

CURRENT SCENARIO, OPPORTUNITIES AND CHALLENGES OF CARBON CREDIT TRADING IN INDIA**Dr. Kishor P. Bholane**

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kpbl143@gmail.com, Mob. No.: 8275343305**ABSTRACT:**

As a developing country, India's main goal is to promote development without harming the environment. Carbon credits are now seen as an effective tool to combat climate change, pollution and greenhouse gas emissions. India's carbon credit trading plan is an important step in the fight against climate change. This research paper discussed the government initiatives on carbon credit and current scenario of carbon credit market in India. It further studied the opportunities and challenges of carbon credit trading in India.

Keywords:

Climate Change, Green House Gases, Carbon Emission, Carbon Credit etc.

INTRODUCTION:

Fossil fuels (coal, oil and natural gas) are by far the largest contributor to global climate change. It accounts for more than 75% of the world's carbon emissions and almost 90% of all carbon dioxide emissions. When greenhouse gas emissions cover the earth, they trap the sun's heat. This causes global warming and climate change. At the same time, heat changes weather patterns and disrupts the balance of the sky. This situation poses a great risk for both humans and all living things on earth.¹ There is an urgent need to reduce emissions and decarbonise the economy. But the deep changes needed to reduce emissions will take years.² To ensure climate security, the Indian government has taken various measures. Carbon credit and its trading are one of them. Carbon credits are designed as a way to reduce carbon emissions (GHGs).³

Concept of Carbon Credit and Carbon Trading:

A carbon credit is a unit of exchange that organizations, businesses, and individuals can use to offset their greenhouse gas emissions. One carbon credit is equivalent to removing one metric ton of greenhouse gases from the atmosphere.⁴ Carbon trading is the means of generating income through sale of carbon credit. The carbon credit system's goal was to stop the increase of CO₂ emissions. For example, if a green club group plants enough trees to reduce emissions by one ton, the group will be awarded a credit. If a steel producer has an emission quota of ten tons, but expects to produce 11 tons, it can purchase a carbon credit from the green club group. Buyers and sellers of carbon credit can trade through the Carbon Trade Exchange, which is like a stock exchange.⁵ Therefore, carbon trading offers the supply of carbon credit to fulfil its demand.

Objectives of the Study:

Following are the objectives of this research paper:

- 1) To determine the amount of carbon credits to buy considering carbon offset lifecycle as well as to know the ways to buy it.
- 2) To overview the Indian Government initiatives on carbon credits and its trading.
- 3) To discuss the current scenario of carbon credit market in India.
- 4) To list out the carbon credit trading companies listed in India.
- 5) To study the opportunities and challenges of carbon credit trading in India.

Research Methodology:

As the concept of carbon credit and carbon trading is in its evolutionary stage, particularly in India, not much literature as well as numerical data is available. To study the current scenario, opportunities and challenges of carbon credit trading in India researcher studied and analyzed theoretical and literature reviews. This study is based on secondary data and trying to add to the existing literature on carbon credit and its trading.

Buying of Carbon Credits:

Purchasing credits can eliminate carbon footprint of a company. But you need to decide a few things first. Calculate your company's carbon emissions. Note that each credit represents one tonne of carbon dioxide or its equivalent. So, if your company emits a total of 1,000 tons of greenhouse gases per year, you need to purchase 1,000 carbon credits to cover all your carbon emissions. This carbon accounting is about ensuring your company doesn't emit more than it absorbs. It will also help finance projects to reduce carbon emissions. Once you've calculated your company's total carbon footprint, it's time to decide how much carbon footprint you'll offset. You can then decide the number of credits to purchase. However, before purchasing the credit, the following carbon offset lifecycle should be taken into account:⁶

Stage 1 - Development of Methodology: Buyers can provide financial support for the development of new projects.

Stage 2 - Project Development & Registration: The next stage is project development and registration. The design is then validated by an independent verifier and approved by a carbon offset program. Only then project registration is possible and carbon offset credits can be generated.

Stage 3 - Project Verification and Carbon Credit Issuance: A carbon offset project is implemented and verified to determine the quantity of emission reductions it generated and the corresponding number of carbon credits are issued.

Stage 4 - Transfer of Carbon Credit: After they're issued, carbon credits can be transferred into different accounts in an offset program's registry. Company can then use those carbon credits to offset business footprint and then retire them.

Stage 5 - Retirement of Carbon Credit: Carbon credit holders must retire the offsets after their use and claim their reductions. After retirement, the offsets cannot be used or transferred. Thus, carbon credits need to be removed from circulation.

