

Conference :-
Heat Rate
Efficiency Summit 2023

Topic :
Overview of the Indian Carbon Market

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**3RD HEAT RATE
EFFICIENCY
SUMMIT 2023**



Overview of the Indian Carbon Market

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India's Climate Action Commitments



- India submitted its updated Nationally Determined Contributions (NDCs) in August 2022:
- To **reduce the Emissions Intensity** of its Gross Domestic Product (GDP) by 45 percent by 2030, from 2005 level.
 - To achieve about **50 percent cumulative electric power** installed capacity from non-fossil fuel-based energy resources by 2030
 - To put forward and further propagate a **healthy and sustainable way of living** based on traditions and values of conservation and moderation, including through a mass movement for '**LIFE**'– '**Lifestyle for Environment**' as a key to combating climate change.



Need for Carbon Market



- To **facilitate** the achievement of India's enhanced **NDC targets** and **future NDC goals**.
- To mobilize new mitigation opportunities through **demand for emission reduction credits** by private and public entities.
- To **mobilise** a significant portion of **investments in clean technologies** required by growing economy to transit toward low-carbon pathways.
- To **leverage** the potential international collaboration and financing **opportunities under Article 6** of the Paris Agreement.



Global Perspective – Carbon Market



Carbon Pricing Instruments (CPI)



Carbon Pricing Instruments

Emission Trading Scheme

Carbon Tax

Energy Tax

- Key aspect of CPI is the “**polluter pays**” principle
- Its broad goal is to **discourage the use** of carbon dioxide–emitting fossil fuels
- An approach to reduce emissions that **passes the cost of emissions on to emitters.**
- Price on carbon **creates financial incentives** to reduce emissions.
- Globally 73 CPIs of which **36 are emission trading systems**



Overview of International Carbon Market



Cap & Trade Scheme	Carbon Offset Scheme (crediting)	Perform, Achieve and Trade
Ex-ante emission allowances	Ex-post emission reduction units/carbon credits	Ex-post energy saving certificates
Obligated entities	Non-Obligated entities	Obligated entities

- Government allocates emission allowances to obligated entities.
- The obligated entities surrender their allowances at the end of the compliance period.
- The obligated entities can trade emission allowances to meet their obligation:
 - Obligated entities with a higher level of emissions than their allowances should buy allowances.
 - Obligated entities with a lower level of emissions than their allowances can sell allowances.

- A project proponent (i.e., a non-obligated entity) registers a carbon offset project and establishes the baseline scenario of emissions.
- Carbon credits are issued based on the amount of emission reductions achieved.
- Carbon credits can be purchased by both obligated and non-obligated entities:
 - Non-obligated entities to meet their emission reduction targets.
 - Obligated entities to offset a specific percentage (usually 5-10%) of their target defined under the ETS.

- PAT has elements of both ETS and carbon crediting by virtue of setting a baseline and a target) and trading ESCerts.
- Government sets a specific energy consumption target for all designated consumers (i.e., obligated entities):
 - The obligated entities overachieving the targets are issued with ESCerts while those underachieving the targets are required to purchase ESCerts.
 - ESCerts are traded between obligated entities under the PAT Cycle.



Overview of ETS around the globe



Emission Trading Scheme (ETS)	Coverage	Number of Entities	Sectors	Impact	Allowance price* as on date (per T CO ₂)
European Union (EU)	43% of EU emissions – (11,000+	Power and Industries Plants Major	Emissions reduced by 35% between 2005 and 2019	EUR 83.78
Korea	70% of emissions –	610	Power and Industries Plants Major	Between 2015 and 2018, emissions intensity dropped 3.9%.	KRW 11,800
China	40% of emission	2000+	Power Plants	Nearly 194 million tonnes of China Emission Allowance (CEA) transacted.	CNY 78.76

*As of 12 October 2023



Market based Mechanism Experience of India



Scheme	Launched	Metric	Coverage	Credits Issued
Perform Achieve and Trade (PAT)	2012	1 ESCert = 1 TOE saved	13 energy-intensive sectors	9.4 million ESCerts ^a ~
Renewable Energy Certificate (REC)	2010	1 REC = 1 MWh	Distribution Licensees, Captive Consumers, Open Access users	102 million RECs issued ^b ,
Clean Development Mechanism (CDM)	2005	1 CER = 1 t CO ₂	Covering 15 sectoral scopes	310 million CERs issued ^c in India till date.

