



Mission Efficiency Roundtable:

South-South Exchange on Energy Efficiency

08th October, 2025



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Background



South-South Exchange has been designed:

- To foster collaboration and mutual learning between India and African nations in the field of energy efficiency.
- To strengthen future technical cooperation, joint initiatives and peer-to-peer support.
- To enhance learning and knowledge exchange on practical tools, strategies that can be adopted.
- To build up bilateral and multilateral cooperation on sustainable energy and cooling solutions.



About Bureau of Energy Efficiency, India



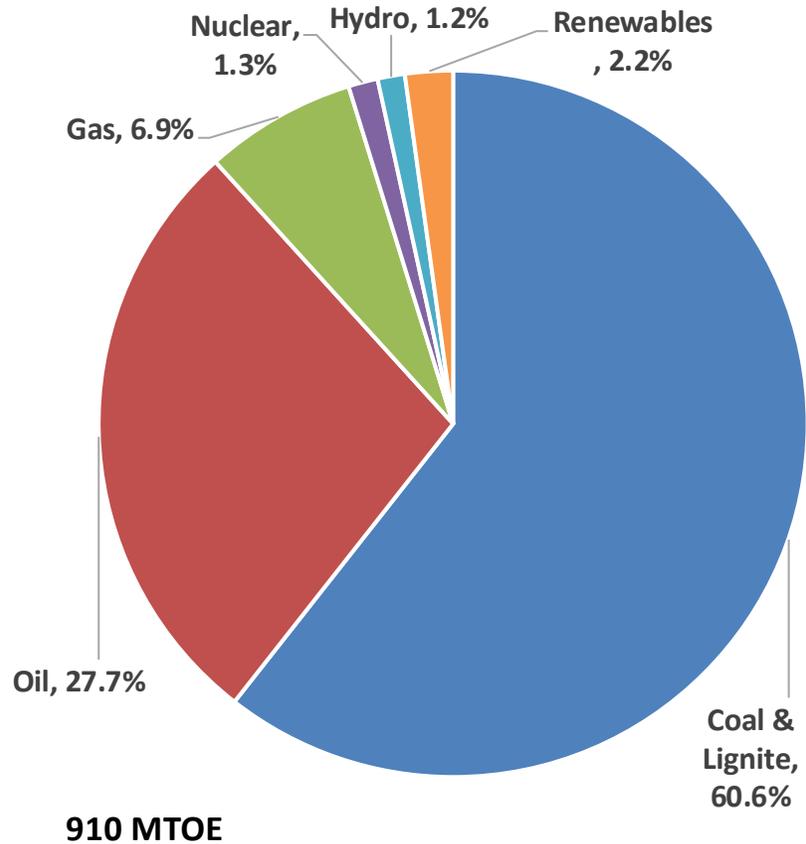
- **Established in 2002 under Energy Conservation (EC) Act**
- **To discharge regulatory functions on energy efficiency and energy conservation**
- **Provides the legal framework for promoting energy conservation activities:**
 - **Standards and Labelling for appliances & equipment**
 - **Energy Consumption norms for energy intensive industries**
 - **Demand Side Management (DSM) programmes**
 - **Energy Conservation Building Code (ECBC) for commercial buildings**
 - **Certification of Energy Auditors and Managers**
- **Mission Directorate for National Mission for Enhanced Energy Efficiency (NMEEE)**
- **Supported by States Designated Agencies (SDAs) at State level**
- **For implementation of Energy Projects, Ministry created Energy Efficiency Services Limited (EESL).**
- **EC Act amended in 2010 and 2022.**



