India’s Evolving Carbon Market

For Prelims: Carbon Credit Market, NDCs, GHG, Kyoto Protocol, Net Zero, PLI Scheme, Energy Conservation.

For Mains: India’s Evolving Carbon Market and its Significance.

Why in News?

- The Ministry for Power, New & Renewable Energy is taking steps to establish a **Carbon Credit Market** to help the country meet its **[Nationally Determined Contributions (NDC).](#)**

What are the Carbon Markets?

- **Carbon Credits:**
    - A carbon credit (also known as carbon offset) is a **credit for greenhouse emissions reduced or removed from the atmosphere** by an emission reduction project, which can be used by governments, industry, or private individuals to compensate for the emissions they generate elsewhere.
    - Those that cannot easily reduce emissions can still operate, at a higher financial cost.
    - Carbon credits are based on the **"cap-and-trade"** model that was used to reduce sulfur pollution in the 1990s.
    - One carbon credit is **equal to one metric ton of carbon dioxide,** or in some markets, carbon dioxide equivalent gases (CO_2-eq).
    - Negotiators at the Glasgow COP26 climate change summit in November 2021 agreed to create a global carbon credit offset trading market.
        - The **[Kyoto Protocol](#)** provides for three mechanisms that enable countries, or operators in developed countries, **to acquire greenhouse gas reduction credits:**
        - Under Joint Implementation (JI), a developed country with relatively high costs of domestic greenhouse reduction would set up a project in another developed country.
        - Under the **Clean Development Mechanism (CDM),** a developed country can **“sponsor” a greenhouse gas reduction project in a developing country** where the cost of greenhouse gas reduction project activities is usually much lower, but the atmospheric effect is globally equivalent. The developed country would be given credits for meeting its emission reduction targets, while the developing country would receive the capital investment and clean technology or beneficial change in land use.
        - Under **International Emissions Trading (IET),** countries **can trade** in the international carbon credit market to **cover their shortfall** in Assigned Amount Units (AAUs). Countries with surplus units can sell them to countries that are exceeding their emission targets under Annex B of the Kyoto Protocol.
- **Carbon Markets:**
    - A carbon market **turns emission reductions and removals into tradeable assets,**

    - thus creating incentives to reduce emissions or **improve energy efficiency.** The carbon markets can be compliance and voluntary.
    - Carbon trading started formally in 1997 under the **United Nations' Kyoto Protocol on climate change** which had more than 150 nation signatories.
    - Parties with commitments under the agreement agreed to limit or reduce their greenhouse gas emissions between 2008 – 2012 to 5.4% which were well below the levels of 1990.
    - Emissions trading, as set out in the Kyoto Protocol, allowed **countries to sell the excess capacity of emission units** to countries that had levels well over their targets.

What is the Significance of Carbon Markets?

- Carbon markets will **open up new avenues for organizations** that are engaged in developing, trading and consulting carbon credits, while stunting the growth of fossil-fuel generation capacities.
- Carbon credits will help developing countries like **India carry out economic activities, while keeping the country's carbon goals in perspective.**
    - In 2021, the global carbon credits market rose by 164 % and is expected to cross USD 100 billion by 2030.
- Carbon credits offer a way **to reward the industries and other sectors** that have developed practices involving technological innovations to reduce emissions and achieve climate targets.
- Carbon markets will play a key role in the **drive towards decarbonisation, encouraging the reduction of emissions through various schemes** in the short term with an ultimate goal of achieving **Net Zero** in the long term.
- Carbon markets are one of the most effective drivers of reducing emissions, offering the lowest-cost emission reductions and enabling India to avert a loss of USD 35 trillion.

What are the Indian Emission Targets?

- India **submitted its updated NDCs** under the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) in August 2022, in which it stressed the fact that it is a step ahead in achieving the long-term goal of **Net Zero in 2070.**
- Under the updated NDCs, India is committed to reducing the emissions intensity of its gross domestic products by **45 % from 2005 levels by 2030 and achieving 50 %** of its cumulative electric power installed capacity from non-fossil fuel sources of energy by 2030.
- The country is working on expanding its supply chain in the solar manufacturing division.

What are the Related Indian Initiatives?

- **PLI Scheme:**
    - Diversification of the supply chain by introducing a production linked incentive scheme for the **manufacturing of polysilicon cells into modules.**
- **Clean Development Mechanism:**
    - In India, the clean development mechanism under the Kyoto Protocol provided a primary carbon market for the players.
    - The secondary carbon market is covered by the **perform-achieve-trade** scheme (which falls under the energy efficiency category) and the renewable energy certificate.
- **Energy Conservation (Amendment) Bill, 2022:**
    - Empowers the Centre to specify norms and standards of energy efficiency for appliances, industrial equipment and buildings with a connected load over 100 kiloWatts (kW) or a contractual demand of more than 120 kilovolt-amperes (kVA).

Way Forward

- India is on the path to establishing a carbon market at the national level beginning with the voluntary carbon market and then moving on to a compliance-based market.
- The effects of climate change reduction should be favorable to sectors such as renewable energy, energy efficiency, transportation, waste, afforestation and reforestation.
- The carbon credits market favoured by appropriate regulations and policy will help in the creation

of suitable opportunities for the next decade.

UPSC Civil Services Examination Previous Year Question:

Prelims

Q. The concept of carbon credit originated from which one of the following? (2009)

(a) Earth Summit, Rio de Janeiro
(b) Kyoto Protocol
(c) Montreal Protocol
(d) G-8 Summit, Heiligendamm
Ans: (b)

Q. Regarding “carbon credits”, which one of the following statements is not correct? (2011)

(a) The carbon credit system was ratified in conjunction with the Kyoto Protocol
(b) Carbon credits are awarded to countries or groups that have reduced greenhouse gases below their emission quota
(c) The goal of the carbon credit system is to limit the increase of carbon dioxide emission
(d) Carbon credits are traded at a price fixed from time to time by the United Nations Environment Programme.
Ans: (d)

Mains

Q. Should the pursuit of carbon credits and clean development mechanisms set up under UNFCCC be maintained even though there has been a massive slide in the value of a carbon credit? Discuss with respect to India’s energy needs for economic growth. **(2014)**

Q. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. **(2022)**

Source: DTE