

ESG

India

Sector View:

NIFTY-50: **22,162** April **07, 2025**

ICM progresses with carbon offset plan

The recent notification of the detailed procedure for the offset mechanism and eight methodologies represents a major advancement in the operationalization of the Indian Carbon Market (ICM) by mid-2026. The proposed MRV process under the offset mechanism is poised to ensure accuracy and integrity. However, for its effective implementation, the adoption of a nimble and transparent approach will be crucial, in our view.

Offset mechanism to incentivize climate action by non-obligated entities

The offset mechanism will encourage voluntary participation by non-obligated entities to develop projects across 10 sectors to be included in the offset mechanism in two phases (see Exhibit 1). These projects will focus on implementing environment-friendly technologies and practices aimed at 1) reducing or avoiding GHG emissions (using renewable energy, achieving energy efficiency and efficient waste management) and 2) GHG removal activities such as afforestation and biochar that generate carbon credit certificates (CCCs). The mechanism will adhere to a core set of values and principles to ensure that the carbon credits represent real, measurable and additional emission reductions, avoidances, or removals (see Exhibit 2). The non-obligated entities must follow all steps in the project cycle—starting from listing on the ICM portal to becoming eligible for the issuance of CCCs (see Exhibit 3).

Eight key methodologies notified for Phase I of India's offset mechanism

The government has notified eight methodologies for the six sectors covered in Phase I of the offset mechanism. These methodologies encompass a wide range of activities, including renewable energy (such as hydro and pumped storage), green hydrogen production, industrial energy efficiency, landfill methane recovery, and mangrove afforestation and reforestation (see Exhibit 4). Adapted from the existing UNFCCC Clean Development Mechanism (CDM) methodologies, each methodology includes two key components: 1) a baseline component specifying the project boundary, baseline emissions, additionalities, and leakages; and 2) a monitoring component detailing the data and parameters to be monitored. The non-obligated entities must select valid approved methodologies and apply them to their proposed ICM activities.

Robust MRV systems critical for integrity and effectiveness of carbon offsets

We believe the rigorous monitoring, reporting and verification (MRV) process proposed under the offset mechanism will be crucial for upholding the credibility of CCCs issued under ICM. The non-obligated entities must meticulously collect and report the data and parameters specified in the monitoring component of each methodology to demonstrate compliance with the established baseline emissions, additionalities and leakages. Further, independent verification by accredited third parties ensures that the reported data is accurate and that the emission reductions or removals are real, measurable and incremental. This process will also help prevent double counting of carbon offsets. The adoption of a nimble and transparent approach is essential for the effective implementation of the offset mechanism.

Quick Numbers

India to include ten sectors under the offset mechanism in two phases

Eight methodologies for offset mechanism notified

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Full sector coverage on KINSITE



Ten sectors will be covered under the offset mechanism in CCTS in two phases

Exhibit 1: Sectors and sub-sectors covered under the offset mechanism in CCTS

Phase I	Phase II		
Sub-sector	Sector	Sub-sector	
Energy Industries (renewable / non-renewable) Energy distribution Energy demand	Construction	• Construction	
 Manufacturing Industries Chemical Industries Mining/Mineral production Metal production 	Fugitive emissions	From fuels (solid, oil, and gas) From Industrial gases (halocarbons and sulphur hexafluoride)	
Waste handling and disposal	Solvent use	• Solvents use	
Agriculture	CCUS and other measures	Carbon capture, utilization and storage of CO2 and other removals	
Afforestation and reforestation			
Transport			
	Sub-sector Energy Industries (renewable / non-renewable) Energy distribution Energy demand Manufacturing Industries Chemical Industries Mining/Mineral production Metal production Waste handling and disposal Agriculture Afforestation and reforestation	Sub-sector Energy Industries (renewable / non-renewable) Energy distribution Energy demand Manufacturing Industries Chemical Industries Mining/Mineral production Metal production Waste handling and disposal Agriculture Afforestation and reforestation	

Source: Ministry of Power, MoEFCC, Kotak Institutional Equities

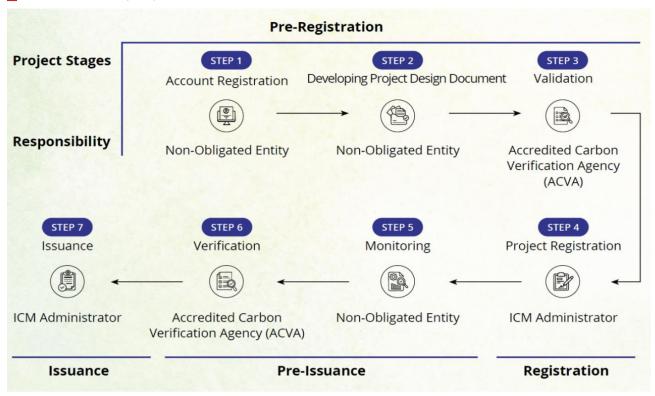
Non-obligated entities must consistently apply the fundamental principles of the offset mechanism for its effective implementation

