सत्यमेव जयते
Government of India

ECONOMIC SURVEY

2023-24

PUTTING IN PLACE A MARKET FRAMEWORK TO PRICE CARBON: INDIAN CARBON MARKET (ICM)

6.41. The regulations on the Carbon Credit Trading Scheme (CCTS), also called the Indian Carbon Market, were notified by the Ministry of Power on 28 June 2023. The objective of CCTS is to allow the determination of a price for one tonne of carbon dioxide equivalent emissions, encouraging an obligated entity to factor in the cost of a resource that was not priced earlier, thereby incentivising investment in alternative low-emission technologies. CCTS will subsume the existing PAT scheme, where the Designated Consumers (DCs) under the PAT scheme will gradually transition to CCTS by 2028-30. Under the CCTS, the Government shall set entity-wise GHG emission intensity targets to enable a per-output emissions limit (i.e., GHG emissions intensity target) in place of specific energy consumption targets under the existing PAT scheme. Key institutions and stakeholders that will play a crucial role in the oversight, implementation, and guidance of the ICM are as follows (Table 1):

Table VI.1: Institutional Architecture of Carbon Market in India

Function	Institution
Governance, oversight and functioning	National Steering Committee for the Indian carbon market
Policy & administrator	Bureau of Energy Efficiency
Implementor of targets	Obligated entity
Trading regulator	Central Electricity Regulatory Commission
Registry	Grid Controller of India Limited (GCIL)
Trading platform	Power exchange – IEX, PXIL, HPX

6.42. The CCTS envisages a compliance mechanism whereby the registered entities notified under the mechanism, called obligated entities (OE), will be notified of GHG emission intensity targets for each annual year in the trajectory period (called the compliance year). On completion of the trajectory period, the targets shall be revised for subsequent periods. The obligated entities would be required to comply and furnish the compliance status with the targets set after the verification and trading process within nine months from the completion of the compliance cycle. The entity obligated to achieve greater than the target notified can get the Carbon Credit Certificates (CCC) issued by the difference between the actual and target. These CCCs can be sold in the carbon market or banked by the obligated entity on completion of the compliance year. The banked CCCs can be sold or used to achieve compliance in the following years. An obligated entity failing to meet the targets would be required to buy the CCCs in the Indian carbon market or use their banked CCCs for compliance.

Voluntary Carbon Market (VCM)

6.43. Carbon markets can be compliance markets run and regulated by governments or international bodies, with specific industries required to participate (compliance market), or could be voluntary carbon markets- which are not regulated by governments and are entirely voluntary. The global voluntary carbon market is worth over USD 1.2 billion, and India is the second-largest supplier of carbon offsets.

6.44. A VCM allows entities to compensate for their emissions through emission reduction/removal/avoidance achieved in projects elsewhere or by other entities – a process termed 'carbon offsetting'. The purchaser of an offset credit can retire the offset to claim the underlying reduction towards their own emission reduction goals. However, there are concerns about double counting in VCM when sellers and buyers can claim the carbon reductions. There is also uncertainty about whether a credit being used as an offset by a foregin entity can be simultaneously claimed by the country where the credit was generated for their emission reduction target. If this is not, then with India's ambitious NDC and Net Zero announcement, carbon credits sold to foreign entities will make India's emissions reduction more expensive and difficult.

Box VI.6: Evolution of Carbon Markets

The existence of the first market-based regulation to abate the air pollution level and address environmental problems can be traced back to the sulphur dioxide (SO2) allowance trading programme by the United States in the 1970s. The Montreal Protocol (1987) served as an early international precedent for trading emissions permits to address ozone depletion. Article 4.2(a) of the UNFCCC (Convention) set the foundation for early carbon markets by allowing the Parties to implement emission reduction policies jointly.

The Conference of the Parties or COP of the UNFCCC adopted a legal instrument in this regard - the Kyoto Protocol (KP) in 1997. The KP established legally binding GHG emissions reduction targets for 38 industrialised countries and Economies in Transition (EIT) – Annex-B Parties to the KP. Market-based mechanisms under the KP allowed Parties to meet part of their Kyoto caps with 'Kyoto units' bought from other Parties. It had three mechanisms – (i) Clean Development Mechanism (CDM) leading to Certified Emission Reductions (CERs) from mitigation projects in developing countries,[67] (ii) Joint Implementation creating Emission Reduction Units (ERUs) achieved by projects in countries with emission caps, and (iii) International Emissions Trading (IET) enabled trading of Assigned Amount Units (AAUs) and other Kyoto units between countries with emission caps. These mechanisms laid the foundation for the first-ever effort in the international carbon market, though its initial implementation faced challenges like limited participation and complex rules. However, after the launch of the European Union Emission Trading Scheme (EU-ETS) in 2005, the significance of the carbon market was realised for the first time. It was around the mid-2000s that EU-ETS started functioning, and Voluntary Carbon Markets began to gain traction. The fungibility of the credits with EU-ETS helped the Kyoto Protocol to establish a stronger carbon price in its first commitment period (2008-2012).

The second commitment period (2013-2020) of the KP was adopted in December 2012, while the EU-ETS entered its third phase in 2013-2020. The cumulative inflow of international credits led to a large surplus in the European carbon market and undermined the carbon price incentive; for example, prices fell from €15/tCO2e in 2011 to a price range of €3 - €8/tCO2e in the 2013 - 2015 period. The EU decided not to allow CERs and ERUs from KP to be compliance units within the EU-ETS and made it mandatory to exchange the Kyoto units for EU-ETS emission allowances. The second phase of the KP's carbon markets failed mainly

67 Developing countries did not have obligation to cap emissions.

due to the non-participation of some major developed economies and due to the non-interchangeability of the Kyoto credits with EU-ETS[68]. With the end of the KP in 2020, the CDM also dried up and was replaced by the unregulated buyers and sellers of the carbon market, the VCM.

