

PERFORM, ACHIEVE & TRADE (PAT) SCHEME

Status and Way Forward

9th May, 2016
The Grand, New Delhi

**Thirteenth annual conference on
Managing Cost of Energy**
Improving Efficiency, Optimising Sourcing

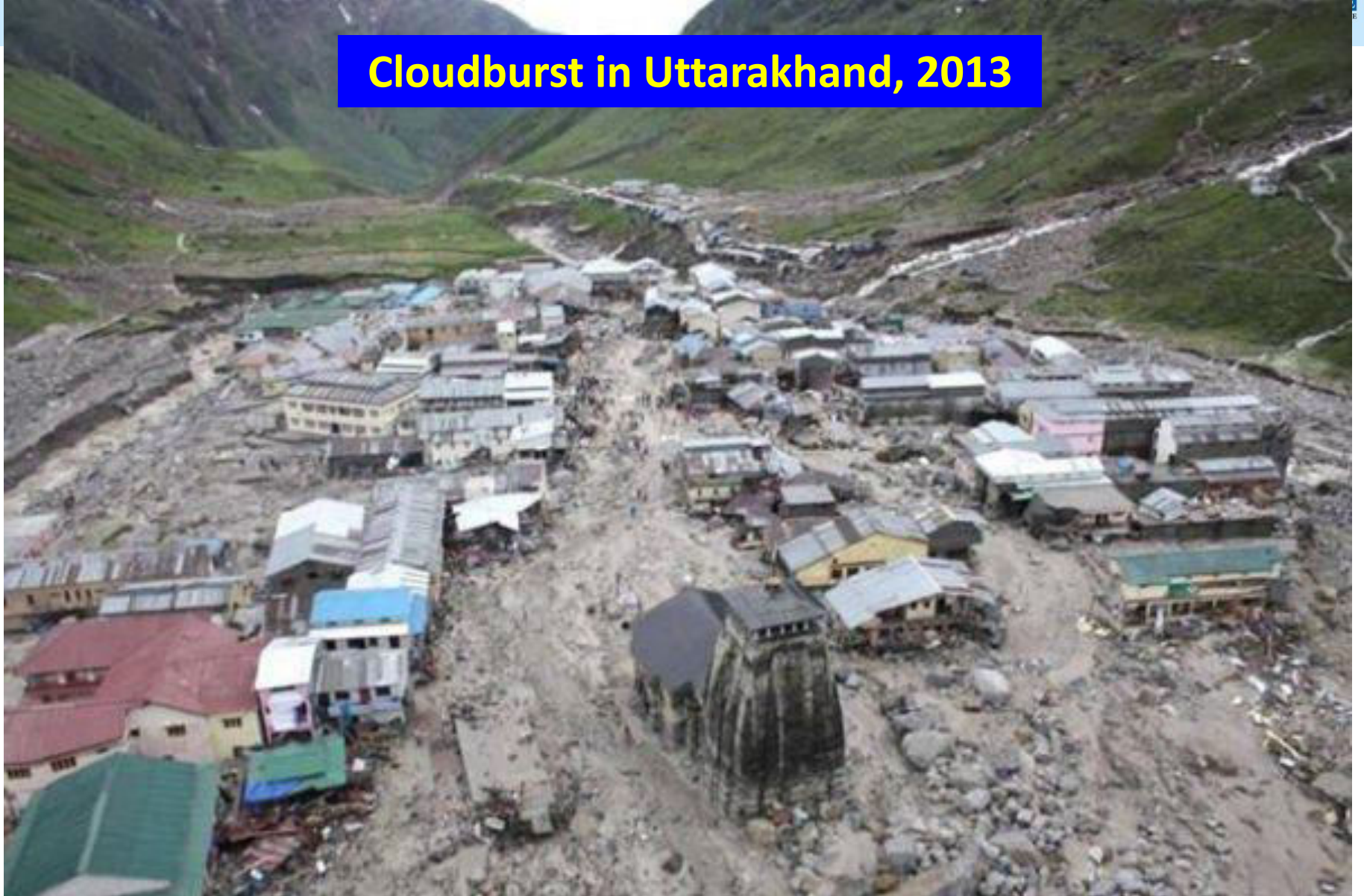
Floods in Mumbai, 2005



Cloudburst in Leh, Ladakh, 2010



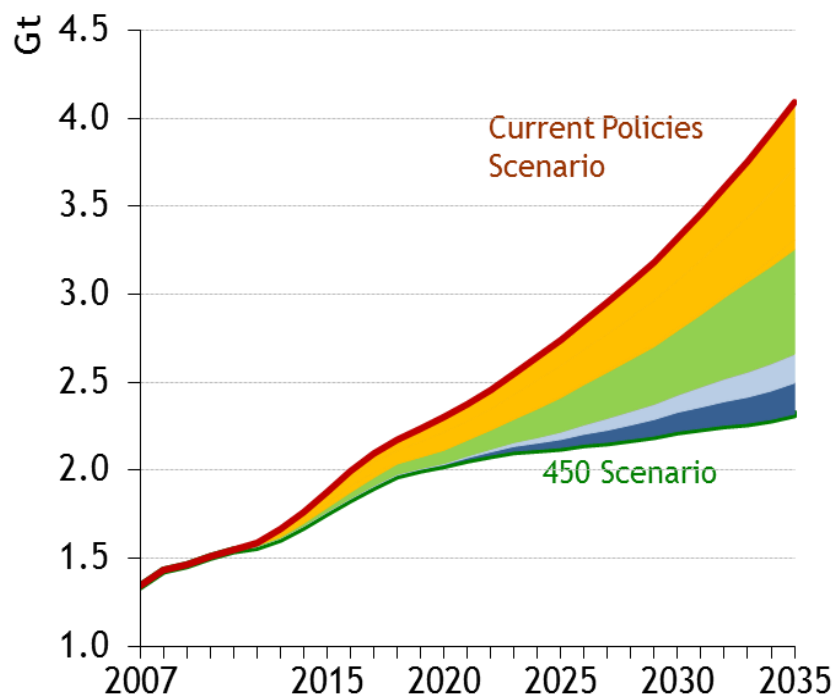
Cloudburst in Uttarakhand, 2013



Flooding in Chennai, 2015



Indian GHG Scenario



Share of cumulative abatement between 2010-2035

Efficiency	51%
Renewables	32%
Biofuels	1%
Nuclear	8%
CCS	8%

WEO, 2010

Perform, Achieve and Trade (PAT) – WHY?

