

# Carbon trading



## **Abstract**

Carbon Trading are generated by enterprises in the developing world that shift to cleaner technologies and thereby consumption, consequently reducing their greenhouse gas emissions. For each tone of carbon dioxide (the major GHG) emission avoided, the entity can get a carbon emission certificate which they can sell either immediately or through a futures market, just like any other commodity.

The certificates are sold to entities in rich countries, like power utilities, which have targets to achieve and find it cheaper to buy 'offsetting' certificates rather than do a clean-up in their own backyard. This trade is carried out under a mandated international convention on climate change to help rich countries reduce their emissions. 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. Introduction Carbon Trading are a part of international emission trading norms. They give incentives to companies or countries which emit less carbon. The total annual emissions are capped and the market allocates a monetary value to any shortfall through trading. Businesses can exchange, buy or sell Carbon Credit in international markets at the prevailing market price.

India and China are likely to emerge as the biggest sellers and Europe is going to be the biggest buyers of Carbon Credit. India is one of the countries that have 'credits' for emitting less carbon. India and China have surplus credit to offer to countries that have a deficit. India has generated some 30 million Carbon Credits and has roughly another 140 million to push into the world market. Waste disposal units, plantation companies, chemical plants and municipal corporations can sell the Carbon Credits and make money.

Carbon, like any other commodity, has begun to be traded on India's Multi Commodity Exchange for last 3-4 years. MCX has become first exchange in Asia to trade Carbon Credits. Carbon Trading certify the removal of greenhouse gas from the air or the prevention of greenhouse gas emissions. Each carbon credit is associated with a single tone of carbon dioxide. There are many different kinds of Carbon Trading. How does Carbon Credit save the planet? 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 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.

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. (a) 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. (b) Or it can tie up with developing nations and help them set up new technology that is eco-friendly, thereby helping 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 owner 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 I am emitting less carbon (as per standard fixed by UNFCCC) I 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.

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 will be 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 Trading. 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. Where do Carbon Trading fit in the planet saving action plan? 1. Recognize that everything we do has associated greenhouse gas emissions 2.

Reduce your emissions. 3. Offset with fully certified Carbon Trading today (because the planet can't wait) Certification: the difference between carbon offsets and Carbon Trading There are many retailers offering uncertified carbon offsets. Purchasers should avoid carbon offsets that don't come with a certification as they provide no guarantees that you are getting what you are paying for. All certifications are not equal There are many different kinds of certification available globally. Before you buy, make sure that the certification comes from a trusted third party source.

For larger orders Carbon Planet can source any kind of certified carbon credit you seek. However, we do recommend our standard premium stock of NGACs. Find out more about our procurement policies we enforce when sourcing Carbon Trading for you to buy. Carbon Planet currently offers 2 different kinds of certified Carbon Credit as standard stock: 1. Forestry Sequestration NGACs from Forests NSW 2. Carbon Saving NGACs from Showerhead and Light bulb replacement. Forestry Sequestration NGACs The

New South Wales Greenhouse Abatement Certificate (NGAC) certification process is comprehensive.

It includes Kyoto Protocol measures, but goes beyond these. In summary the NGAC certification process ensures the following:

- \* That each NGAC represents one tone of carbon dioxide stored for at least 100 years.
- \* That the trees have been planted since 1990.
- \* That the trees weren't planted on old growth forest cleared land (the land must have been clear prior to 1990).
- \* That should the tree from which your carbon credit came come to any harm within 100 years of your purchase e. g. fire, disease, logging; that carbon credit will be replaced immediately from another source.

From NSW Government " When can a forest manager create NGACs" NSW Greenhouse Gas Abatement Scheme Fact Sheet Published: October 2004). Forests NSW's carbon pool is audited annually to ensure that every carbon credit issued corresponds to one tonne of carbon dioxide removed from the atmosphere for 100 years. Carbon Saving NGACs Carbon Planet's current stock of Carbon Saving NGACs is generated from shower head and light bulb replacement. This is called Demand Side Abatement. The NGAC certification ensures, with a high level of confidence, that at least one tonne of carbon dioxide equivalent has been saved per carbon credit.

Thus by purchasing a monthly subscription of NGAC Carbon Trading, you can continuously erase your CO2 footprints. Procedure of trading in carbon: (i) What is 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 Trading 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. (ii) How does MCX trade Carbon Credits? 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 bottom line. 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 (Green House Gas) GHG.