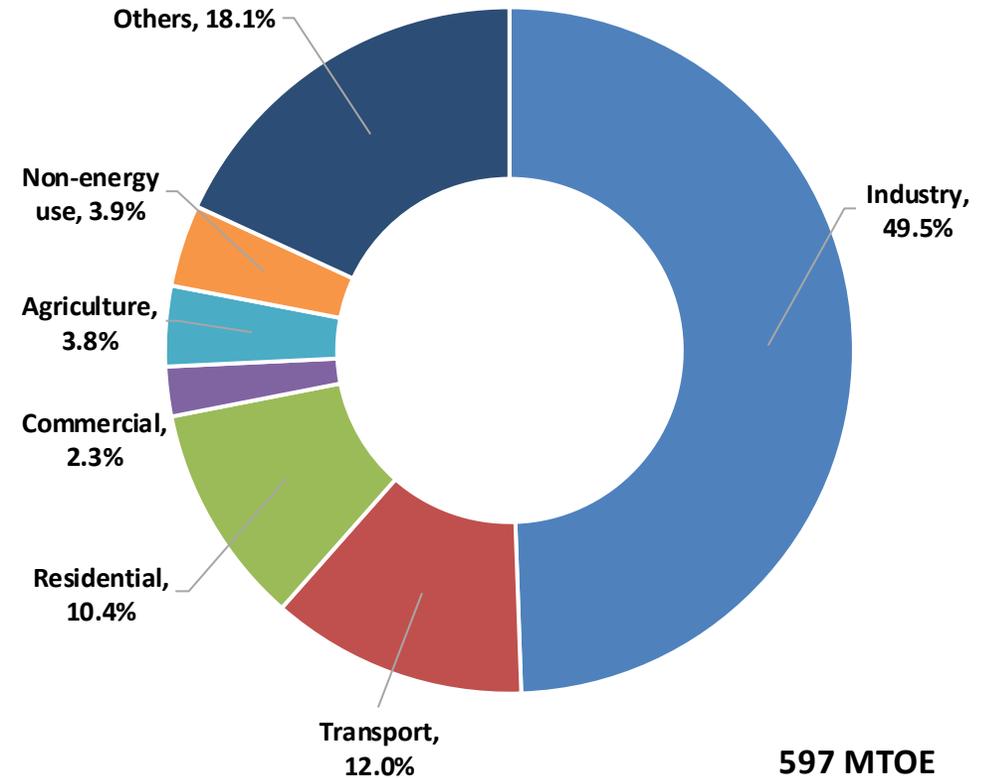
Energy Flow: India Energy Scenario for the year 2023-24(Actual)



Primary Energy Supply Mix for year 2023-24 (Supply Side)

