

## Carbon Credit Trading in India

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### Abstract

The growing concern about climate change and global warming among world leaders resulted in an international treaty-United Nations Framework Convention on Climate Change (UNFCCC). Kyoto protocol is an international agreement under the UNFCCC with legally binding targets for 37 Developed countries to reduce and limit their Green House Gas emissions by 5.2% below of their emissions on 1990 level. Kyoto (Japan) protocol was adopted in 1997 by the world leaders of Developed countries and till date there are 193 countries that have committed to limiting their greenhouse gas emissions by working together.

Emissions trading or cap-and-trade is a market-based approach used to control Green House Gas (GHG) emissions by providing financial incentives to the GHG (CO<sub>2</sub>) emission reduction projects by reducing use of fossil fuels as well as the rate of forest land conversion. Emission reduction projects like the use of renewable energy for e.g. wind, biomass, small hydro and solar energy projects; waste management that reduces methane emissions, reforestation projects etc can be registered under this market based mechanism to earn carbon credits and sell them. Carbon finance, made available for such projects which are registered under available carbon credit mechanism, facilitates the financial support through carbon credits for the reduction of greenhouse gas emissions to the project developer in developing countries for example India .

Emission Trading or Cap & Trade is one of the so called Kyoto Mechanisms under the UNFCCC. In this, the central authority sets a limit of cap on the amount of a pollutant that can be emitted. This limit is sold to the firms in the form of emission permits. An emission permit represents the right to emit the specific volume of a particular pollutant. The Firm would need to hold the number of permits equivalent to their emissions. The number of these permits can not exceed a cap. If a firm wants to increase the emission permits, it would buy from those who need fewer permits. This transfer of permits is called Emission Trade or Carbon Trading. The buyer is paying a charge for polluting, while the seller is being rewarded for having reduced emissions.

**Keywords:** Emission Trade, Carbon Trading, CDM, CER, IET, UNFCCC, GHG(CO<sub>2</sub>), Kyoto Mechanism Carbon Finance, Climate Changed and Global Warming.

### PAPER/ARTICLE INFO

RECEIVED ON: 10/10/2018

ACCEPTED ON: 11/10/2018

Reference to this paper  
should be made as follows:

**Pulkit Agarwal, Kamlesh Kumar (2018), "Carbon Credit Trading in India", Int. J. of Trade and Commerce-IIARTC, Vol. 7, No. 2, pp. 443-448**

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### 1. INTRODUCTION

A carbon credit is a generic term for any tradable certificate or permit representing the right to emit one tonne of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent (CO<sub>2</sub>) equivalent to one tonne of carbon dioxide. One carbon credit is equal to one metric tonne of carbon dioxide, or in some markets, carbon dioxide equivalent gases (Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous oxide (N<sub>2</sub>O), Sulphur hexafluoride (SF<sub>6</sub>), groups of hydro fluorocarbons (HCFs) and groups of Per fluorocarbons (PFCs). One carbon credit is equivalent to 1000 kg of CO<sub>2</sub>.

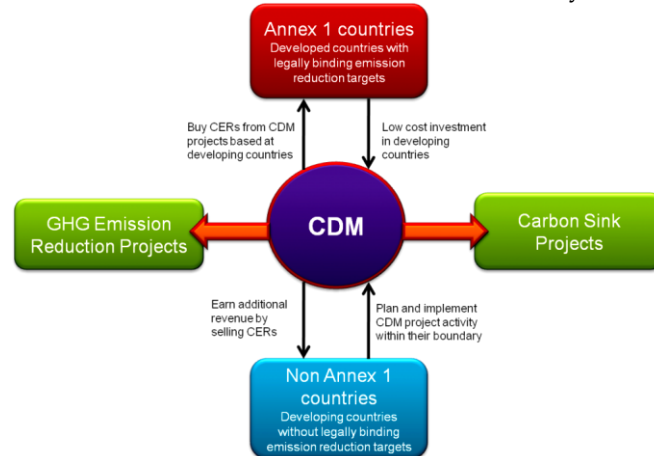
The Kyoto Protocol provides for three mechanisms that enable countries or operators in developed countries to acquire greenhouse gas reduction credits:-

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 or technology transfer in a developing country where the cost of greenhouse gas reduction project activities is usually much lower but the atmospheric effect of reduction is globally equivalent. The developed country would be given carbon 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. Countries with surplus units can sell them to countries that are exceeding their emission targets under Annex B of the Kyoto Protocol.

“The market value for greenhouse gas commodities could be worth \$2-3 trillion per year by 2020.”-Green Divider The Nicholas Institute for Environmental Policy Solutions



### 2. CLEAN DEVELOPMENT MECHANISM

Under the Article 12 of Kyoto protocol, a program called Clean Development Mechanism began which aimed at reduction of the greenhouse gases and prevent the depletion of ozone layer. Under it developed as well as developing countries come together to implement emission

reduction projects and policies which will help them obtain a Certificate Emission Reduction(CER) credits which can be traded as equivalent to one tonne of CO<sub>2</sub>.

