Asia and Pacific Regional Workshop: Promoting CDM and Markets Mechanisms


13-15th October, 2014

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Bureau of Energy Efficiency
Ministry of Power
Overview of Legal Framework for REC & ESCerts
2008: National Action Plan on Climate Change (NAPCC)
- Suggests RPO at 5% in year 2010, increasing 1% every year for 10 years.
- Appropriate authorities may issue certificates that procure RE power in excess of the national standard.
- Such certificates may be tradable, to enable utilities falling short to meet their RPS.
- Penalties as may be levied, falling short in RPS.

January, 2010: CERC issues REC Regulation on 14th Jan, 2010
- CERC designated National Load Despatch Centre (NLDC) as Central Agency: Notification dated 29.01.2010

June, 2010: CERC approved Procedures for Accreditation, Registration & Issuance

June, 2010: CERC Order on determination of forbearance price and floor price
National Mission for Enhanced Energy Efficiency

• National Action Plan on Climate Change (NAPCC) - 2008
  – Nation Mission for Enhanced Energy Efficiency (NMEEE)

  ➢ **Perform Achieve and Trade (PAT):** Market The market based mechanism to enhance the cost effectiveness in improving the Energy Efficiency in Energy Intensive industries through certification of energy savings which can be traded.

  ➢ **Market Transformation for Energy Efficiency (MTEE):** Accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.

  ➢ **Energy Efficiency Financing Platform (EEFP):** Creation of mechanisms that would help finance demand side management programs in all sectors by capturing future energy savings.

  ➢ **Framework for Energy Efficient Economic Development (FEEED):** Developing fiscal instruments to promote energy efficiency.
Covers 478 plants in 8 energy intensive industry (Aluminium, Cement, Chlor-alkali, Fertilizer, Iron & Steel, Paper & Pulp, Textile and Thermal Power Stations), and gate to gate boundary concept adopted.

Energy consumption of these plants was about 1/3rd of the total energy consumed in India in the baseline year (2009-10).

Large variations in energy intensities of different units in almost every sector

Key Goal: Mandate Specific Energy Consumption improvement

Energy Intensity reduction target for each unit based on its current efficiency in base line (2009-10)

Multi-cycle process – First PAT cycle till 2014-15

Approach - Consultative
Concept of Target, Compliance, ESCerts & Penalty

Baseline SEC

Target SEC

Saving Target

Issued Escerts

Achieved SEC

Purchase Escerts

Compliance

Penalty

Scenario 1

Scenario 2
Renewable Energy Certificates
Present Status of Installed Renewable Generation Capacity

**Total Installed Capacity**
- Thermal: 176,119
- RES: 31,692
- Nuclear: 4,780
- Hydro: 40,799

Total Installed Capacity as on 31st August'14

**Renewable Installed Capacity**
- Wind Power: 21,693
- Solar: 2,753
- Bagasse: 2,680
- Biomass: 1,365
- Small Hydro Power: 3,826
- W to E: 107

Renewable Installed Capacity as on 31st July’14

2,53,389 MW Total Installed Capacity as on 31st August’14

32,424 MW Total Installed Capacity as on 31st July’14
Renewable Energy Certificates ... Genesis

- **In-firm nature**
  - Scheduling for sale within State – can be only on monthly basis
  - Scheduling in MW outside State – very difficult

- **Difficulty in fixing preferential tariffs for each technology, vintage etc.**

- **Disparities among States**
  - **Surplus States** (having abundant Renewable resource) - cannot absorb renewable power at preferential tariff
  - **Deficit States** - Only through scheduling, no other manner for procuring renewable energy

- **Solution**
  - Convert (Renewable) Green Energy = Electricity + Green Attribute
  - Sell Electricity @normal prices
  - Sell Green Attributes @ some premium
Introducing another option... REC

Feed-in Tariff
[State Regulated Tariff]

Sale of electricity to DISCOMs at State regulated tariff

Purchase of Renewable Power @ market price

Buy from Third Party

REC Option

Green Attributes

[Solar & Non-Solar]

REC

Sale of Electricity at Market Price in open market

Electricity

Sale of RECs at Power Exchange

[State Regulated Tariff]