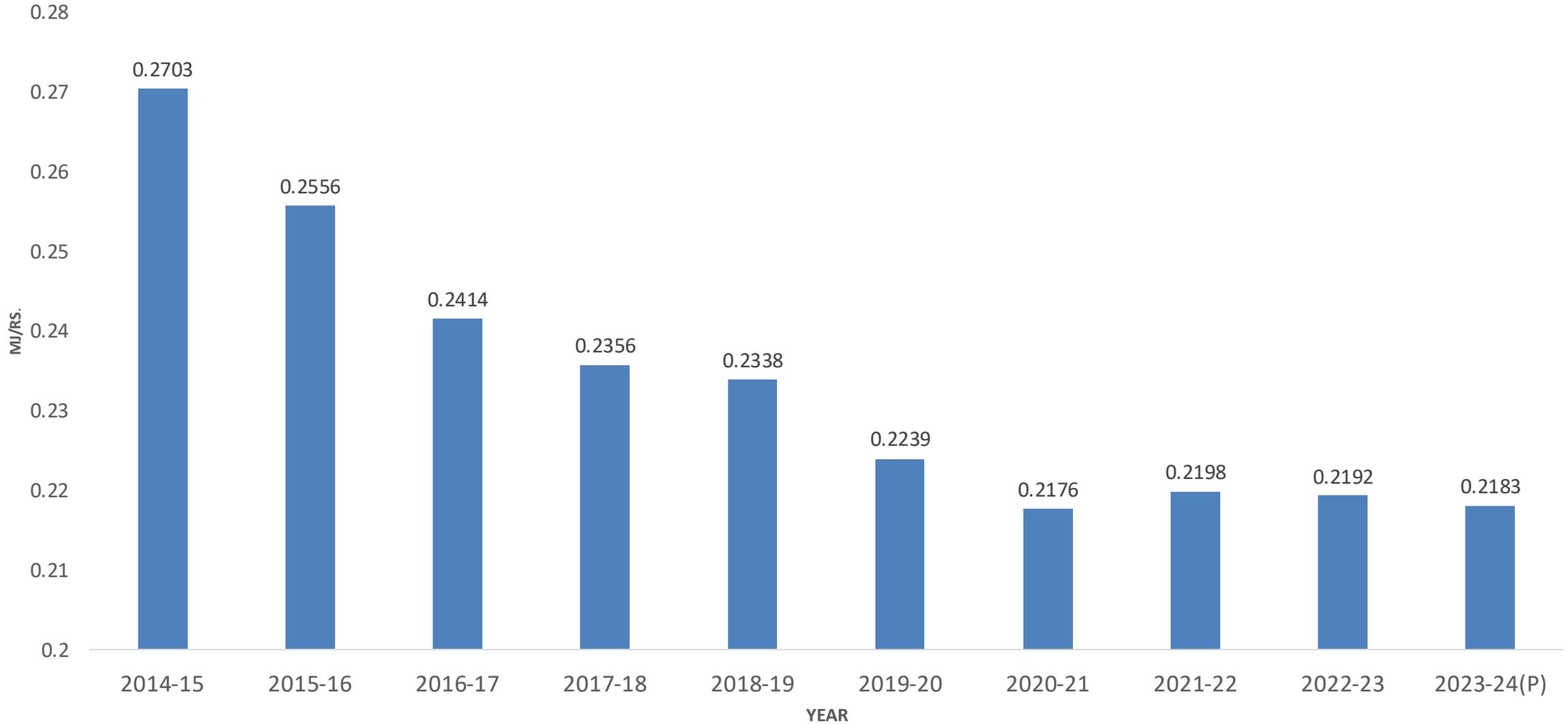


Sector wise Energy Consumption for year 2023-24 (Demand Side)





Energy Intensity of India in Mega Joule / rupee





National Mission for Enhanced Energy Efficiency



National Action Plan for Climate Change (NAPCC)

National Mission for Enhanced Energy Efficiency (NMEEE)

Perform, Achieve & Trade (PAT)

Financing Energy Efficiency Programme (FEEP)

Framework for Energy Efficient Economic Development (FEEED)

Energy Efficiency Financing Platform (EEFP)

Eight (8) Core Missions under NAPCC

- National Solar Mission
- National Mission for Enhanced Energy Efficiency
- National Mission on Sustainable Habitat
- National Water Mission
- National Mission for Sustaining the Himalayan Ecosystem
- National Mission for a "Green India"
- National Mission for Sustainable Agriculture
- National Mission on Strategic Knowledge for Climate Change



PAT - Sectoral Coverage



Criteria for Identification of Sectors

- ❖ Listed in Schedule of EC Act
- ❖ Intensity or quantity of energy consumed
- ❖ Amount of investment needed
- ❖ Capacity to invest
- ❖ Availability of energy efficient technology

Sectors in PAT Scheme

1. Aluminum;
2. Fertilizers;
3. Iron and Steels;
4. Cement;
5. Pulp and Paper;
6. Chlor-Alkali;
7. Sugar;
8. Textile;
9. Chemicals;
10. Railways;
11. Port Trust
12. Transport Sector (Industries and Services)
13. Petrochemical, Gas Crackers, Naphtha Crackers and Petroleum Refinery
14. Thermal Power Stations, Hydel Power Stations, Electricity transmission companies and distribution companies;
15. Commercial Buildings or Establishment



PAT Scheme – Industrial units under PAT Cycles



Sector / No. of DCs	PAT Cycle I	PAT Cycle II	PAT Cycle-III	PAT Cycle-IV	PAT Cycle- V	PAT Cycle- VI	PAT Cycle- VII	PAT Cycle- VIII	Total Notified DCs
	Apr'12	Apr'16	Apr'17	Apr'18	Apr'19	Apr'20	Apr'22	Apr'23	
Aluminium	10	12	1	-	1	-	12	1	14
Cement	85	111	14	1	12	37	120	25	200
Chlor- Alkali	22	24	-	2	2	-	24	1	29
Fertilizer	29	37	-	-	-	-	0	-	37
Iron & Steel	67	71	29	35	23	5	134	66	270
Paper & Pulp	31	29	1	2	8	2	24	7	55
Textile	90	99	34	7	16	7	120	38	206
Thermal Power Plant	144	154	37	17	17	-	152	-	239
Refinery	-	18	-	-	-	20	0	-	20
Railways	-	22	-	-	-	-	26	-	26
DISCOMs	-	44	-	-	-	-	95	-	96
Petrochemical	-	-	-	8	-	-	0	-	8
Buildings	-	-	-	37	31	64	0	-	133
Total	478	621	116	109	110	135	707	138	1333