Various types of Clean Development Mechanism projects are like reducing the dependency on fossil fuels, using animal waste to generate energy and manage it efficiently, fuel and electricity efficient households and offices, reducing the emission involved in manufacturing process. The Clean Development Mechanism (CDM), provided for under Article 12 of the Kyoto Protocol, enables developing countries to participate in joint greenhouse gas (GHG) mitigation projects. Under this Protocol, Annex I countries (developed countries and economies in transition) are required to reduce GHG emissions to below their 1990 levels.

The CDM enables these countries to meet their reduction commitments in a flexible and cost-effective manner. It allows public or private sector entities in Annex I countries to invest in GHG mitigation projects in developing countries. In return the investing parties receive credits or certified emission reductions (CERs) which they can use to meet their targets under the Kyoto Protocol. While investors profit from CDM projects by obtaining reductions at costs lower than in their own countries, the gains to the developing country host parties are in the form of finance, technology, and sustainable development benefits.

The basic rules for the functioning of the CDM were agreed on at the seventh Conference of Parties (COP-7) to the UNFCCC held in Marrakesh, Morocco in October-November 2001. Projects starting in the year 2000 are eligible to earn CERs if they lead to "real, measurable, and long-term" GHG reductions, which are additional to any that would occur in the absence of the CDM project. This includes afforestation and reforestation projects, which lead to the sequestration of carbon dioxide.

### **2.1 What is the Carbon Market?**

The new low-carbon economy provides an emerging market opportunity for American Indian foresters, ranchers and farmers to develop and sell carbon credits, also called greenhouse gases (Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous oxide (N<sub>2</sub>O), Sulphur hexafluoride (SF<sub>6</sub>), groups of hydro fluorocarbons (HCFs) and groups of Per fluorocarbons (PFCs) offsets and reduction credits. Carbon credits are developed from land conservation and renewable energy projects which reduce the amount of carbon dioxide (CO<sub>2</sub>) - or "greenhouse gas" - released into the air or remove existing CO<sub>2</sub> from the air. Projects often include the use of terrestrial sequestration. Greenhouse gas (GHG) management and carbon credit projects are good for the environment but they also provide an economic opportunity for those who develop them. Investors, often large companies or industries, purchase carbon credits to offset their own CO<sub>2</sub> emissions.

The offsets, called Certified Emissions Reductions, are issued under the U.N.'s Clean Development Mechanism, which is designed to reward investors in clean energy projects in developing nations. CERs are internationally tradable and major buyers are big European polluters which can use the offsets to meet mandatory emissions reductions under the European Union's emissions trading scheme.

### **2.2 What drives the price of a CER (Certified Emissions Reductions)**

Certified Emissions Reductions(CER)pricing is market driven and dependent on the European market. European countries have around 80% share in Certified Emissions Reductions (CER)

trading and hence any market based crisis in this region affects the price of the CER. ECX CER Emission Futures are traded on the Intercontinental Exchange. Each contract is for One lot of 1000 Certified Emission Reduction units (CERs), being units issued pursuant to Article 12 of the Kyoto Protocol (as amended from time to time). Prices are quoted in Euro and Euro cents per metric tonne.

### **2.3 Carbon Credits Trading [Carbon Trading] - Kyoto Protocol**

A carbon credit (often called a carbon offset) is a tradable certificate or permit. One carbon credit is equal to one tonne of carbon dioxide. Carbon credits are a part of attempts to mitigate the growth in concentrations of GHGs. Carbon credits or carbon offsets can be acquired through afforestation, renewable energy, CO<sub>2</sub> sequestration, methane capture, buying from an exchange (carbon credits trading) etc.

### **2.4 Carbon Trading In India and Its Legal Aspect**

The companies in the developed world are required to meet certain carbon emission target set by their respective government. However, if these companies are not able to meet their emission targets, they have an alternative of purchasing these carbon credits from the market i.e. from someone who is successful in meeting these targets and who has a surplus of these credits. This process is known as carbon trading. Carbon trading is also very advantageous for the companies of the developing world as it provides monetary gains in exchange of carbon credits which help these companies to purchase or change their technology. This change in technology eventually helps the companies to reduce carbon emission.

The regulatory framework and technical capacity to implement emissions trading or carbon trading and achieve these ambitious goals already exist. The Ministry is empowered by the Environment (Protection) Act, 1986 and accompanying rules to limit net adverse environmental impact from industrial activity and is ready to apply this power to support an emissions trading scheme. The State Pollution Control Boards have the power to implement such a scheme on the ground by modifying the terms of environmental Consent.

The government documents say that the Ministry of Environment & Forests have introduced the required regulatory framework for an emissions trading scheme. The Central Pollution Control Board have set technical standards for continuous monitoring and review bids. The State Pollution Control Boards have revised industry Consents, implement the adoption of continuous monitoring and enforce the requirement of holding permits to emit. Budget 2018 proposed to reduce the tax on income from carbon credits to 10% from 30% as an incentive to industries to reduce emissions.

## **3. CARBON TRADING IN INDIA**

Indian industries were able to cash in on the sudden boom in the carbon market making India a preferred location for carbon credit buyers. It is expected that India will gain at least \$5 billion to \$10 billion from carbon trading (Rs 22,500 crore to Rs 45,000 crore) over a period of time. Also India is one of the largest beneficiaries of the total world carbon trade through the Clean Development Mechanism claiming about 31 per cent (CDM).