These management consultancies then scouted for buyers to sell Carbon Trading. It was a bilateral deal. However, the price to sell Carbon Trading at was not available on a public platform. The price range people were getting used to was about Euro 15 or maybe less per tone of carbon. Today, one tone of carbon credit fetches around Euro 22. It is traded on the European Climate Exchange. Therefore, you emit one tone less and you get Euro 22. "Emit less and increase/add to your profit" MCX is the futures exchange of India. 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 get or take delivery. They can fulfill the deal prior to December too, but most people wait until December because that is the time to meet the norms in Europe. The MCX decides to trade Carbon Credit

because they are into futures trading. Let people decide, if they want to hold on to their accumulated Carbon Credit or sell them now. If the buyer thinks that the current price is low for him, he can 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 ready to buy from Indians are actually financial investors. They think 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 the carbon will increase and then they can make more money. So the investors are willing to buy now to sell later. There was a huge requirement of Carbon Trading in Europe before 2012. 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 Trading after meeting UNFCCC norms. Only those Indian companies that meet the UNFCCC norms and take up new technologies will be entitled to sell Carbon Trading. Till MCX came along, these companies were not getting best-suited price. Some were getting Euro 15 and some were getting Euro 18 through bilateral agreements. When the contract expires in December, it is expected that prices will be firm up then. On MCX we already have power, energy and metal companies who are trading. These companies are high-energy consuming companies. They need better technology to emit less carbon.

These Carbon Trading 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. The registry and the ownership travel from the original owner to the next buyer. In the short-term, large investors are likely to come and later banks are also expected to 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.

**Price Determination** 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 market at that time. As December gets closer, it is possible that some government 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 the way to meet their targets. It is a safe market because it is a matter of having more information on the extent of demand and supply of carbon credit market. Analyzing Indian Scenario India being a developing country has no emission targets to be followed. However, she can enter into CDM projects. As mentioned earlier, industries like cement, steel, power, textile, fertilizer etc. emit green houses gases as an outcome of burning fossil fuels. Companies investing in Windmill,

Bio-gas, Bio-diesel, and Co-generation are the ones that will generate Carbon Credit for selling to developed nations. Polluting industries, which are trying

to reduce emissions and in turn earn Carbon Credit and make money include steel, power generation, cement, fertilizers, waste disposal units, plantation companies, sugar companies, chemical plants and municipal corporations. Delhi Metro Rail Corporation (DMRC) A must mention project is The Delhi Metro Rail Corporation (DMRC): It has become the first rail project in the world to earn Carbon Credit because of using regenerative braking system in its rolling stock.

DMRC has earned the Carbon Credit by using regenerative braking system in its trains that reduces 30% electricity consumption. Whenever a train applies regenerative braking system, the released kinetic energy starts a machine known as converter-inverter that acts as an electricity generator, which supplies electrical energy back to the Over Head Electricity (OHE) lines. This regenerated electrical energy that is supplied back to the OHE that is used by other accelerating trains in the same service line. DMRC can now claim 400, 000 CERs for a 10-year crediting period beginning December 2007 when the project was registered by the UNFCCC.

This translates to Rs 1. 2 crore per year for 10 years. India has the highest number of CDM projects registered and supplies the second highest number of Certified Emission Reduction units. Hence, India is already a strong supplier of Carbon Credit and can improve it. BENEFITS FOR INDIA By, switching to Clean Development Mechanism Projects, India has a lot to gain from Carbon Trading:

1. It will gain in terms of advanced technological improvements and related foreign investments.

2. It will contribute to the underlying theme of green house gas reduction by adopting alternative sources of energy.
3. Indian companies can make profits by selling the CERs to the developed countries to meet their emission targets.

#### TRADING OF CERS:

- As a welcome scenario, India now has two Commodity exchanges trading in Carbon Credit. This means that Indian Companies can now get a better trading platform and price for CERs generated.
- Multi Commodity Exchange (MCX), India's largest commodity exchange, has launched futures trading in Carbon Credit.

The initiative makes it Asia's first-ever commodity exchange and among the select few along with the Chicago Climate Exchange (CCE) and the European Climate Exchange to offer trades in Carbon Credit.

The Indian exchange also expects its tie-up with CCX which will enable Indian firms to get better prices for their Carbon Trading and better integrate the Indian market with the global markets to foster best practices in emissions trading.

- On 11th April 2008, National Commodity and Derivatives Exchange (NCDEX) also has started futures contract in Carbon Trading for delivery in December 2008.
- 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. If the Indian buyer thinks that the current price is low 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, 2010 or 2012, then the demand for the 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 Trading in Europe before 2012. Only those Indian companies that meet the UNFCCC norms and take up new technologies will be entitled to sell Carbon Trading. There are parameters set and detailed audit is done before you get the entitlement to sell the credit.

