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EARN WHILE YOU BURN- LATEST TREND OF POWER SECTOR

(CARBON CREDIT)

Ms.Nidhi Savjani[1]
[1] Lecturer, Department of Electrical Engg., government polytechnic, Rajkot, Gujrat,

ABTSRACT - *Carbon credits are a key component of national and international emissions trading schemes that have been implemented to reduce global warming. They provide a way to reduce greenhouse effect emissions on an industrial scale by capping total annual emissions and letting the market assign a monetary value to any shortfall through trading. Credits can be exchanged between businesses or bought and sold in international markets at the prevailing market price. Credits can be used to finance carbon reduction schemes between trading partners and around the world.*

Keywords: *global warming, Kyoto Protocol, CERs, flexible mechanism, Indian scenario*

I. INTRODUCTION

Measure of any developed country is given by per capita energy consumption of that country. More the consumption, more the development. Growth of country is also dependent on the industrial revolution But this human activity has increased the concentration of various greenhouse gases. The major source of industrial greenhouse gas emissions is burning of fossil fuels. Power Sector, cement, steel, textile, fertilizer and many other industries which are depending on fossil fuels (coal, electricity derived from coal, oil, etc.) emit the major GHG like carbon dioxide, methane, nitrous oxide, hydro fluorocarbons (HFCs), etc, all of which have not yet been completely proven to increase the atmosphere's ability to trap infrared energy and thus affect the climate. Global warming results in extreme Weather/ Temperature increment, rising sea levels, increased intensity of tropical storms, increase in the number of heat-waves. Arctic summer sea ice is likely to disappear in second half of century. We can't disturb atmosphere for the growth. Intermediate solution of this problem is carbon credits**.** The concept of carbon credits came into existence as a result of increasing awareness of the need for controlling emissions.

II. KYOTO PROTOCOL

There is an agreement under which industrialized countries will reduce their collective emissions of greenhouse gases by 5.2% compared to the year 1990. The goal is to lower overall emissions of six greenhouse gases - carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydro fluorocarbons, and per fluorocarbons - averaged over the period of 2008-2012. National limitations range from 8% reductions for the European Union and some others to 7% for the US, 6% for Japan, 0% for Russia, and permitted increases of 8% for Australia and 10% for Iceland. The Kyoto Protocol is a protocol to the United Nations Framework Convention on Climate Change (UNFCCC or FCCC) produced at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro, Brazil, from 3–14 June 1992.

As of 2008, 183 parties have ratified the protocol.Kyoto Parties also agreed to successive commitment periods (2013-2017 and 2018-2022) but have not agreed on reduction targets. The parties agreed that:

1. The largest share of historical and current global emissions of greenhouse gases has originated in developed countries;

2. Per capita emissions in developing countries are still relatively low, and

3. The share of global emissions originating in developing countries will grow to meet their social and development needs.

In other words, China, India, and other developing countries were not included in any numerical limitation of the Kyoto Protocol because they were not the main contributors to the greenhouse gas emissions during the pre-treaty industrialization period. However, even without the commitment to reduce according to the Kyoto target, developing countries do share the common responsibility that all countries have in reducing emissions.

There will be a mechanism of "compliance", which means a "monitoring compliance with the commitments and penalties for non compliance."

III. CERTIFIED EMISSION REDUCTIONS

Carbon credits are generated by companies in the developing world when they move to cleaner technologies that help to reduce their greenhouse emissions. The developing country has to validate its carbon projects through one of theUNFCC's approved mechanisms. The Protocol allows these projects to be constructed and credited in advance of the Kyoto trading period.Once approved; these units are termed Certified Emission Reductionor or CERs.For every tonne of carbon dioxide reduced, the company receives a CER certificate that it can sell like any other commodity.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.

IV. KYOTO'S 'FLEXIBLE MECHANISMS'

The Kyoto Protocol provides for three mechanisms that enable countries or operators in developed countries to acquire greenhouse gas reduction credits

1) Under Joint Implementation (JI) a developed country with relatively high costs of domestic greenhouse reduction would set up a project in another developed country.

2) 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.

3) Under International Emission 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.

V. HOW 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.

By way of example, consider a business that owns a factory putting out 100,000 tones of greenhouse gas emissions in a year. Its government is a 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 tones per year. The factory either reduces its emissions to 80,000 tones 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.

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 tones 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 tones 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.

VI. INDIAN SCENARIO

4.1 Non Renewable Energy Projects

Torrent Power Ltd's gas-fired power plant in Gujarat's Surat district has been registered by the executive board of Clean Development Mechanism (CDM) becoming the largest project in India to be registered at the United Nations board.Torrent's 1147.5MW project would be one of the first Greenfield mega power projects to be setup with liquefied natural gas as fuel. The power plant has been developed with plans to drive out coal-fired electricity from the western

regional electricity grid. This grid is heavily dependent on electricity generated from coal. Gas-fired plants are cleaner than coal-fired ones as they emit less greenhouse gases. The project is now set to earn almost 3.2 million carbon credits annually from 2007-2012.

4.2 Renewable Energy Projects

Though gas-based power plants emit less than coal-generated plants, which is why they are getting credits, they do emit a lot of greenhouse gases. Ideally, CDM should promote renewable energy projects which also have strong sustainable developmental aspects. Financing of renewable energy projects via carbon credits is a relatively new activity in India. Renewable energy firms like C TRADE are working to help develop renewable energy projects through carbon financing.

4.2.1 Biomass Energy

C TRADE has developed Biogas projects to help local organizations and farm owners where the potential funding from CDM carbon credits will be used to recover the cost for design, development, construction and operation. Farmer does not need to invest anything. C TRADE possesses the right on CERs earned from that project.

One biogases (sugarcane pulp) -based renewable energy project at a sugar factory in India is expected to offset 42,446 tons of carbon dioxide annually for ten years. This 9-MW biomass renewable project was issued 33,434 CER between May 2006 and March 2007.

4.2.2 Wind Energy

In recent years, the wind energy market has grown significantly and much of this growth can be attributed to supportive governmental policies and innovations in management and financing. A 6.5-megawatt (MW) wind energy project in the state of Madhya Pradesh was issued 10,413 CER for offsetting green house gas emissions over a 13-month period. With 5 wind turbines, the wind farm is owned by a consortium of 5 companies but operated and maintained by the supplier.

4.2.3 Hydro Power Plant

The mountainous state of Uttarakhand has an active list of hydro electric projects of various sizes under development and at the proposal stage. . These include a large number of run-of-river projects ranging from 0.4 MW to 230 MW, and also a few large projects (between 25 and 100 MW) based on water storage. The four small hydro projects for which project design documents have been prepared for CDM are expected to generate 160,000 carbon credits.

VII. CONCLUSION

In the past few years a large number of renewable energy projects have benefited from carbon financing, meeting the energy security needs, and preventing the release of green house gases into the atmosphere. Still, many dispersed and disaggregated renewable energy activities have not yet been able to tap markets for carbon credits. With the development of the carbon credit market and new approaches to renewable energy businesses and policy this may change in the future.

VIII. REFERENCES

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[4]www.carbonplanet.com

