab Institutional Area,  
Katwaria Sarai,  
New Delhi -110016

**Subject: Direction to POSOCO to discharge the function of Registry for trading/exchange of Energy Saving Certificates (ESCerts) under Perform Achieve and Trade (PAT) Scheme-reg.**

Sir,

I am directed to refer to the above subject and to say that for facilitation of Trading/Exchange of Energy Saving Certificates on Power Exchange under the Perform Achieve and Trade (PAT) scheme (which is a market based mechanism to enhance cost effectiveness of improvements in energy efficiency in energy intensive large industries and facilitates through certification of energy savings) under National Mission for Enhanced Energy Efficiency (NMEEE), Power System Operation Corporation (POSOCO) shall discharge the functions of a Registry.

Direction to POSOCO by the Central Government to discharge the functions of Registry for trading/exchange of Energy Saving Certificates (ESCerts) under Perform Achieve and Trade (PAT) Scheme is as follows:

Whereas the Central Government in the Ministry of Power inter-alia launched the Perform Achieve and Trade (PAT) Scheme under the National Mission for Enhanced Energy Efficiency (NMEEE), a market based mechanism to enhance the cost effectiveness of improvements in energy efficiency in the energy intensive large industries on 30<sup>th</sup> March, 2012.

Whereas the Central Government in the Ministry of Power vide Energy Conservation Rules, 2012 dated 30<sup>th</sup> March, 2012 specified the Energy Consumption norms and standards for the 478 DCs for the period from 2012-2015 covering 8 sectors Aluminium, Chlor-Alkali, Textile, Pulp & Paper, Iron & Steel, Fertilizer, Cement and Thermal Power plants under the **Energy Conservation Rules 2012** (common parlance being PAT Rules) notified on 30<sup>th</sup> March 2012.

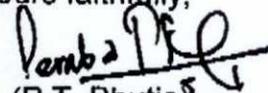
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Whereas section 14A (1) of the Energy Conservation Act,2001 and Rule 12 of the PAT Rule 2012 give powers to the Central Government to issue Energy Saving Certificate (ESCerts) in electronic form, each ESCert being equivalent to one metric ton of oil equivalent of energy (toe) consumed and the Power exchanges are designated as the trading platforms through which the ESCerts shall be traded and regulated by the Central Electricity Regulatory Commission (CERC).

And, Whereas considering the experience of Power System Operation Cooperation (POSOCO) with regards to Renewable Energy Certificate (REC) trading and management of integrated operation of Regional and National Power Systems with reliability, security and economy, the Ministry of Power, Government of India, has agreed to assign the function of Registry of ESCert trading to the POSOCO and accordingly issue this order to authorize POSOCO to establish the necessary framework for this purpose.

Yours faithfully,



(P.T. Bhutia)  
Director EC

[Tele-fax :23063497]

- Copy to :
- i) DG, BEE
  - ii) Director (R&R)
  - iii) Director (Transmission)