Deepening & Widening of PAT Scheme and Provisions of EC Act Applicable to DCs

Deepening & Widening of PAT Scheme
Deepening of PAT

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aluminum</td>
</tr>
<tr>
<td>2</td>
<td>Cement</td>
</tr>
<tr>
<td>3</td>
<td>Chlor-Alkali</td>
</tr>
<tr>
<td>4</td>
<td>Fertilizer</td>
</tr>
<tr>
<td>5</td>
<td>Pulp &amp; Paper</td>
</tr>
<tr>
<td>6</td>
<td>Thermal Power</td>
</tr>
<tr>
<td>7</td>
<td>Iron &amp; Steel</td>
</tr>
<tr>
<td>8</td>
<td>Textiles</td>
</tr>
</tbody>
</table>

Cement

Significant scope of additional saving 22% from 29 units without Deepening
Iron and Steel

Significant scope of additional saving 51% from 53 units without Deepening

Pulp and Paper

Significant scope of additional saving ~55% from 10 units without Deepening
With Deepening there are scope of adding 12% more saving from this sector
Without Deepening, Scope of 62 adding new units; adding 44% more savings

Summary

<table>
<thead>
<tr>
<th>Sector</th>
<th>Existing Threshold limit (toe)</th>
<th>Number of DCs in PAT-I</th>
<th>Same Threshold limit (toe)</th>
<th>Number of plants proposed for PAT</th>
<th>Savings from plants in TOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement</td>
<td>30,000</td>
<td>85</td>
<td>30,000</td>
<td>29</td>
<td>180,686</td>
</tr>
<tr>
<td>Steel</td>
<td>30,000</td>
<td>67</td>
<td>30,000</td>
<td>59</td>
<td>773,864</td>
</tr>
<tr>
<td>Pulp and Paper</td>
<td>30,000</td>
<td>67</td>
<td>30,000</td>
<td>9</td>
<td>64,629</td>
</tr>
<tr>
<td>Textile</td>
<td>3,000</td>
<td>90</td>
<td>3,000</td>
<td>69</td>
<td>28,333</td>
</tr>
<tr>
<td>Total</td>
<td>273</td>
<td>166</td>
<td></td>
<td></td>
<td>1,047,512</td>
</tr>
</tbody>
</table>
### Widening of PAT

**Schedule to EC Act: List of Energy Intensive Industries and other establishments**

- Aluminium;
- Fertilizers;
- Iron and Steel;
- Cement;
- Pulp and paper;
- Chlor Akali;
- Sugar;
- Textile;
- Chemicals;
- **Railways**;
- Port Trust;
- Transport Sector (industries and services);
- Petrochemicals, Gas Crackers, Naphtha Crackers and Petroleum Refineries;
- **Thermal Power Stations**, hydel power stations, electricity transmission companies and distribution companies;
- Commercial buildings or establishments;

### Widening of PAT

<table>
<thead>
<tr>
<th>Sector</th>
<th>Threshold limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Refineries</td>
<td>Annual Energy consumption of 90,000 mtoe or above.</td>
</tr>
<tr>
<td>Electricity Distribution Sectors</td>
<td>Annual AT&amp;C loss of 1000 MU/ 86,000 TOE or above</td>
</tr>
</tbody>
</table>
| Railways                    | All zonal railways having **traction** annual energy consumption of 70,000 mtoe and above.  
                            | Workshop/production units having annual energy consumption of 30000 mtoe or above |
PAT - Way forward (PAT Cycle II)

- Deepening of PAT (existing sectors): Inclusion of more units from existing sectors
  - About 170 new DCs from four sectors (I&S, P&P, Cement and Textiles)
  - Over 100-110 new DCs from four sectors (TPP, Chlor-Alkali, Fertilizer and Aluminum)
- Widening of PAT: Inclusion of more units from new sectors
  - New sectors: Refinery, Railways and Electricity DISCOMS
  - About 175 new DCs

<table>
<thead>
<tr>
<th>PAT Cycles</th>
<th>No. of Units</th>
<th>Share of total energy consumption (2009-10 Level)</th>
<th>Sectors covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle I (2012-13 to 2014-15)</td>
<td>478 DCs</td>
<td>36%</td>
<td>8</td>
</tr>
<tr>
<td>Cycle II (2016-17 to 2018-19)</td>
<td>900-950 DCs</td>
<td>50%</td>
<td>11</td>
</tr>
</tbody>
</table>

