PAT Scheme: A component of NMEEE for enhancement of Energy Efficiency in Designated Sectors
Perform, Achieve and Trade (PAT) – WHY?

- National Action Plan on Climate Change (NAPCC)
  - Nation Mission for Enhanced Energy Efficiency (NMEEEE)

  Perform Achieve and Trade (PAT): a regulatory instrument to reduce specific energy consumption in energy intensive industries, with an associated market based mechanism to enhance the cost effectiveness through certification of excess energy saving which can be traded.
How much energy is required?

- A minimum energy consumption of **2400 kgoe/year/cap** is needed today to achieve HDI of **0.9**
- Countries which “develop” later achieve transition at lower energy levels
- Probable that transition may occur at **1500 kgoe** in the future
- Enhanced energy efficiency is essential to enable early transition
Indian Textile Industry

- Textile sector contributes about 14% to the industrial production
- Textile sector also contributes about 4% to the GDP and 11% to the country’s export earnings
- The textile sector is the second largest provider of employment after agriculture.
- The report of the Planning Commission on boosting India’s manufacturing exports during 12th Five Year Plan (2012-17), envisages India’s exports of Textiles and Clothing at USD 64.11 billion by the end of March 2017
# Textile Sector - Categorization

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Sub-Sector</th>
<th>Section</th>
<th>Major Product</th>
<th>Speciality Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spinning</td>
<td>Ring Frame</td>
<td>Yarn @40s Count</td>
<td>TFO, Doubling, Open End, Dying</td>
</tr>
<tr>
<td>2</td>
<td>Processing</td>
<td>Processing</td>
<td>Fabric</td>
<td>Printing, Finishing</td>
</tr>
<tr>
<td>3</td>
<td>Composite</td>
<td>Spinning, Weaving, Knitting, Processing</td>
<td>Fabric</td>
<td>Printing, Finishing</td>
</tr>
<tr>
<td>4</td>
<td>Fibre</td>
<td></td>
<td>Fibre</td>
<td></td>
</tr>
</tbody>
</table>
Grouping of Textile DCs

Textile (90)

- Spinning (37)
  - CPP (34)
  - Non CPP (03)
- Processing (20)
  - CPP (15)
  - Non CPP (05)
- Composite (27)
  - CPP (22)
  - Non CPP (05)
- Fiber (06)
Product Mix

Series Production

Section 1
Section 2
Section 3
Product A
Major Product A
Process B1
Product C
Product B

Parallel Production

Section 1
Section 2
Section 3
Product A
Major Product A
Product B
Product C

Section 1
Section 2
Section 3
Product B
Product B
Product C
Product Mix - Intermediary Product

Series Production

Section 1

Section 2

Section 3

Product A

Process B1

Process C

Process B2

Product B (P1)

Product C (P2)

Pe: Intermediary Product Sold out to the market

E1

S1

Ei: Intermediary Product Purchased from market

E2

S2

Ee: Intermediary Product Sold out to the market

S3

S4

Notional Energy for Import (Ei) = Pi x Si
Notional Energy for Export (Ee) = Pe x Se
Total Energy (E) = E1 + Ei - Ee
SEC for Major Product: S2 = E2/P
Equivalent Product (P_{eq}) = P + P1 x (S3/S2) + P2*(S4/S2)
SEC = E/P_{eq}

Parallel Production

Section 1

Section 2

Section 3

Product A

Product B (P1)

Product C (P2)

Product C (P2)

Product B (P1)

Product A

Pe: Intermediary Product Sold out to the market

E1

S1

Ei

Si

Ee

Se

E2

S2

E3

S3

E4

S4

Si, Se S1,S2,S3,S4 are SEC of Process
Pi, Pe, P,P1,P2 are Production
Ei,Ee,E1,E2,E3,E4 are Energy
PAT-WHERE?

• Reporting Formats – FORM I and Sector Specific Pro forma
• Normalization
• Integration
• Communication
• Adoption
• Evaluation
Timeline for issuance of ESCerts

1st April

M&V- Submission of FORM I, Form A,B, Sectoral Proforma...

30th June

SDA’s Scrutiny

15 Days

10 Working Days

BEEs Scrutiny

15 Working Days

BEEs recommendation to Central Government

30th Nov.

Issue of ESCerts and Trading
Normalization Factors

- Normalisation is a very important and rational process of modifying energy data in order to account for changes in quantifiable variables that impacts energy performance and static factors to compare energy performance under equivalent conditions.

- There are several factors that need to be taken into consideration in the assessment year such as change in product mix, change in fuel quality, import/export of electricity etc.

- The undue advantage or disadvantage could not be imposed on a DC while assessing the performance in the assessment year as compared to the baseline year for any change in above factors.
Normalization Factors - Broad Categorization in Textile Plant

- **Product Mix**
  - Import & Export of Intermediary product
  - Value added product
  - Major Product (For Series and Parallel Production)
  - Weaving & Knitting Production
  - Finished Fabric for Composite Sub Group
    - Cotton
    - Polyester Cotton
    - Lycra
    - Non Cellulosic Product (100% Synthetic)
    - Wool based product

- **Fuel Quality in CPP**
- **Low PLF in CPP**
- **Power Mix** (Imported & Exported from/to the grid and self-generation from the captive power plant)
- **Capacity Utilization**
  - Start/Stop

- **Environmental Concern** (Additional Environmental Equipment requirement due to major change in government policy on Environment)
- **Biomass/Alternate Fuel Unavailability**
- **Construction Phase or Project Activities**
- **Addition of New Line/Unit** (In Process & Power Generation)
- **Unforeseen Circumstances**
- **Renewable Energy**
Thank you!