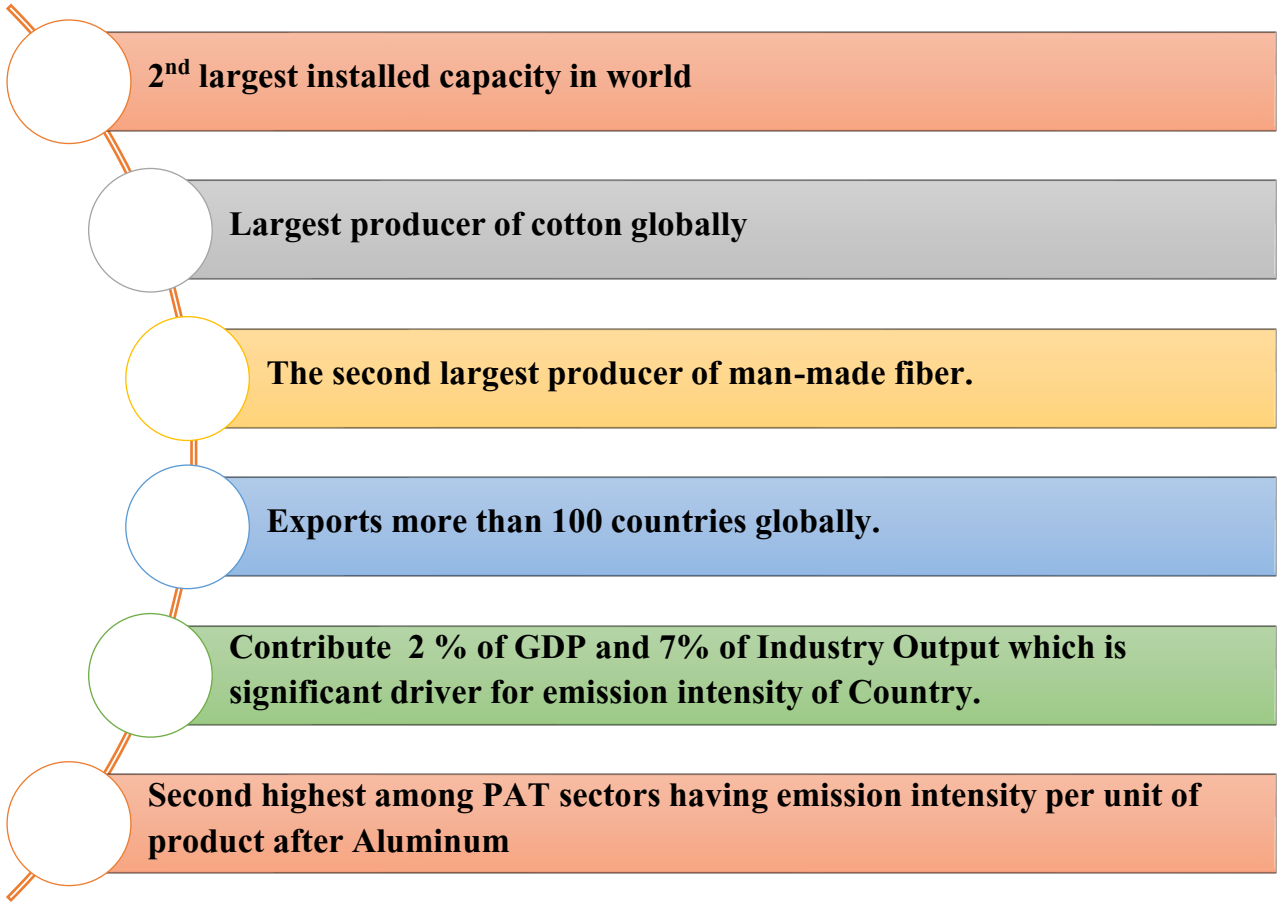
Impact of PAT Scheme and initiatives in Textile Sector

Introduction to Textile Sector

- The total number of industries around 3500 registered in Textile commissioner, there are 3.85 Lakh units in the power loom sector with a total loom capacity of 24.86 Lakhs.
- The sector contributed 15 percent to the export earnings of India in 2020-21.
- India is the 6th largest exporter of Textiles & Apparel worldwide, which shares 4% of the global trade.
- About 5 percent of global greenhouse gas emissions come from the textile industry in 2018 2,106 million tonnes of CO2e.(source Mckinsey report 2021)
- Estimated around 21 Percent (2.87 Million Toe) of the energy-intensive Industries are covered under the PAT scheme.