Achievements of PAT programme (2012-2024)



Realized Impacts – PAT I- VI(2012-2023)



Energy Saving

27.07 mtoe

~4.5% of India's total primary energy consumption (Yr 2024)

Emission Reduction

~115.21 million tonnes of CO2

~3.9% of India's Emissions (as per BUR4)

Capacity building

17000+ Engineers and operators

19199 Energy Auditors & Managers

302 Accreditation

ESCerts Trading

33.66 lakhs

ESCerts traded. Resulting Business of

INR ~440 crore

Investment

Encouraged investments for energy efficient technologies

Rs 75,400 Crore (reported)

Savings

Monetary savings

Rs 58444 Crores



STANDARDS & LABELLING PROGRAMME

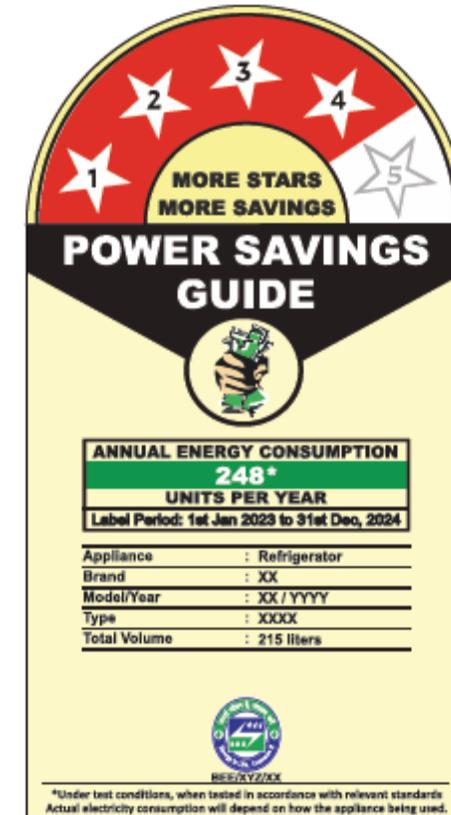


Scheme:

- ❑ The Bureau of Energy Efficiency, Ministry of Power launched Standard & Labeling (S&L) program for appliances/equipment under section 14 of the Energy Conservation Act, 2001.

❑ Objective:

- To reduce the end use energy consumption of appliances without diminishing the service levels.
- To create awareness amongst the consumers, to make informed decision considering the cost effectiveness & energy performance while purchasing appliances .
- To monitor and verify energy savings that incur annually through sale of energy efficient appliances.
- While meeting aforesaid objective, prime objective is to ensure products quality.





Appliances Covered Under S&L Program



Mandatory

1. Frost Free Refrigerator
2. Direct Cool Refrigerator
3. Deep Freezers
4. Room Air Conditioner (Variable Speed)
5. Room Air Conditioner (Fixed Speed)
6. RAC (Cassette, Floor Standing Tower, Ceiling, Corner AC)
7. Light Commercial AC Fixed Speed
8. Stationary Storage Type Electric Water Heater
9. Tubular Fluorescent Lamps
10. LED LAMPS
11. Ultra-High Definition (UHD) Televisions
12. Colour Television
13. Distribution Transformer
14. Ceiling Fan
15. Chillers
16. Washing Machine (Semi/Top Load/Front Load)
17. Domestic LPG Stove

Voluntary

1. General Purpose Industrial Motor
2. Agricultural Pump Set
3. Domestic Gas Stove
4. Computer
5. Ballast
6. Office Automation Products
7. Diesel Engine Driven Moonset Pumps for Agricultural Purposes
8. Solid State Inverter
9. Diesel Generator Set
10. Microwave Oven
11. Solar Water Heater
12. Air Compressors
13. High Energy Li-Battery
14. Tyres/Tires
15. Side by Side/Multi Door Refrigerator
16. Pedestal Fan
17. Table/Wall Fan
18. Induction Hob
19. Solar photovoltaic module
20. Packaged Boiler
21. Commercial Beverage cooler
22. Grid Connected Solar Inverter
23. Refrigerant Compressor
24. Evaporative Cooler
25. EV Charger

