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Research Paper Finance

Carbon Trading a Step towards Green Environment

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ABSTRACT

The concept of carbon credits came into existence as a result of increasing awareness of the need for pollution control. Carbon credits are a tradable permit scheme. They provide a way to reduce greenhouse gas emissions by giving them a monetary value. Carbon credits were one of the outcomes of the Kyoto Protocol. Carbon credit trading is an innovative method of controlling emissions using the free market. Carbon trading market brings buyers and sellers of carbon credits together with standardized rules of trade. India signed and ratified the Protocol in August, 2002 and has emerged as a world leader in reduction of greenhouse gases by adopting Clean Development Mechanisms (CDMs) in the past few years. There is a great opportunity awaiting India in carbon trading. This article discusses various operational issues in carbon trading mechanism and the Indian scenario for carbon trading.

Keywords : Carbon Credits, Kyoto Protocol, Carbon Trading, Clean Development Mechanism

Carbon dioxide, the most important greenhouse gas produced by combustion of fuels, has become a cause of global panic as its concentration in the Earth's atmosphere has been rising alarmingly. This devil, however, is now turning into a product that helps people, countries, consultants, traders, corporations and even farmers earn billions of rupees. This was an unimaginable trading opportunity not more than a decade ago. The greenhouse gas market has shown significant developments over the past several years. From a theoretical construct proposed by politicians and academics during the early mid 1990s to an important part of Kyoto Protocol in 1997, to what is today a very promising and active market, the evolution has been very impressive

Kyoto Protocol

As nations have progressed we have been emitting carbon, or gases which result in warming of the globe. Some decades ago a debate started on how to reduce the emission of harmful gases that contributes to the greenhouse effect that causes global warming. So, countries came together and signed an agreement named the Kyoto Protocol.

The Kyoto Protocol is a 'modus operandi' to the International Framework Convention on the reduction of greenhouse gas emissions which results in climate changes. It is an amendment to the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty intended to bring countries together to reduce global warming and to cope with the effects of temperature increases that have been unavoidable even after 150 years of industrialization. Countries that ratify the Kyoto Protocol commit to reduce emissions of six greenhouse gases that contribute to global warming: carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs and PFCs. The Kyoto Protocol entered into force on 16th February 2005 and presently covers more than 170 countries. The main objective of the protocol is to reduce worldwide greenhouse gas emissions to below the 1990 level of 5.2% by 2008 to 2012. The idea was to make developed countries pay for their wild ways with emissions while at the same time monetarily rewarding countries with good behaviour in this regard. The very phase "Kyoto Protocol" has become synonymous with the idea of saving the planet from the global meltdown.

Carbon Credits

The concept of carbon credits came into existence as a result of increasing awareness of the need for pollution control. Our earth is undoubtedly warming. This warming is largely the result of emissions of carbon dioxide and other Greenhouse Gases (GHG's) from human activities including industrial processes, fossil fuel combustion, and changes in land use, such as deforestation etc. As global economies grow, use more natural resources, and emit more Carbon Dioxide (CO2), more solutions will be needed to reduce global warming. People have become increasingly concerned about the possible effects of global warming. Global warming is a serious threat to humanity as a whole. The financial markets provide one unique way of limiting CO2 emissions through the creation of a carbon credit market. Carbon credits were one of the outcomes of the Kyoto Protocol.

What is Carbon Credit?

Carbon credits are a tradable permit scheme. They provide a way to reduce greenhouse gas emissions by giving them a monetary value. A credit gives the owner the right to emit one tonne of carbon dioxide. Credits are awarded to countries or groups that have reduced their green house gases below their emission quota. Carbon credits can be traded in the international market at their current market price.

International treaties such as the Kyoto Protocol set quotas on the amount of greenhouse gases countries can produce. Countries, in turn, set quotas on the emissions of businesses. Businesses that are over their quotas must buy carbon credits for their excess emissions, while businesses that are below their quotas can sell their remaining credits. By allowing credits to be bought and sold, a business for which reducing its emissions would be expensive or prohibitive can pay another business to make the reduction for it.

For example, if a steel producer has an emissions quota of 10 tonne, but is expecting to produce 11 tonne, it could purchase this carbon credit from the environmental group. The carbon credit system looks to reduce emissions by having countries honor their emission quotas and offer incentives for being below them.

Any company, factories or farm owner can get linked to United Nations Framework Convention on Climate Change and

know the 'standard' level of carbon emission allowed by its outfit or activity. The extent an outfit emit less carbon (as per standard fixed by UNFCCC) it get credited in a developing country. This is called carbon credit. These credits are bought over by the companies of developed countries mostly Europeans, because the United States has not signed the Kyoto Protocol.