Sell to Discoms at Price ≤ Pooled Cost of Power Purchase*
Eligibility Criteria

Self Consumption / Captive Use
- No Promotional Wheeling*
- No Promotional Banking**
- No Electricity Duty Exempt

Third Party Sale/Open Access
- Sale at Mutually Agreed Price

Sale Through Bilateral Contracts
- Sale at Mutually Agreed Price

PPAs with Distribution Licensee
- PPA at Average Power Purchase Cost
- PPA at State Regulated Tariff

Eligible if all three conditions mentioned above are met
- Eligible
- Eligible
- Eligible
- Not Eligible
Important Provisions

- **Eligibility for REC:**
  A Generating company is eligible for obtaining accreditation from the State Agency if:
  - It does not have any PPA at a preferential tariff.
  - Sells to distribution licensee at a price not exceeding the pooled cost of power purchase,
  - Sells to open access consumer at mutually agreed price.
  - Sells through power exchange at market determined price.

- **Non-compliance of RPO:**
  If the obligated entity does not fulfill the RPO as per the regulations, The Commission may direct the obligated entity to deposit into a separate fund, to be created and maintained by the State Agency (SLDC), such amount as the Commission may determine on the basis of the shortfall in units of RPO and the forbearance price decided by the Central Commission (CERC).

- The penal charges will be equivalent to the forbearance price multiplied by shortfall in units of RPO.
REC Buyers

• Obligated Entities
  – Distribution Companies
  – Open Access Consumers
  – Industries consuming Captive Power

• Voluntary Entities
  – Corporates under CSR
  – Individuals
Energy Saving Certificates (ESCertS)
# First PAT cycle Energy Saving Targets

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Sector</th>
<th>Nos. of DCs</th>
<th>Energy Saving Targets in MTOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aluminium</td>
<td>10</td>
<td>455580.41</td>
</tr>
<tr>
<td>2</td>
<td>Chlor Alkali</td>
<td>22</td>
<td>54339.38</td>
</tr>
<tr>
<td>3</td>
<td>Textile</td>
<td>90</td>
<td>66013.08</td>
</tr>
<tr>
<td>4</td>
<td>Pulp &amp; Paper</td>
<td>31</td>
<td>118004.44</td>
</tr>
<tr>
<td>5</td>
<td>Iron &amp; Steel</td>
<td>67</td>
<td>1486056.88</td>
</tr>
<tr>
<td>6</td>
<td>Fertilizer</td>
<td>29</td>
<td>477899.30</td>
</tr>
<tr>
<td>7</td>
<td>Cement</td>
<td>85</td>
<td>815700.95</td>
</tr>
<tr>
<td>8</td>
<td>Thermal Power Plant</td>
<td>144</td>
<td>3210800.20</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>478</strong></td>
<td><strong>6684394.63</strong></td>
</tr>
</tbody>
</table>
Section 14A (2) of EC Act 2001 says that “The designated consumer whose energy consumption is more than the prescribed norms and standards shall be entitled to purchase the energy savings certificate to comply with the prescribed norms and standards.”

Rule-13(b) as “where the measures implemented in terms of clause (a) are found inadequate for achieving compliance with the energy consumption norms and standards, the designated consumer shall purchase the energy savings certificates equivalent in full satisfaction of the shortfall in the energy consumption norms and standards worked out in terms of metric ton of oil equivalent.”.
Rule-12(4) that “The designated consumer who has been issued energy savings certificates may sell them through the power exchange”
## TIME LINE for the target year of PAT CYCLE 1