Exhibit 2: Fundamental principles of the offset mechanism in CCTS Incorporating a robust and transparent governance structure and process entails: (a) ensuring clear, consistent guidelines for accountability including measures for no double counting and tracking of CCCs, (b) effective third-party validation and verification, Governance (c) strong focus on additionality and permanence, (d) ensuring that emission reductions are real, measurable and beyond the local, state and national regulations and (e) alignment with SDGs by demonstrating quantification of positive impact through each target and indicator Ensure that all project components and activities are pertinent to the objectives of the ICM, contributing meaningfully to GHG Relevance reduction or removal or avoidance Include all necessary information and documentation to provide a comprehensive and thorough understanding of the project Completeness activity Maintain coherence and uniformity in all aspects of project development, ensuring that data, methodologies, and approaches Consistency align seamlessly throughout the project cycle Uphold precision and correctness in the collection, calculation, and reporting of data to enhance the reliability of GHG Accuracy emission estimates or calculations Foster openness and clarity in all project-related processes, allowing stakeholders and the public to access relevant Transparency information and understand the decision-making rationale Exercise cautiousness in assumptions and estimations, opting for conservative values to prevent overestimation of emission Conservativeness reductions and ensure the environmental integrity of the Offset Mechanism

Source: Ministry of Power, MoEFCC, Kotak Institutional Equities

Non-obligated entities have to follow a step-by-step project cycle to register their projects and receive CCCs

Exhibit 3: Steps in project cycle under offset mechanism in ICM



Source: Ministry of Power, MoEFCC, Kotak Institutional Equities





Non-obligated entities have to select and apply valid approved methodologies from this list to their ICM activity

Exhibit 4: List of eight methodologies notified so far under the offset mechanism and their key elements

Sr. No.	Sector	Name of the methodology	Typical projects	Type of GHG emissions mitigation action
1	Energy	Grid-connected electricity generation from renewable sources	Retrofit, rehabilitation, replacement or capacity addition to an existing power plant or construction and operation of a new power plant/unit that uses renewable energy sources and supplies electricity to the grid Battery energy storage system can be integrated under certain conditions Pumped storage projects operating in coordination with a renewable energy plant under certain conditions	Renewable energy Displacement of electricity that would be provided to the grid by more-GHG-intensive means
2	Energy	Hydrogen production from electrolysis of water	Production of hydrogen through electrolysis of water using electricity from a captive renewable power plant only, or from a mix of electricity predominantly from a captive renewable plant and residually from the electric grid. The hydrogen produced is supplied to an existing dedicated consumer.	Fuel or feedstock switchRenewable energy
3	Industries	Energy efficiency and fuel switching measures for industrial facilities	Introduction of energy efficiency measures such as efficient motors, pumps, boilers etc. for specific industrial or mining and mineral production processes (such as steel furnaces, paper drying, tobacco curing, etc.) through new installation or retrofit/replacements	Fuel/electricity savings through increase in energy efficiency
4	Industries	Hydrogen production using methane extracted from biogas	Installation of biogas purification system to isolate methane from biogas for the production of hydrogen displacing LPG as both feedstock and fuel in a hydrogen production unit	Fuel and feed stock switch to reduce consumption of fossil fuel
5	Waste Handling and Disposal	Landfill methane recovery	Capture and combustion of methane from landfills used for disposal of residues including municipal, industrial and other solid wastes containing biodegradable organic matter	GHG destruction: destruction of methane and displacement of more-GHG intensive energy generation
6	Waste Handling and Disposal	Flaring or use of landfill gas	Capture of landfill gas (LFG) and its flaring and/or use to produce energy and/or use to supply consumers	GHG destruction: destruction of methane emissions and displacement of a more-GHG intensive service
7	Agriculture	Methane recovery from livestock and manure management at households and small farms	Recovery and combustion of methane from manure or a mixture of manure and other agricultural wastes through: Installation of a methane recovery and combustion system to an existing source of methane emissions; or Change in the management practice for manure to achieve controlled anaerobic digestion (domestic biogas digester) that is equipped with a methane recovery and combustion system.	GHG destruction: Combustion of methane and displacement of more-GHG intensive energy generation
8	Forestry	Afforestation and reforestation of degraded mangrove habitats	-	-

Source: Ministry of Power, MoEFCC, BEE, Kotak Institutional Equities

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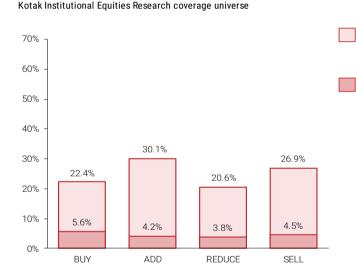
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Overseas Affiliates

Kotak Mahindra (UK) Ltd. 8th Floor, Portsoken House 155-157 Minories, London EC3N 1LS Tel: +44-20-7977-6900

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Details of	Contact Person	Address	Contact No.	Email ID
Customer Care/ Complaints	Mr. Ritesh Shah	Kotak Towers, 8th Floor, Building No.21, Infinity	18002099393	ks.escalation@kotak.com
Head of Customer Care	Mr. Tabrez Anwar	Park, Off Western Express Highway, Malad (East),	022-42858208	ks.servicehead@kotak.com
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