



## Carbon Trading: An Emerging Business

\* Dr. Basanta Khamrui \*\* Dilip Kumar Karak

\* Assistant Professor, Dr. Gour Mohan Roy College, Monteswar, Burdwan, W. B.

\*\* Assistant Professor, Rishi Bankim Chandra Evening College, Naihati, North 24 Parganas, W. B.

### ABSTRACT

*In this paper, we are trying to study the business opportunity of Carbon Trading. There are two important hazards which are posing challenges to future existence of our civilization. Environmental protection becomes a key issue at Stockholm Conference, in 1972. In the year 1997 Kyoto Protocol was signed, but it comes into effect on February 16, in this year. The aim of Kyoto Protocol is to cut greenhouse gas emission below the 1990's levels, by 2012. Under the Kyoto Protocol a country/company can emit more carbon than its assigned amount only if it can simultaneously to buy "Carbon Credits" from the countries/ companies who earned these credits for adopting environment-friendly measures. In this way Carbon Trading is reduced the levels of greenhouse gases in our environment and there is a new business opportunity to be made.*

**Keywords : Greenhouse gases, Carbon Trading, Kyoto Protocol**

### Introduction

In the recent times, climate change has emerged as the most controversial and debatable issue. The average temperature of the earth is rising day to day. The Intergovernmental Panel on Climate Change (IPCC, 2007) predicts that the average global surface temperature will likely to rise 1.1 to 6.4°C during the running Century. Such rising global average air temperature is known as global warming. Greenhouse Gases (GHG), like Carbon-dioxide (CO<sub>2</sub>), Carbon monoxide, Nitrous oxide, Methane etc., have been identified as major factors for global warming. Industries like, power, transport, cement, steel, wastes, fertilizer, chemical etc. use fossil fuel (coal and oil) and emit GHG emission to a large extent. Moreover, deforestation and some other unhealthy activities promote environmental degradation. The United Nations Framework Convention on Climate Change (UNFCCC) 1992 mentions that the industrially develop countries, which are leading countries for global warming. An important event that a relatively few number of such countries are responsible for the largest chunk of the stock of global GHG emissions. So low polluter countries are also suffered from the global warming. That led to be set up a standard for control the serious global problem and to save the environment.

### Objectives

The main objectives of the present study are as under:

- ◆ To grow the concept and effect of global warming.
- ◆ To save the environment.
- ◆ To control the use of fossil fuel.
- ◆ To protect the unhealthy economic activities.
- ◆ To introduce sustainable environmental development mechanisms.
- ◆ To explore the carbon credits.

### GHG emissions

The global warming indicates stress on ecological and socio-economic systems, in the earth for mindless activities of economic development. Global warming will cause the various problems, like, glacier retreat rise in sea level, downturn in agricultural production, species extinction, fatal diseases, ozone layer depletion, etc.

### Global scenario

Since 1945 worldwide emissions of GHG have increased, with the largest increases taking place in carbon dioxide (CO<sub>2</sub>) emissions, environmentalists attribute the global problem of climate change not to the current GHG emissions but to the stake of historical GHG emissions. According to working paper published by the World Resources Institute, total GHGs were estimated at 44,153 Mt. Co<sub>2</sub> equivalents (million metric tons) in 2005.

Global emissions increased by 12.7% between 2000 and 2005, i. e. on average 2.4% per annum. CO<sub>2</sub> is the predominant gas accounting for 77% of world GHG emissions in 2005 followed by methane 15 % and nitrous oxide 7%. North America accounted for 18% of world GHG emissions, China for 16% and the EU for 12% in 2005. India's share stood at 4% in 2005. Per capita CO<sub>2</sub> emissions of major countries are depicted in table -1 above (Economic survey: 2010-11).

### Global Initiatives

Environmental problems encompass a continuously growing array of pollutant and ecosystem degradation. The growing environmental degradation observed at the local, national and global level attracted. To protect the environmental degradation and climate change an attempt was made in different **earth summit** and conventions conducted in different time and places worldwide. United Nations Conference on environment (UNCED), known as **Earth summit** or **Rio Summit** (1st earth summit) was organized from June 3 to 14, 1992 in Rio De Janeiro city of Brazil. The representatives of 178 developed and developing countries was attended the conference. Thriftier, the United nations Framework Conventions on Climate Change (UNFCCC) was set up in 1992 and entered into force in 1994. The main objective of the convention is to stabilize the concentration of GHGs in the atmosphere at 1990 level. In the convention 194 countries are enjoys near universal membership parties. The convention setup a protocol in 1997 known as Kyoto Protocol which containing a legally binding quantitative time bound target for developed countries. The protocol setup a target to reduce overall emissions by at least 5% below 1990 levels in the 1<sup>st</sup> commitment period, 2008 to 2012. To meet the target the Kyoto Proto-

col recommends three mechanisms: (1) Clean Development Mechanism (CDM), (2) Joint Implementation (JI), and (3) International Emission Trading (IET).

