Carbon Credit - An Eco Friendly Business

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WHAT IS CARBON CREDIT?

A Carbon Credit is a generic term meaning that a value has been assigned for the reduction or to offset greenhouse gas emissions. Carbon credits and markets are key components of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs). One carbon credit is equal to one ton of carbon dioxide, or in some markets, carbon dioxide equivalent gases. Carbon trading is an application of an emissions trading approach.

Greenhouse gas emissions are capped and then markets are used to allocate the emissions among the group of regulated sources. The goal is to allow market mechanisms to drive industrial and commercial processes in the direction of low emissions or less carbon intensive approaches than those used when there is no cost to emitting carbon dioxide and other GHGs into the atmosphere. Since GHG mitigation projects generate credits, this approach can be used to finance carbon reduction schemes between trading partners and around the world.

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 contribute to the greenhouse effect that causes global warming. So, countries came together and signed an agreement named the Kyoto Protocol.

The Kyoto Protocol has created a mechanism under which countries that have been emitting more carbon and other gases (greenhouse gases include ozone, carbon dioxide, methane, nitrous oxide and even water vapor) have voluntarily decided that they will bring down the level of carbon they are emitting to the levels of early 1990s. The mechanism was formalized in the Kyoto Protocol, an international agreement between more than 170 countries. The mechanism adopted was similar to the successful US Acid Rain Program to reduce some industrial pollutants.

Developed countries, mostly European, had said that they will bring down the level in the period from 2008 to 2012. In 2008, these developed countries have decided on different norms to bring down the level of emission fixed for their companies and factories.

A company has two ways to reduce emissions. **One**, **it can reduce the GHG (greenhouse gases) by adopting new technology or improving upon the existing technology to attain the new norms for emission of gases. Or, it can tie up with developing nations and help them set up new technology that is eco-friendly, thereby helping the developing country or its companies 'earn' credits.**

India, China and some other Asian countries have the advantage because they are developing countries. Any company, factories or farm owners in India can get linked to **United Nations Framework Convention on Climate Change** and know the 'standard' level of carbon emission allowed for its outfit or activity. **The extent to which an organization is emitting less carbon (as per standard fixed by UNFCCC) gets 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.

KYOTO PROTOCOL'S 'FLEXIBLE MECHANISMS'

A credit can be an **Emissions Allowance** which was originally allocated or auctioned by the national administrators of a cap-and-trade program, or it can be an offset emission. Such offsetting and mitigating activities can occur in any developing country which has ratified the Kyoto Protocol, and has a national agreement in place to validate its carbon project through one of the UNFCCC's approved mechanisms. Once approved, these units are termed Certified Emission Reductions or CERs. The Protocol allows these projects to be constructed and credited in advance of the Kyoto trading period.

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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 in a developing country where the cost of greenhouse gas reduction project activities is usually much lower, but the atmospheric effect is globally equivalent. The developed country would be given 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 allowances.Countries with surplus credits can sell them to countries with capped emission commitments under the Kyoto Protocol.

These carbon projects can be created by a national government or by an operator within the country. In reality, most of the transactions are not performed by national governments directly, but by operators who have been set quotas by their country.

EMISSION MARKETS

For trading purposes, one allowance or CER is considered equivalent to one metric tone of CO_2 emissions. These allowances can be sold privately or in the international market at the prevailing market price. These trade and settle internationally and hence allow allowances to be transferred between countries. Each international transfer is validated by the UNFCCC. Each transfer of ownership within the European Union is additionally validated by the European Commission.

Climate exchanges have been established to provide a spot market in allowances, as well as futures and options market to help discover a market price and maintain liquidity. Carbon prices are normally quoted in Euros per tonne of carbon dioxide or its equivalent (CO_2e). Other greenhouse gasses can also be traded, but are quoted as standard multiples of carbon dioxide with respect to their global warming potential. These features reduce the quota's financial impact on business, while ensuring that the quotas are met at a national and international level.

Currently, there are **Five Exchanges Trading In Carbon Allowances**: **The Chicago Climate Exchange, European Climate Exchange, Nord Pool, Powernext And The European Energy Exchange**. Recently, NordPool listed a contract to trade offsets generated by a CDM carbon project called Certified Emission Reductions (CERs). Many companies now engage in emissions abatement, offsetting, and sequestration programs to generate credits that can be sold on one of the exchanges.

