



## Is Carbon Trading the Solution to Climate Change Problem?

### KEYWORDS

Carbon trading, climate change, allowances, carbon credits, offsetting.

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**ABSTRACT** *The global concern on climate change led to development of a market based system of trading carbon emissions, formalised by the UNFCCC in the Kyoto Protocol. With 170 countries & governmental entities ratifying the Kyoto Protocol, it began to be regarded as the panacea to the climate change problem. This paper presents a brief review of existing carbon trading schemes & discusses why these schemes are inadequate to deal with the problem of climate change.*

### Introduction

The concept of climate change is now of global concern due to the global warming caused by air pollution from rapid industrialization and use of energy. The Copenhagen Accord set the goal of limiting the long-term increase in global mean temperature to two degrees Celsius (2°C) above pre-industrial levels, to avoid catastrophic climate change (OECD, 2009). It was opined that carbon emissions reduction in all major carbon emitting countries is imperative for achieving this goal. Preferred solutions to mitigate emission reductions were built around market forces rather than direct regulation through legislation, and considered incorporating some tax that reflects the level of carbon dioxide emissions.

In Kyoto, country leaders agreed to apply cap-and-trade schemes in Carbon Emission for green house gas reduction. The Kyoto Protocol emerged as the first scheme for introducing trading of greenhouse gases on a global basis. New optimism came into the international debate on Climate Change through the implementation of the Emission Trading Approach proposed in the Kyoto Protocol. Putting a price on greenhouse gas emissions was regarded as a key policy in climate change mitigation. It was widely accepted that without price measures, it will be more difficult and expensive to meet the Copenhagen Accord goal of limiting temperature rise to 2° C.

Carbon emission trading was believed to be the way for mitigation of global warming as this scheme tries to reduce the Carbon dioxide (CO<sub>2</sub>) emissions by limiting energy consumptions. Around 170 countries and other governmental entities ratified the Kyoto Protocol, which is part of the United Nations Framework Convention on Climate Change (UNFCCC). Nearly 40 developed countries (excluding the US) have pledged to reduce their annual carbon emissions. Many other countries have implemented or are developing domestic emissions trading systems (ETS). Despite the wide acceptance of this scheme for mitigating the climate change effects and the growing volumes of carbon trades globally, the initial euphoria among the environmentalists regarding this scheme has subsided as they do not see the air getting any cleaner. This study presents a brief review of existing carbon trading schemes & discusses in depth why the current schemes are inadequate to deal with the problem of climate change.

### The Kyoto Protocol

Emissions trading as proposed in the Kyoto Protocol, is a

way of creating a market for carbon emissions and involves trading in carbon allowances. This is accomplished through a **"cap and trade"** system, adopted by the International Framework Convention on Climate Change with its commonly known Kyoto Protocol. This system requests signatory countries to cut down their emissions by at least 5 percent below the base line of 1990 emission level. The most important fact related to the Kyoto protocol is its implementation of a purely market oriented, industry friendly credit trading system to counter carbon mitigation. This mainly facilitates a credit system for "Trading of Carbon" based on an Assigned Allocation Units (AAUs, also known as "allowances") system, wherein one ton of CO<sub>2</sub> equals one credit. In this system, a target (cap) is established for emissions from a particular group/industry and allowances are issued in line with that cap. Allowances can then be traded so that entities exceeding their allowance can purchase unused allowances from "under-emitters" and avoid penalties otherwise imposed on "over-emitters". The cap is usually set in accordance with emissions from a "base-line" year. Targets are then set for a given period.

Another way of carbon trading is '**Offset Trading**'. This refers to investment in carbon reduction projects to obtain credits in order to offset emissions. In addition to the emissions trading scheme within the developed countries, the Kyoto Protocol introduced the '**Clean Development Mechanism (CDM) and Joint Implementation (JI)**'. The CDM is an arrangement allowing developed countries to invest in or implement projects that reduce emissions or remove carbon from the atmosphere in other developing countries in lieu of CERs (Certified Emission Reductions). JI is a similar project-based scheme but involves developed countries earning credits or ERUs (Emission Reduction Units) by implementing projects that reduce emissions or remove carbon from the atmosphere in other developed countries. Here one developed country receives emissions credits in return for financing an emissions reduction project in another.

