

Carbon Credit Trading Scheme

Navigating the path to Net Zero manufacturing

June 2024

1

Agenda

1. Carbon Pricing and Carbon Pricing Instruments
2. Introduction to Carbon Markets
3. Indian Carbon Market (ICM)
4. Compliance Mechanism under ICM
5. Offset Mechanisms under ICM
6. Linkage with international markets (Article 6.2/6.4)

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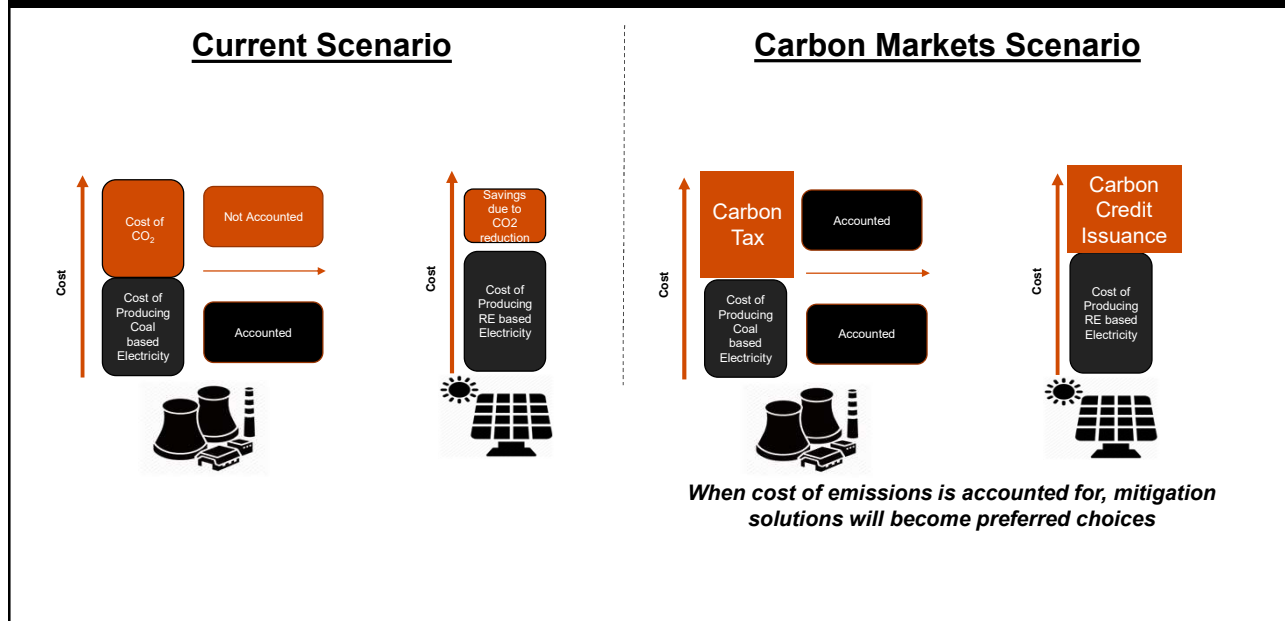
1 Carbon Pricing Instruments

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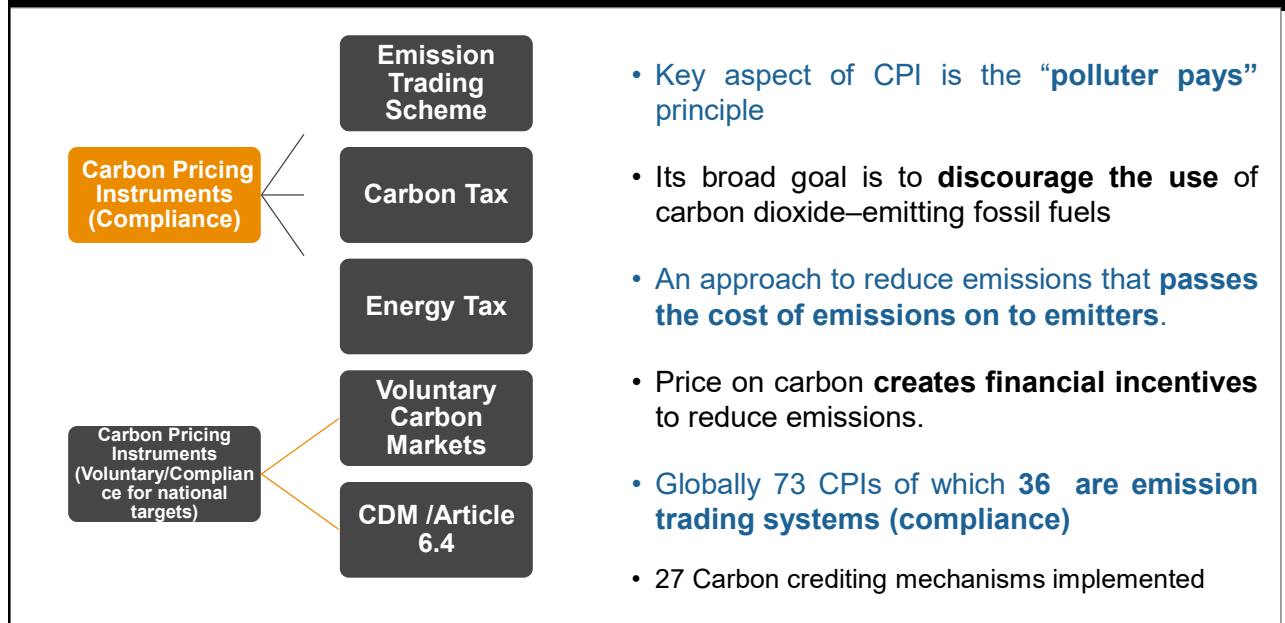
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Carbon Pricing Instrument