THE GREENHOUSE GASES ADDRESSED BY THE KYOTO PROTOCOL

There are six greenhouse gases addressed by the Kyoto Protocol:

Table 1: Greenhouse Gases Addressed By The Kyoto Protocol

S.NO	GAS	GLOBAL WARMING POTENTIAL
1.	Carbon dioxide (CO_2)	1
2.	Methane(CH_4)	21
3.	Nitrous oxide (N_2O)	310
4.	Hydro fluorocarbons (HFCs)	140-11,700
5.	Per fluorocarbons (PFCs)	560-9200
6.	Sulphur hexafluoride (SF_6)	23,900

HOW DOES IT WORK IN REAL LIFE?

Assume that British Petroleum is running a plant in the United Kingdom. Say, that it is emitting more gases than the accepted norms of the **UNFCCC**. It can tie up with its own subsidiary in, say, India or China under the Clean

Development Mechanism. It can buy the 'carbon credit' by making Indian or Chinese plant more eco-savvy with the help of technology transfer. It can tie up with any other company like Indian Oil, or anybody else, in the open market.
In December 2008, an audit was done of their efforts to reduce gases and their actual level of emission. China and India are ensuring that new technologies for energy savings are adopted so that they become entitled for more carbon credits. They are selling their credits to their counterparts in Europe. This is how a market for carbon credit is created.
Every year, European companies are required to meet certain norms, beginning 2008. By 2012, they will achieve the required standard of carbon emission. So, in the coming five years, there will be a lot of carbon credit deals.

CLEAN DEVELOPMENT MECHANISM

Under the CDM, you can cut the deal for carbon credit. Under the UNFCCC, charter any company from the developed world can tie up with a company in the developing country that is a signatory to the Kyoto Protocol. These companies in developing countries must adopt newer technologies, emitting lesser gases, and save energy.
Only a portion of the total earnings of carbon credits of the company can be transferred to the company of the developed countries under CDM. There is a fixed quota on buying of credit by companies in Europe.

BUYING CARBON CREDITS CAN REDUCE EMISSIONS

Carbon credits create a market for reducing greenhouse emissions by giving a monetary value to the cost of polluting the air. Emissions become an internal cost of doing business and are visible on the balance sheet alongside raw materials and other liabilities or assets.
For example, consider a business that owns a factory putting out 100,000 tonnes of greenhouse gas emissions in a year. Its government is an Annex I country that enacts a law to limit the emissions that the business can produce. So the factory is given a quota of say 80,000 tonnes per year. The factory either reduces its emissions to 80,000 tonnes or is required to purchase carbon credits to offset the excess.
After costing up alternatives, the business may decide that it is uneconomical or infeasible to invest in new machinery for that year. Instead, it may choose to buy carbon credits on the open market from organizations that have been approved as being able to sell legitimate carbon credits.
We should consider the impact of manufacturing alternative energy sources. For example, the energy consumed and the Carbon emitted in the manufacture and transportation of a large wind turbine would prohibit a credit being issued for a predetermined period of time.
❁ One seller might be a company that will offer to offset emissions through a project in the developing world, such as recovering methane from a swine farm to feed a power station that previously would use fossil fuel. So, although the factory continues to emit gases, it would pay another group to reduce the equivalent of 20,000 tonnes of carbon dioxide emissions from the atmosphere for that year.
❁ Another seller may have already invested in new low-emission machinery and have a surplus of allowances as a result. The factory could make up for its emissions by buying 20,000 tonnes of allowances from them. The cost of the seller's new machinery would be subsidized by the sale of allowances. Both the buyer and the seller would submit accounts for their emissions to prove that their allowances were met correctly.