India's carbon market is one of the fastest growing markets in the world and has already generated approximately 30 million carbon credits, the second highest transacted volumes in the

world. The carbon trading market in India is growing faster than even information technology, bio-technology and Business Processing Outsourcing (BPO) sectors. Nearly 850 projects with an investment of Rs. 650,000 million are in the pipeline. Carbon is also now being traded on India's Multi Commodity Exchange. It is the first exchange in Asia to trade carbon credits.

### **3.1 India's Growing Carbon Offset Market**

India is the second largest source of U.N.-backed carbon offsets after China and has developed a thriving sector focusing on projects that cut greenhouse gas emissions. India is the biggest beneficiary of carbon trading and it is expected that over a period of time India will gain \$5 to \$10 billion. It is high time India evolve a proper policy to deal with carbon trading. The composting plant in Okhla, New Delhi has become the first in India to receive the carbon credits from the United Nations Framework Convention on Climate Change (UNFCCC). The plant has received Rs 25 lakhs as an advance against the Carbon Emission Reduction (CER) earnings from this plant. Seven Indian companies have made it to a carbon-clean list of 200 largest companies worldwide ranked by their total clean-energy revenues. Among Indian companies are: Suzlon Energy at 68 rank for its wind farms, Bharat Heavy Electricals Ltd at 106 for its wind electric generators and solar cells, and Tata Chemicals at 114 for chemicals for bio diesel, solar energy, and fuel cells. Thermax Ltd. is at 139 and Exide Indus at 153 for electric storage batteries. Besides, IDFC Ltd. is at 155 for its green infrastructure financing and Havells India at 166 for energy meters.

In the new regime, the country could emerge as one of the largest beneficiaries accounting for 25 per cent of the total world carbon trade, says a recent World Bank report. The countries like US, Germany, Japan and China are likely to be the biggest buyers of carbon credits which are beneficial for India to a great extent. The Indian market is extremely receptive to Clean Development Mechanism (CDM). Having cornered more than half of the global total in tradable certified emission reduction (CERs), India's dominance in carbon trading under the clean development mechanism (CDM) of the UN Convention on Climate Change (UNFCCC) is beginning to influence business dynamics in the country.

### **4. CONCLUSION**

Even though India is the largest beneficiary of carbon trading and carbon credits are traded on the Multi Commodity Exchange (MCX), it still does not have a proper policy for trading of carbons in the market. As a result the Centre has been asked by The National Commodity and Derivatives Exchange Limited (NCDEX) to put in place a proper policy framework for allowing trading of certified emission reductions (CERs), carbon credit, in the market. Also, India has huge number of carbon credits sellers but under the present Indian law, the buyers based in European market are not permitted to enter the market. To increase the market for carbon trading, Forward Contracts (Regulation) Amendment Bill has been introduced in the Parliament. This amendment would also help the traders and farmers to utilize NCDEX as a platform for trading of carbon credits. However, to unleash the true potential of carbon trading in India, it is important that a special statute should be created for this purpose as the Indian Contracts Act is not enough to govern the contractual issues relating to carbon credits.

**REFERENCES**

- [1]. <http://swapsushias.blogspot.in/2013/10/clean-development-mechanism-what-india.html#.Ww0YoDSFPMx>
- [2]. <https://www.gktoday.in/gk/emissions-trading/>
- [3]. [http://visionias.in/beta/sites/all/themes/momentum/files/CA\\_Important\\_Issues/Climate\\_Change.pdf](http://visionias.in/beta/sites/all/themes/momentum/files/CA_Important_Issues/Climate_Change.pdf)
- [4]. <http://www.indiancarbon.org/the-carbon-credit-market.html>
- [5]. <https://www.gktoday.in/gk/clean-development-mechanism-2/>
- [6]. <https://www.pmfias.com/unfccc-kyoto-protocol-common-but-differentiated-responsibilities-clean-development-mechanism-carbon-credits-trading/>
- [7]. <http://iasscore.in/ias-prelims/clean-development-mechanism>
- [8]. <http://www.legalservicesindia.com/article/264/Carbon-Trading-In-India.html>
- [9]. <https://www.reuters.com/article/us-india-carbon-factbox/factbox-indias-growing-carbon-offset-market-idUSTRE67B1GH20100812>
- [10]. <https://www.quandl.com/collections/futures/ice-cer-emissions-futures>
- [11]. <https://www.businessgreen.com/tag/certified-emission-reduction>
- [12]. [http://economictimes.indiatimes.com/articleshow/62742838.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://economictimes.indiatimes.com/articleshow/62742838.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)
- [13]. <http://iasscore.in/ias-prelims/clean-development-mechanism>
- [14]. [http://www.business-standard.com/article/companies/7-indian-companies-among-top-200-carbon-clean-firms-116081701492\\_1.html](http://www.business-standard.com/article/companies/7-indian-companies-among-top-200-carbon-clean-firms-116081701492_1.html)