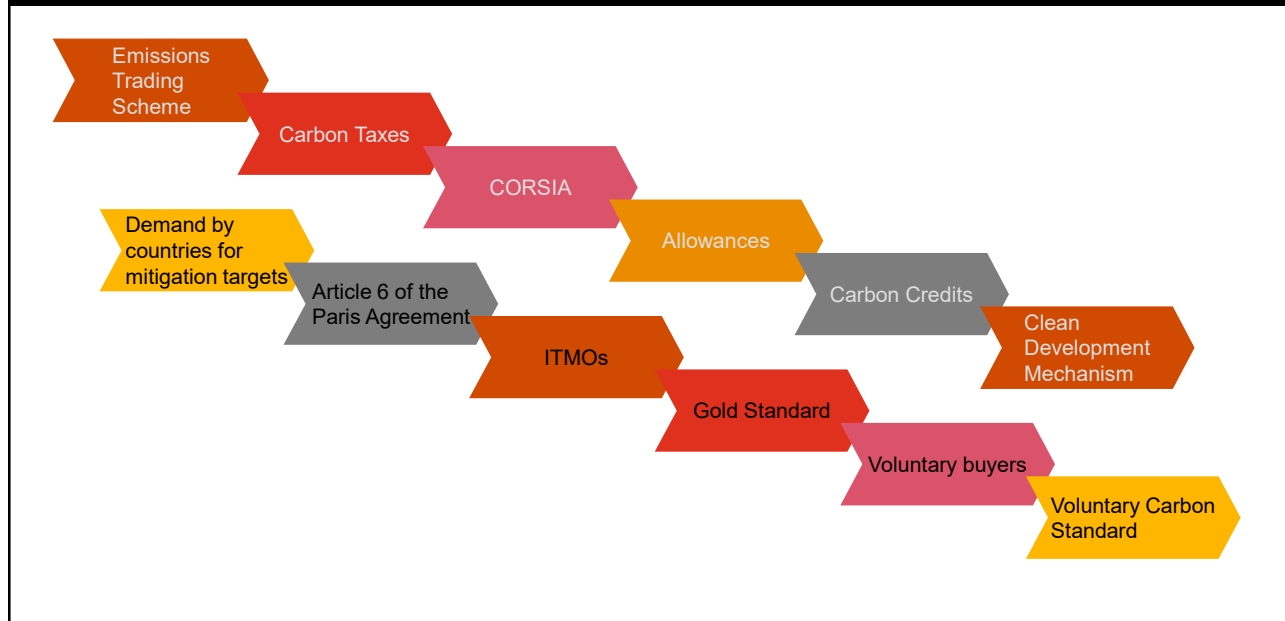
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Carbon Pricing Instrument



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Carbon Pricing – Various concepts