The Paris Agreement, adopted in December 2015, provides countries the option to voluntarily cooperate for higher ambition in their NDCs through a unified global carbon market.

a. Article 6.2 calls for 'voluntary cooperative approaches' at the bilateral level involving the use of Internationally Transferred Mitigation Outcomes (ITMOs)[69] in meeting NDCs, promoting sustainable development, and ensuring environmental integrity and transparency while avoiding any double counting.

b. Article 6.4 defines an international mechanism to issue emission credits against mitigation outcomes. Article 6.4 of the Paris Agreement mechanism thus became the successor to the Kyoto Protocol's CDM.[70] If authorised by the host country, the emission credits (or Emission Reductions) generated by mitigation activities become ITMOs. Another country can use them to fulfil its NDC or for other mitigation purposes, and calls for the corresponding adjustment in the origin county to avoid any double counting.

Negotiations are still ongoing on the implementation of Articles 6.2 and 6.4.

6.45. The carbon market's effectiveness in emission reduction in India will depend on its regulation and implementation in the context of the target of Viksit Bharat by 2047 and Net Zero by 2070. While the domestic compliance market developed under the CCTS is essential to ensure that the industry internalises the emission costs into its production and investment decisions, we may not subsidise the transition of other countries.

6.46. The Government of India's Mission LiFE is envisaged as a mass movement to address climate change and foster sustainable living based on conservation and moderation principles. The Government supports voluntary environmental actions such as the Green Credit Programme (GCP), which incentivises individuals, communities, private sector industries, and companies to participate in environment-positive activities by offering green credits as rewards. Box 7 presents a brief discussion on GCP.

Box VI.7: LiFE in Action: India's Innovative Green Credit Program[71]

The LiFE movement is a grassroots, mass initiative to combat climate change and promote sustainable living rooted in conservation and moderation. To bolster this effort and encourage eco-friendly practices, the Ministry of Environment, Forest and Climate Change

68 Use of international credits in EU ETS after 2020, European Commission, https://tinyurl.com/55mn5s79.

69 Internationally transferred mitigation outcomes are units for emissions trading between Parties to the Paris Agreement

70 Michaelowa, A., Samaniego, X., Kessler, J., Ahonen, H. M., Spence, C., & European Capacity Building Initiative. (2022). Pocket Guide to Article 6. Under the Paris Agreement. https://www.zora.uzh.ch/id/eprint/230043/

71 Gazette notification by MoEFCC, 26 June 2023 https://egazette.gov.in/WriteReadData/2023/246825.pdf

introduced two pioneering programs: the Green Credit Programme (GCP) and the Ecomark Scheme.[72]

Objectives of GCP: The GCP is an innovative market-based mechanism aimed at encouraging individuals, communities, private sector industries, and companies to engage in voluntary environmental positive actions through the issuance of green credits.

Implementation and governance: According to the Green Credit Rules, 2023, notified in October 2023, GCP shall be implemented through a phased and iterative approach. In the initial phase, it focuses on voluntary tree plantation on degraded land, wasteland, watershed, etc., under the control and management of the Forest departments. The governance structure of GCP includes the Steering Committee members from concerned ministries, experts, and institutions. Indian Council of Forestry Research and Education (ICFRE) is designated as the GCP administrator and is responsible for the implementation and management of GCP. GCP's digital processes include a dedicated web platform and a green credit registry for streamlining operations. Registration, accounting, and green credit issuance monitoring ensure the transparency and accountability of GCP. The generation of green credits under Green Credit Rules, 2023, is independent of the carbon credit under the Carbon Credit Trading Scheme, 2023.

A 'Green Credits Programme' was co-hosted by India and UAE on the side-lines of COP-28. India invited all nations to join the global green credit initiative, aimed at facilitating global collaboration, cooperation, and partnership through the exchange of knowledge, experiences, and best practices in planning, implementing, and monitoring environment-positive actions through programs/mechanisms like Green Credit. Chapter 13, a special essay, makes the case for the international relevance of LiFE.

INTERNATIONAL COMMITMENTS ON CLIMATE FINANCE: THE DEVELOPMENTS

6.47. Lack of access to adequate and affordable financial resources remains a significant constraint for developing countries in implementing their climate commitments. The Standing Committee on Finance (a body under the UNFCCC) has estimated that resources from USD 5.8 trillion to USD 11.5 trillion are required till 2030 to meet the targets set by developing countries in their NDCs and other communications. The 2023 UN Adaptation Gap Report estimated adaptation costs in developing countries to be 10 to 18 times greater than current international adaptation finance flows of USD 21.3 billion.[73] The UNFCCC and its Paris Agreement mandate that developed countries provide financial resources on a grant or concessional basis and provide access to technologies to developing countries to enable their climate actions. The first GST outcome also underscored the current needs of developing countries and the criticality

72 Notification issued for Green Credit Program (GCP) and Ecomark scheme Under LiFE Initiative to Promote Sustainable Lifestyle and Environmental Conservation, October 13, 2023, PIB, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1967476

73 United Nations Environment Programme (2023). Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves the world exposed. Nairobi. https://doi.org/10.59117/20.500.11822/43796.