MCX AND CARBON CREDITS

Carbon, like any other commodity, has begun to be traded on India's **Multi Commodity Exchange**. MCX has become first exchange in Asia to trade carbon Credit.
This entire process was not understood well by many. Those who knew about the possibility of earning profits adopted new technologies, saved credits and sold it to improve their bottomline.
Many companies did not apply to get credit even though they had new technologies. Some companies used management consultancies to make their plan greener to emit less GHG. These management consultancies then scouted for buyers to sell carbon credits. It was a bilateral deal. However, the price to sell carbon credits was not available on a public platform. The price range people were getting used to be about Euro 15 or maybe less per tonne of carbon. Today, one tonne of carbon credit fetches around Euro 22. It is traded on the European Climate Exchange. Therefore, you emit one tonne less and you get Euro 22. Emit less and increase/add to your profit.
The MCX decided to trade carbon credits because it is futures trading. Let people judge if they want to hold on to their

accumulated carbon credits or sell them now.
MCX is the futures exchange. People here are getting price signals for the carbon for the delivery in next five years. The exchange is only for Indians and Indian companies. 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. They can fulfill the deal prior to December too, but most people will wait until December because that is the time to meet the norms in Europe.
Say, if the Indian buyer thinks that the current price is low for him, he will wait before selling his credits. The Indian government has not fixed any norms nor has it made it compulsory to reduce carbon emissions to a certain level. So, people who are coming to buy from Indians are actually financial investors. They are thinking that if the Europeans are unable to meet their target of reducing the emission levels by 2009 or 2010 or 2012, then the demand for carbon will increase and then they may make more money.
So, investors are willing to buy now to sell later. There is a huge requirement of carbon credits in Europe before 2012. Only those Indian companies that meet the UNFCCC norms and take up new technologies will be entitled to sell carbon credits.
There are parameters set and detailed audit is done before you get the entitlement to sell the credit. In India, already 300 to 400 companies have carbon credits after meeting UNFCCC norms. Till MCX came along, these companies were not getting the best-suited price. Some were getting Euro 15 and some were getting Euro 18 through bilateral agreements. On MCX it already has power, energy and metal companies who are trading. These companies are high-energy consuming companies. They need better technology to emit less carbon.

CARBON CREDIT - GOOD FOR SMALL INVESTORS

These carbon credits are with the large manufacturing companies who are adopting UNFCCC norms. Retail investors can come in the market and buy the contract if they think the market of carbon is going to firm up. Like any other asset, they can buy these too. It is kept in the form of an electronic certificate.
MCX are keeping the registry and the ownership will travel from the original owner to the next buyer. In the short-term, large investors are likely to come and later, it is expected that banks would get into the market too. This business is a function of money, and someone will have to hold on to these big transactions to sell at the appropriate time.
It is incorrect to say that because under UNFCCC, the polluters cannot buy 100 per cent of the carbon credits, they are required to reduce - say, out of 100 per cent, they have to induce 75 per cent locally by various means in their own country. They can buy only 25 per cent of carbon credits from developing countries.
Like in the case of any other asset, its price is determined by a function of demand and supply. Now, norms are known and on that basis, European companies will meet the target between December 2008 and 2012. People are wondering how much credit will be available in the market at that time and to what extent would norms be met by European companies. The carbon credit and its trading are regulated as per the mechanism settled under the international Kyoto Protocol. Less / reduction in emission of carbon by 1 Tonne entities 1 carbon credit unit.
One credit unit fetches around Euro 22 (₹1490) and the prices are expected to reach higher levels. It means you emit one tonne less and you get Euro 22. Emit less and increase your profit.As December gets closer, it is possible that some governments might tinker with these norms a little if the targets could not be met. If these norms are changed, prices can go through a correction. But, as of now, there is a very transparent mechanism in which the norms for the next five years have been fixed.Governments have become signatories to the Kyoto Protocol and they have set the norms to reduce the level of carbon emission. Already companies are on way to meeting their target.Other than this, it's a question of having correct information. How much will be the demand for carbon credit some years from now? How much will the supply be? Is it a safe market because it is a matter of having more information on the extent of demand and supply of carbon credit market.

TAXATION TREATMENT OF CARBON CREDIT

Carbon credits and carbon taxes each have their advantages and disadvantages. Credits were chosen by the signatories to the Kyoto Protocol as an alternative to Carbon taxes. A criticism of tax-raising schemes is that they are frequently not hypothecated, and so, some or all of the taxation raised by a government would be applied based on what the particular nation's government deems most fitting. However, some would argue that carbon trading is based around creating a lucrative artificial market, and, handled by free market enterprises as it is, carbon trading is not

necessarily a focused or easily regulated solution. By treating emissions as a market commodity, some proponents insist it becomes easier for businesses to understand and manage their activities, while economists and traders can attempt to predict future pricing using market theories. Thus, the main advantages of a tradable carbon credit over a carbon tax are argued to be:

- The price may be more likely to be perceived as fair by those paying it. Investors in credits may have more control over their own costs.
- The flexible mechanisms of the Kyoto Protocol help to ensure that all investment goes into genuine sustainable carbon reduction schemes through an internationally-agreed validation process.
- Some proponents state that if correctly implemented, a target level of emission reductions may somehow be achieved with more certainty, while under a tax, the actual emissions might vary over time.
- It may provide a framework for rewarding people or companies who plant trees or otherwise meet standards exclusively recognized as "green."