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of Form</th>
<th>Submitted/issued by</th>
<th>Time of Submission</th>
<th>Submission authorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Form A</strong> (Performance Assessment Document)</td>
<td>DCs</td>
<td>Three months from conclusion of target year (end of first or second or third year of relevant cycle) &lt;br&gt; 30&lt;sup&gt;th&lt;/sup&gt; June, 2015</td>
<td>SDA &amp; BEE</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Form B</strong> (Certificate of verification by AEA)</td>
<td>DCs</td>
<td>Three months from conclusion of target year (end of first or second or third year of relevant cycle) &lt;br&gt; 30&lt;sup&gt;th&lt;/sup&gt; June, 2015</td>
<td>SDA &amp; BEE</td>
</tr>
<tr>
<td>3.</td>
<td>BEE’s Recommendation to MoP for issuance of ESCerts</td>
<td>BEE</td>
<td>10 working days from from receipt of forms A &amp; B &lt;br&gt; 10&lt;sup&gt;th&lt;/sup&gt; July, 2015</td>
<td>Ministry of Power</td>
</tr>
<tr>
<td>4.</td>
<td>Issuance of ESCerts</td>
<td>Ministry of Power</td>
<td>Within 15 working days from receipt of recommendations by BEE &lt;br&gt; 25&lt;sup&gt;th&lt;/sup&gt; July, 2015</td>
<td>BEE</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Form D</strong> (status of Compliance)</td>
<td>DC</td>
<td>End of 5 months from the last date of submission of Form A &lt;br&gt; 30&lt;sup&gt;th&lt;/sup&gt; November, 2015</td>
<td>SDA &amp; BEE</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Form C</strong> (check verification report and certificate)</td>
<td>AEA (Accredited Energy Auditor)</td>
<td>Within 6 months after issuance of ESCerts &lt;br&gt; <strong>(January, 2016)</strong> or within 1 year of submission of compliance report &lt;br&gt; (<strong>Oct, 2016</strong>)</td>
<td>BEE</td>
</tr>
</tbody>
</table>
## Resemblances in ESCerts trading with REC trading

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>REC</th>
<th>ESCerts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligibility</td>
<td>CERC</td>
<td>BEE</td>
</tr>
<tr>
<td>Accreditation</td>
<td>State Agency</td>
<td>BEE</td>
</tr>
<tr>
<td>Registration</td>
<td>Central Agency</td>
<td>BEE</td>
</tr>
<tr>
<td>Market surveillance</td>
<td>Central Agency/Compliance Auditors</td>
<td>BEE/ CERC</td>
</tr>
<tr>
<td>Rules and procedure for depositories</td>
<td>Central Agency prepares and CERC approves</td>
<td>BEE</td>
</tr>
<tr>
<td>Issuance</td>
<td>Central agency</td>
<td>Central Government</td>
</tr>
<tr>
<td>Validity of certificates</td>
<td>6 months</td>
<td>Two cycle (One cycle of 3 years)</td>
</tr>
<tr>
<td>Denomination</td>
<td>1 REC = 1 MWh</td>
<td>1 ESCert = 1 MTOe</td>
</tr>
<tr>
<td>Dealing in certificates</td>
<td>Power exchanges</td>
<td>Power exchange</td>
</tr>
<tr>
<td>Floor and forbearance price</td>
<td>CERC</td>
<td>BEE with the approval of detailed procedures of CERC</td>
</tr>
<tr>
<td>Market price</td>
<td>Power exchanges</td>
<td>Power exchange</td>
</tr>
<tr>
<td>Compliance charges/Buy out price</td>
<td>SERCs</td>
<td>BEE</td>
</tr>
</tbody>
</table>
# Linking of ESCerts with REC certificate

<table>
<thead>
<tr>
<th>Parameters</th>
<th>REC Market</th>
<th>ESCerts Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry</td>
<td>Ministry of New Renewable Energy (MNRE)</td>
<td>Ministry of Power (MoP)</td>
</tr>
<tr>
<td>Objective</td>
<td>Promotion of renewable Energy generation</td>
<td>Reduction of energy consumption of designated sector</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>High marginal cost of renewable generation</td>
<td>Less marginal cost of reduction in energy consumption</td>
</tr>
<tr>
<td>Price of certificate</td>
<td>High</td>
<td>Low (may be zero in case of no floor price)</td>
</tr>
<tr>
<td>Regulatory obligation</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Market Liquidity Ratio</td>
<td>Low</td>
<td>Yet to establish</td>
</tr>
</tbody>
</table>
India is a signatory of the Kyoto protocol as an Annex II signatory

Indian renewable energy projects and energy savings projects are eligible for issuance of CER (Certified Emission Reduction)

Although, the Govt. of India has maintained the stand that the PAT mechanism is a voluntary action irrespective of international commitments. It is possible to register the PAT mechanism under NAMA (Nationally Appropriate Mitigation Actions) with the UNFCCC
THANK YOU

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