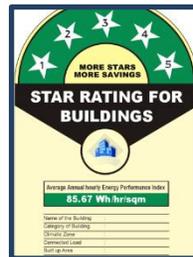
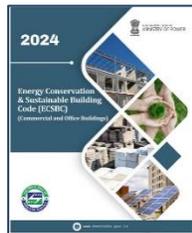


Building Energy Efficiency Programs



Commercial Buildings

Residential Buildings



- ECSBC
- Building Cells
- Demo Projects
- Super ECSBC Buildings
- Schedule of Rates

- Star Rating
- Shunya Rating

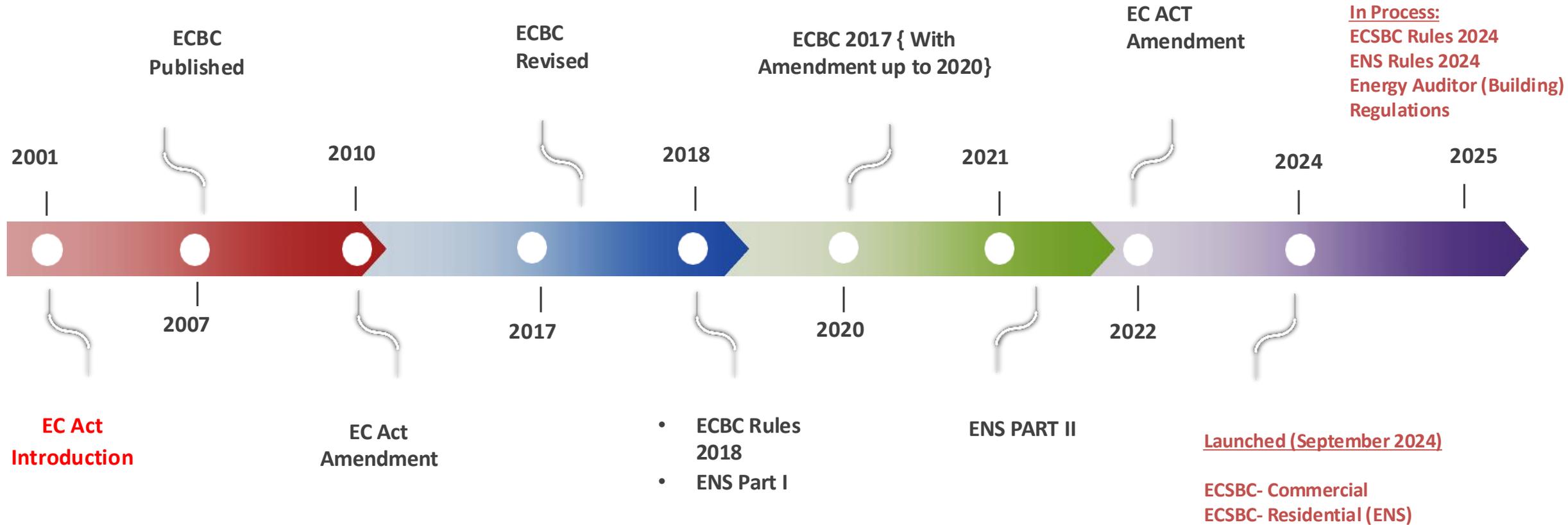
- Hotels
- Airports

- ENS (Eco-Niwas Samhita)

- Star Rating (Residential)



Journey so far for Building Sector





Transport

Energy Efficiency
in Railways

Passenger Cars

Heavy & Medium
Duty Vehicles

**Inclusion of railways
under PAT scheme**

- 1. Corporate Fuel Efficiency Standards in place**
- 2. Electric Vehicles**

- 1. Fuel Efficiency Standards launched**
- 2. Electric Vehicles**
- 3. Hydrogen Vehicles**



Energy and Resource Mapping of MSMEs



Energy Mapping of 9 MSME Sectors in India



- **9** Energy intensive Sectors
- **45** Clusters
- **450+** units chosen for detail energy audits
- Compendium of **120** technologies