Countries can implement projects that demonstrate savings in carbon emissions, either by not emitting carbon or by absorbing carbon. Examples include forestry, biomass energy and hydropower plants. CDM has emerged as the most popular emissions trading scheme. Projects in developing countries are supplied to the CDM market for developed countries to buy. The developing country will not only benefit from revenues from sale of carbon credits,

but also from increased foreign investments and potential for technology transfer. To date, over 1,000 projects have been registered in almost 70 countries. China, India, Brazil and Africa are leading suppliers of CDM projects while the UK, Japan and Italy are leading buyers. By creating a price for carbon emissions, carbon trading encourages organisations to go beyond compliance and find ways to make reductions, including through investment in new technologies.

#### Difficulties with carbon trading

Despite the advantages listed, there are many reasons to be sceptical of this way of handling the global crisis of climate change & global warming.

#### Problems with the Approach:

➤ **Complex & expensive process:** First, establishing such a project can be a complex and expensive process as all CDM or JI projects must go through a rigorous validation process by the UNFCCC, certification costs ranging around US\$10,000 besides many other costs involved for the company.

➤ **No standardisation:** There are relatively few companies engaged in the design, validation, verification and certification of projects and credits. With no legislative guidelines or supervision, they have no reason for maintaining high standards – it's about the price & costs! Also, some consultancy organisations are intertwined with the very companies that invest in the CDM project.

➤ **The baseline problem:** To know how much CO<sub>2</sub> is saved by a certain action, two numbers are required: how much CO<sub>2</sub> was in the atmosphere after the action and how much would be in it without that action. This second number is called the "baseline". Setting a baseline is a major challenge as individual governments & private consultants over-allocate allowances to protect domestic industries. The higher the baseline, the better. Theoretically, a company can get credits for emitting more carbon if they were good enough in "creative accounting" to enable setting of a higher baseline. An example in this respect is the fact that the states in the former Soviet bloc had an economic breakdown in the early 1990s and thus already reached their caps. They had "hot air" to sell without doing any mitigation-efforts.

➤ **Allowances are not credits:** While allowances within a cap-and-trade scheme are really reductions, an earned credit (e.g. under the CDM) is just an assumed commodity but today, the two are seen as equivalent and are traded on one market (Under the European Union Emission Trading System).

➤ **No real reduction:** An earned credit represents an "emission reduction" but there is no global climate benefit as it is only an offset. There's no point in cutting emissions at one place while an amount equal to that is allowed to be emitted elsewhere. A company may undertake a CDM project, earn carbon credits & use them to offset additional emissions at another location, thus claiming to be carbon-neutral. Hence, nearly two thirds of all emissions claimed as so reduced are still there. The problem is increasing no matter how much is offsetted. Hence, it is not offsetting that is the solution, but stopping to emit CO<sub>2</sub> at all. Thus, a change in lifestyle is needed rather than offsetting.

➤ **Major credits earned through absorption & not re-**

**duction:** Of the two options available – reduce carbon emissions & carbon capture, only the latter is being emphasized. As a result, the amount of credits generated through renewable energy projects (which mean real reduction for the same amount of energy produced) is small as compared to those that come from 'capture' (attempts or mechanisms to absorb carbon emissions).

➤ **Falsification of amounts:** Even in a project under the CDM system, the amount of falsification is huge and unimaginable. According to a July 2010 report from the CDM executive board meeting in Bonn, "emission reduction project developers have been caught falsifying documents".

➤ **Carbon Sham:** Another problem is the advent of carbon scams where carbon credits are sold but no carbon reducing action is actually undertaken. For e.g., it is claimed that forests are being planted, whereas no such action is undertaken or the number of trees or area under coverage is much less. For this, increased regulation and supervision would be beneficial but the purchaser must take care to ensure that mitigation measures promised are actually taken.

➤ **Complexity of Carbon cycle:** The offsetting approach of planting trees to let them absorb carbon for the amount of their life time is useful but calculating exactly how much CO<sub>2</sub> is absorbed as too many factors play in.