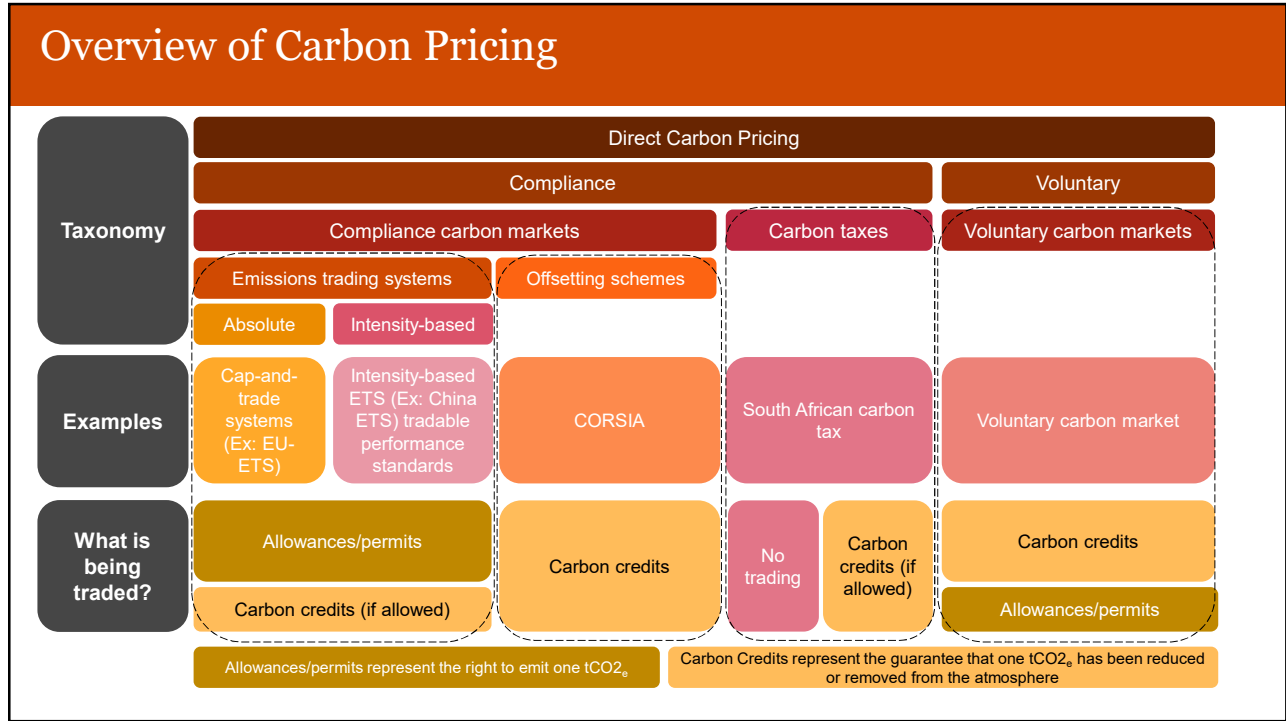


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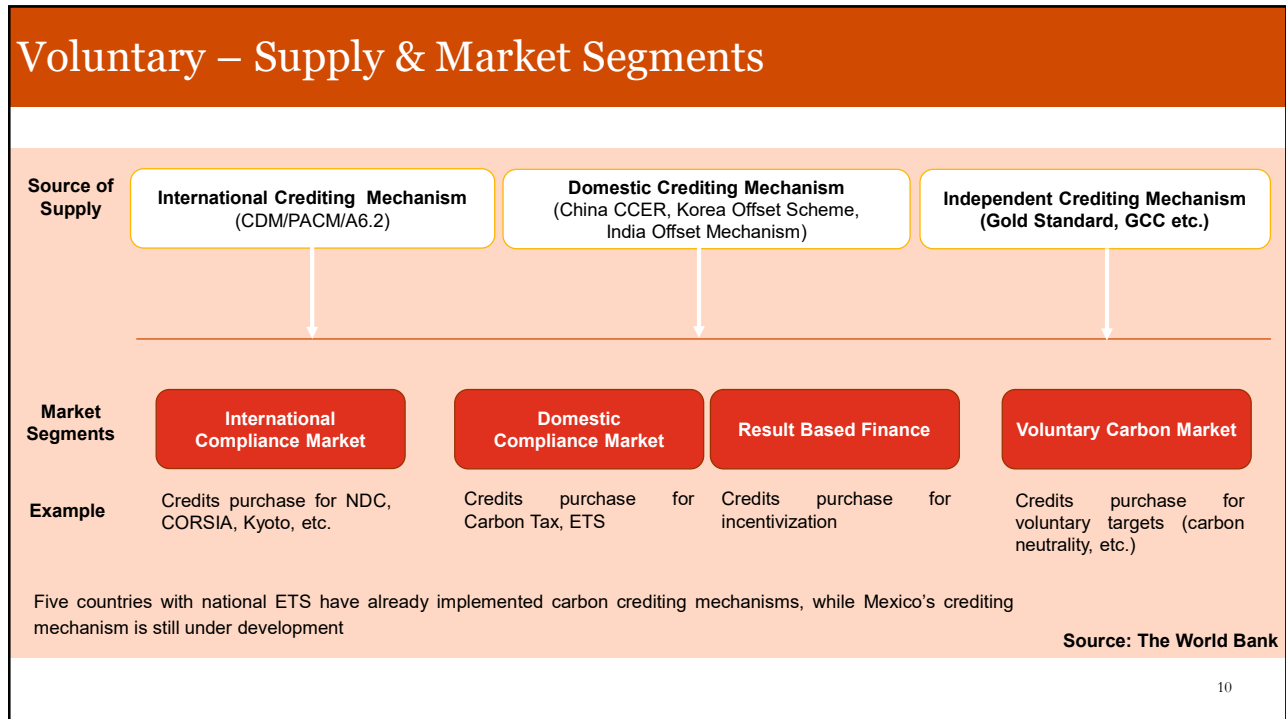
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Introduction to Carbon Markets