**Carbon Credit**

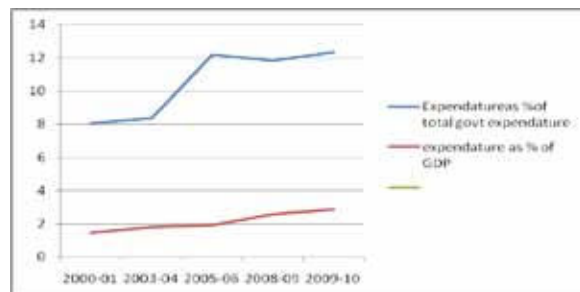
Under this system each firm is given a permit or quota of each carbon emitters. Each permit specifies exactly how much the firm is allowed to emit carbon. If any firm exactly meets its quota, no fines or penalties will be levied. On the other hand if any firm emits carbon below its quota known as carbon credit, it will be free to sell its difference to others on open market. The permits are marketable. They can be bought and sold. The aim of Kyoto Protocol is to cut GHG emissions below the 1990 levels, by 2012. To achieve this target the protocol makes it mandatory for emitters to buy Carbon Credits from the emitters who earned these credits, if their emissions exceed the specified limits. In a nutshell, if you emit more than your limit, you either pay for it or adopt environmental friendly measures. In this way trading of Carbon Credit is becomes a very helpful tool for reducing the levels of GHG in our environment. Carbon Credits inspire the countries/companies who have adopted eco-friendly measures to reduce the GHG emissions.

**Table: 1 Total Expenditure on Adaptation-oriented Schemes**

Year	Expenditures %of total Govt. expenditure	Expenditure as % of GDP
2000-01	8.06	1.45
2003-04	8.39	1.79
2005-06	12.2	1.91
2008-09	11.82	2.56
2009-10	12.34	2.84

Source: Economic Survey 2010 - 2011

**Figure: 1 Total Expenditure on Adaption-oriented Schemes**



Source: Economic Survey 2010 - 2011

**Table: - 2 Reported Performance Targets of Responders**

Company	Sector	Target Type	Performance Type	Baseline	Timeline	Status
Tata Chemicals	Materials	Intensity	20% reduction in CO2 emission/ tone of product	2008	2020	Ongoing
Sterlite industries	Materials	Intensity	10% reduction in CO2 emission/ tone of product	2006	2012	Ongoing
Ambuja Cements	Materials	Intensity	Reduction from 785kg to 628 kg CO2/tonne of prod.	1990	2013	Ongoing
TCS	IT	Intensity	5% reduction in CO2 emission/ FTE	2010	2011	Not Achieved
HDFC	Financial	Intensity	15% reduction in CO2/unit revenue	2010	2011	Achieved

Source: CDP India 200 Report 2011.

**Way of Carbon Reduction**

- Change light bulbs to low emission
- Pay the Carbon Tax
- Pay your bills online

**Capitalization of Carbon Credit**

An agreement was made in between the Multi-commodity Exchange (MCX) of India's and Chicago Climate Exchange (CCX), opens new vista of opportunity for Indian investors, both corporate as well as individual, would get an opportunity to trade in derivative instruments such as Carbon financial instruments on the MCX trading platform. Carbon futures/ options are derivative instruments whose underlying assets is the Carbon Credits. India and other developing countries like Brazil and China expect huge cash flows and technology transfers through the Clean Development Mechanisms (CDM) that allow developed nations to earn credit by investing in environment-friendly project in a developing country. In this way it has gained popularity among investors looking for opportunities in CDM projects.

**Carbon Credit Calculation**

A company can set its baselines and estimates it is ready for the calculation stage. Steps to be followed for calculating carbon emissions are:

1. Identify Carbon emission sources.
2. Select a Carbon emissions calculation approach.
3. Collect activity data and choose emission factors.
4. Apply calculation tools.
5. Roll-up Carbon emissions data to corporate level.

**Indian Scenario**

India does not have to meet stiff targets set by Kyoto Protocol, and thus, it finds itself in an enviable position. World Bank estimates that, Indian carbon market near about \$ 100 mn annually and at least 10% of the global market in the initial stage. India can expect huge cash flows and technology transfers through the CDM that allowed developed nations to earn credits. Presently India and Brazil is the largest players in the carbon emission market. The market of carbon emission trading is estimated to grow around \$ 5 billion within 2010. Many Indian industries/investors have started generating revenues through CDM. For instance SRF an Indian Chemical firm has sold 2.5 million units of Carbon Credits to European agencies for Rs.250 crores. Gujarat Fluor chemicals, refrigerant makers, expect revenue about Rs.500 crore over the next 6 – 7 years through the sale of Carbon Credits. Grasim Industries earned Rs. 17 crore by selling of Carbon Credits in Europe. Many more Indian firms and banks like Reliance Industries, ONGC, RCF, SBI, ICICI, IDBI, etc. are also exploring and entering the Carbon emission business.

Carbon Action is a new initiative launched by Carbon Disclosure Project (CDP) in 2011. It is driven by a leading group of companies to encourage their portfolio to reduce emissions, by investing in emissions reduction activities with a satisfactory payback period. CDP reflects a growing recognition that there is a huge range of carbon reduction activities that companies can undertake that have a very clear business case. The following Table shows the report of the CDP 2011 performance targets of responders.

- Open a window
- Ask for an energy audit
- Buy green power
- Turn food into fuel (bio fuels)

- Switch off lights at closing time
- Aforestations
- Illuminate public spaces with LEDs
- Set higher carbon emission standards
- Change company vehicles to bio fuels
- Plant trees in the tropics
- Set an organizational Carbon budget
- Trade carbon for capital
- Shut off computers (no standby)
- Use more geothermal heat
- Properly insulate water heater

### Conclusions

To save the earth from global warming controlling of carbon emission is essential. Carbon emission credits mechanism is one of the most important instruments for GHGs reduction. Several organizations explained how they already use the cost of carbon as part of their decision-making, which influences their investment decisions. Carbon Credits, thus, create a market for reducing GHG emissions by giving a monetary value to the cost of polluting the air. Carbon emissions trading motivate the emitters for carbon credit. In these way carbon trading is reduce the level of GHG in our environment and there is a new business opportunity to be made.

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