^aBased on issuance of Cycle I & II, ^btill 12 Sept 2023

¹Converted basis 3.5 t CO₂/toe

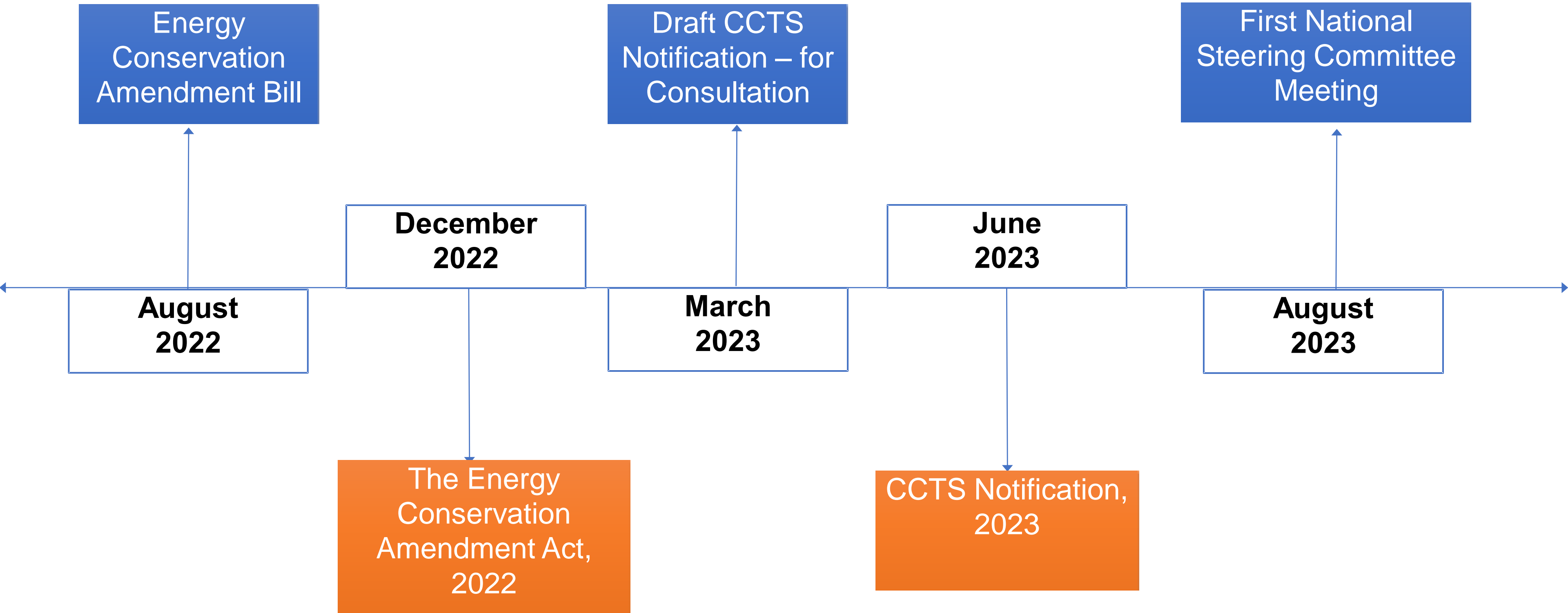
²Converted basis 0.71 t CO₂/MWh



Indian Carbon Market Framework



Key Milestone – Indian Carbon Market





Regulatory Framework



CCTS 2023



India's Carbon Credit Trading Scheme, 2023 was notified by the Government of India on 28 June 2023 under the Energy Conservation Act, 2001.

The notification underlines the necessary framework and the roles of diverse stakeholders for the development and functioning of the Indian Carbon Market (ICM).



As per Section 3 of the CCTS, NSCICM will be constituted by the Government to govern and oversee the functioning of Indian Carbon Market

Key elements of the CCTS

Definitions and detailed procedures

National Steering Committee and Technical Committee (Formation and Functions)