8



9



10

India Market Mechanism (Status)

Scheme	Launched	Metric	Coverage	Credits Issued
Perform Achieve and Trade (PAT)	2012	1 ESCert = 1 TOE saved	13 energy-intensive sectors 1333 Designated Consumers	9.4 million ESCerts ^a ~ 33 million t CO₂e¹
Renewable Energy Certificate (REC)	2010	1 REC = 1 MWh	Distribution Licensees, Captive Consumers, Open Access users Number of Projects 1117 ~ 5607 MW (registered)	123 million RECs issued ^b , 87 million t CO₂e²
Clean Development Mechanism (CDM)	2005	1 CER = 1 t CO ₂	Covering 15 sectoral scopes Number of Projects -1685 (India)	310 million CERs issued ^c in India till date. 310 million t CO₂e²

^aBased on issuance of Cycle I & II, ^btill 20th Feb 2024

¹Converted basis 3.5 t CO₂/toe

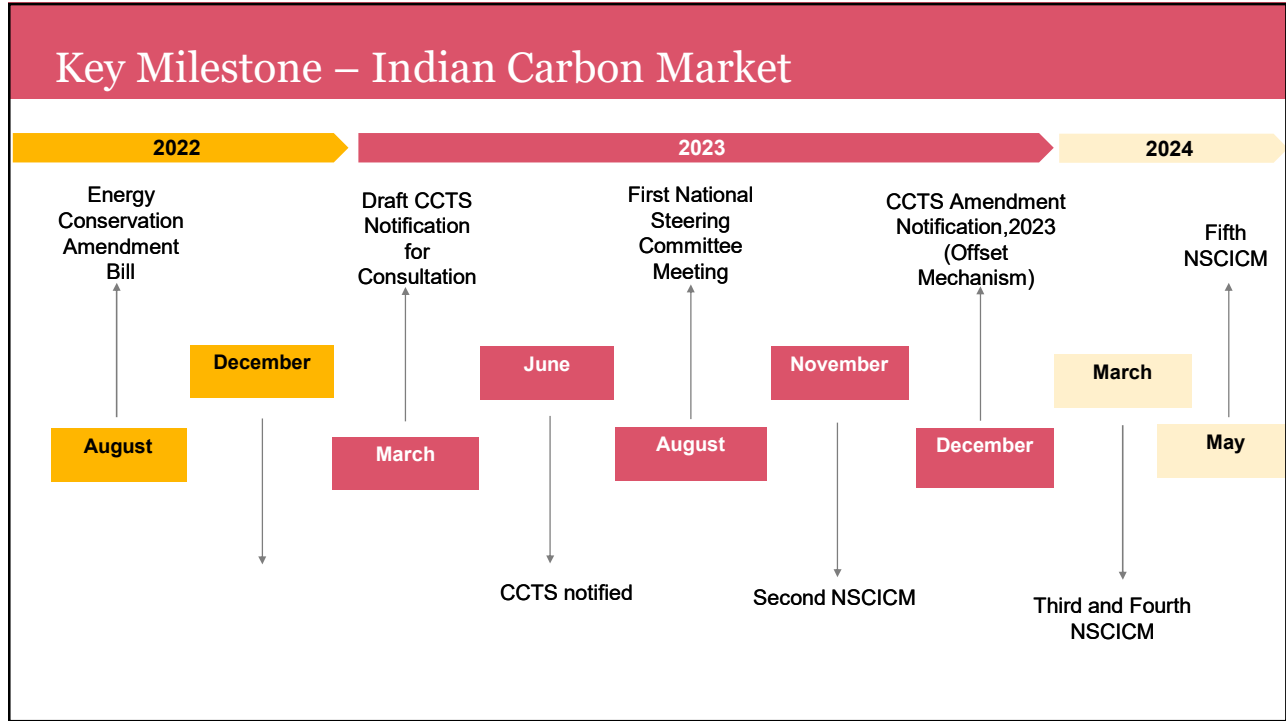
²Converted basis 0.71 t CO₂/MWh

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12




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Key Milestone – Indian Carbon Market


28 June

- Carbon Credit Trading Scheme Notification



19 December

- Amendment in the CCTS notification with inclusion of "Offset Mechanism"



14

CCTS – Key Elements



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)**.