PAT Cycle Overview

- One of the flagship schemes under NMEEE, the Perform, Achieve and Trade (PAT) scheme is 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.
- At present, total 13 energy intensive sectors are under PAT Scheme such as Aluminium, Cement, Iron & Steel, Chlor-Alkali, DISCOM, Fertilizer, Pulp & Paper, Textile, Building (Hotels),Thermal Power Plants, Petrochemical, Petroleum Refinery and Railways.
- Total DCs covered under PAT Scheme: 1196
- The scheme has now been expanded with additional coverage to new sectors such as Glass, Ceramic, Chemicals, Mining & Non-Ferrous Metals (Copper/Zinc) etc.
- 15 New sectors are under consideration.

PAT Scheme Impact (2012-2020)

Energy Saving

22.75 mtoe

2.56 % of India's

Total primary energy supply

Emission Reduction

99.43 million tonnes of CO_2

3.49% of India's

emissions

Skill Development

Capacity building:

12000+ Engineers and operators

17975 Energy Auditors & Managers

285 Accreditation

ESCerts Trading

95.63 lakhs ESCerts were awarded.

50.71 lakhs ESCerts entitled to Purchase.

12.98 lakhs ESCerts traded in PAT-I

Investment

Encouraged investments for energy efficient technologies for domestic manufacturing