National Action Plan on Climate Change (NAPCC)

– Nation Mission for Enhanced Energy Efficiency (NMEEE)

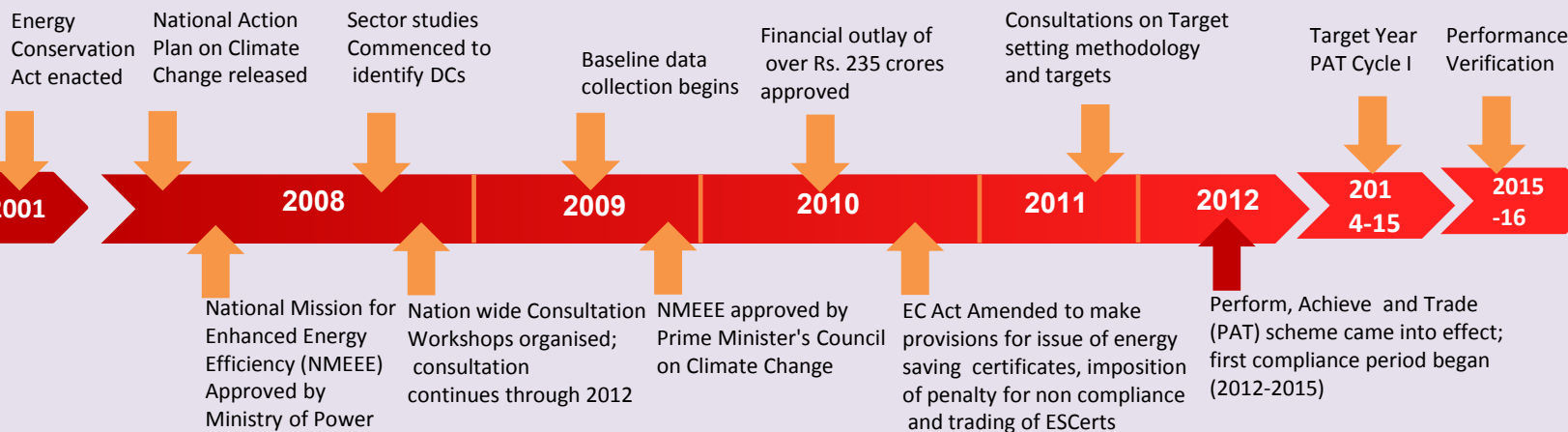
- Perform Achieve and Trade (PAT)
- Market Transformation for Energy Efficiency (MTEE)
- Energy Efficiency Financing Platform (EEFP)
- Framework for Energy Efficient Economic Development (FEEED)

Intended Nationally Determined Contributions (INDCs)

- To put forward and further propagate a healthy and **sustainable way of living** based on traditions and values of **conservation and moderation**.
- To adopt a **climate friendly and a cleaner path** than the one followed hitherto by others at corresponding level of economic development.
- To reduce the emissions intensity of its GDP by **33 to 35** percent by **2030** from 2005 level.
- **Enhanced Energy Efficiency**
 - **Industry**
 - **Perform, Achieve and Trade**

Genesis of PAT

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.



**PAT
Cycle II**

**2016
-19**

PAT Cycle I- Notified Sectors

S. NO.	Sectors	Annual Energy Consumption Norm to be DC (mtoe)	No. of Identified DCs	Annual Energy Consumption (Million toe)	Share Consumption (%)	Appportioned Energy Reduction For PAT Cycle-1 (Million toe)
1	Power (Thermal)	30000	144	104.56	63.38%	3.211
2	Iron & Steel	30000	67	25.32	15.35%	1.486
3	Cement	30000	85	15.01	9.10%	0.815
4	Aluminium	7500	10	7.71	4.67%	0.456
5	Fertilizer	30000	29	8.20	4.97%	0.478
6	Paper & Pulp	30000	31	2.09	1.27%	0.119
7	Textile	3000	90	1.20	0.73%	0.066
8	Chlor- Alkali	12000	22	0.88	0.53%	0.054
	Total		478	164.97	100%	6.686

PAT Cycle I- Achievements

S. NO.	Sectors	No. of DCs	Savings (Million toe)	% Increase in savings
1	Aluminium	10	0.73	59%
2	Cement	75	1.44	76%
3	Chlor- Alkali	22	0.10	100%
4	Fertilizer	29	0.83	73%
5	Iron & Steel	60	2.10	41%
6	Paper & Pulp	26	0.26	117%
7	Textile	82	0.12	71%
8	Thermal Power Plant	123	3.06	(-)5%
	Total	427	8.64	29%

- ▶ Saving of about 8.67 Million TOE from verified 427 DCs (5.24%)
- ▶ CO₂ mitigation about 31 million tonnes

PAT Cycle II- Notified Sectors

Sr. No	Sector	No. of DCs in PAT I	Additional DC in PAT Cycle-II	Total no. of DCs PAT -2
1	Aluminium	10	2	12
2	Chlor-Alkali	22	3	24
3	Textile	90	14	99
4	Pulp & Paper	31	4	29
5	Iron & Steel	67	9	71
6	Fertilizer	29	8	37
7	Cement	85	27	111
8	Thermal Power Plants	144	22	154
9	Refinery	NA	18	18
10	DISCOMS	NA	44	44
11	Railway	NA	22	22
Total				621

PAT Cycle II
Baseline Year: 2014-2015
PAT Cycle II (2016-17 to 2018-2019)
Assessment Year: 2018-19
M&V period: Apr-2019 to 31st July 2019