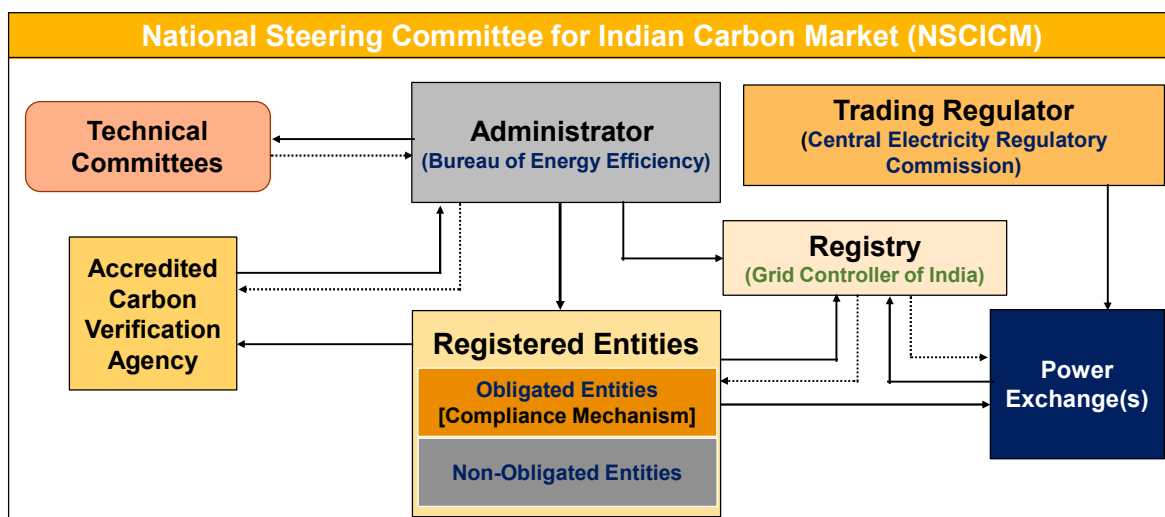
Key elements of the CCTS

Key elements of the CCTS

- Definitions and Details Procedure
- 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 and Offset Mechanism

15

Institutional Framework

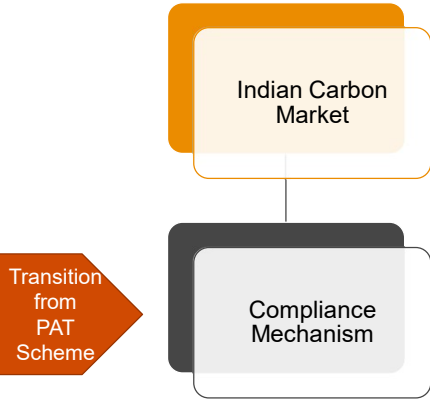


16

4 Compliance Mechanism

17

Compliance Mechanism



Compliance mechanism

- Compliance Mechanism – A mechanism under the Carbon Credit Trading Scheme under which the obligated entities shall comply with the prescribed GHG emission norms notified by the Central Government;
- It will be transitioned from the existing PAT scheme i.e., currently an energy efficiency-based compliance mechanism to a GHG emission-intensity based compliance mechanism.
- 'Registered Entity'** means any entity, including designated consumers, registered for carbon credit trading scheme specified under clause (w) of Section 14 of the Act

11 July 2024

18

Compliance Mechanism

Transition from Specific Energy Consumption (SEC) to GHG Emission Intensity
SEC ~toe/t to GEI ~ tCO₂e/t

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

Transition

Proposed for Compliance Mechanism Approach under CCTS $SGE = \frac{\text{Total GHG Emissions from DCs (tCO}_2\text{e)}}{\text{Equivalent Product or Output (t)}}$