Baseline Fixation and Target Setting

**Old DCs in Existing Sector**
- MEA Reports Review
  Engagement of Agencies for review and analysis of Form-2 and MEA reports
- Baseline Fixation
  Un-normalised Baseline SEC fixation through M&V Pro-forma
- Review of National Commitments
  Review of Sector Specific National Policies on Energy Savings and International commitment (INDC/Regulatory/Govt. Policies etc.)
- Workshops
- Trading
  Notification of trading regulations
  Workshops for familiarization
  ESCerts trading

**New DCs in Existing Sector**
- Workshops
  Workshops for filling up Data I the Pro-forma and Target Fixation methodology
- Data Collection
  Pro-forma Filling by DCs
- Verification Audit and Review

**New DCs in New Sectors**
- Workshop
  Inception Workshop for DCs (Railways, Refinery and DISCOMs)
- Sector Specific Pro-forma
  Development of Sector Specific Form I and Pro-forma for new sectors (The pro-forma integrated with Normalisation factors)
- Data Collection and Verification Audit

**New DCs in New Sectors**
- Workshop
  6 nos of Workshop on Form I, Pro-forma, Baseline fixation & Target Setting
- Normalisation
  Development and preparation of Normalisation document for New Sectors
Provisions of EC Act Applicable to DCs

Energy Conservation Act 2001

- Enacted in October 2001
- Become effective from 1st March 2002
- Bureau of Energy Efficiency (BEE) operationalized from 1st March 2002.

MISSION OF BEE

*Develop policy and strategies with a thrust on self regulation and market principles, within the overall framework of the EC Act with the primary objective of reducing energy intensity of the Indian economy.*
DESIGNATED CONSUMERS
( Energy Intensive Industries and other Establishments)

(A mandatory programme to focus on energy efficiency improvement in organized sectors such as energy intensive industries and commercial sector through establishment of energy management system, capacity building of energy professionals, implementation of energy audits, establishments of specific energy consumption norms and support to consumers on providing information on authentic energy data)

- Schedule to EC Act provides list of 15 energy intensive industries and other establishments to be notified as designated consumers (DC). A DC to
  - Appoint or designate certified energy manager
  - Submit Annual Energy consumption return
  - Get energy audit conducted by an accredited energy auditor
  - Implement techno-economic viable recommendations
  - Comply with energy consumption norms and standards

Schedule of the EC Act

- Aluminium;
- Fertilizers;
- Iron and Steel;
- Cement;
- Pulp and paper;
- Chlor Akali;
- Sugar;
- Textile;
- Chemicals;
- Railways;
- Port Trust;
- Transport Sector (industries and services);
- Petrochemicals, Gas Crackers, Naphtha Crackers and Petroleum Refineries;
- Thermal Power Stations, hydel power stations, electricity transmission companies and distribution companies;
- Commercial buildings or establishments;
Among 15 Energy Intensive Industries, 9 industries & establishments have been notified as Energy Intensive Industries as specified in the Schedule to the Energy Conservation Act, 2001 (52 of 2001), having annual energy consumption as indicated against each industry, as Designated consumers for the purposes of the EC Act:-

<table>
<thead>
<tr>
<th></th>
<th>Criteria for Notification for a Industry as Designated Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thermal Power Stations- 30,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>2</td>
<td>Fertilizer- 30,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>3</td>
<td>Cement- 30,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>4</td>
<td>Iron &amp; Steel- 30,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>5</td>
<td>Chlor-Alkali- 12,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>6</td>
<td>Aluminium- 7,500 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>7</td>
<td>Railways- One traction substation in each Zonal Railway, Production units and Workshops of Indian Railways having total annual energy consumption of 30,000 MTOE or more under Ministry of Railways</td>
</tr>
<tr>
<td>8</td>
<td>Textile-3,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
<tr>
<td>9</td>
<td>Pulp &amp; Paper-30,000 metric tonne of oil equivalent (MTOE) per year and above</td>
</tr>
</tbody>
</table>
DESIGNATED CONSUMERS-
MAJOR PROVISIONS