Total Energy Consumption from 11 sectors 227 mtoe

Energy Saving Target = 8.869 Mtoe

PAT- Way forward (PAT Cycle II)

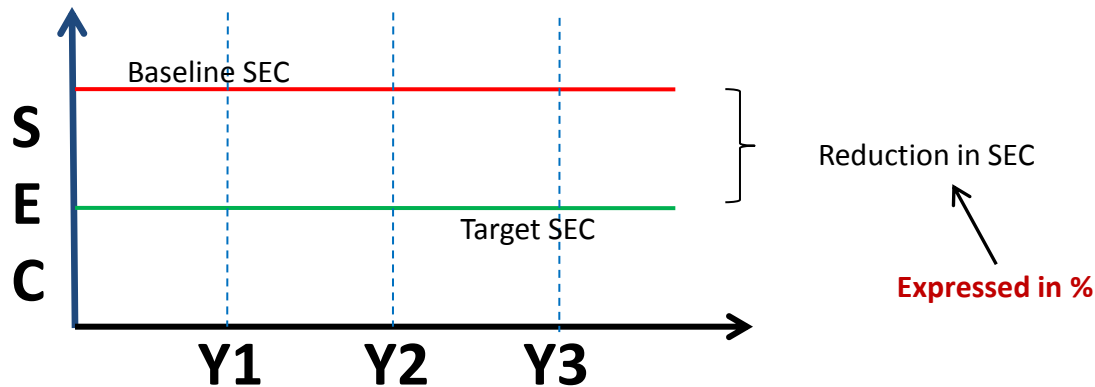
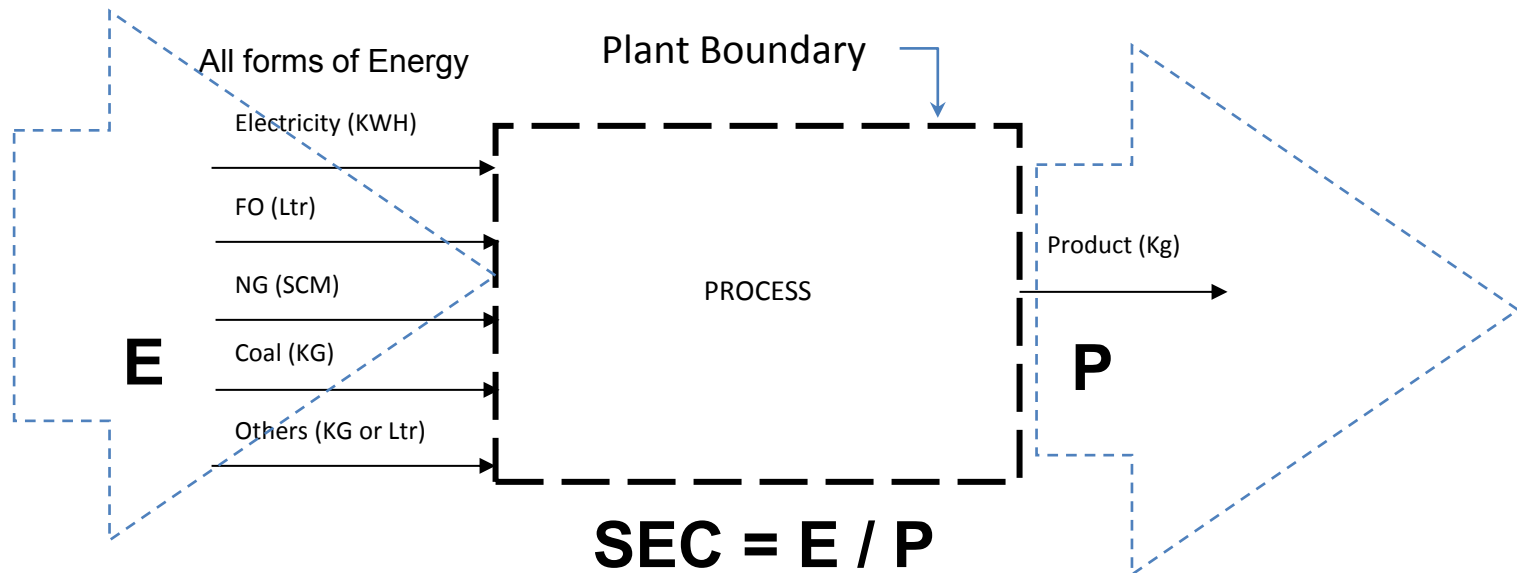
- Deepening of PAT (existing sectors): Inclusion of more units from existing sectors
 - 89 DCs from (I&S, P&P, Cement and Textiles, TPP, Chlor-Alkali, Fertilizer and Aluminum)
- Widening of PAT: Inclusion of more units from new sectors
 - New sectors: Refinery, Railways and Electricity DISCOMs
 - 84 new DCs

PAT Cycles	No. of Units	Share of total energy consumption (2009-10 Level)	Sectors covered
Cycle I (2012-13 to 2014-15)	478 DCs	36%	8
Cycle II (2016-17 to 2018-19)	621 DCs	50%	11

