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Perform, Achieve and Trade Scheme (PAT)

Syllabus- GS 3 - *Conservation*, *Environmental Pollution and Degradation*

Why in NEWS?

- As per recent report by CSE, it says that Centre's decarbonisation scheme is in effective enough.
- There has been very feeble reduction of CO2 emissions in the thermal sector under this scheme during the last ten years, finds CSE report.

What is PAT scheme?

It is a market-based mechanism to further accelerate as well as incentivize energy efficiency in the large energy-intensive industries.

- The chief goal of the scheme is to make India's industrial sector energy efficient. PAT scheme is a part of the **BEE**'s **National Mission for Enhanced Energy Efficiency (NMEEE).**
- The scheme provides the option to trade any additional certified energy savings with other designated consumers to comply with the Specific Energy Consumption reduction targets.
- The scheme sets energy efficiency targets for industries with those failing to achieve the targets having to pay a penalty. The penalty is based on what remains to be achieved in terms of the target.
- The **Energy Savings Certificates (ESCerts)** so issued will be tradable on special trading platforms to be created in the two power exchanges -- Indian Energy Exchange and Power Exchange India.

About BEE:

- Set up on 1st March 2002 by Government of India.
- Under the provision of the Energy Conservation Act, 2001.
- It is a **statutory** body under the Ministry of Power.
- Mission – To assist in developing policies and strategies with a thrust on self-regulation and market principles with the primary objective of reducing the energy intensity of the Indian economy within the overall framework of the Energy Conservation Act, 2001.

This can be achieved with the active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

- The scheme is unique in many ways, particularly from a developing country's perspective since it creates a market for energy efficiency through tradable certificates ESCerts, by allowing them to be used for meeting energy reduction targets.

How does PAT scheme work?

- The targets are given according to the current energy efficiency levels of the DCs in such a manner that energy efficient DCs are given lower targets while DCs that are not energy efficient are given higher targets.

- While calculating the specific energy consumption a "gate-to-gate" approach is adopted, thereby including all energy consumption against the total production.
- The values are normalised to take into account factors beyond the DC's control.
- At the end of the cycle, the DC's performance is assessed by a cadre of professionals known as Accredited Energy Auditors who are empanelled with the BEE.
- PAT covered about 13 energy-intensive sectors. Sectors included are thermal power plants (TPP), cement, aluminium, iron and steel, pulp and paper, fertiliser, chlor-alkali, petroleum refineries, petrochemicals, distribution companies, railways, textile, and commercial buildings (hotels and airports).

Observation made by CSE report:

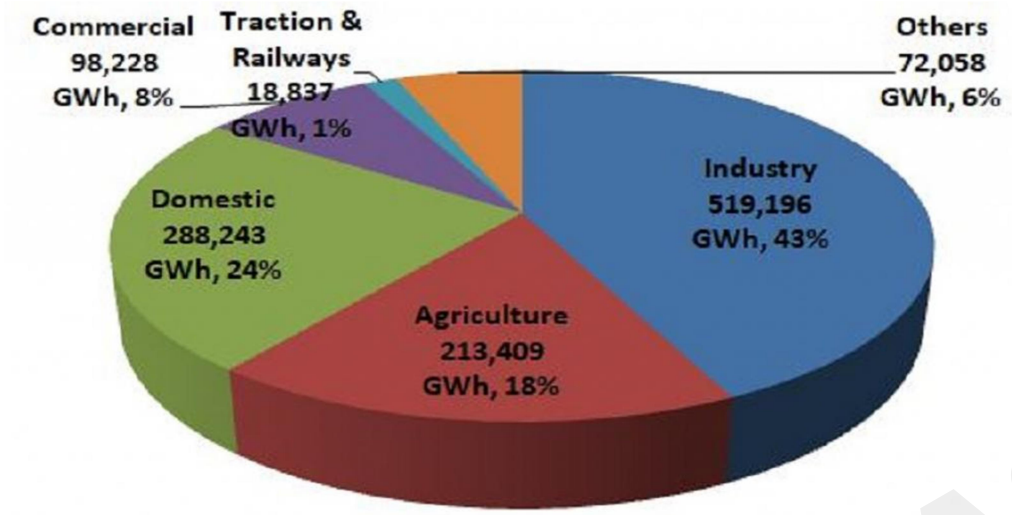
- The CSE analysis found thermal power plants under this scheme in the last decade had reduced just 1-2 per cent of overall carbon dioxide emissions emitted by them.
- The report attributed the inefficiency of the scheme to non-transparency, loose targets and overlooked deadlines.
- The industrial sector consumes the most energy in India — accounting for 43 per cent of overall consumption — making it the major contributor to the country's energy and environmental footprint.
- CSE analysed the efficacy of the PAT scheme for the thermal power plants. The analysis clearly shows that in both Cycles 1 and 2, TPPs had the most lenient target and underperformed in meeting the target among other sectors.
- **Carbon dioxide (CO2**) emissions from the energy sector are about 2,064 million tonnes of CO2, highlighting the carbon emission reductions achieved in both cycles.
- Electricity generation contributes to **40 per cent** of this total emission, which is 825.6 million tonnes of CO2 in one year. The overall CO2 emission reduction achieved by thermal power plants in PAT cycle 1 and 2 is 13 and 11.9 million tonnes respectively.