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19

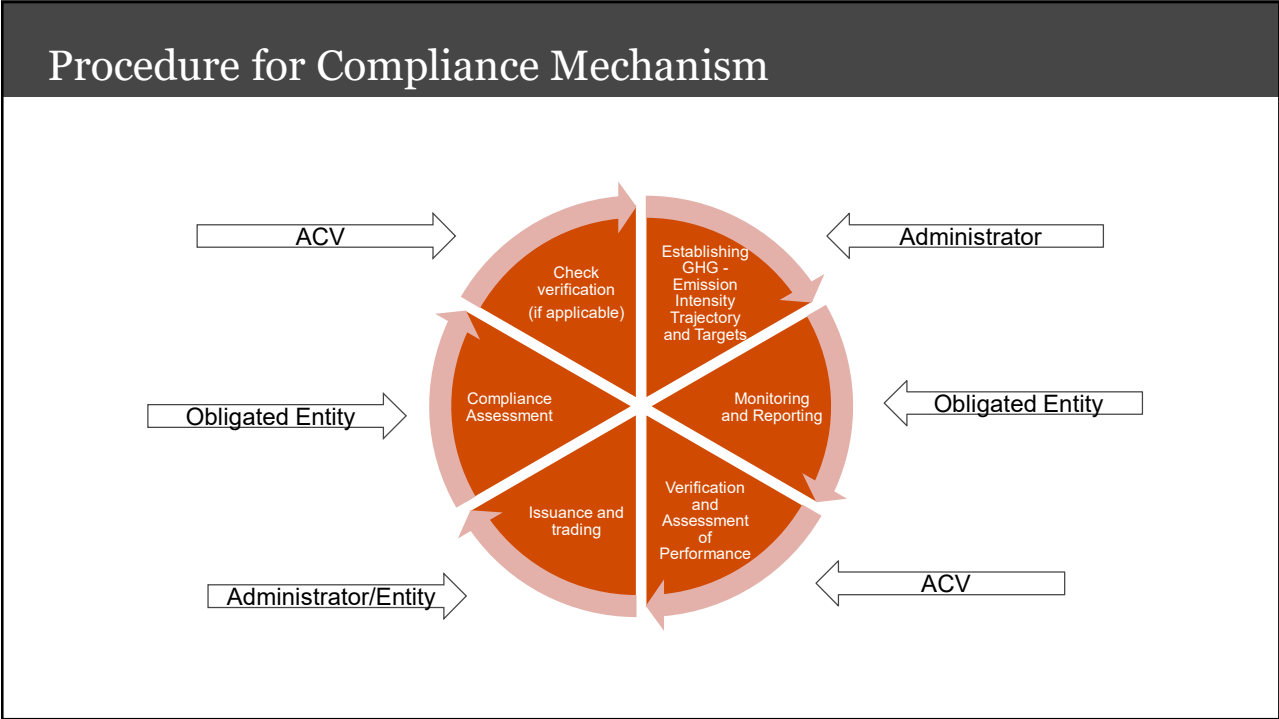
Compliance Mechanism

The chart shows three scenarios for compliance with a target of 2.2 t CO₂e/t:

- Baseline:** Current emission is 2.5 t CO₂e/t. Target is 2.2 t CO₂e/t. Target reduction is 0.3 t CO₂e/t.
- Case I - Exceeding the Target:** Target is 2.2 t CO₂e/t. Actual achievement is 2.0 t CO₂e/t. This results in 0.2 t CO₂e/t of excess reduction, which translates to 0.2 t CO₂e/t of credits to be issued per unit of production.
- Case II - Shortfall in target:** Target is 2.2 t CO₂e/t. Actual achievement is 2.4 t CO₂e/t. This results in a 0.2 t CO₂e/t shortfall, which translates to 0.2 t CO₂e/t of credits to be purchased per unit of production.

Issuance/purchase of CCCs will be post verification
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20



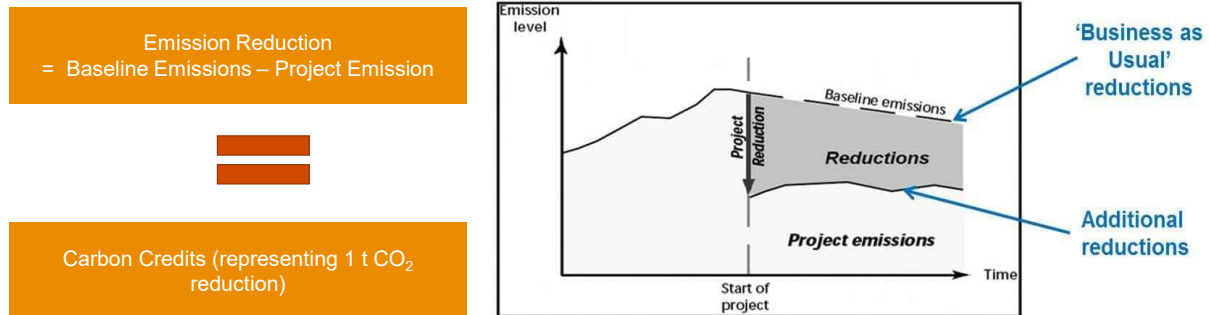
21

5 Offset Mechanisms

22

Functioning of Offset Mechanisms

Offset Mechanisms are project-based



The Government of India in December 2023 – included offset mechanism under CCTS (for non PAT Sectors)

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23

Offset Mechanism - CCTS

Definition

- “Offset mechanism” means a mechanism under Scheme where the non-obligated entities can register their projects for accounting **GHG emission reduction or removal or avoidance for issuance** of Carbon Credit Certificates;

