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# Mitigating Climate Impact: Carbon Credit Schemes in Environmental Preservation and Energy Conservation

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## ABSTRACT

*The Carbon Credit Scheme has emerged as a crucial tool in the global fight against climate change, promoting sustainable development and encouraging businesses to adopt environmental friendly practices. This research article delves into the intricacies of the Carbon Credit Scheme in India, analyzing its evolution, implementation, and effectiveness in mitigating carbon emissions, analyzing its evolution, current status, challenges, and potential improvements. The study aims to provide a comprehensive understanding of the legal intricacies surrounding carbon credits.*

**Keywords:** Energy Conservation; Carbon Credit; Environment Protection; Carbon Credit Scheme.

## I. INTRODUCTION

Many countries across the globe have been endeavoring to mitigate the impacts of global warming. The key to achieving this goal is to reduce the emission of carbon dioxide, the main driver of global warming. Thus far, a wide variety of policies have been developed and implemented worldwide in an effort to reduce carbon emissions. On June 28, 2023 Government of India has also notified the Carbon Credit Trading Scheme, 2023. With the implementation of this scheme India took a significant step towards achieving its net zero commitments.

Before going into the details of the Scheme let us discuss what carbon credits are very briefly here. Carbon credits are also sometimes called as carbon offsets. If you do some activity that have the effect of reducing emissions of a Greenhouse gas like carbon dioxide below a certain benchmark you get a carbon credit also if you do some activity that has an effect of sucking up a Greenhouse gas from the atmosphere you get a carbon credit one carbon credit corresponds to 1 ton of carbon dioxide or one ton of carbon dioxide equivalent either reduced or removed. These carbon credits are tradable in the market like shares of a company. These credits are bought by the entity that is under a legal obligation to reduce the greenhouse gas emissions but

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is unable to do so on its own by other measures or by an entity that has voluntarily committed itself to reduce emissions. So with their being an investment called carbon credit and there being sellers and buyers you have a market and this market is called carbon market.<sup>2</sup>

Carbon credit is not new it was first introduced in Kyoto Protocol to the United Nations Framework Convention on Climate Change, which came into force on February 16, 2005. Through it reduced emissions or removed carbon dioxide or any other greenhouse gas from the atmosphere were given certified emission reduction certificate (CER) which could be sold in the market this was happening from a number of years but then the prices of CER crashed and many Indian companies are still left holding heaps of worthless CERs.

Today there are many carbon markets in the world they are broadly divided into two types of market that is the compliance market and the voluntary market. Understanding these two markets that are voluntary and compliance carbon market are of immense importance in understanding the carbon market worldwide. Voluntary market is one in which buyers are not under any legal obligation to do emission reductions but have volunteered that is on their own they have come forward to do so even if this cost them some money for the good of the world and the environment at large. Many leading companies of the world like Google Microsoft Apple etc. were buyers in the voluntary market. According to one estimate the size of the voluntary carbon market was two billion dollars in 2022 and many experts say that it could have been gone to any extent between 5 billion dollars to and even up to 50 Billion Dollars by 2030 depending upon the market price of the carbon credit.<sup>3</sup>

Compliance carbon market is a market where the buyers of carbon Credit are under a legal obligation of emission reduction. Compliance market is typically run by a cap and trade mechanism. Cap and trade is another important term in carbon Credit market under this system an authority fixes a baseline for emission or allows a certain level of emissions. For example the steel industry it could be so many tons of carbon dioxide per ton of steel produced, for coal power industry it could be so many tons of carbon dioxide per kilowatt hour of power produced. An obligated entity is bound by law to its emissions to the level fixed by the authorities. If its emissions are less than the fixed level it gets carbon credit if emission exceeds the fixed level in such situation it can go to the carbon market and buy a carbon credit that are sold by those companies that have done well in reducing the emission of greenhouse gases. This cap

