

Carbon credit Trading

Every day newspapers across globe report on adverse effects of global warming.

Ice glaciers are melting in the North and South Pole affecting the marine life. Other adverse effects are climate change, natural calamities etc. Many species are on the verge of extinction due to global warming. One day it could be the end of human kind as well.

In order to contain these harmful gases there was an agreement - Kyoto Protocol in 1997 between various countries.

The Kyoto Protocol was made under the United Nations Framework Convention on Climate Change (UNFCCC). Countries that ratify this protocol committed to reduce their emissions of carbon dioxide and five other greenhouse gases (water vapour, carbon dioxide, methane, nitrous oxide, and ozone.), or engage in emissions trading if they maintained or increased emissions.

The status of the Protocol as of 2006

As of December 2006, a total of 169 countries and other governmental entities have ratified the agreement (representing over 61.6% of emissions from Annex I countries). Notable exceptions include the United States and Australia. Other countries, like India and China, which have ratified the protocol, are not required to reduce carbon emissions under the present agreement.

No one would have thought in 1997 that emission trading would be a booming business opportunity in the coming years.

Emissions trading is an administrative approach used for controlling pollution by providing economic incentives for achieving reductions in emissions.

In such a plan, a central authority usually a government agency sets a limit on the amount of a pollutant that can

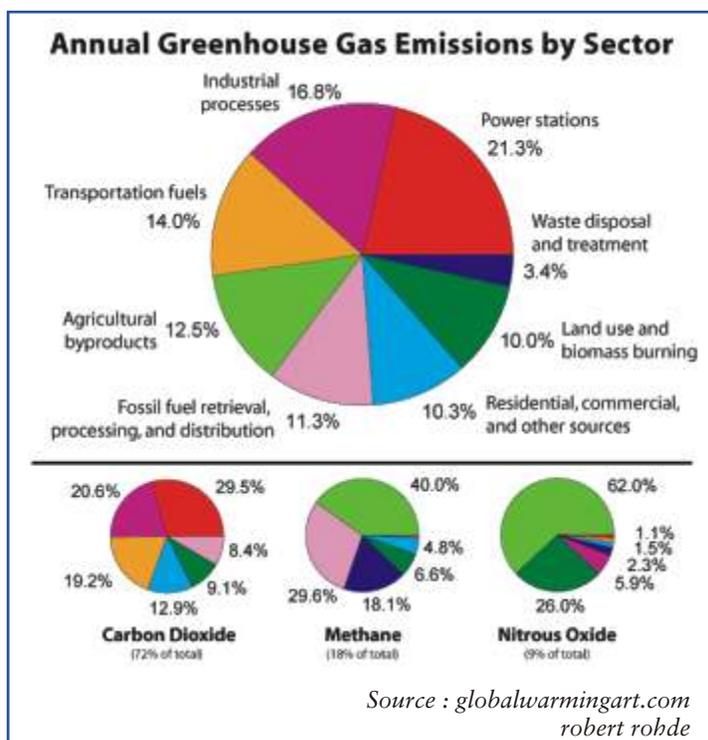
be emitted. Companies or other groups that emit are required to hold an equivalent number of credits or allowances which represent the right to emit a specific amount of emission. The total amount of credits cannot exceed the limit there by controlling total emissions to that level. Companies that need to increase their emissions must buy credits from those who pollute less. This transfer of allowances is the carbon trade. In effect, the buyer is being fined for polluting, while the seller is being

rewarded for having reduced emissions.

According to kyoto protocol there are Annex I and Non-annex I countries. Annex I Kyoto countries are those that are required to limit and reduce emissions, while non-Annex I Kyoto countries are not limited. Non-Annex I countries such as Brazil, China, and India play an important part in Kyoto as they are able to host environmental projects that serve as compliance mechanisms for Annex I countries. These compliance projects are generally described as Kyoto Flexible Mechanisms.

Flexible Mechanisms

The Marrakech accords in 2001 established the rules and mechanisms for Kyoto's cap-and-trade system. Three flexible mechanisms were established to allow regulated polluting entities in capped countries (Annex I) to acquire rights to pollute beyond their assigned limits. These mechanisms are **Clean Development Mechanism ("CDM")**, **Joint Implementation ("JI")** and **Emissions Trading**.



The CDM and JI are project-based mechanisms while Emissions Trading means that an Annex I polluting entity can trade with another Annex I polluting entity for their rights to pollute. Surplus credits that are acquired by overshooting the emission reduction target can be sold in the global market. One credit is equivalent to one tonne of CO₂ emission reduced. Carbon credits are available for companies engaged in developing renewable energy projects that offset the use of fossil fuels.