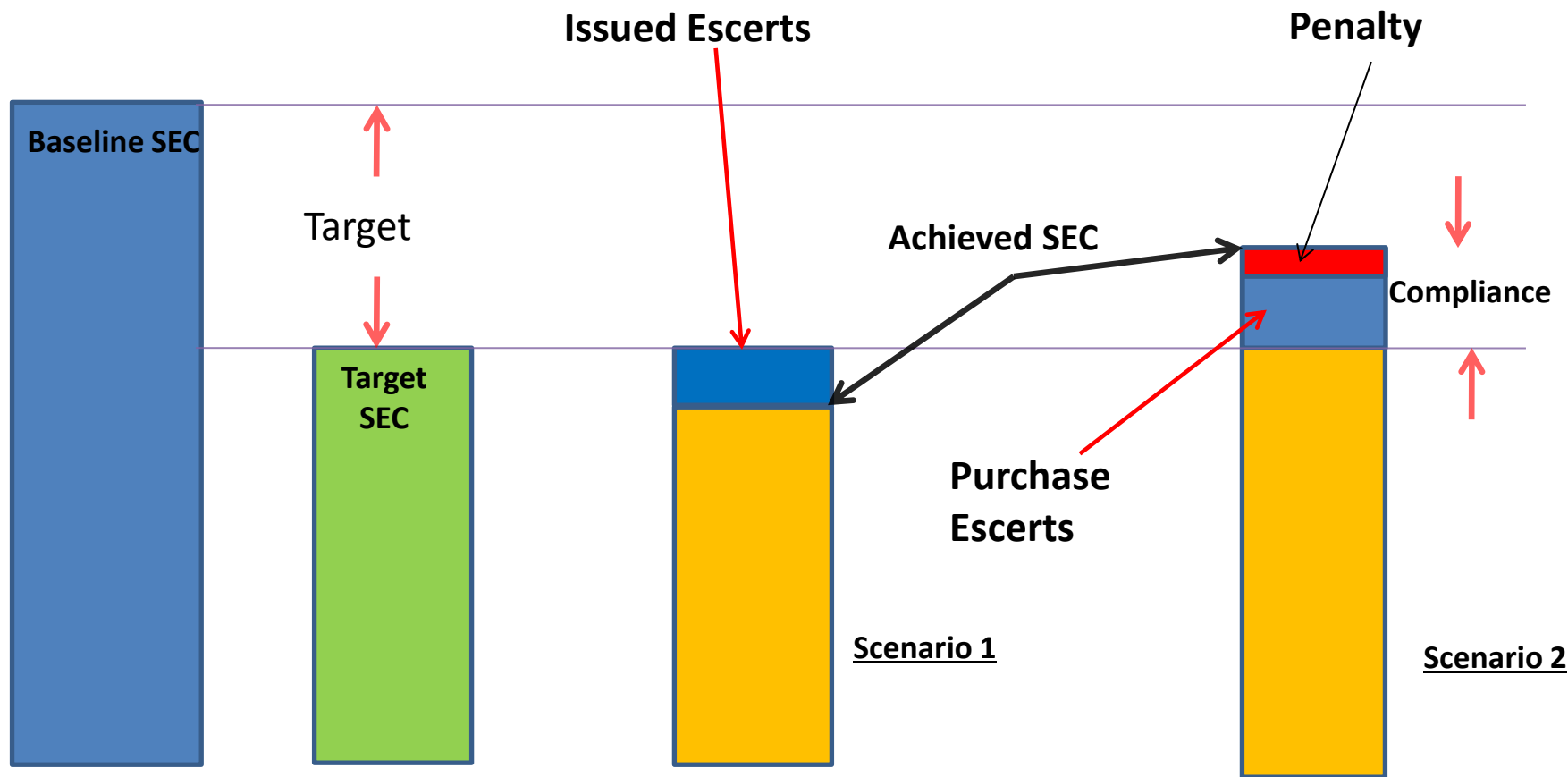
PAT- Retained Salient features

- Regulatory instrument linked with market mechanism
 - Certification of energy saving
- Consultative approach
 - Ministries/DCs/Associations/FIs/Research Organizations
- Outreach/ Capacity Development
 - Workshops/Seminars/ Visits
- “Self – competing”
 - Unit specific targets
- Relative responsibility
 - Less target for more efficient and more for less efficient
- Supports improvement in energy management system
 - measurement, recording and reporting