Role of NSICM for Offset Mechanism

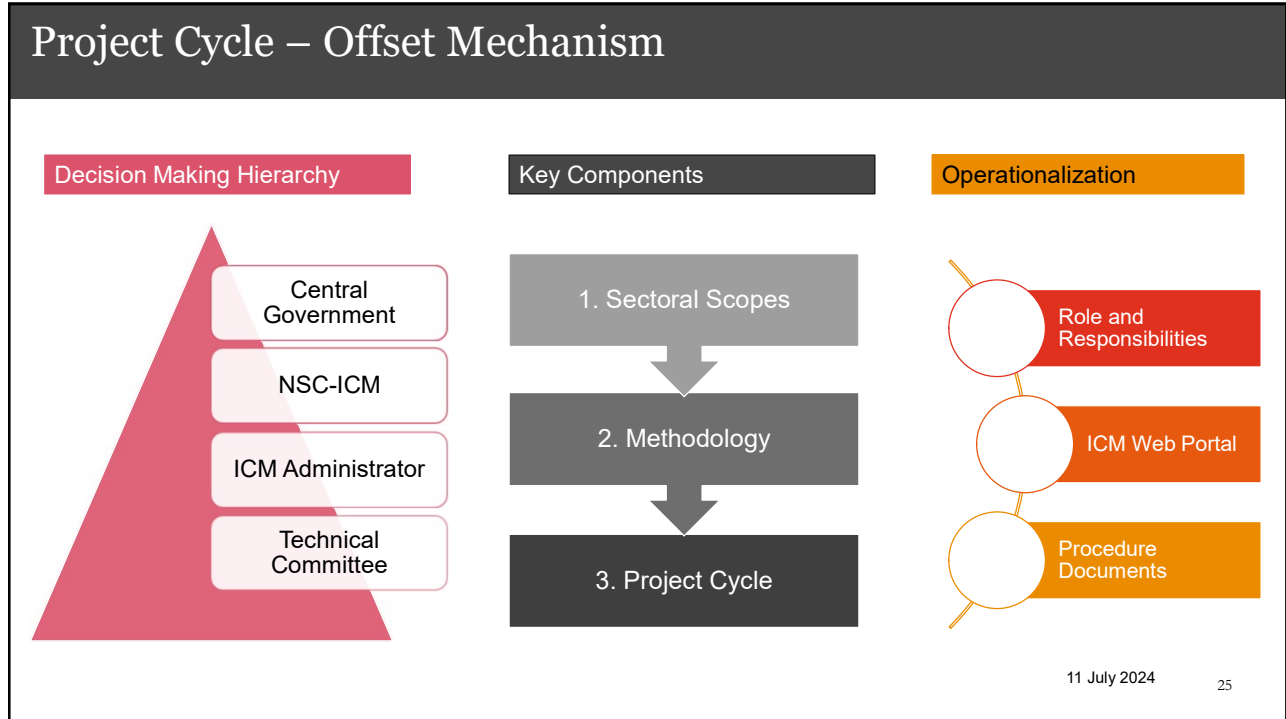
- Recommendation on sectoral scope and methodologies to be used for projects

Role of administrator

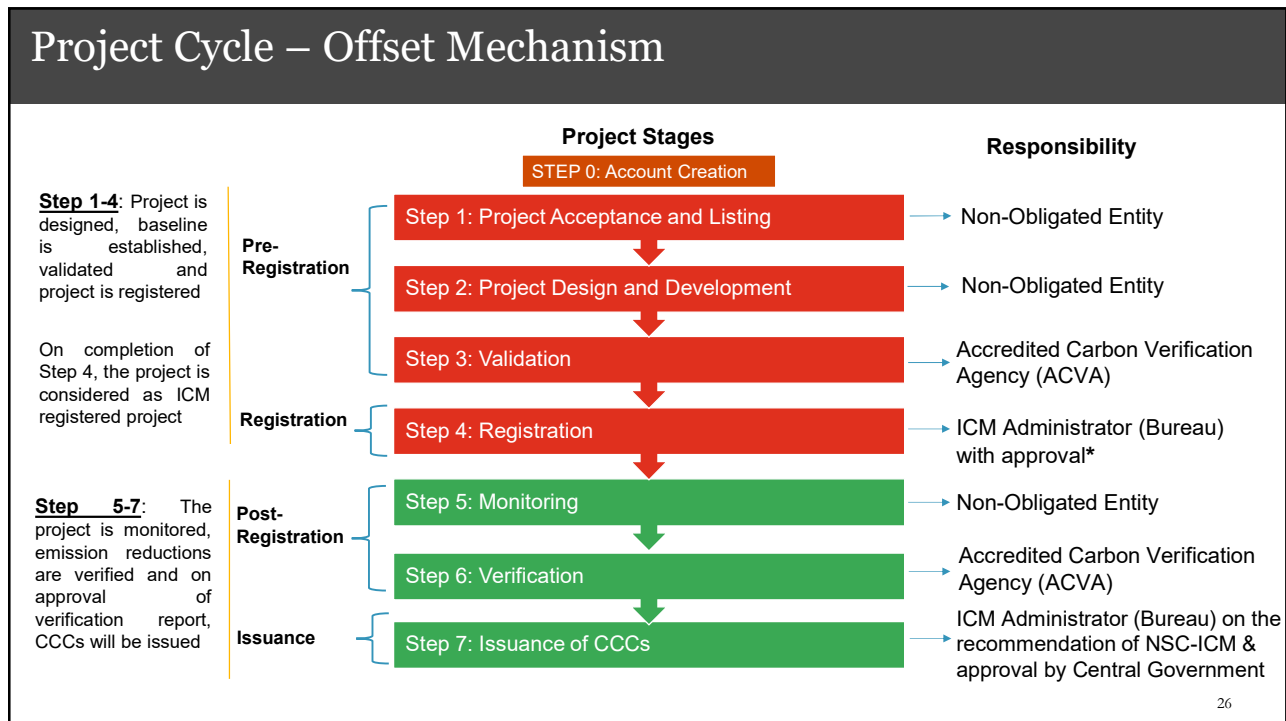
- To develop standards and register projects (procedure)
- To identify sectoral scopes and develop methodologies to be used