Rs 56,100 Crore invested

Savings

Rs 51520 Crores

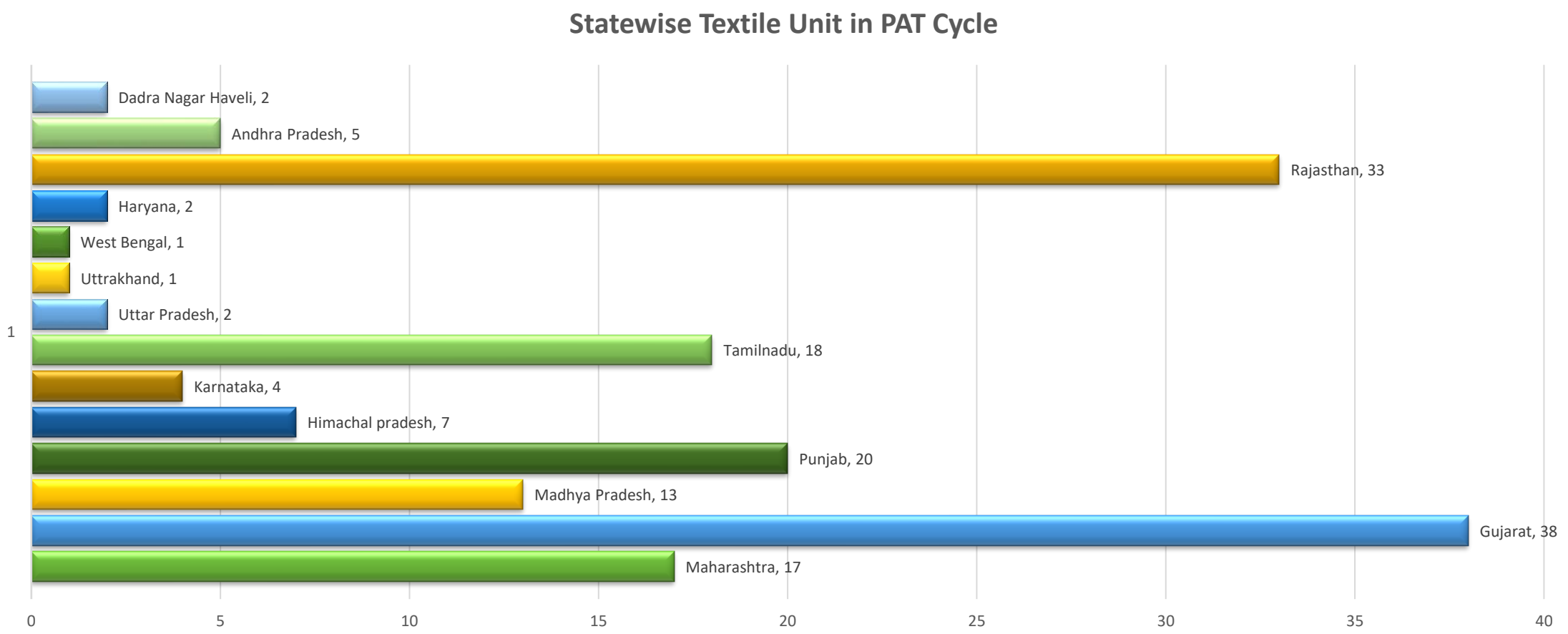
from saved **energy consumption**

PAT Cycle Overview

PAT Cycle	Cycle Year	Number of DC's Notified	Targeted Energy Consumption Reduction (Million TOE)	Achieved Energy Consumption (Million TOE)	Emission Reduction (Million Tonne of Co2)
I	2012-2015	478	6.68	8.67	31.00
II	2016-2019	621	13.63	14.08	68.43
III	2017-2020	116	0.976	1.594	6.43
IV	2018-2021	109	0.699	#	
V	2019-2022	110	0.513	#	
VI	2020-2023	135	1.277	-	-
VII	2022-2025	707	8.485	-	-

M&V In progress

Coverage in the sector



Performance of the Sector

PAT Consumption and Savings in Textile Sector						
Pat Cycles	**No of Designated Consumer**	**Consumption in Million Toe**	**Equivalent Production in Million Tons**	**Target Saving In Million Toe**	**Achieved savings in Million Toe**	**Over achievement**
2	99	1.476	1.690	0.0881	0.14	**59%**
3	34	0.668	0.485753	0.0400	0.0499	**25%**
4	7	0.397	0.417432771	0.0204	Under Evaluation	
5	16	0.2266	0.147748	0.01353	Under Evaluation	
6	7	0.1113073	0.343007	0.006645		
Total	**163**	**2.879**	**3.084**	**0.16868**		

Interventions implemented by the DCS

- Retrofitting of direct NG-fired burners in stenter
- Polygee BG20K(waste heat recovery in Poly viscose stenter)
- Waste heat recovery in screw/Centrifugal compressor
- Replacement of old with high-speed ring frame in spinning.
- Optimization of steam line size as per the end use.
- Waste heat recovery from dye spent.
- Installation of the flash steam vessel at 1.7 to 2 Kg pressure and pressure power pump (ppppu) at condensate return
- The installation of the Fabric moisture sensor, exhaust humidity sensor and to control outlet moisture of the Fabric on the stenter.
- The installation of Microturbine/Back pressure Turbine in Textile Processing/composite units.
- Installation of the Steam Accumulator with boiler.

Outcome of PAT 3 Cycle

- The total investment of around 98 crores in PAT-3 from Textile DCs.
- The average SEC of the sector in PAT-3 is found to dip from 1.87 Toe/Tonne to 1.74.
- The average rate of reduction is found as 6.95 percent.
- The sector had overachieved the target by 25%.

Why need of Energy Efficiency and Technology Upgradation in Textile

The increased cost of fuel to meet the daily energy expenses.

The Government policies for a reduction in energy and process realted emissions.

High Volatility in prices of energy resources.

To meet environmental and sustainable compliances related to products being mfg.

Availability of energy-efficient technologies.

To cut the operational cost, to meet the product's competitive prices in the market.

DEEP Initiative

In View of implementing innovative energy efficiency technologies and deploy large-scale implementation of energy efficiency measures in the DCs(Desginated Consumers), BEE jointly with EESL implementing DEEP(Demonstration of Energy Efficiency Project).

Emerging technologies, which are innovative in nature and have potential to replicate in the notified PAT industries, which has not been commercialized to the large scale and have potential for energy efficiency improvement or generation will be targeted under the scheme.