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<sup>2</sup> **The Globe and Mail**, *See, A Climate for Action*, at 1, 6 (2008), [http://www.ipac.ca/documents/Globe%20and%20Mail%20\(6\)1.pdf](http://www.ipac.ca/documents/Globe%20and%20Mail%20(6)1.pdf) (last visited Nov. 2, 2024)

<sup>3</sup> **Philippe Ambrosi & Karan Kapoor**, *State and Trends of the Carbon Market* 1 (2008), <http://wbcarbonfinance.org/docs/state-trends-final.pdf> (last visited Nov. 2, 2024).

and trade market is sometimes called as Alliance market also. These carbon credits in allowance market are sometimes are called as allowances.

#### **(A) Kyoto Protocol:**

Kyoto Protocol is an international treaty negotiated under the United Nations Framework Convention on Climate Change (UNFCCC) treaty aimed at combating climate change by reducing greenhouse gas emissions. It was adopted in 1997 and entered into force in 2005. The Protocol sets binding emission reduction targets for developed countries, known as Annex I Parties, while also establishing mechanisms for emissions trading and clean development projects in developing countries. These targets are determined based on each country's historical emissions and level of economic development. Its primary goal is to limit global warming by promoting collective action to reduce emissions of greenhouse gases, such as carbon dioxide, methane, and nitrous oxide. The Protocol also establishes mechanisms for compliance, including reporting requirements and review processes to ensure adherence to the agreed-upon emission reduction commitments. Additionally, it outlines provisions for enforcement and dispute resolution mechanisms to address non-compliance by parties. Overall, the Kyoto Protocol functions as a legally binding framework for international cooperation to address climate change through emission reduction efforts.<sup>4</sup>

India, as a signatory to the Kyoto Protocol, has a unique status under the agreement, particularly concerning carbon credits. As a developing country, India is not subject to binding emission reduction targets like those imposed on developed nations. Instead, India has focused on sustainable development while voluntarily undertaking measures to reduce its greenhouse gas emissions.

One significant aspect of India's involvement in the Kyoto Protocol is its participation in the Clean Development Mechanism (CDM). The CDM allows developed countries to invest in emission reduction projects in developing countries like India and earn carbon credits, known as Certified Emission Reductions (CERs), in return. These CERs can be used to meet part of their emission reduction targets under the Protocol.

India has been a major beneficiary of CDM projects, attracting significant investment in renewable energy, energy efficiency, and sustainable development initiatives. These projects have contributed to reducing greenhouse gas emissions while simultaneously promoting

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<sup>4</sup> **Press Release, Climate Action Network (CAN) Europe, EU and Its Member States Ratify the Kyoto Protocol** (May 31, 2002), [http://www.climnet.org/EUenergy/ratification/31-5-02\\_EUratifiesKP.pdf](http://www.climnet.org/EUenergy/ratification/31-5-02_EUratifiesKP.pdf) (last visited Nov. 13, 2024).

economic growth and poverty alleviation in India.

Additionally, India has actively engaged in negotiations under the Kyoto Protocol and subsequent climate agreements to advocate for the interests of developing countries. India has emphasized the principle of "common but differentiated responsibilities," which recognizes the historical responsibility of developed countries for climate change and the need for differential treatment between developed and developing nations. Furthermore, India's approach to carbon credits and climate action has evolved over time. While continuing to participate in international carbon credit mechanisms like the CDM, India has also prioritized domestic initiatives to address climate change. These include ambitious renewable energy targets, energy efficiency programs, afforestation projects, and the implementation of the Paris Agreement commitments.

India's status under the Kyoto Protocol with regards to carbon credits highlights its active participation in international climate efforts, its role in sustainable development, and its advocacy for equitable and inclusive climate policies. Through its engagement in carbon credit mechanisms and domestic climate actions, India is making significant contributions to global climate mitigation efforts while pursuing its development goals.<sup>5</sup>

#### **(B) The Paris Agreement:**

The Paris Agreement is also an international treaty within the United Nations Framework Convention on Climate Change (UNFCCC) that aims to combat climate change. It was adopted in 2015 and entered into force in 2016. The Paris Agreement establishes a framework for countries to set their own voluntary, non-binding emission reduction targets, known as Nationally Determined Contributions (NDCs). These targets are submitted by each country and are updated every five years, with the aim of collectively limiting global warming to well below 2 degrees Celsius above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius.