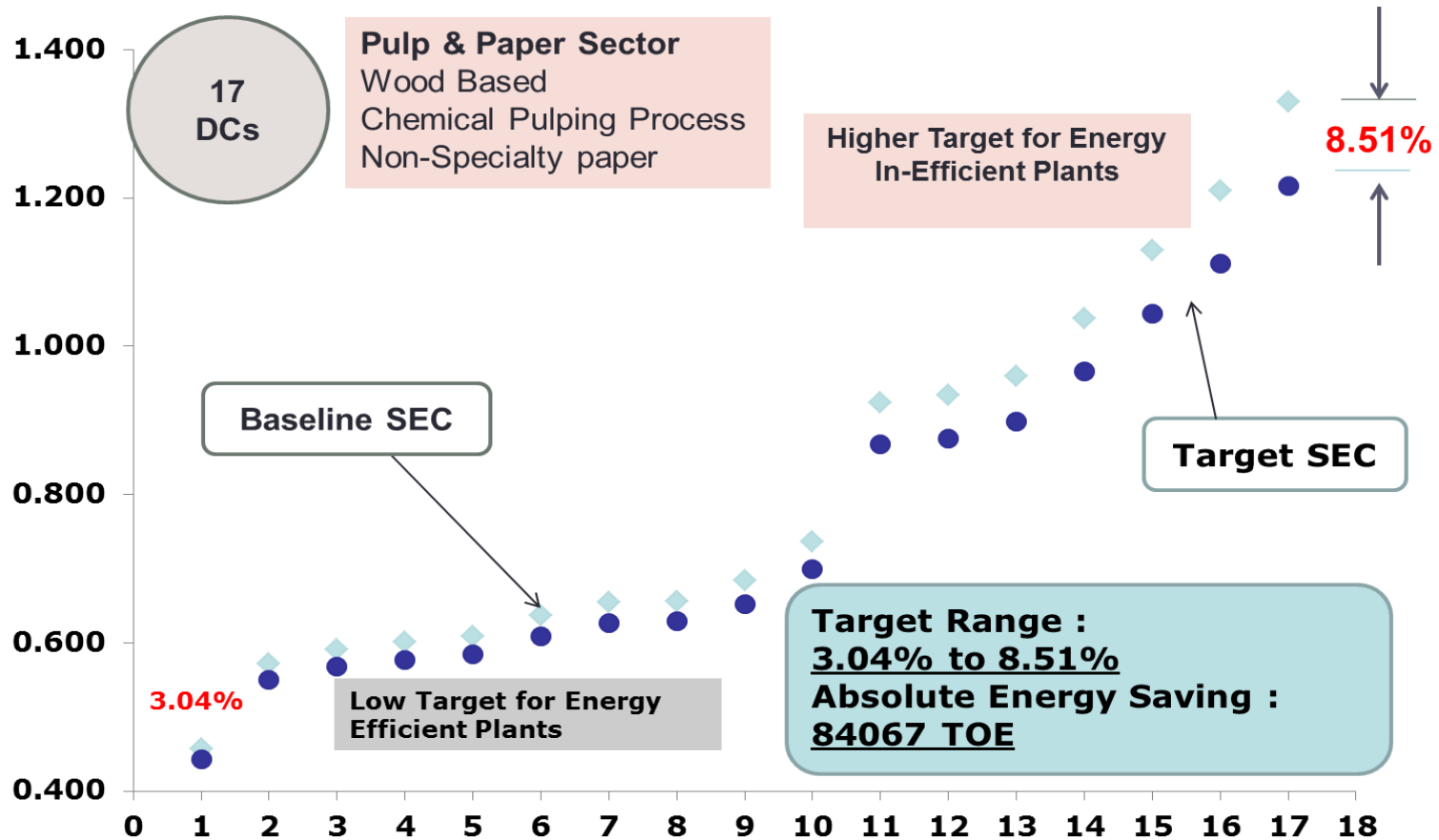
Gate-to-Gate concept



Concept of Target, Compliance, ESCerts & Penalty

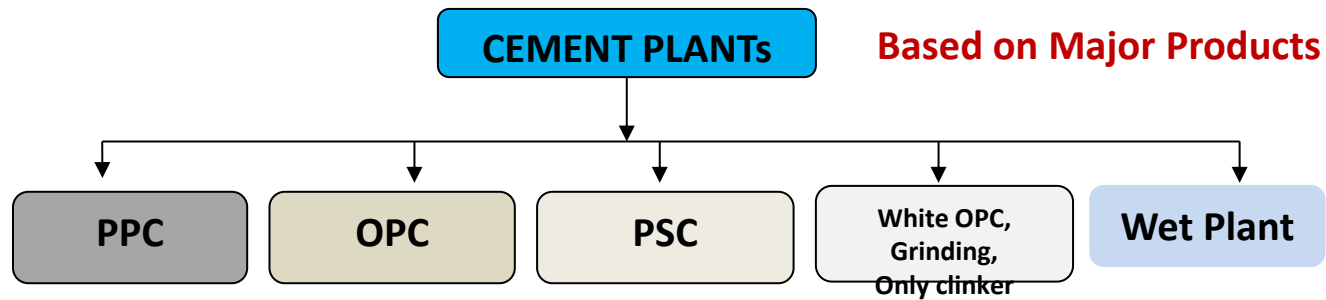
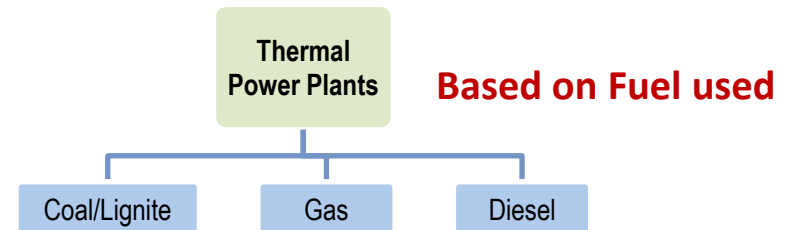
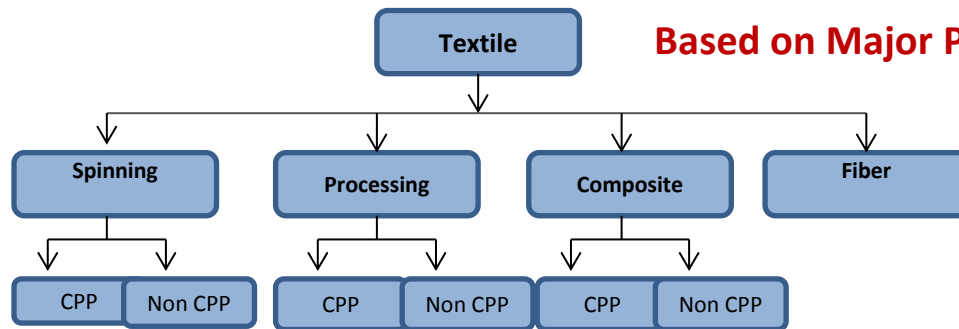


Bandwidth in SEC within sectors



Target is Plant Specific Less for Energy Efficient and more for Inefficient Plants