STAGE:1 Projects:-

1. Micro turbine/ Back pressure turbine (HP/MP to LP expansion)
2. VFD enabled Screw Compressor with Permanent Magnet (PM) motor
3. Turbo Blower
4. Low-Grade Waste Heat Recovery System (LGWHRS)

STAGE:2 Projects:-

1. High grade waste heat recovery
2. Cooling solutions from low grade heat recovery

ESCerts Upgradation

The major issues encountered during the PAT Cycle-I trading was huge price fluctuations of ESCerts due to limited validity and excess supply.

The unmatched price fluctuations not gave the reasonable return for the ENCON investment

In order to address the issues the following steps have been taken.

ESCerts Validity Extension:

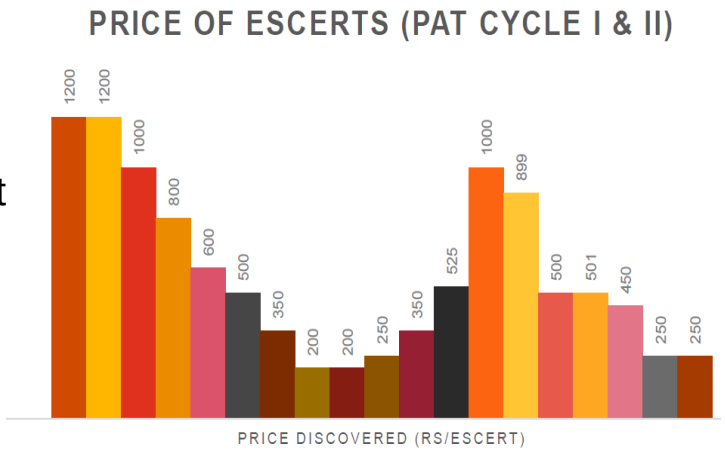
The ESCerts validity extended till the time it is not sold in order to eliminate the ESCerts dumping in the market.

Floor Price for ESCerts:

The floor price for the Energy Saving Certificates has been fixed at ten percent of the price of one metric tonne of oil equivalent (TOE) of energy consumed for PAT Cycle II. Floor price will be 1804 INR.

Proposed Institutional Banking of ESCerts:

In Energy Conservation Amendment Bill-2022, In section 14A sub section (2) Provision given for any other person can purchase of ESCerts on voluntary basis. This will facilitate enough liquidity in the market.



Vide notification number G.S.R. 669 (E), dated: 30.08.2022.
TOE Price: G.S.R 779 (E) dated 14th December 2020.

Facilitation Centre

BEE has set-up a Facilitation Centre for encouraging and up scaling Energy Efficiency Financing in the country. This Facilitation Centre helps various beneficiaries like large industries /DCs under the PAT Scheme of BEE, MSMEs, commercial and institutional buildings, Municipalities, Corporations, and commercial establishments get financing to implement Energy efficiency projects through Registered Financial Institutions.

* Potential beneficiaries can fill in project related information in the Willingness Form. These forms will be evaluated by the Facilitation Center for Energy Efficiency loan/project.
* After technical and financial evaluations the willingness will be forwarded to the Financial Institutions (FIs) for further processing.
* FIs may coordinate with the potential borrowers for EE financing.

BEE is connected with 22 Financial institutions till now received 73 project proposals including EV, 36 projects have been completed for technical evaluations.

Email for enquiry/ willingness Facilitation-centre@beeindia.gov.in

Drive for Net Zero Commitment

Revised NDC translates Prime Minister 'Panchamrit' announced at COP 26

- A step towards achieving India's long term goal of reaching net-zero by 2070
- India now stands committed to reduce Emissions Intensity of its GDP by 45 percent by 2030
- Prime Minister's concept of mass movement for 'LIFE'– 'Lifestyle for Environment' as a key to combating climate change"

- BEE initiated R&D and Demonstrated projects in Iron & Steel sector, subsequently other sector are in pipeline
- Bureau is in a process of making strategies for Cleaner fuel adoption.

Thank you