Additionally,

- **3** Energy intensive Sectors
(Food Processing, Leather and Textiles)
- Energy audits in **150** Units of **15** clusters



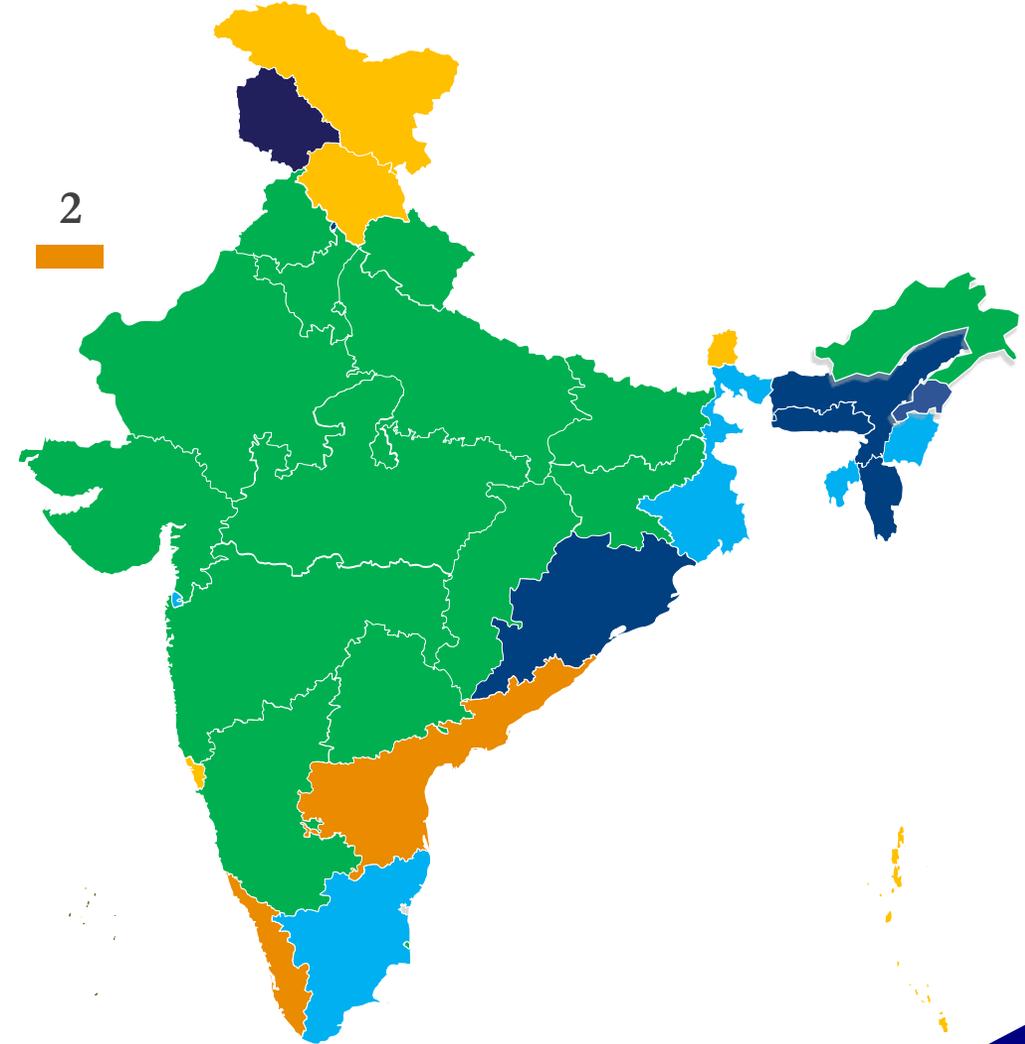
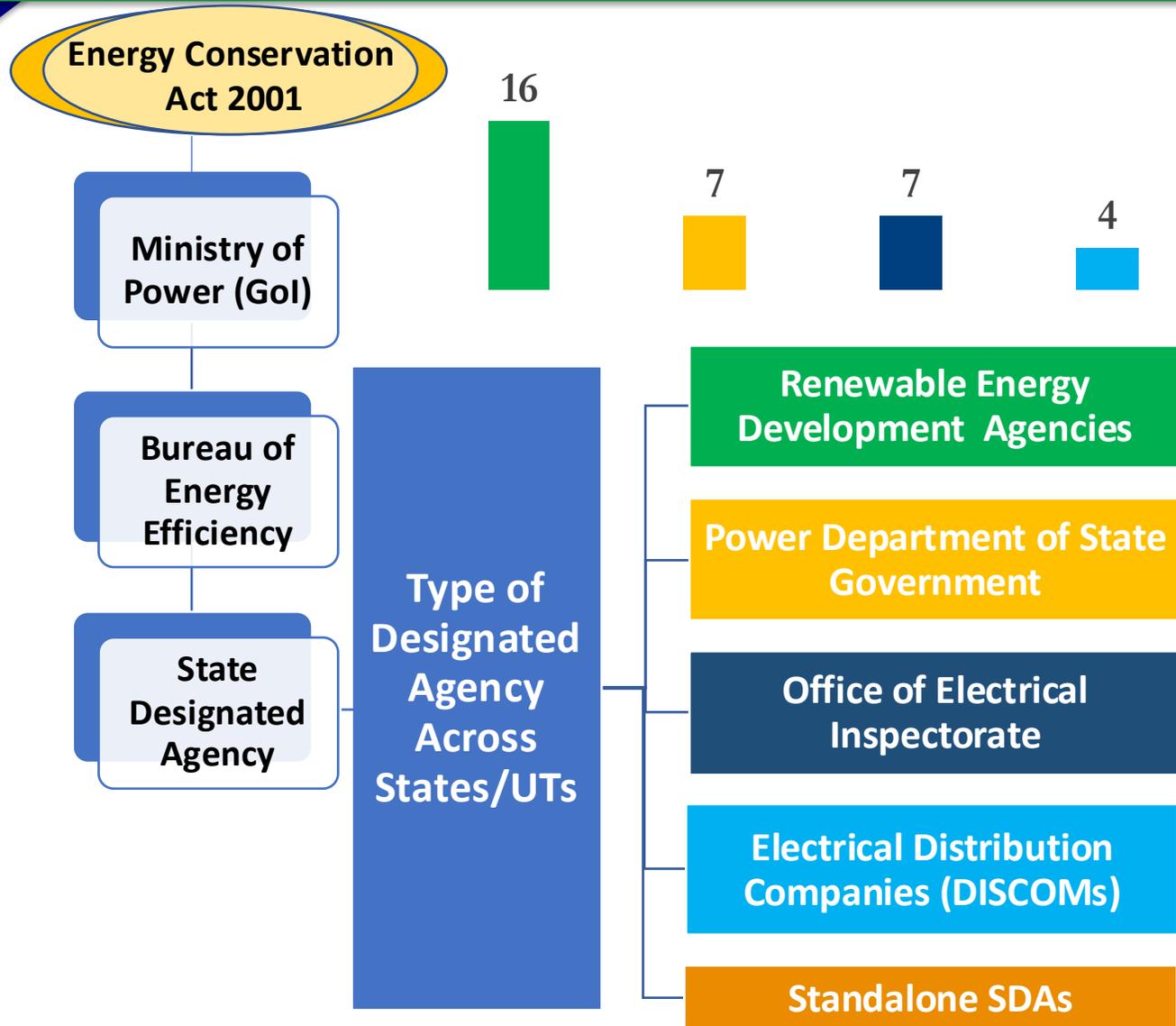
Salient Features of ADEETIE