- With the global average temperatures rising, it remains unclear which plants can survive and serve as offsetting tools.

- Without knowledge of absorbing capacity or suitability in a region, trees are planted at will. Often, monocultures and unfamiliar plants are planted, thus adversely affecting the biodiversity & disturbing sensitive ecological balances causing more harm than good. Besides, research by the Carnegie Institute presented at the "First National Conference On Carbon Sequestration" has shown that trees planted outside of the tropical regions have little or no impact on global climate change.

➤ **Future value accounting:** Offsetting-projects are meant to go over a period of time and hence, future value accounting should be done as all value is not realised in a single year. If a tree is planted for absorbing emissions of one ton, the mitigation capacity for the lifespan of the tree, for example 20 years, is calculated. It means that the emissions are not balanced immediately, but about 20 years later, and every year, only 1/20th of the emissions is reduced. This means that a wait of 20 years is required to offset the emissions or 20 trees are to be planted at once (which costs 20 times more!). If the activity causing such emissions is carried regularly, the emissions can never be offset until 20 trees are planted each year till the activity is carried on which can be tough and expensive. Another alternative to let the amount of mitigated carbon reach the amount of emissions is to stop doing that activity – and wait 20 years.

➤ **No priority classification:** Luxury-emissions should be reduced first and not survival-emissions. But, usually they are not touched that quickly, as it is politically and economically more expensive, rather the survival emissions are targeted which does not result in substantial reduction. Also, instead of uniform worldwide reduction, mitigation is done first where it is the cheapest at the moment for

the ones which have to reduce their emissions. The idea of mitigating in places where this is cheaper first leads to the regions with lesser emissions become even less CO<sub>2</sub>-intensive while those with higher emissions stay with a high level.

- **Class difference:** Since the costs of paperwork alone runs into thousands, carbon trading and offsetting makes sense only to corporates and wealthy consumers who can afford such costs and is viewed sceptically by others.
- **Distraction** - Carbon trading serves as a distraction from the real solutions to fight global warming. If corporates can pollute, and then use credits for carbon offsets, emissions would become a greater problem.
- **No Measurement Benchmarks:** There is need of a benchmarking or certification process that measures the real value of carbon trading programs. International standards bodies like the United Nations Panel on Climate Change and global warming advocacy groups are trying to evolve a system to enable carbon credit buyers know the mitigation impact of their investments.
- **Increasing emissions in developing nations:** Even though climate change is the biggest threat facing the planet, underdeveloped countries consider development to be more crucial for them, even though it means raising their emission levels. Over the next 100 years, developing countries are estimated to increase their energy use eight-fold & it would be extremely difficult for them to return emissions to pre 1990 levels.
- **Ineffective and inefficient:** Emission trading can slow down the whole process of reverting climate change as carbon offsetting is becoming a substitute for reducing

emissions at source. Carbon trading allows governments and companies to avoid implementation of serious and more immediate reductions in polluting activities. It gives entities legal permission to pollute up to the cap level as the company is obliged to reduce emissions only to that level. With a cap level set quite high, right now the private industry holds rights to pollute the earth by far more than is healthy – that too with state approval. Permitted levels of emissions i.e. allowances may need to be dramatically reduced if climate change is to be averted. Purchasing carbon credits should be resorted to only after all practical steps have been taken to reduce emissions.

### Conclusion

Carbon credits are an emerging trend, particularly in the business world. While many experts agree that putting a price on the cost of carbon is good, but it is debatable whether companies should trade harmful environmental practices for carbon offsets.

Carbon trading does not help to adequately tackle the problem of Climate Change. It is not efficient & fast enough, places emphasis on offsetting rather than real reduction, and distracts attention from serious measures and collective political action that needs to be taken for reducing pollution levels to tackle climate change.

Carbon trading is also only one of a number of instruments available to governments. Other alternatives that have been debated in the current climate regime include use of taxes and encouraging the development of appropriate technology. An approach that focuses more on **Carbon Taxation, Cap-without-trade** and aggressive pushing of **green investment** seems to be the better & greener alternative.

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