Financing support in India:

- Carbon Trading projects requires huge capital investment. Realizing the importance of Carbon Trading in India, The World Bank has entered into an agreement with Infrastructure Development Finance Company (IDFC), wherein IDFC will handle carbon finance operations in the country for various carbon finance facilities.
- The agreement initially earmarks a \$10-million aid in World Bank-managed carbon finance to IDFC-financed projects that meet all the required eligibility and due diligence standards.
- IDBI has set up a dedicated Carbon Credit desk, which provides all the services in the area of Clean Development Mechanism/Carbon Credit (CDM). In order to achieve this objective, IDBI has entered into formal

arrangements with multi-lateral agencies and buyers of Carbon Trading like IFC, Washington, KfW, Germany and Sumitomo Corporation, Japan and reputed domestic technical experts like MITCON.

- HDFC Bank has signed an agreement with Cantor CO2E India Pvt. Ltd and MITCON Consultancy Services Limited (MITCON) for providing carbon credit services. As part of the agreement, HDFC Bank will work with the two companies on awareness building, identifying and registering Clean Development Mechanism (CDM) and facilitating the buy or sell of Carbon Credit in the global market.

International moves to promote energy self-sufficiency and cut carbon emissions will create a unique opportunity for innovative start-ups to emerge as key infrastructure players over the next few years. The transition to a low-carbon economy will spark a period of historic flux within the business community, characterized by fast-emerging companies and heightened mergers and acquisition activity across the clean tech sector.

The global trade in Carbon Credits has taken off fairly well with the turnover going up from \$11 billion in 2005 to \$118 billion in 2008. Carbon markets investments planned have exceeded all expectations. But the resistance to the idea seems to be gathering steam with many in the developed countries pointing out procedural deficiencies and arguing that Carbon Credits will confer unfair advantages on companies in developing countries like China and India, the major sellers of carbon credit.

But despite growing opposition, the concept of Carbon Credits continues to soar steadily, boosting the number of emission-reducing projects in the pipeline from 490 in end-2005 to 4, 782 in November 2009, and pushing up

the total Carbon Credit supply from 704 million CERs to 2, 820 million CERs during the period. One reason the concept of Carbon Credits has gained popularity is its ability to create a political alliance of forces on opposing sides like Left-wing environmentalists and free market proponents.

While the former believe that the polluters have no significant incentives for self-regulation and have to be curbed through government intervention, the latter believe that such command and control intervention would wreak havoc and that the market would eventually offer an optimal solution. Carbon trading regulations helped break the impasse by providing a clear target that the environmentalists could embrace, while at the same time favoring the market mechanism over governmental regulation as advocated by the Right.

An added advantage of the Carbon Credits is that it optimizes investments in emission-reduction projects by encouraging projects in countries where the cost of reducing emissions is the least, which generally goes in favor of developing countries. Countries like India have favored carbon trade, as it offers a win-win situation for both entrepreneurs and the broader society. While innovative companies that help reduce emissions are provided with Carbon Credits, which they can encase to boost viability or earn profits, the gains to society accrue in the form of a smaller destabilizing impact on the environment.

Opportunities for carbon-efficient companies in India IFC and Standard ; Poor's have launched the world's first carbon-efficient index for emerging markets that aims to mobilize more than \$1 billion for carbon-efficient companies over the next three years. The innovative S; P/IFC Carbon

Efficient Index will encourage carbon-based competition among emerging-market companies, give carbon-efficient companies access to long-term investors, and should help reduce carbon emissions in developing countries. The index was developed by S; P using carbon data provided by environmental data provider Trucost.

IFC provided financial support to the S; P/Trucost consortium to accelerate the carbon research on emerging-market companies, and it provided technical support to help validate and refine the methodology. The rollout of smart grid and renewable energy technologies will also usher in transformative alliances between automakers, utilities, battery makers, communications providers and renewable energy firms as they each seek to play a role in the development of integrated low-carbon infrastructure projects.

Companies that identify their roles and capitalise on these new alliances earliest will establish sizable leads in nascent clean technology markets. New forms of public-private partnerships will be necessary in creating a ubiquitous, national smart grid, but these new models of collaboration must be closely managed to ensure technologies are rolled out quickly and effectively. Underpinning these clean technology transformations is increased support from the investment community

## Referances

- Mathews, John A. 2008) “ How Carbon Credits could drive the emergence of renewable energies” <http://ideas.repec.org/a/eee/enepol/v36y2008i10p3633-3639.html> \* [www.rediff.com/money/2008/feb/05inter](http://www.rediff.com/money/2008/feb/05inter).

- [www. carbontrading. com/c/](http://www.carbontrading.com/c/) \* ions Trading; Joint Implementation; Clean Development Mechanism. php%3Fa... - Cached - Similar
- Carbon Credits India. Emissions (CDM) ... India has generated approximately 30 Million Carbon Credits and approximately [www. globaladvisors](http://www.globaladvisors.com) \* Carbon Credits; by Garg A . in Chartered Secretary November , 2009.
- National solid waste of India . News letter, February 2007.