14 (e) specify, having regarding to the intensity or quantity of
energy consumed and the amount of investment required for
switching over to energy efficient equipments and capacity or
industry to invest in it and availability of the energy efficient
machinery and equipment required by the industry, any user
or class of users of energy as a designated consumer for the
purposes of this Act;

(g) establish and prescribe such energy consumption norms and
standards for designated consumers as it may consider
necessary:

(h) direct, having regard to quantity of energy consumed or the
norms and standards of energy consumption, the energy
intensive industries specified in the Schedule to get energy
audit conducted by an accredited energy auditor in such
manner and intervals of time as may be specified by
regulations;

(i) to get energy audit conducted by an accredited energy
auditor;

(k) to furnish to the designated agency, in such form and
manner and within such period, the information with
regard to the energy consumed and action taken on the
recommendation of the accredited energy auditor;

(l) to designate or appoint energy manager and submit a
report on the status of energy consumption at the end of
the every financial year to designated agency;

(n) to comply with energy consumption norms and
standards;

(o) direct any designated consumer, who does not fulfill the
energy consumption norms and standards prescribed
under clause (g), to prepare a scheme for efficient use of
energy and its conservation and implement such scheme
keeping in view of the economic viability of the
investment in such form and manner as may be
prescribed;
Section 15:
The State Government may, by notification, in consultation with the Bureau

(a) designate any agency as designated agency to coordinate, regulate and enforce provisions of this Act within the State;
(b) direct, any designated consumer to furnish to the designated agency, in such form and manner and within such period as may be specified by rules made by it, information with regard to the energy consumed by such consumer;
(c) specify the matters to be included for the purposes of inspection under sub-section (2) of section 17;

The Energy Conservation (Amendment) Act, 2010

Main Amendments
- The Central Government may issue the energy savings certificate to the designated consumer whose energy consumption is less than the prescribed norms and standards in accordance with the procedure as may be prescribed.

- 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.

- The Central Government may, in consultation with the Bureau, prescribe the value of per metric ton of oil equivalent of energy consumed.
**Number of Designated Consumers (DCs) as notified under Indian Energy Conservation Act**

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>Annual Energy Consumption Norm to be DC (toe)</th>
<th>No. of Identified DCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>7500</td>
<td>10</td>
</tr>
<tr>
<td>Cement</td>
<td>30000</td>
<td>85</td>
</tr>
<tr>
<td>Chlor-Alkali</td>
<td>12000</td>
<td>22</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>30000</td>
<td>29</td>
</tr>
<tr>
<td>Pulp &amp; Paper</td>
<td>30000</td>
<td>31</td>
</tr>
<tr>
<td>Thermal Power</td>
<td>30000</td>
<td>144</td>
</tr>
<tr>
<td>Iron &amp; Steel</td>
<td>30000</td>
<td>67</td>
</tr>
<tr>
<td>Textiles</td>
<td>3000</td>
<td>90</td>
</tr>
</tbody>
</table>

**Next Steps**
## Plan of Activities

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activity Details</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Notification of DCs</td>
<td>Sep 2015</td>
</tr>
<tr>
<td>2</td>
<td>Consultation with stakeholders via workshop</td>
<td>Aug 2015</td>
</tr>
<tr>
<td>3</td>
<td>Technical Committee formation/Normalization Committee formation</td>
<td>Sep 2015</td>
</tr>
<tr>
<td>4</td>
<td>Performa design/design of Form 1 with stakeholders and normalization parameters</td>
<td>Oct 2015</td>
</tr>
<tr>
<td>5</td>
<td>Finalization of normalization parameters by Expert Committee</td>
<td>June 2016</td>
</tr>
<tr>
<td>6</td>
<td>Workshop after finalizing Form 1 (data)</td>
<td>Nov 2015</td>
</tr>
<tr>
<td>7</td>
<td>Data collection/verification by 3rd party/agency</td>
<td>Jan 2015</td>
</tr>
<tr>
<td>8</td>
<td>Draft target setting methodology &amp; approach by expert</td>
<td>Nov 2015</td>
</tr>
<tr>
<td>9</td>
<td>Finalizing point 8 by committee</td>
<td>Dec 2015</td>
</tr>
<tr>
<td>10</td>
<td>Notification of SEC targets</td>
<td>31st March ’16</td>
</tr>
</tbody>
</table>