Grouping of DCs



Stakeholders

Regulator

MoP

Administrator

**Bureau of
Energy
Efficiency**

Implementer

**Designated
Consumer**

**State Nodal
Agency /
Adjudicator**

**State
Designated
Agency/ SERC**

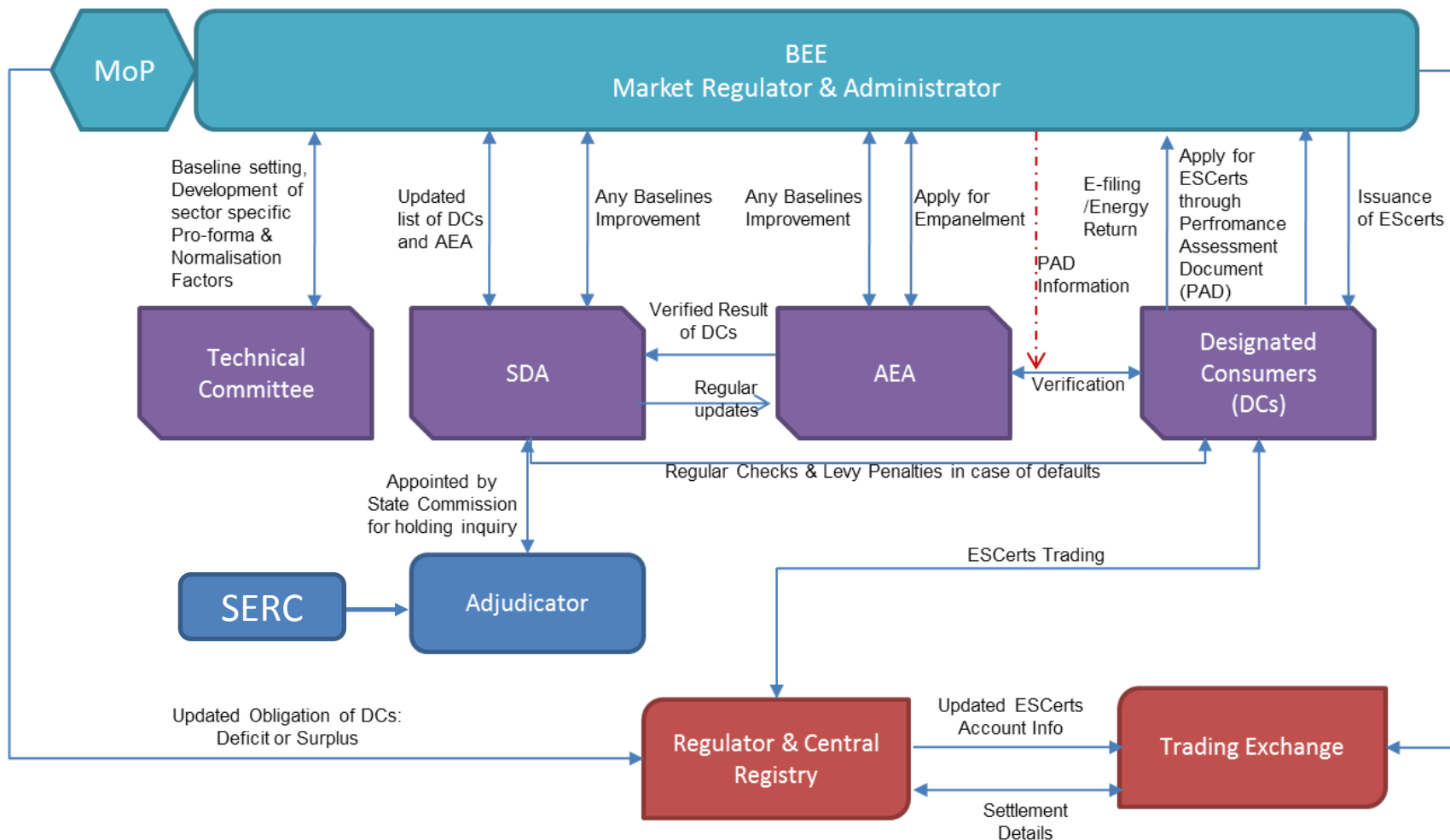
Verifier

**Empanelled
Accredited
Energy
Auditor**

**Trading Regulator,
Registry**

**CERC/
POSOCO**

Institutional Structure

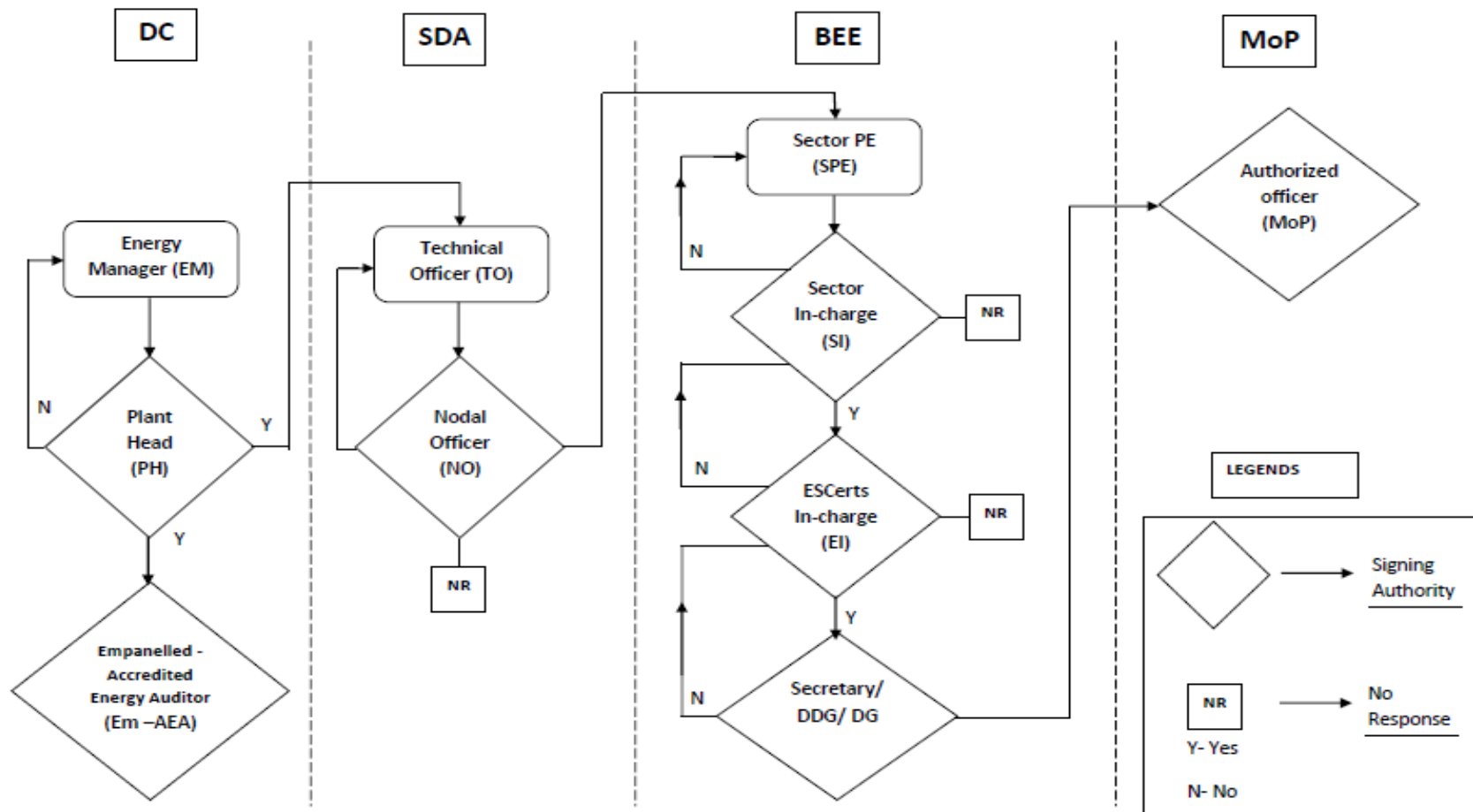


Market Design

- **ESCCerts are issued**
 - When energy efficiency improvements surpass targets
 - With 1 mToE = 1 ESCert

