Emissions trading scheme (ETS)

Mains Syllabus: GS II - Government policies and interventions for development in various sectors and issues arising out of their design and implementation; GS III - Conservation, environmental pollution and degradation.

Why in News?

A new study found that Gujarat's cap and trade system delivered both environmental and economic benefits.

What is Gujarat's emissions trading scheme (ETS)?

- **Gujarat's ETS** – It is the world's first market for trading in particulate matter emissions, launched in Gujarat's Surat.
- The programme, operational for over five years, was the first of its kind globally for particulate matter and India's first pollution trading scheme of any kind.
- **Developed by** - Gujarat Pollution Control Board (GPCB), in collaboration with the Energy Policy Institute at the University of Chicago.
- **Features of the scheme** - Under the programme, 318 large coal-using industrial plants were required to install Continuous Emissions Monitoring Systems (CEMS).
- **Real time tracking of pollution** – It allowed thereal-time tracking of particulate matter emissions, shifting from the earlier system of periodic spot checks.
- **Emission cap** - GPCB set an overall cap on the total mass of particulates that could be emitted collectively by all plants over a compliance period.

  Initially, GPCB capped total particulate emissions at 280 tonnes per month.

- Up to 80 per cent of the total cap was distributed for free, proportional to a plant's emissions potential and the remaining 20 per cent were auctioned off weekly.
- **Permit Trade** - The plants could then trade these permits, creating a financial incentive to reduce emissions where it was cheapest to do so.
- **Penalties** - Any firm that failed to hold sufficient permits to cover its emissions at the end of a compliance period faced penalties based on the size of the shortfall.

What are the benefits of emission trading scheme?

- **Environmental impact** - By setting a cap on emissions, ETS ensures that overall

pollution levels decrease over time.
- In the Gujarat's pilot project, Particulate emissions were reduced by 20 to 30 %.
- **Cost-effectiveness** - ETS allows businesses to reduce emissions in the most economical way by trading allowances.
- Companies that can reduce emissions at a lower cost can sell their surplus allowances to others.
- Due to the ETS in Surat, Pollution abatement costs dropped by over 10 %.
- **Economic incentives** - Companies are financially motivated to reduce emissions, as they can profit from selling unused allowances.
- **Flexibility** - Businesses have the freedom to choose how they meet their emission targets, whether by reducing emissions directly or purchasing allowances.
- **Encourages innovation** - ETS drives technological advancements as companies seek innovative ways to reduce emissions and stay competitive.
- Improved compliance with environmental regulations - Compliance with environmental laws rose to 99 per cent among participating plants.

What are the challenges in implementing emission trading scheme?

- **Allocation of Allowances**- Establishing the correct emission cap level, deciding on the method for allocating emission allowances (auction vs. free allocation) will be challenging.
- **Monitoring and reporting** - Ensuring accurate and reliable monitoring and reporting of emissions is crucial for the integrity of the scheme and requires significant investment in technology and infrastructure.
- **Price fluctuation** - The market-based nature of ETS can lead to volatile prices for emission allowances, making it difficult for companies to plan and invest in low-carbon technologies.
- **Carbon Leakage** - Companies may relocate production to countries with less stringent emission controls to avoid the costs associated with the ETS, undermining the environmental benefits of the scheme.
- **Diversion of responsibility** - The costs of purchasing emission allowances may be passed on to consumers, potentially leading to higher energy prices and disproportionately impacting low-income households.

What lies ahead?

- Adopting continuous emission monitoring systems and standardized reporting protocols can ensure data accuracy and transparency.
- Enhancing verification processes with third-party audits to maintain market integrity.
- Introducing price floors and ceilings to mitigate volatility and provide investment certainty for low-carbon technologies

India's Carbon Credit Trading Scheme (CCTS)/ Indian Carbon Market

• **India's Carbon Credit Trading Scheme (CCTS)** – It is a market-based mechanism aimed at reducing greenhouse gas emissions by incentivizing industries to reduce emissions and trade carbon credits.
• The scheme replaces the existing Perform, Achieve, and Trade (PAT) scheme, which focused on energy efficiency improvements.
• **Legal Framework** - The Energy Conservation (Amendment) Act, 2022, provides the legal basis for the CCTS and allows for the issuance of Carbon Credit Certificates (CCCs).
• **Regulatory Body** -The Bureau of Energy Efficiency (BEE) is responsible for implementing and overseeing the CCTS.
• **Carbon credit certificates (CCCs)** - Each CCC will represent one tonne of CO2 equivalent (tCO2e) reduction or removal from the atmosphere.
• The BEE will issue the CCCs, which will be traded through the country's power exchanges.
• **Mechanisms** - CCTS incorporates both a compliance mechanism for obligated entities (primarily energy-intensive industries) and a voluntary offset mechanism for other entities.
• **Compliance Mechanism** - CCTS will take the form of an intensity-based 'baseline-and-credit' scheme.
• Obligated entities will be assigned emission intensity targets, and if they exceed their targets, they must purchase carbon credits from those who have reduced emissions below their targets.
• **Offset Mechanism** - Non-obligated entities can participate in the scheme by registering projects that reduce, remove, or avoid GHG emissions and earning carbon credits.
• **Scope** - The CCTS will initially cover carbon dioxide (CO2) and perfluorocarbons (PFCs), with provisions to expand to other greenhouse gases in the future.
• The scheme will cover both direct (scope 1) and indirect (scope 2) emissions.

References

1. DownToEarth | Can pollution markets work?
2. ICAP | Indian-carbon-credit-trading-scheme

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