Comparison of CO2 emission and emission reduction from electricity generation

CO_2 emission from electricity generation	PAT 1		PAT 2	
	Achieved CO_2 reduction	Reduction per cent	Achieved CO_2 reduction	Reduction per cent
Million tonne of CO_2	Million tonne of CO_2	%	Million tonne of CO_2	%
825.6	13.6	1.57%	11.9	1.44%

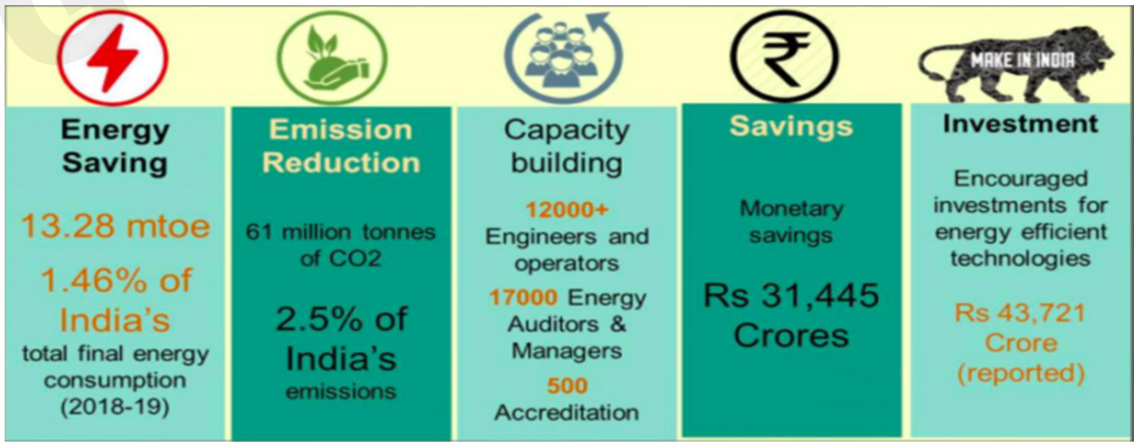
- The total emission reduction from TPPs is 24.85 million tonnes of oil equivalent, which is only 3 per cent of the total emission from the sector. This highlights the fact that the target given to TPPs is very less compared to the overall emission reduction from the sector.

Breakup of electricity consumption



PAT Scheme Cycle 1 Achievement:

PAT Scheme Cycle 2 Achievements:



Conclusion:

- The energy reduction target should be made stringent in order to meet up with the global climate commitments with respect to greenhouse gas emission mitigation. Targets must be interlinked to material CO2 reduction.
- The PAT scheme is very crucial in helping the country achieve energy efficiency, which is an important part of achieving sustainable development goals.