The Paris Agreement does not impose binding emission reduction targets on individual countries. Instead, it relies on a bottom-up approach where each country determines its own climate action plan based on its national circumstances, capabilities, and priorities. However, the Agreement establishes a robust transparency framework to ensure accountability and encourage countries to regularly report on their progress towards achieving their NDCs.

The Agreement also includes provisions for financial assistance and technology transfer from developed to developing countries to support their climate mitigation and adaptation efforts.

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<sup>5</sup> **United Nations Framework Convention on Climate Change, Kyoto Protocol**, <http://unfccc.int/kyoto-protocol/items/2830.php> (last visited Nov. 13, 2024).

Additionally, it encourages cooperation and collaboration among countries in various areas, including capacity building, research, and development of climate-resilient technologies. Overall, the Paris Agreement provides a flexible and inclusive legal framework for global climate action, emphasizing cooperation, transparency, and collective efforts to address the urgent threat of climate change.

India, as one of the largest and most populous developing countries, plays a significant role in the global efforts to combat climate change under the Paris Agreement. India's position under the Agreement is shaped by its national circumstances, development imperatives, and commitment to sustainable development while addressing climate challenges. Several key aspects characterize

India's stance under the Paris Agreement revolves around its Nationally Determined Contribution (NDC), which outlines ambitious targets for reducing emission intensity, increasing non-fossil fuel energy sources, and enhancing forest cover. Emphasizing the principle of differentiated responsibilities, India stresses equity and fairness, highlighting the historical emissions of developed nations and the need for support to developing countries. Aligning climate actions with sustainable development goals, India focuses on poverty eradication, social equity, and economic development while prioritizing adaptation measures to address vulnerabilities, especially in coastal and Himalayan regions. Through initiatives like the International Solar Alliance, India promotes renewable energy globally, emphasizing international cooperation in forums such as COP to advance climate action and achieve sustainable development goals, reflecting its commitment to inclusive and ambitious climate policies.<sup>6</sup>

### **(C) Carbon Credit Trading Scheme, 2023**

Since long the Government of India wanted to bring in its own Indian carbon market. A market in which a carbon credit is generated in India sold in India and bought in India. Accordingly the Central Government through Ministry of Power, in exercise of the powers conferred by clause (w) of section 14 of the Energy Conservation Act, 2001 has notified the Carbon Credit Trading Scheme, 2023<sup>7</sup> on June 28, 2023. This may be considered as the first step towards making an Indian carbon market. As per the scheme the Indian carbon market will be run by the cap and

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<sup>6</sup>See *India's Growing Carbon Offset Market*, **Reuters** (June 22, 2010), [http://in.reuters.com/article/2010/06/22/idINIndia-49524120100622?feedType=RSS&feedName=topNews&utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3Areuters%2FINtopNews%28News%2FIN%2FTopNews%29](http://in.reuters.com/article/2010/06/22/idINIndia-49524120100622?feedType=RSS&feedName=topNews&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3Areuters%2FINtopNews%28News%2FIN%2FTopNews%29); see also *Issuance of Certified Emission Reductions (CERs)*, **United Nations Framework Convention on Climate Change**, [http://cdm.unfccc.int/Issuance/cers\\_iss.html](http://cdm.unfccc.int/Issuance/cers_iss.html) (last visited Jan. 27, 2025).

<sup>7</sup> For details, see *the Scheme*, <https://beeindia.gov.in/sites/default/files/CCTS.pdf> (last visited Nov. 2, 2024).

trade scheme which has been discussed above.