ADEETIE	Central Sector Scheme - funded through the Central Government (GBS)
Scheme type	<u>Interest subvention on EE loans for MSMEs</u>
Key Stakeholders	Bureau of Energy Efficiency (BEE), Financial Institutions (FIs), and State Designated Agencies (SDA) Industrial Associations (IAs), Energy Auditors and MSME Enterprises of selected sectors
Budget Outlay	Rs 1000 Crore (875 Cr -Interest Subvention; 50 Cr -IGEA and 75 Cr Opex -BEE)
Timeline	3 years (FY 2025-26 to 2027-28) Liability up to 2030-31
Eligible entities	Eligible MSMEs must have a valid Udyam Registration Number (URN) Involved in one of the 14 specified manufacturing sectors spread across 60 Clusters. <u>Manufacturing entities</u> involved Foundry, Forging, Steel Re-Rolling, Paper, Glass & Refractory, Ceramics, Brass, Chemicals, Pharma, Bricks, Food, Fisheries, Leather and Textile.
Eligible Financing Institutions	All Scheduled commercial banks Public / Development financial institutions, NBFCs

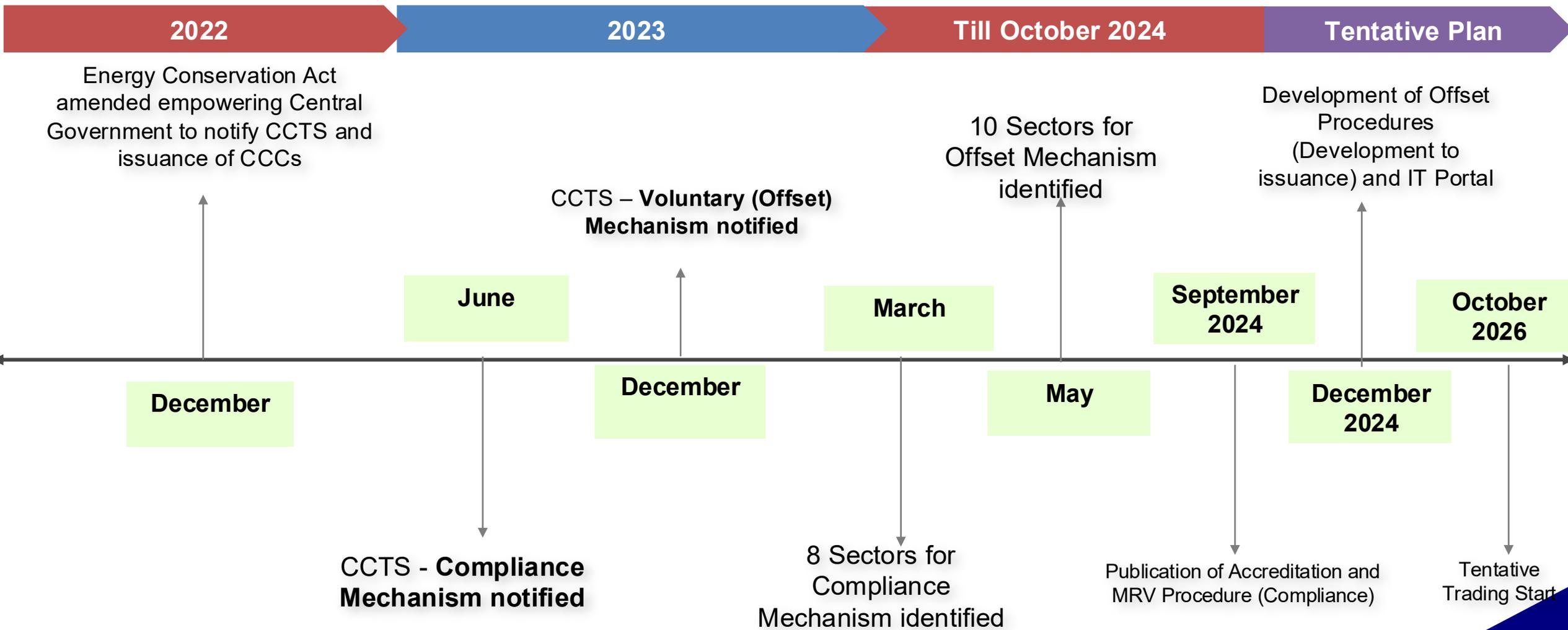


State Designated Agencies (SDAs)





Indian Carbon Market Framework





Target and Achievement during FY 2022-23 to 2024-25



Year	Target		Achievement	
	Electricity Savings (BU)	Energy Saved (Mtoe)	Electricity Savings (BU)	Energy Saved (Mtoe)
FY 2022-23	214	43.8	307.33	50.81
FY 2023-24	230	52.52	321.39	53.6
FY 2024-25 (P)	247	61.71	343.89	57.35



Thank You