THE ADVANTAGES OF A CARBON TAX ARE ARGUED TO BE

- Possibly less complex, expensive, and time-consuming to implement. This advantage is especially great when applied to markets like gasoline or home heating oil.
- Perhaps some reduced risk of certain types of cheating, though under both credits and taxes, emissions must be verified.
- Reduced incentives for companies to delay efficiency improvements prior to the establishment of the baseline if credits are distributed in proportion to past emissions.
- When credits are grandfathered, this puts new or growing companies at a disadvantage relative to more established companies.
- Allows for more centralized handling of acquired gains worth of carbon is stabilized by government regulation rather than market fluctuations. Poor market conditions and weak investor interest have a lessened impact on taxation as opposed to carbon trading.

Generating of revenue by taking up structured CDM Project gives a new dimension to Accounting and Taxation. As the concept of Carbon Trading is totally new, even at the international level, various aspects and jurisprudence are yet to evolve. **The Council of Institute of Chartered Accountants of India** (ICAI) approved the accounting guidance note on carbon credit to be effective from July 1, 2009. This means, corporates account for their generated CERs, as well as trading and selling of carbon credit under UNFCCC mechanism, in the September quarter results.

How CERs transactions are taxed is obviously an important issue. Generally, these are levied through Direct Taxes i.e. tax on the revenue generated by the sale of CERs or through indirect taxes such as Value Added Tax (VAT) etc.

DIRECT TAXATION

As per the Income Tax Act, 1961, in India, any compensation received from the multilateral fund of the Montreal Protocol on substances that deplete the ozone layer would not be taxed as per the terms of agreement entered into with Govt. of India. However, the Kyoto Protocol does not enjoy similar benefits under the Act. So, the Income Tax department might levy the normal corporate tax @ 30 % on sales of CERs. In transfer of capital assets, the gains are liable for Capital Gain Tax i.e. either it may be long-term or short term capital depending upon the period of holding. However, no directive has yet been issued by the income Tax Department.

INDIRECT TAXATION

Indirect tax Legislations do not provide any specific guidelines on the treatment of CERs for the tax purpose and no directive has yet been issued by the Government. CERs may be considered to be goods for VAT purpose in India and so be treated similarly to electricity- which is either excluded from the purview of VAT or included in the schedule of goods exempted from VAT in order to promote CDM projects in India and to ensure their competitiveness in the international markets.

FOREIGN EXCHANGE CONTROL

In the CDM projects, self generated CERs are sold to Annex 1 Countries. The payment will be made in currencies

other than the local currency. Whether such CERs transactions would be subject to Foreign Exchange Regulation Act, 1999 (FEMA) is a highly jurisdictional specific issue.

CRITICISMS

Environmental restrictions and activities have been imposed on businesses through regulation. Many are uneasy with this approach to managing emissions.

The Kyoto mechanism is the only internationally-agreed mechanism for regulating carbon credit activities, and, crucially, includes checks for additionality and overall effectiveness. It's supporting organization, the UNFCCC, is the only organization with a global mandate on the overall effectiveness of emission control systems, although enforcement of decisions relies on national co-operation. The Kyoto trading period only applies for five years between 2008 and 2012.

The first phase of the EU ETS system started before then, and is expected to continue in a third phase afterwards, and may co-ordinate with whatever is internationally-agreed at but there is general uncertainty as to what will be agreed in Post Kyoto Protocol Negotiations on Greenhouse Gas Emissions. As business investment often operates over decades, this adds risk and uncertainty to their plans. As several countries responsible for a large proportion of global emissions (notably USA, Australia, and China) have avoided mandatory caps, this also means that businesses in capped countries may perceive themselves to be working at a competitive disadvantage against those in uncapped countries as they are now paying for their carbon costs directly.