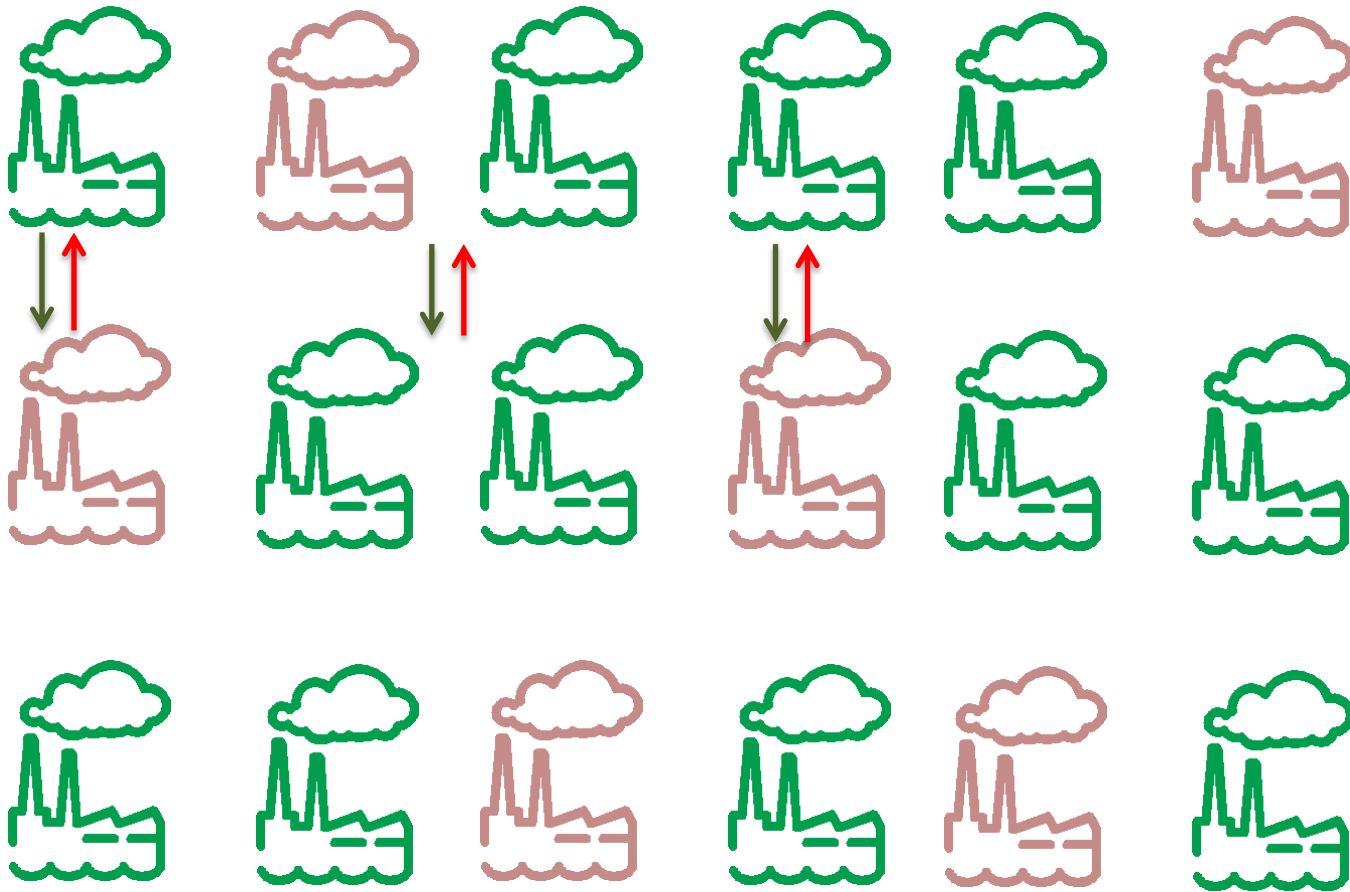
- **Banking of ESCerts allowed during each cycle**
 - 1st cycle ESCerts to 2nd cycle
 - 2nd cycle ESCerts to 3rd cycle