Administrator (BEE) and Registry (GCI) and its functions

Regulations for Trading

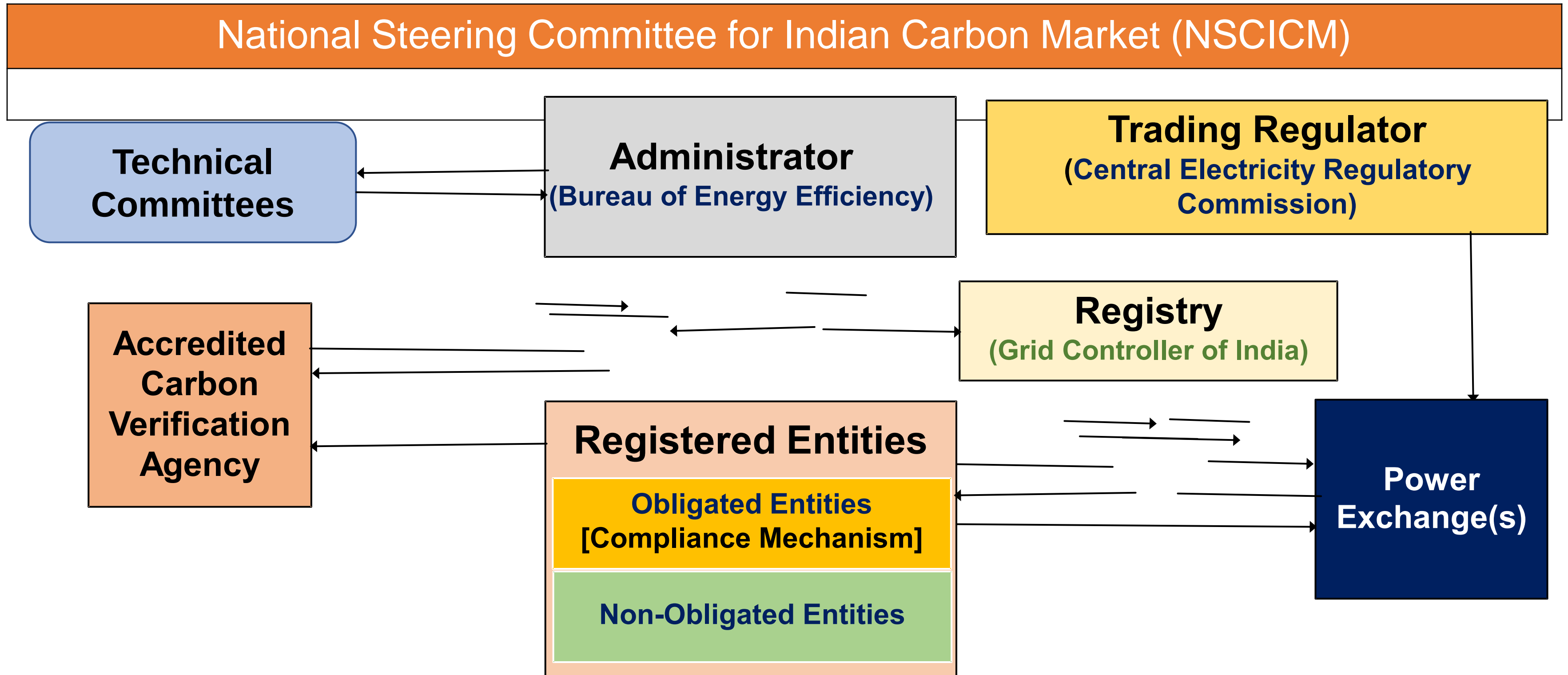
Accredited Carbon Verification Agency

Trading of Certificates

Compliance Mechanism



Institutional Framework





Institutional Framework



National Steering Committee for Indian Carbon Market (NSCICM)

Chairperson

Secretary, Ministry of Power

Co-Chairperson

Secretary, Ministry of Environment, Forest and Climate Change

Members

Ministry of Finance	NITI Aayog	Ministry of Power	Ministry of Environment, Forest and Climate Change
Ministry of New and Renewable Energy	Ministry of Steel	Ministry of Coal	Ministry of Petroleum and Natural Gas
Ministry of Agriculture and Farmers Welfare	Ministry of Chemical and Fertilizers	Central Electricity Authority	Grid Controller of India Limited
Department of Environment of State Government representing State – (2) *CII & FICCI – also has been included as coo-opted members	Expert Members - (2)** Other Members - (3)*	Member Secretary: Director General, Bureau of Energy Efficiency **Shri Upendra Tripathy & Shri R R Rashmi as experts	



Transition from Specific Energy Consumption (SEC) to Specific GHG Emissions (SGE)



