

Introduction

The UK government as part of the Kyoto Protocol has pledged to cut emissions of greenhouse gases by 20% by 2010 and by 60% by 2050. Part of the Kyoto agreement is the Clean Development Mechanism (CDM). This allows industry in signatory countries to invest in projects that sequester their carbon dioxide (CO₂) emissions if they cannot meet their reduction requirements within their own operations. Carbon sequestration is a means of absorbing the harmful CO₂ emissions so that they do not enter the atmosphere and cause global warming. The two main examples of this are tree planting and renewable energy projects. In theory trees absorb CO₂ as they grow, and renewable energy projects such as wind turbines replace an existing activity that originally used fossil fuels and in so doing offset the carbon.

The Principle

There are a number of companies (e.g. Climate Care and The Carbon Neutral Company) that help businesses reduce their emissions. When all possible reductions have been implemented the remaining figure is offset. In this way a company can say it is 'carbon neutral'. In other words, it no longer contributes to climate change. There is also a trend for making operations or events 'carbon neutral' by offsetting the entire carbon emissions associated with it. All flights associated with the G8 meeting in Edinburgh were carbon offset. The 2012 Olympic Games is set to become carbon neutral by carbon offsetting.

The Practice – Tree planting

There is, however, a problem. Trees do not sequester the carbon immediately and there is no consensus on how much carbon trees absorb. If the tree dies it releases the stored carbon. In practice tree planting largely takes the form of mono-cultures in the global South. This wipes out existing biodiversity, has displaced indigenous people and in some instances has led to the removal of rainforests, releasing large amounts of CO₂. Any land use change to plant forests will release CO₂ into the atmosphere. One study suggested that planting trees outside of the tropics to mitigate climate change does not work as their canopies actually trap heat. Because of this there has been a move away from tree planting within the CDM and by companies such as the Carbon Neutral Company. The CDM have moved towards biofuel crop plantations in countries like Indonesia, which is disastrous for the climate as rainforests are destroyed and CO₂ is released. UK offsetting companies have looked more towards renewable projects.

The Practice – Renewables

Renewable projects always seem to be in the global South and might be a worthy project like solar-powered cooking stoves in India or replacing filament light bulbs in South Africa with CFL bulbs. These need to be shown to be 'additional'. The project needs to establish that the carbon savings would not have happened anyway in order to say that the emissions are not entering the atmosphere. Another point to consider is that it is not clear how quickly a renewable project will offset the carbon that UK industry emits. If it is over the lifetime of the project, then clearly it is failing to do what it sets out to achieve.

The Market Place

The carbon offsetting market is unregulated and there is no guarantee that the client's money will contribute towards reducing CO₂ emissions. There is a lack of transparency regarding how the customer's payment physically sequesters carbon and different

schemes are inconsistent. In other words, for a set activity different offset companies ascribe varying amounts of CO₂ emissions to it. This does not instil confidence in the chemistry or maths involved in the process. The UK government is concerned about the market and DEFRA has introduced a voluntary non-binding set of guidelines which is not an accreditation scheme. The government has named four schemes that comply which are: Pure, Global Cool, Equiclimatic and Carbon Offsets.

Unaccounted Problems

Many people are increasingly offsetting their air flights. Jet aircraft not only produce CO₂, but water vapour, ozone (both greenhouse gases), nitrous dioxide (NO₂), sulphur oxides (SO_x), carbon monoxide (CO) and volatile organic compounds (VOCs). According to the Intergovernmental Panel on Climate Change (IPCC) the overall impact of this combination of exhaust gases is a warming affect of 2.7 times that of CO₂ alone. It is unclear whether this is taken into account when carbon offsetting.

Power stations

Fossil fuel combustion at power stations not only produces CO₂, but also a whole range of co-pollutants. They include: Nitrogen oxide (NO_x – which vehicles also emit), SO_x (causing acid rain and smog), CO, arsenic, benzene, mercury, lead, ozone and formaldehyde. These are all hazardous to human health and are not accounted for by carbon offsetting. Physically reducing carbon emissions reduces these pollutants.

Inherent Problem

On the face of it carbon offsetting is false accountancy. A claimed reduction in a business' CO₂ emissions may well not actually be happening, and it is very difficult for the reduction to be accurately substantiated. It is believed that carbon offsetting not only mitigates climate change but changes behaviour. However it is possible for a company or individual to simply offset their impact on the climate and not actually reduce emissions at all, or for more money, emissions could actually be increased. Friends of the Earth are concerned that carbon offsetting is being used to ward off legislation and delay the urgent action that is actually required to cut emissions to the scientifically-accepted safe level and develop a low-carbon, sustainable economy. Every industrial country cannot offset. If the UK wanted to offset its annual CO₂ emissions by planting trees then France, Germany, Spain and Italy would need to be covered in mono-culture forests.

Conclusion

For competitive advantage and true differentiation in an increasingly 'green' marketplace we suggest donating to Practical Action and rainforest protection charities, such as:

Practical Action - <http://practicalaction.smartchange.org/>

The Rainforest Foundation UK - <http://www.rainforestfoundationuk.org/>

Rainforest Portal - <http://www.rainforestportal.org/>

Rettet den Regenwald (Rainforest Rescue) -

<http://www.regenwald.org/international/englisch/index.php>

The former is a truly charitable act and the latter protects the carbon sinks that are crucial to all our futures in preventing runaway global warming.