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24



25



26

Key Difference – Compliance Vs Offset

Key Aspect	Compliance Mechanism	Offset Mechanism
Nature	Mandatory	Voluntary
Entities Involved	Large Scale emission emitters	Corporations/Companies/nonprofits/Society (no restriction on size or scale)
Level of implementation	Facility Level	Project Level
Usage of Credits	To meet legally binding emission reduction targets	To voluntary offset emission for sustainability goals
Additionality	Less or no emphasis, primary focus is to meet the targets	Crucial Criterion, reduction must be beyond baseline scenario
Scope	Sector Specific, targeting obligated entities (Designated Consumers)	Broad and diverse (sector scope based on emission source/reduction)
Boundary Consideration	Gate to Gate Boundary	Project boundary (but outside boundary of obligated entity under compliance)
Credit Issuance	Against the targets (only on overachievement of targets)	Against the baseline and baseline are based on methodology

27

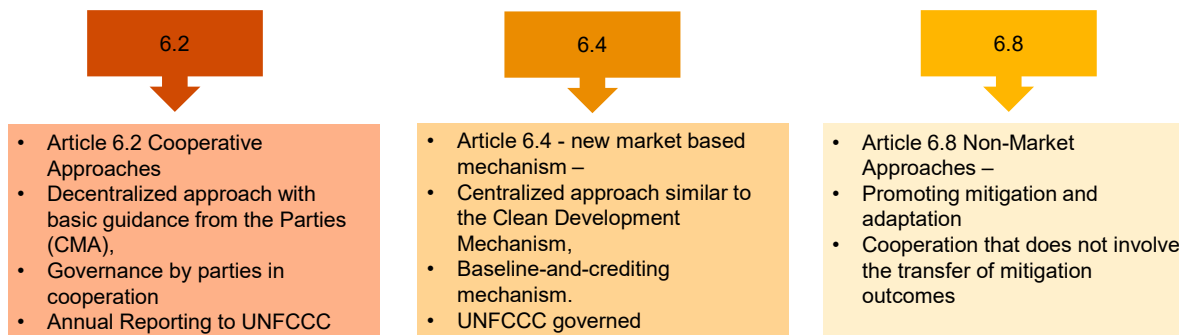
27



28

Article 6 – Approaches

Countries can voluntarily cooperate to achieve their NDCs in whatever way they wish. Article 6 of the PA provides for different options of cooperation:



Credits issued under A6.2 and A6.4 are termed Internationally Transferred Mitigation Outcomes (ITMOs)

29

29

Article 6 – India's Position

A list of **13 activities*** have been identified by GoI to be considered under Article 6.2 for a bilateral approach

Constitution of Designated National Authority for the Implementation of Article 6 of Paris Agreement (NDAIAPA) - on 30th May, 2022

Framework for Carbon Credit Trading Scheme (CCTS), 2023 published

Development of Institutional Mechanisms and Processes for Article 6 (6.2, 6.4, 6.8) - In progress

CCTS notified in June 2023

I. GHG Mitigation Activities:

1. Renewable energy with storage (only stored component)
2. Solar thermal power
3. Off- shore wind
4. Green Hydrogen
5. Compressed bio-gas
6. Emerging mobility solutions like fuel cells
7. High end technology for energy efficiency
8. Sustainable Aviation Fuel
9. Best available technologies for process improvement in hard to abate sectors
10. Tidal energy, Ocean Thermal Energy, Ocean Salt Gradient Energy, Ocean Wave Energy and Ocean Current Energy
11. High Voltage Direct Current Transmission in conjunction with the renewal energy projects

II. Alternate Materials:

12. Green Ammonia

III. Removal Activities:

13. Carbon Capture Utilization and Storage

* The activities will initially be for first 3 years and may be updated/revised by NDAIAPA

30

30

Countries have initiated activities under Article 6.2

82 bilateral agreements between 6 different buyer countries and 39 host countries

Buyer Countries



Switzerland



South Korea



Singapore



Japan



Sweden



Australia

*as on June 2024 (Source: UNFCCC)

140* pilot projects have been recorded, of which 119 under Japan JCM

76% in Asia, **13%** in Africa and **6%** in the Americas.

Five projects have been authorized
Switzerland Ghana (2022, 2024 x2)
Switzerland Thailand (February 2023)
Switzerland Vanuatu (June 2023)

Total expected Outcome More 2 million t CO₂

India is in discussion with various countries on similar bilateral agreements

31

31

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32