Process Flow for Issuance of ESCerts

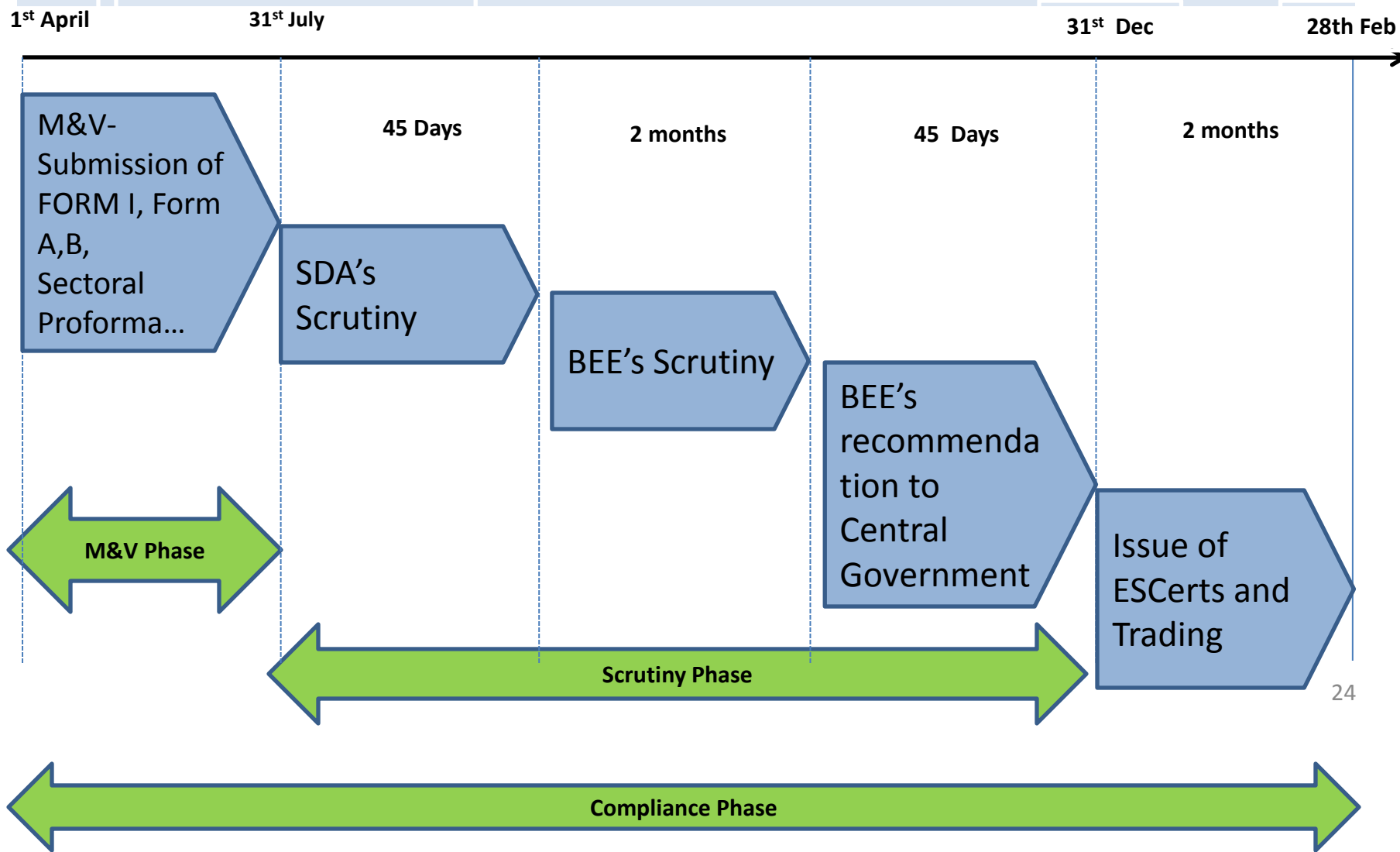


NR: No Response – Notification is issued to the head of the department and to the next officer in the channel.

Trading for Compliance

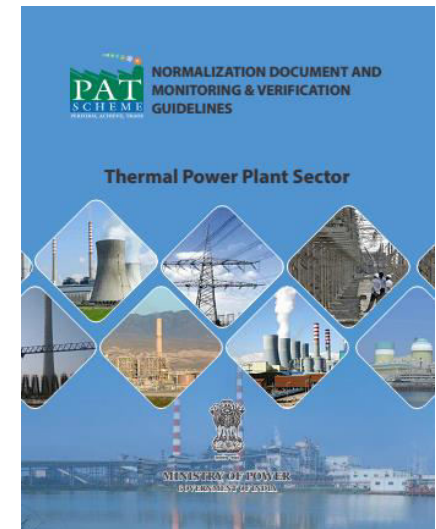
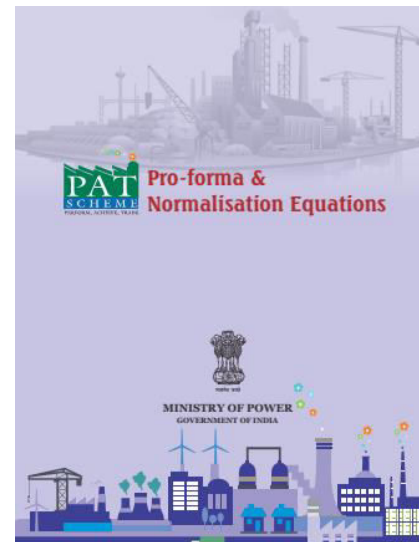


Key Timelines



PAT- Evolution

- Reporting Formats: Pro-forma
- Normalization
- Integration
- Documentation
- Communication
- Adoption
- Evaluation



PAT Cycle I Experience

- Amendments in the EC Act
- Requires changes in the timelines (PAT Rules)
 - Notified timeline for comprehensive monitoring, reporting and verification was extended
 - Deadline for submission of Performance Assessment Document extended by 45 days
- Need to link Inspection Rules, 2010 with Check verification under PAT to increase the domain of SDAs in the process of check verification
- Capacity of stakeholders
 - Need for building of Capacity of AEAs/SDAs/BEE desired

PAT Cycle I Experience

- Removal of rules related to early issuance of ESCerts
 - No DCs applied for early issuance
 - Proposal for rolling cycle
- Changes in the target setting methodology
 - To factorize the historical trend of sectoral efficiency improvement
 - National Policy objectives
 - Recognition of Global best sector/DC
- Changes in the baseline setting methodology
 - To accommodate the variations in capacity utilization
 - Single year based baseline fixation
- Normalization factors
 - Need to provide legal sanctity to normalization factors

PAT- Way forward (PAT Cycle II +)

▶ Introduction of Rolling cycle:

- ▶ New DCs identified from the notified 11 sectors**
- ▶ New sectors identified**
 - ▶ Petrochemicals and 24 hour usage buildings**

▶ 8 Orientation workshops at 8 SDAs for introduction of PAT and hand holding for data reporting and compliance activities for new DCs

▶ About 20 Regional workshops at four regions on PAT rules and Targets for PAT cycle II.



Thank you