

Carbon Trading: A Mitigation Approach to Climate Change

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ABSTRACT

Earth's average temperature has risen by 1.4°F over the past century. It is projected that it will further likely to rise another 2 to 11.5°F over next century. Small changes in the average temperature of earth so far, can transform into large in coming hundred years. Moreover these climatic changes will have great potential to create negative impacts on environment and mankind. Therefore it is essential to mitigate climate change for advance minimization of its dangerous impacts. Carbon trading has been introduced in the 1997 Kyoto Protocol, as a mitigation technique to lessen carbon emission in the atmosphere, by 5% below 1990 levels between 2008 and 2012. Carbon trading refers to a system to control carbon dioxide emission, for which governments or international bodies set an general limit on whole amount of carbon that can be emitted. Carbon trade permit those countries which emits more carbon into the atmosphere, to purchase the right to release more carbon dioxide from those nations that have lower scale of carbon emission. The carbon trade also refers to the ability of individual companies to trade polluting rights through a regulatory system. In this direction this paper is going to represent carbon trading, carbon credits and its relevance.

Keywords: Carbon Trade; Carbon Credits; Kyoto Protocol; Carbon Trade Exchange; Clean Development Mechanism'

1. INTRODUCTION

Climate change is a global threat that needs urgent action from global community. All countries will be affected by climate change and its impacts, particularly developing countries. If temperature is taken as an climate change indicator, it has been found that earth's average temperature has risen by 1.4°F (0.72°C) over the past century. It is projected that it will further likely to rise another 2 to 11.5°F over next century (NCAR, 2014). Future climate change will primarily depend on many factors, such as:

- The rate at which levels of greenhouse gas concentrations in our atmosphere continue to increase
- How strongly features of the climate (e.g., temperature, precipitation, and sea level) respond to the expected increase in greenhouse gas concentrations

- Natural influences on climate (e.g., from volcanic activity and changes in the sun's intensity) and natural processes within the climate system (e.g., changes in ocean circulation patterns) (USEPA, N.D.)

Small changes in the average temperature of earth so far, can transform into large in coming hundred years. Moreover these climatic changes will have great potential to create negative impacts on environment and mankind. Therefore it is essential to mitigate climate change for advance minimization of its dangerous impacts. Current evidence suggests that to avoid the worst impacts of climate change, we should aim to limit the global average temperature rise to 2°C (35.6°F), not beyond that. This requires to undertake immediate reduction in global greenhouse gas emissions in all the sectors.

In the 1997 Kyoto Protocol, it was decided that carbon emission in the atmosphere will be reduced by 5% below 1990 levels between 2008 and 2012. Hence Carbon trading has been introduced, as a mitigation technique to lessen carbon emission in the atmosphere. Carbon trading refers to a system to control carbon dioxide emission, for which governments or international bodies set an general limit on whole amount of carbon that can be emitted. Carbon trade permit those countries which emits more carbon into the atmosphere, to purchase the right to release more carbon dioxide from those nations that have lower scale of carbon emission. The carbon trade also refers to the ability of individual companies to trade polluting rights through a regulatory system.

2. CARBON TRADE

Carbon trade refers to the exchange of carbon credits between nations which are designed to reduce emissions of carbon dioxide. This trade gives permission to higher emitting countries to purchase the right to release more CO₂ into atmosphere. Higher emitting countries can purchase emission right from those countries that emits less carbon. The carbon trade is intended to reduce overall carbon dioxide emissions to 5% below 1990 levels, between 2008 and 2012. (WTO-UNEP, 2009). The carbon trade gives ability to individual companies to trade polluting rights through a regulatory system that is known as cap and trade. Companies that pollute less can sell their unused pollution rights to the companies that pollute more. The goal of carbon trade is to ensure that companies in collective form, do not exceed a baseline level of pollution. Therefore, Carbon trade becomes a medium for those companies which are able to pollute less, to achieve financial incentives. (investopedia, N.D.)

3. CARBON CREDIT

A carbon credit represents one tone of carbon dioxide equivalent either removed, avoided or sequestered. For instance : to produce 1 kwh power through a thermal power plant 1 tone carbon is

released consequently. If the same amount of power i.e. 1 kwh is generated by a wind power plant then 1 tone carbon emission will be cut to be released into atmosphere. Hence, 1 tone carbon less = 1 Carbon credit. The green power companies can sell their carbon credits to the companies in such countries which has emission targets. In this way developing countries can have finances to set up and operate wind farms, and consequently lead to green development.

In carbon market, carbon credits are generated by projects that needs to be operated under one of the United Nations Framework Convention on Climate Change (UNFCCC) approved mechanisms, i.e. known as 'Clean Development Mechanism' (CDM).

3.1 Where are carbon credits held?

Carbon credits are stored electronically in 'registries'. Registries are crucial for issuing, holding, and transferring carbon credits. Once a carbon project is issued with credits, the registry gives a unique serial number to each company so that they can be tracked through their entire life-cycle. Registries also facilitate the surrendering of credits for carbon neutrality purposes. This ensures that credits are not resold at a later date. Carbon trade exchange keep the record of all these registries by getting connected to various national registries. All this function is performed by carbon trade exchange via Climate's Registry Electronic Interface (REI).

4. DIFFERENT TYPES OF CARBON PROJECTS

Carbon credits can be generated from various types of projects including:

- Renewable energy: a switch from fossil fuels to 'clean' energy e.g. wind and solar power plants
- Forest Regeneration and Aforestation: planting of new trees as trees function as carbon sequester and store CO₂ in their wood
- Energy efficiency: reducing emissions though an increase in energy efficiency e.g. installation of energy-efficient machinery
- Methane capture: avoiding methane emissions through capture and burning to create energy e.g. landfill methane capture

Project eligibility for carbon credits depends on whether a project follows one of the Kyoto Protocol's project-based mechanisms or an independent voluntary standard.

5. SIGNIFICANCE OF CARBON TRADING

This system is attractive to governments for several reasons. First, it easily enables descending reductions in carbon emissions over a number of years. Every year, the number of credits granted can just be decreased by the government. Second, it creates a flexible and efficient market for

carbon reduction, encouraging reduction of carbon emissions by those companies who can do so at the least cost. A company for which reduction in carbon emissions is expensive will buy excess credits from a company that can reduce carbon emissions on cheap and easy bases. Not only government, but also private companies and organizations are also getting actively involved in this trade. These private organizations are getting huge incentives for buying and selling carbon credits.

Third reason, carbon-trading deals in forestry projects also in developing countries as forests acts as carbon sinks and store Co₂ in large amount. The use of forest is a financially viable technique to reduce emission. It could also bring significant benefits to the local communities involved and consequently helps in reducing poverty at the same time. Forestry projects can bring social, economic, and local environmental benefits to millions of people. (Clyde, P., 2012)

6. CONCLUSION

The concept of carbon trading, hence, becomes very significant. If this can be implemented properly in an efficient manner, it will defiantly be proved as a great helping hand in reducing carbon emission and corresponding harmful impacts. The process of trading is quite similar to buying and selling of stocks in share markets. Carbon trading is serving as an means for saving the world from harmful consequences of carbon emission and climate change.

On the hand, in the words of economist Jeffrey Sachs, carbon trading is "hard to implement, it's hard to monitor, it's non-transparent, it's highly political, highly manipulative, which is why the banks love it, the banks all want to trade, this is an investment banking dream." (wikinvest, N.D.)

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