## **II. SALIENT FEATURES OF THE SCHEME**

### **(A) National Steering Committee**

The National Steering Committee for Indian Carbon Market, as mandated by the Central Government, is the apex body responsible for overseeing and governing the Indian carbon market. Chaired by the Secretary of the Ministry of Power and co-chaired by the Secretary of the Ministry of Environment, Forest and Climate Change, the committee comprises high-ranking officials from various ministries including Finance, Niti Aayog, Power, Environment, Forest and Climate Change, New and Renewable Energy, Steel, Coal, Chemicals and Fertilizers, Petroleum and Natural Gas, and Agriculture and Farmers Welfare. Additionally, it includes members from state environmental departments, expert members with knowledge in emissions, carbon trading, climate change, environment, and energy, as well as representatives from the Central Electricity Authority and the Grid Controller of India Limited. The committee also has provisions for co-opting up to three additional members as necessary. The Director General of the Bureau of Energy Efficiency serves as the Member-Secretary of the committee, ensuring efficient coordination and implementation of its directives.

The establishment of the National Steering Committee for the Indian Carbon Market signifies a significant step towards effective governance and oversight in India's efforts to mitigate carbon emissions. With representation from key ministries and departments, including Environment, Power, Finance, and Agriculture, the committee possesses a diverse range of expertise necessary for addressing the multifaceted challenges of carbon management. Additionally, the inclusion of expert members and representatives from state governments ensures a comprehensive and inclusive approach to decision-making. By vesting the committee with the governance and oversight of the carbon market, the Central Government demonstrates its commitment to addressing climate change and promoting sustainable development. This coordinated effort, spearheaded by the National Steering Committee, will be instrumental in driving forward India's carbon reduction goals and fostering collaboration across sectors and stakeholders.<sup>8</sup>

#### **a. Functions of the National Steering Committee:**

- Recommend procedures for institutionalizing the Indian carbon market to the Bureau.
- Recommend rules and regulations for the functioning of the Indian carbon market to the

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<sup>8</sup> See Carbon Credit Trading Scheme, 2023, r. 3; for details, see the Scheme, <https://beeindia.gov.in/sites/default/files/CCTS.pdf> (last visited Nov. 2, 2024).

Bureau.

- Advise on specific greenhouse gas emission targets for obligated entities to the Bureau.
- Formulate guidelines for trading carbon credit certificates outside India and recommend them to the Bureau.
- Recommend the issuance of carbon credit certificates to the Bureau.
- Develop processes or conditions for the crediting period, renewal, or expiry of carbon credit certificates and recommend them to the Bureau.
- Monitor the functions of the Indian carbon market.
- Recommend the formation of any necessary Committee or Working Group related to the Indian carbon market to the Bureau.
- Fulfill any other functions as assigned by the Central Government.
- The Chairperson is responsible for convening meetings at least once per quarter every year.

The delineation of functions for the National Steering Committee underscores its pivotal role in shaping and regulating the Indian carbon market. By recommending procedures, rules, and emission targets, the committee provides essential guidance for the Bureau, ensuring a structured and effective framework for carbon management. Moreover, its involvement in formulating guidelines for trading carbon credits and overseeing market functions reflects a commitment to transparency and integrity within the market. Additionally, the mandate to monitor market operations and propose committee formations highlights a proactive approach to addressing emerging challenges and fostering collaboration. The requirement for periodic meetings, chaired by the Chairperson, further emphasizes the committee's dedication to ongoing assessment and refinement of carbon market policies. Overall, these functions demonstrate the National Steering Committee's crucial contribution to advancing India's climate agenda and fostering a sustainable low-carbon economy.<sup>9</sup>

#### **(B) Bureau's Role as Administrator and Its Functions:**

The Bureau is designated as the Administrator for the Indian carbon market. In its capacity as the administrator, the Bureau is tasked with the following functions:

- Identifying sectors and potential areas for reducing greenhouse gas emissions within those sectors, and recommending their inclusion in the Indian carbon market to the

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<sup>9</sup> See Carbon Credit Trading Scheme, 2023, r. 4.