After fulfilling all the criteria, you can now buy carbon credits choosing from among the ways:

- 1) Buying directly from project developers.
- 2) Buying from a broker.
- 3) Buying from a retailer.
- 4) Buying from an exchange

Indian Government Initiatives on Carbon Credits and Its Trading:

Government of India has taken the following initiatives on carbon credit and its trading:⁷

- 1) **PLI Programme:** Diversifying the supply chain by offering manufacturing support for the production of polycrystalline silicon cells in buildings.
- 2) **Clean Development Mechanism:** In India, the Clean Development Mechanism under the Kyoto Protocol offers the first carbon market to participants. The secondary carbon market includes commercial and renewable energy certificates.
- 3) **Energy Conservation (Amendment) Bill, 2022:** Empowers the Centre to develop energy efficiency standards and standards for electrical appliances, household appliances and buildings with connections of more than 100 KW or contracts requiring more than 120 KVA.
- 4) **Establishment of Carbon Market:** The government plans to establish the Indian Carbon Market (ICM), which will create a national framework to price greenhouse gas emissions through carbon credit certificate trading in order to decarbonise the Indian economy. For this purpose, the Ministry of Energy, the Ministry of Energy and the Ministry of Environment, Forestry and Climate Change are developing a carbon credit marketing plan.
- 5) **Restrictions on Carbon Credit Exports:** India has banned companies from exporting carbon credits until the country meets the target of reducing carbon emissions by 1 BT by 2030 and net zero emissions by 2070. We will

increase the share of green energy from 42% to 50% by the end of this decade and become an energy exporter in the coming years.

Current Scenario of Carbon Credit Market in India:

India's carbon market is one of the largest in the world. India's carbon credit market is worth over \$1.2 billion. This number will increase as the climate change crisis accelerates and companies strive to achieve zero emissions targets.⁸ Between 2010 and June 2022, India issued 35.94 million carbon credits. This accounted for approximately 17% of total global carbon credits. India's carbon market is growing even faster than the IT, biotechnology and BPO industries. There are around 850 projects with an investment of Rs 65,000 billion are in process. India will gain at least \$5 billion to \$10 billion (Rs. 225 billion to Rs. 450 billion) from carbon trading over time. India is also one of the largest beneficiaries of the world's total carbon emissions through Clean Development Mechanism, accounting for approximately 31%. Carbon is now also traded on the Indian Commodity Exchange. It is Asia's first carbon credit trading exchange. Delhi Metro Rail reduced energy consumption by 30% by using a regenerative banking system and became the first metro station in the world to receive carbon credits.⁹

About 163 million carbon credits have been retired in India as of May 2023. This means that companies that had got carbon credits have sold these carbon credits to other companies, and buyers claimed emissions offsets against these credits. India has surpassed China by retiring 100 million carbon credits as of May 2023. As of June 2023, there are 860 registered and a total of 1,451 projects under various stages of consideration at the world's two leading carbon crediting programmes, Verra and Gold Standard, which certify projects to receive credits.¹⁰

Carbon Credit Trading Listed Companies in India:

Following are list of carbon credit trading companies in India:¹¹

S.N.	Company	Details
1	Jindlal Vijaynagar Steel	\$225 Million worth
2	Powerguda in Andhra Pradesh	Saved 147 tonnes of carbon
3	Handi Forest in Madhya Pradesh	Restored 10,000 hectares of degraded forest
4	Torrent Power AEC	Estimated to received 199.9 crore from energy efficient projects
5	Indian Aluminium	Estimated to received 42.9 crore from Gas capture Projects
6	Kalpataru Power Transmission	5.3 crore estimated to receive by energy efficient projects.
7	Grasim Industry	Estimated to received 4.1 crore from energy efficient projects
8	Balrampur Chini	Estimated to receive 15.7 crore from renewable projects.

Source: Ashim Paul and Legal service.com cited on <https://blog.mywastesolution.com/carbon-credit-trading-in-India/>

Carbon Credit Trading Opportunities in India:

India is one of the world's largest greenhouse gas emitters and therefore has an important role in mitigating the effects of climate change. India's commitment to reducing its carbon footprint and achieving sustainable development goals provides many opportunities for the country's carbon footprint. The most common way to generate carbon credits in India is through renewable energy generation such as solar and wind. The Indian government has set a target of 175 GW of renewable energy generation by 2022, and this presents a great opportunity to create carbon credits through clean energy. Carbon credits can also be generated through energy efficiency measures. Perform, Achieve and Trade (PAT) scheme is one of the several initiatives of India's Bureau of Energy Efficiency (BEE), which

provides incentives to companies to improve energy efficiency and reduce their carbon footprint. Waste-to-energy processes such as biogas and biomass are also potential sources of carbon credits in India. These projects not only produce clean energy, but also help reduce waste and improve sanitation. Carbon credits generated through carbon trading can be used effectively in the development of renewable energy projects. The advantage of carbon emissions project is also related to the creation of jobs for people through the creation of industrial production of renewable energy products.¹²

Challenges of Carbon Credit Trading in India:

Although there are many opportunities for carbon credits in India, there are also some challenges that need to be addressed. One of the main problems is the lack of knowledge and understanding of businesses and organizations about carbon credits. This makes it difficult for them to identify and implement carbon reduction measures that can generate carbon credits. Another challenge is that the process of obtaining carbon credits is time-consuming and complex. Companies and organizations must undergo a rigorous validation and verification process to ensure that their carbon reduction measures align with the standards set by international organizations. It has no central or global base and its costs are high.¹³

Concluding Remark:

Carbon trading is expected to continue to increase in the coming years, as carbon credits remain an important tool in the fight against climate change. The number of companies trading carbon credits is increasing in India. Carbon offset programs can create green energy, reduce waste, improve sanitation, create jobs and create renewable energy projects.

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