A key concept behind the cap and trade system is that national quotas should be chosen to represent genuine and meaningful reductions in national output of emissions. Not only does this ensure that overall emissions are reduced, but also that the costs of emissions trading are carried fairly across all parties to the trading system. However, governments of capped countries may seek to unilaterally weaken their commitments, as evidenced by the 2006 and 2007 National Allocation Plans for several countries in the EU ETS, which were submitted late and then were initially rejected by the European Commissions for being too lax.

A question has been raised over the grand fathering of allowances. Countries within the EU ETS have granted their incumbent businesses, most or all of their allowances, for free. This can sometimes be perceived as a protectionist obstacle to new entrants into their markets. There have also been accusations of power generators getting a 'windfall' profit by passing on these emissions 'charges' to their customers. As the EU ETS moves into its second phase and joins up with Kyoto, it seems likely that these problems will be reduced as more allowances will be auctioned.

Establishing a meaningful offset project is complex: voluntary offsetting activities outside the CDM mechanism are effectively unregulated and there have been criticisms of offsetting in these unregulated activities. This particularly applies to some voluntary corporate schemes in uncapped countries and for some personal carbon offsetting schemes.

There have also been concerns raised over the validation of CDM credits. One concern is related to the accurate assessment of additionality. Others relate to the effort and time taken to get a project approved. Questions may also be raised about the validation of the effectiveness of some projects; it appears that many projects do not achieve the expected benefit after they have been audited, and the CDM board can only approve a lower amount of CER credits. For example, it may take longer to roll out a project than originally planned, or an afforestation project may be reduced by disease or fire. For these reasons, some countries place additional restrictions on their local implementations and will not allow credits for some types of carbon sink activity, such as forestry or land use projects.

CONCLUSION

Carbon trading is not the answer to the greenhouse problem. The greenhouse problem will only go away when carbon dioxide and other greenhouse gas concentrations are brought back to or near pre-industrial levels. Carbon trading as a system is not cognant of what the right concentration level of atmospheric CO_2 is. Carbon trading is dependant on human consensus to achieve desired greenhouse gas concentration and preferred climate conditions.As of now, there is no separate accounting standard known to measure the income and expenditure of CERs. The existing guidelines/standards can well account for the new concept of CERs. An issue that arises while accounting of carbon credits or CERs is that whether carbon credit generated under the Clean Development Mechanism (CDM) can be considered assets or goods of the generating entity. Further, lack of proper accounting guidelines pose challenges for the user of financial reporting practices. The Institute of Chartered Accountants of India (ICAI) is coming up with

some guidelines for the same in due course of Time.

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ANNEXURE I

COUNTRY	TARGET (1990** - 2008 / 2012)
EU - 15*, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
US***	-7%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0
Norway	+1%
Australia	+8%
Iceland	+10%

* The 15 States who were EU members in 1990 will redistribute their targets among themselves, taking advantage of a scheme under the Protocol known as a "bubble", whereby countries have different individual targets, but which combined make an overall target for that group of countries. The EU has already reached agreement on how its targets will be redistributed.

** Some EITs have a baseline other than 1990.

*** The US has indicated its intention not to ratify the Kyoto Protocol.

Note: Although they are listed in the Convention's Annex I, *Belarus* and *Turkey* are not included in the Protocol's Annex B as they were not Parties to the Convention when the Protocol was adopted.

Upon entry into force, *Kazakhstan*, which has declared that it wishes to be bound by the commitments of Annex I Parties under the Convention, will become an Annex I Party under the Protocol. As it had not made this declaration when the Protocol was adopted, Kazakhstan does not have an emissions target listed for it in Annex B.

ANNEXURE II

There are 23 Annex II countries and the European Union. Turkey was removed from the Annex II list in 2001 at its request to recognize its economy as a transition economy. These countries are classified as developed countries which pay for costs of developing countries:

01. Australia
02. Austria
03. Belgium
04. Canada
05. Denmark
06. Finland
07. Germany
08. France
09. Greece
10. Iceland
11. Ireland
12. Italy
13. Japan
14. Luxembourg
15. Netherlands
16. New Zealand
17. Norway
18. Portugal
19. Spain
20. Sweden
21. Switzerland
22. United Kingdom
23. United States of America