Ministry of Power.

- Developing trajectory and targets for entities under compliance mechanisms.
- Issuing carbon credit certificates based on recommendations from the National Steering Committee for the Indian carbon market and subsequent approval from the Central Government.
- Establishing market stability mechanisms for carbon credits.
- Developing procedures for accreditation and outlining the functions of accredited carbon verification agencies.
- Accrediting agencies according to approved procedures for accredited carbon verification agencies.
- Determining fees and charges payable by registered entities, with Central Government approval, to cover the costs and expenses of implementing this scheme.
- Developing processes or conditions for the crediting period, renewal, or expiry of carbon credit certificates.
- Creating data submission formats and forms to facilitate the effective functioning of the Indian carbon market.
- Conducting capacity-building activities for stakeholders.
- Developing and maintaining information technology infrastructure, including user guidance platforms necessary for the Indian carbon market.
- Maintaining a secure database with approved security protocols established by the Central Government.
- Establishing any Committee or working group recommended by the National Steering Committee for the Indian carbon market.
- Carrying out any other functions assigned by the Central Government.

The Bureau's role as the administrator of the Indian carbon market is pivotal in ensuring its effective operation and regulation. Its functions, as outlined, encompass a wide array of responsibilities ranging from identifying sectors for emission reduction to developing market stability mechanisms. By centralizing these functions under one entity, the Bureau can streamline decision-making processes and provide cohesive oversight. Additionally, its collaboration with the National Steering Committee and adherence to Central Government

directives ensure alignment with broader environmental policies and goals. Overall, the Bureau plays a crucial role in facilitating the transition towards a more sustainable and carbon-conscious economy in India.<sup>10</sup>

### **(C) Registry and Its Functions:**

The Grid Controller of India Limited is designated as the registry for the Indian carbon market. The Registry is responsible for the following functions, as determined by the Central Government:

- Complying with directives issued by the Bureau as required.
- Conducting the registration process for obligated or non-obligated entities.
- Maintaining a secure database with stringent security protocols in place.
- Recording all transactions accurately and securely.
- Sharing transaction records with the Power Exchange and the Bureau as necessary.
- Assisting in the development of an information technology platform to manage the database of carbon credit certificates effectively.
- Serving as the meta-registry for India, ensuring comprehensive oversight. Establishing connections with other National or International registries as approved by the Central Government.
- Fulfilling any additional functions assigned by the Bureau, contributing to the efficient operation of the carbon market ecosystem.

The registry is to play a crucial role in managing the transactions and records within the Indian carbon market. It is to ensure compliance with regulations and maintains a secure database. The Central Government will determine the manner in which the registry functions, allowing for flexibility in adaptation to evolving needs.<sup>11</sup>

### **(D) Central Electricity Regulatory Commission as Regulator for trading activities under Indian Carbon Market:**

The Commission assumes the pivotal role of regulator for trading activities within the Indian Carbon Market, ensuring the integrity and efficiency of the market's operations. Tasked with a range of responsibilities, the Commission oversees the trading of carbon credit certificates, meticulously regulating the processes involved to maintain fairness and transparency. Its

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<sup>10</sup> See Carbon Credit Trading Scheme, 2023, r. 5.