Market Benefit

CDM and JI projects are considered “offset projects.” Market experiences suggest that the cost of purchasing an offset from a project tends to be 15-32% lower than trading for an allowance in the open market.

To illustrate this concept we will take a power generator in Denmark as an example. Let us say that it is a very warm summer in Denmark and this has caused the power generator to burn more coal to sell more electricity to its clients (who use it to cool their homes).

Now, let's assume that the Denmark power generator reaches its limit in middle of the year. The generator has contracts with its clients to sell them electricity for the rest of the year, but they have used all their pollution rights. The generator will now consider its options.

1. **Do nothing** - Pay 100 Euros/tonne tax at the end of the compliance period
2. **Emissions Trading** - Find an Annex I power generator with pollution rights left over and purchase those rights for market prices (currently 23 Euros/tonne)
3. **CDM/JI** - Find an environmental project that has proven it has reduced carbon dioxide in a Non-Annex I country and purchase those rights for market prices (currently 10-15 Euros/tonne)

Developer Benefit

The developer has three benefits

1. Reduces Emissions
2. Gets the usual revenue associated with the business model of the core business
3. Gets to further revenue through carbon trading

The benefit of a reduction project is that the funds go towards the development of an environmentally beneficial project that would not have been able to go forward without the additional stimulus resulting from concern for climate change mitigation. For many projects that involve renewable energy the benefit is both in needed energy generation and carbon credit revenue.

Clean Development Mechanism (CDM) and Joint Initiative (JI)

The difference between CDM and JI is geographical and procedural. A CDM project involves an Annex I entity investing in a project in a Non-Annex I country. A JI project involves one Annex I country investing in a carbon project in another Annex I country.

The CDM is overseen by the CDM Executive Board, which is essentially a panel of UNFCCC appointed experts. JI will allow for more autonomy in the creation of Projects, as the host country will be responsible for project certification. The procedures for creating credits will vary from country to country. The CDM is a much larger and more mature mechanism as it has been generating credits since 2004, whereas JI will begin generating credits in 2008.

The lower economic and political risks are likely to make JI an attractive method for the creation of compliance offsets. According to the World Bank, in 2006 the CDM market was worth \$5.2 Billion and the JI market was worth \$141 Million. Both of these markets grew by 300% compared to 2005. Initial estimates by the World Bank have found that transactions for the first 3 months of 2007 were equivalent to all transactions in 2006.

The credits are monetized when the project developer sells them to a third party (possibly a power generator in an Annex I country). This is considered a primary market transaction and makes up 85% of the current.

Carbon Project Cycle

The following are the various stages that a carbon emissions reduction project will generally follow on its way to credit creation and therefore monetization of the carbon Credits:

1. Identification of Potential Carbon Emission Reduction Project
2. Feasibility Study
3. Environmental Market Analysis
4. Identification of Project Partners
5. Letter of Approval from Host Country
6. Project Design Materials Submitted to Auditor
7. Project Validated By UNFCCC CDM Executive Board
8. Project Commencement
9. Annual Verification & CER (Carbon Credit) Issuance

Project Example:

Name of the Project:

12 MW Wind Electricity Generation Farm at Radhapuram by M/s Surana Industries Limited at Taluka Radhapuram, District Tirunelveli, Tamil Nadu.

Project

The project activity involves generation, operation and maintenance of wind energy generators. The proposed

project consists of 8 wind turbines of 1.5 MW each and aims at generating 12 MW of electricity from renewable sources, namely wind energy thereby displacing the electricity from the grid that is mostly produced by carbon intensive fossil fuels like coal.

Source: cdmindia.nic.in

Carbon credit in India

The Multi-Commodity Exchange of India (MCX), the country's leading commodity exchange, may soon become the third exchange in the world with a licence to trade in carbon credits.

The Chicago Climate Exchange (CCX), North America's first and only multi-sector marketplace for reducing and trading greenhouse gas (GHG) emissions, today announced a licensing agreement with MCX. Many Indian companies have already been re-rated on the stock markets on the basis of the bonanza that will accrue to them when carbon trading kicks off.

Under the agreement, the Chicago exchange will list mini-sized versions of its European Climate Exchange (ECX) Carbon Financial Instruments (CFI) and Chicago Climate Futures Exchange, Sulfur Financial Instrument futures contracts on the MCX trading platform.

India is considered as the largest beneficiary, claiming about 31 per cent of the total world carbon trade through the Clean Development Mechanism (CDM). It is expected to rake in at least \$5 billion to \$10 billion (Rs 22,500 crore to Rs 45,000 crore) over a period of time.

The pace at which this sector is evolving we may soon see a dedicated fund investing in financing carbon credit projects.