Features of Carbon Credit

- It is a simple, non-compulsory way to counteract the greenhouse gasses that contribute to climate change and global warming.
- It creates a market for reducing greenhouse emissions by giving a monetary value to the cost of polluting the air.
- Carbon credits are measured in units of certified emission reductions (CERs). Each CER is equivalent to one tonne of carbon dioxide reduction.
- Carbon credits are certificates awarded to countries that are successful in reducing emissions of greenhouse gases.
- They incentivize companies or countries that emit less carbon.
- It is kept in the form of an electronic certificate.

Carbon Trading and its Role in Controlling Emission

Carbon Trading is a market based mechanism for helping mitigate the increase of CO2 in the atmosphere. This means that carbon becomes a cost of business and is seen like other inputs such as raw materials or labor. Carbon credit trading is an innovative method of controlling emissions using the free market. Carbon trading market brings buyers and sellers of carbon credits together with standardized rules of trade.

By way of example, assume a factory that produces 100,000 tonnes of greenhouse emissions in a year. The government then enacts a law that limits the maximum emissions a business can have. So the factory is given a quota of say 80,000 tonnes. The factory either reduces its emissions to 80,000 tonnes or is required to purchase carbon credits to offset the excess.

A business would buy the carbon credits on an open market from organizations that have been approved as being able to sell legitimate carbon credits. One seller might be a company that will plant so many trees for every carbon credit you buy from them. So, for this factory it might pollute a tonne, but is essentially now paying another group to go out and plant trees, which will, say, draw a tonne of carbon dioxide from the atmosphere.

As emission levels are predicted to keep rising over time, it is envisioned that the number of companies wanting to buy more credits will increase, which will push the market price up and encourage more groups to undertake environmentally friendly activities that create for them carbon credits to sell. . Another model is that companies that use below their quota can sell their excess as 'carbon credits.'

Trading Mechanisms

The Kyoto Protocol provides for three mechanisms that enable developed countries with quantified emission limitation and reduction commitments to acquire greenhouse gas reduction credits. These mechanisms are,

1. *Joint Implementation (JI)*

Under JI, a developed country with relatively high costs of domestic greenhouse reduction would set up a project in another developed country that has a relatively low cost

2. *Clean Development Mechanism and (CDM)*

Under CDM, a developed country can take up a greenhouse gas reduction project activity in a developing country where the cost of greenhouse gas reduction project activities is usually much lower. The developed country would be given credits for meeting its emission reduction targets, while the developing country would receive the capital and clean technology to implement the project.

3. *International Emission Trading (IET)*

Under IET, countries can trade in the international carbon credit market. It provides for industrialized countries to acquire units from other countries and use them towards meeting their emission targets under the Kyoto Protocol. This enables countries to make use of lower cost opportunities to reduce emission, irrespective of the country in which those opportunities exist.

Of these it is only CDM that applies to India. As a signatory to Kyoto Protocol and a developing country, India is classified as Non-Annex I country, implying that it is not required to make any commitment to reduce GHG, but may volunteer to cooperate with the process.

Indian Scenario

India comes under the third category of signatories to UNFCCC. India signed and ratified the Protocol in August, 2002 and has emerged as a world leader in reduction of greenhouse gases by adopting Clean Development Mechanisms (CDMs) in the past few years. India is one of the countries that have 'credits' for emitting less carbon. India and China are likely to emerge as the biggest sellers and Europe is going to be the biggest buyers of carbon credits.

More than 112 Indian companies are set to trade in carbon credits. These companies are ready with clean technologies to bring down the emission levels of greenhouse gases and sell certified emission reductions (CERs) to developed countries. According to World Bank estimates, India is expected to rake in $100 million annually by trading in carbon credits and Indian companies are expected to corner at least 10 per cent of the global market in the initial years.

Some of the Indian companies like, Tata Steel, HLL, Jindal Vijaynagar Steel, Essar Power and Gujarat Flurochemicals Ltd. have specially designed projects to take advantage of the opportunity. A must mention project is The Delhi Metro Rail Corporation (DMRC). It has become the first rail project in the world to earn carbon credits because of using regenerative braking system in its rolling stock. DMRC has earned the carbon credits by using regenerative braking system in its trains that reduces 30% electricity consumption. Rajasthan State Mines and Minerals has been issued 57,004 carbon credits by the UNFCCC. UNFCCC has also issued 71,678 CERS to the 18 mw Kemphole mini hydel scheme by International Power Corporation Ltd India and 1,11,570 CERS to a waste heat recovery based captive power project at Monnet, and 10,971 CERS for Nagda Hills Wind Energy project

Carbon, like any other commodity, has begun to be traded on India's Multi Commodity Exchange (MCX). MCX has become first exchange in Asia to trade carbon credits. People here can get price signals for the carbon credits for the delivery in next five years. Every year, in the month of December, the contract expires and at that time people who have bought or sold carbon will have to give or take delivery.

There is a great opportunity awaiting India in carbon trading. 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.

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