<sup>11</sup> See Carbon Credit Trading Scheme, 2023, r. 6.

mandate extends to safeguarding the interests of both sellers and buyers, fostering a balanced and equitable marketplace. Moreover, the Commission regulates the frequency of carbon credit certificate trading, implementing measures to maintain market stability and prevent excessive volatility. With a focus on market oversight, the Commission diligently monitors activities and stands ready to intervene with preventive and corrective actions to forestall instances of fraud or distrust. Through its vigilant oversight and regulatory interventions, the Central Electricity Regulatory Commission plays a crucial role in fostering trust, stability, and integrity within the Indian Carbon Market, thereby advancing India's environmental goals and commitments towards a sustainable future. The assignment of the Central Electricity Regulatory Commission as the regulator for trading activities in the Indian Carbon Market is a significant development in ensuring accountability and stability within the market. The outlined responsibilities, ranging from regulating trading matters to preventing fraud, highlight the Commission's crucial role in maintaining fairness and transparency.<sup>12</sup>

While designating the Central Electricity Regulatory Commission as the regulator for trading activities within the Indian Carbon Market is a step towards ensuring oversight and integrity, there are certain considerations should have been taken in account that, *firstly*, the Commission's primary expertise lies within the electricity sector, raising questions about its suitability for regulating carbon trading, which involves complex environmental and financial dynamics. *Secondly*, while the outlined responsibilities include safeguarding the interests of both sellers and buyers and regulating trading frequency, there is limited clarity on the specific mechanisms and strategies the Commission will employ to achieve these objectives. Additionally, the provision for market oversight and preventive actions against fraud is crucial; however, without robust enforcement mechanisms and transparent processes, there remains a risk of regulatory inefficiency and market manipulation. Therefore, while acknowledging the Commission's role, there is a need for comprehensive evaluation and refinement of its regulatory framework to ensure effective governance and foster trust within the Indian Carbon Market.

#### **(E) Technical Committee and its Functions:**

The Technical Committee has been established by the Bureau to fulfill specific needs within the compliance mechanism of this Scheme. Each committee is tailored to address distinct areas relevant to the Scheme's objectives. Led by an expert member appointed by the Bureau, who possesses the requisite eligibility and experience within the relevant sector, the committee

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<sup>12</sup> See Carbon Credit Trading Scheme, 2023, r. 7.

ensures informed decision-making. Additionally, the composition of each Technical Committee may vary as per the requirements outlined by the Bureau, allowing for flexibility in assembling expertise as needed. These committees are tasked with executing various functions essential for the Scheme's implementation. Finally, the Technical Committee operates as an advisory body, providing recommendations to the Bureau on matters assigned to it, thereby contributing to the Scheme's effective execution and governance.<sup>13</sup>

The Technical Committee is supposed to play a crucial role within the compliance mechanism of the Scheme, as established by the Bureau. Firstly, the Bureau is mandated to form one or more Technical Committees tailored to address specific areas pertinent to the Scheme's objectives. These committees are essential for conducting in-depth assessments and providing expert guidance on various technical aspects. Secondly, each Technical Committee is led by a chairperson who is an expert in the respective field, ensuring that decisions are informed by specialized knowledge and experience. This ensures the committee's ability to effectively address complex technical issues within their designated sectors. Additionally, the composition of each committee is determined by the Bureau, allowing for flexibility in assembling diverse expertise as needed. The primary function of each Technical Committee is to execute tasks relevant to the Scheme's implementation, leveraging their expertise to provide valuable insights and recommendations. Finally, the Technical Committee operates as an advisory body, making recommendations to the Bureau based on their assessments and analyses of the matters assigned to them. Overall, the Technical Committee serves as a vital component of the Scheme's governance structure, facilitating informed decision-making and ensuring technical rigor in its execution.

#### **(F) Accredited Carbon Verification Agency:**

The Accredited Carbon Verification Agency plays a crucial role in ensuring the integrity of carbon-related activities within the Scheme. The Bureau, with prior approval from the Central Government, establishes the accreditation procedure and eligibility criteria for agencies seeking accreditation as carbon verification entities. This process is guided by recommendations from the National Steering Committee for the Indian Carbon Market, ensuring alignment with overarching objectives. Once accredited, these agencies are entrusted with various functions within the Scheme, as determined by the Bureau in accordance with evolving needs and objectives.<sup>14</sup>

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<sup>13</sup> See Carbon Credit Trading Scheme, 2023, r. 8.