SEC ~toe/t to SGE ~ tCO₂e/t

**Current Approach
under PAT**

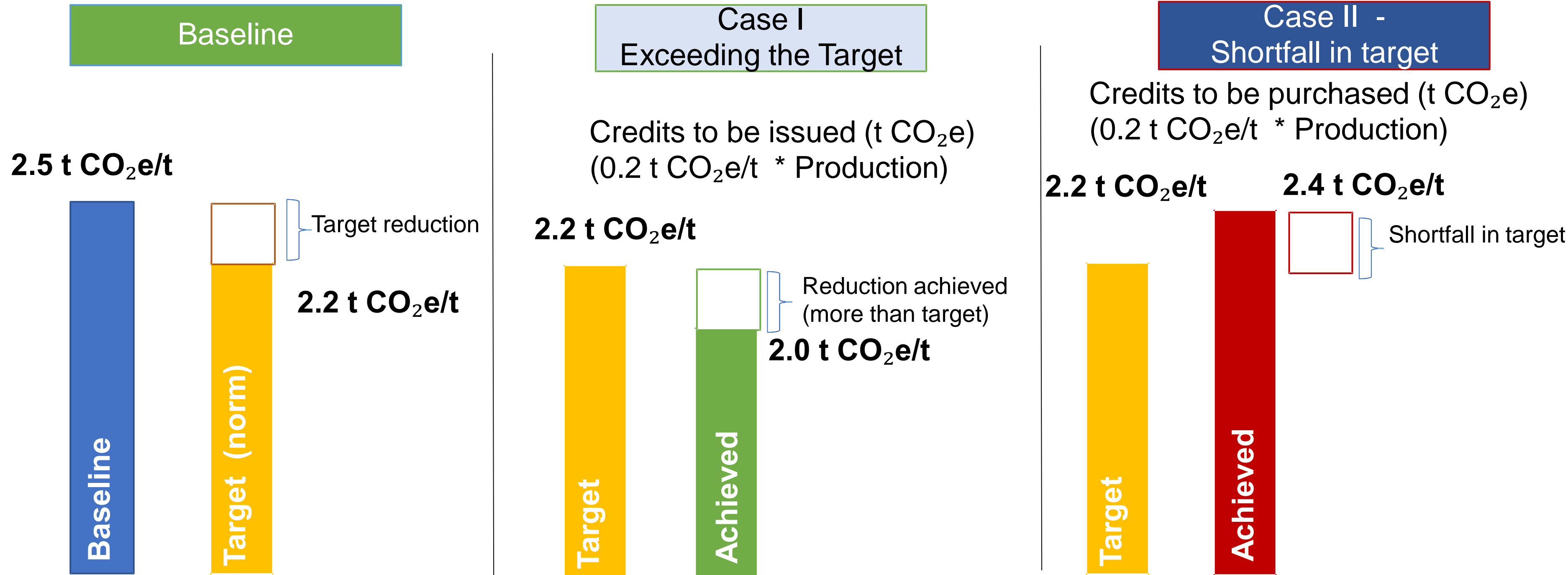
$$\text{SEC} = \frac{\text{Total Energy input to the plant boundary (TOE)}}{\text{Equivalent Product or Output (t)}}$$

Transition





Compliance Mechanism



Issuance/purchase of CCCs will be post verification



Transition from Perform Achieve and Trade (PAT)



Cycle	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Cycle – 4*	TOE/t & 3 years (109 DCs)						Targets – in t CO ₂ /t under CCTS	
Cycle – 5		TOE/t & 3 years (110 DCs)						
Cycle – 6			TOE/t & 3 years (135 DCs)					
Cycle – 7					TOE/t & 3 years (707 DCs)			
Cycle – 8						TOE/T & 3 Years (138 DC)		

- Currently till date – eight PAT cycle have been notified
- Cycle 4 & 5 have been completed and verification also completed
- As PAT will be transitioning to compliance mechanism, the sector/DCs will be included as their PAT cycle are completed
- DCs will only have one target either in TOE/T or T CO₂/t

Targets notified

Cycle Completed

Draft and PAT Transition Plan under preparation

*revision in PAT Cycle from 2018-19 -2020-21 to 2018-19 to 2021-22



CCTS Compliance Phase I



Sectors	No. of Obligated Entities
Iron and Steel	58
Cement	13
Pulp and Paper	10
Petro-chemicals	8
Total	89

Sub Sector Classification

Iron & Steel : 2 ISP, 19 SI, 31 SI+SMS+Other and 6 others

Cement : Clinkerisation Units

Pulp & paper: 1 Wood, 1 Agro and 8 RCF

Petrochemicals: 3 Naptha, 3 Gas and 2 mixed



Thank You

Thanking You
on Behalf of!



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