<sup>14</sup> See Carbon Credit Trading Scheme, 2023, r. 9.

The establishment of an Accredited Carbon Verification Agency underscores the importance of robust verification processes within the Indian carbon market. By mandating the Bureau, with oversight from the Central Government, to define accreditation procedures and eligibility criteria, the system ensures that only competent and credible agencies are entrusted with verification responsibilities. Moreover, the reliance on recommendations from the National Steering Committee for the Indian Carbon Market ensures alignment with overarching objectives and best practices. This approach not only enhances transparency and reliability but also instills confidence among stakeholders regarding the accuracy of carbon-related data and transactions. Additionally, the flexibility for accredited agencies to adapt their functions based on evolving needs, as determined by the Bureau, reflects a commitment to continuous improvement and effectiveness within the Scheme. Overall, the establishment of accredited verification agencies marks a significant step towards fostering trust and integrity within the Indian carbon market, ultimately contributing to the achievement of national carbon mitigation goals.

#### **(G) Compliance Mechanism:**

The Ministry of Power, based on recommendations from the Bureau will determine the sectors and entities subject to compliance obligations. The Bureau will conduct studies for these sectors/entities, recommending emission intensity targets in terms of carbon dioxide equivalent (tCO<sub>2</sub>e) per unit of output, considering technological feasibility and implementation costs. And upon considering Bureau and National Steering Committee recommendations, the Ministry of Power will suggest greenhouse gas emission intensity targets to the Ministry of Environment, Forest, and Climate Change for formal notification under the Environment Protection Act, 1986.

Further, Obligated entities must achieve emission intensity targets notified by the Ministry of Environment, Forest, and Climate Change. Additionally, entities must meet other targets, such as non-fossil energy consumption, as specified by the Ministry of Power under the relevant Act. Entities surpassing emission intensity targets receive carbon credit certificates, endorsed by the National Steering Committee for the Indian Carbon Market. Entities failing to meet emission intensity targets must purchase carbon credit certificates from the Indian carbon market to offset their shortfall.

The Compliance Mechanism outlined here delineates the framework through which sectors and entities are mandated to adhere to specific emission intensity targets within the Indian carbon market. Firstly, the Ministry of Power, guided by recommendations from the Bureau,

determines the sectors and entities subject to compliance obligations. Subsequently, the Bureau conducts comprehensive studies to ascertain feasible emission intensity targets for these entities, considering factors such as available technologies and implementation costs. Following this, the Ministry of Power, in consultation with both the Bureau and the National Steering Committee for the Indian Carbon Market, recommends greenhouse gas emission intensity targets to the Ministry of Environment, Forest, and Climate Change for formal notification. Obligated entities are then obligated to achieve these targets, alongside any additional targets specified by the Ministry of Power. Entities exceeding their targets are issued carbon credit certificates, reflecting their contributions to emissions reduction efforts. Conversely, entities failing to meet their targets must offset their emissions by purchasing carbon credit certificates from the Indian carbon market. This mechanism thus incentivizes emissions reduction and fosters a market-driven approach to carbon mitigation.

**(H) Detailed Procedure:**

The National Steering Committee for the Indian Carbon Market, along with other relevant authorities, shall collaborate to formulate a comprehensive procedure for operationalizing the Indian carbon market, adhering to the guidelines set forth in this Scheme.

The detailed procedure shall encompass the following elements:

- Criteria for the issuance of carbon credit certificates;
- Determination of the validity period for carbon credit certificates;
- Establishment of floor and forbearance prices for carbon credit certificates;
- Specification of requirements, formats, and timelines for submissions;
- Framework for monitoring, reporting, and verification processes; and
- Consideration of any other pertinent matters related to or arising from the implementation of the Scheme.

The provision for a detailed procedure is essential for ensuring the effective operation and regulation of the Indian carbon market. Collaboration among relevant authorities, led by the National Steering Committee, ensures a comprehensive approach to formulating operational guidelines. The inclusion of specific elements such as criteria for issuance, validity periods, and pricing mechanisms demonstrates a commitment to transparency and consistency within the market. Moreover, specifying requirements for submissions and establishing monitoring and verification frameworks are crucial for maintaining the integrity of carbon credit transactions. Overall, the delineation of a detailed procedure is instrumental in providing clarity and guidance

for stakeholders participating in the Indian carbon market.<sup>15</sup>

**(I) Power to issue directions:**

Clause 13 of the Scheme grants the Bureau the authority to issue directives and orders to registered entities, subject to approval from the Central Government, as deemed necessary for the effective implementation of the Scheme. This provision empowers the Bureau to provide guidance and instructions to ensure compliance with the Scheme's objectives and requirements. It underscores the Bureau's role as a regulatory body responsible for overseeing the functioning of the Scheme and maintaining its integrity. Additionally, the requirement for approval from the Central Government ensures that directives are aligned with broader governmental policies and objectives. Overall, this clause serves to facilitate efficient management and enforcement of the Scheme, enhancing its effectiveness in achieving its intended goals.

### **III. CONCLUSION**

The Carbon Credit Trading Scheme, 2023, notified by the Central Government of India in June 2023, represents a significant step towards addressing climate change and promoting sustainable development. However, upon critical examination, several key aspects warrant attention and scrutiny. Firstly, while the scheme aims to incentivize emissions reductions and foster a market-driven approach to carbon mitigation, its effectiveness may be limited by the absence of stringent enforcement mechanisms and accountability measures. Without robust monitoring and enforcement, there is a risk of non-compliance and potential exploitation of loopholes within the scheme.

Furthermore, the scheme's reliance on carbon credits as tradable commodities raises concerns regarding market integrity and transparency. The determination of carbon credit prices and the allocation of credits to obligated entities require careful consideration to prevent market manipulation and ensure fair distribution. Moreover, the scheme's impact on vulnerable communities and marginalized groups must be thoroughly evaluated. There is a risk that stringent emission reduction targets may disproportionately burden certain sectors or regions, exacerbating socio-economic inequalities.

Additionally, the scheme's alignment with broader climate goals and international commitments, such as the Paris Agreement, needs closer examination. It is imperative to ensure that the scheme's objectives are coherent with global efforts to limit temperature rise and mitigate climate change impacts. The scheme's long-term sustainability and adaptability to

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<sup>15</sup> See Carbon Credit Trading Scheme, 2023, r. 12.

evolving climate scenarios and technological advancements require continuous monitoring and periodic review. Flexibility in adjusting targets and mechanisms in response to changing circumstances is crucial for the scheme's efficacy and relevance over time.

In conclusion, while the Carbon Credit Trading Scheme, 2023, represents a commendable effort by the Central Government of India to address climate change, its implementation and effectiveness hinge on addressing critical issues such as enforcement, market integrity, equity, alignment with global goals, and adaptability. A rigorous and transparent evaluation of these aspects is essential to ensure that the scheme fulfills its intended objectives and contributes meaningfully to India's climate action agenda.

The Scheme addresses the nation's commitment to addressing climate change, fostering sustainable development, and achieving the ambitious goal of net-zero emissions. By incentivizing businesses and industries to adopt cleaner and more environmentally friendly practices, the scheme aims to contribute significantly to the reduction of carbon footprints. The Carbon Credit Scheme promotes the adoption of renewable energy sources, energy efficiency measures, and sustainable practices, thereby creating a more resilient and competitive economy. Additionally, by encouraging the generation of carbon credits through initiatives such as afforestation and clean energy projects, India simultaneously addresses environmental concerns, contributing to biodiversity conservation and mitigating the adverse impacts of climate change. In essence, the Carbon Credit Scheme emerges as a multifaceted strategy that not only facilitates the transition to a low-carbon economy but also fosters economic prosperity while safeguarding the environment for future generations.

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