Brief remarks about voluntary carbon offsetting

Carbon offsetting – a definition

Carbon offsetting can be defined as the means of compensating for carbon dioxide or other greenhouse gas emissions, arising from human activity, by participating in schemes designed to make equivalent and timely reductions of greenhouse gases in the atmosphere. These schemes often occur in quite different locations, even overseas, from the original emissions.

The perceived need for offsetting

"… carbon emissions are implicated in almost every aspect of our lives."[1] For example, whether we toast a slice of bread, make a phone call, conduct an online search of the internet or even brush our teeth under a tap, emissions of greenhouse gases, most often carbon dioxide, are involved somewhere. We now know that to mitigate climate change it is absolutely necessary to reduce our personal carbon footprint, which is made up of the numerous contributions from all our daily activities, with the ultimate aim of living in a net zero-carbon society.

It is also clear that we can reduce our emissions by reducing our demands for energy and by using what we do use much more efficiently. But, in addition, we must move away from, and eventually abandon, the use of fossil fuels and rely more and more on sources of low-carbon, renewable energy. Many studies have shown that it is possible to reach a low-carbon or even a net-zero society over time but to do so by 2030, or even at some later date, will require extensive and relatively rapid changes in the way we live. For example, we must reduce our emissions by using public transport in place of private cars, by retrofitting buildings so they are much better insulated and by constructing new buildings to the highest standards of insulation. How is all this possible and where, if at all, does carbon offsetting fit in?

[1] Adam Corner & Jamie Clarke, 'Talking Climate', (palgrave macmillan, 2016)

Carbon offsetting is seen by some people as a quick way to avoid some of the indirect damage to the climate caused by their personal emissions.[2] But there are serious concerns about the ethics and even the effectiveness of paying someone else, who is probably living elsewhere and even in a less developed country, to take on the responsibility for our own emissions such as from long-haul flights. Offsetting has been compared unfavourably to the Catholic church's practice in earlier centuries of selling indulgences to obtain absolution from sins and reduced time spent in purgatory!

There are several other potential problems with offsetting schemes. The user needs to be sure that:

- the reduction in emissions from their chosen scheme won't have happened anyway (otherwise their emissions will not actually have been offset). This is called the additionality test
- the scheme will cause a permanent reduction in emissions and will not have caused an increase in emissions elsewhere
- the scheme will remove greenhouse gases at broadly the same time and rate as they have been emitted, otherwise, on balance, the emissions could end up causing net damage to the atmosphere.

Offsetting is explained in greater detail in a report published by the World Wide Fund for Nature (WWF).[3]

How it works

Let's look at some examples of how voluntary offsetting works. Carbon offset projects can be grouped by the type of project. The larger projects (more than about 10% of the total) may be broadly categorized into bio-sequestration, industrial gases and renewable energy projects.

[2] Carbon offsetting of companies' emissions, which is also possible, are not considered here.
[3] Kollmuss, Anja, Zink, Helge, and Polycarp, Clifford. 'Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards'. Germany: WWF (SEI, Tricorona), March 2008.

Bio-sequestration means avoiding deforestation, encouraging soil management or planting trees, with the latter type of scheme being most common. However, there are shortcomings with planting trees. A newly planted forest will take many years to absorb carbon dioxide from the atmosphere equivalent to that emitted by a flight or other activity today and meanwhile damage will be done to the climate by the emitted carbon.

Some gases emitted by industry have a very high Global Warming Potential (GWP). The destruction of these gases is therefore a very effective way to reduce global heating but the offset market does not appear to be the best way to reduce these emissions. For example, some reports have indicated that the creation of an offset market for hydrofluorocarbon gases, widely used in refrigeration, has created perverse incentives in China and India to start building new HCFC-22 facilities to increase revenue from offsets. Those who emit HFC-23, a potent greenhouse gas that is a by-product of the manufacture of refrigerant gases such as HCFC-22, can earn almost twice as much from Clean Development Mechanism credits as they can from selling refrigerant gases![4]

Although renewable energy projects might appear to be ideal targets for carbon offsetting it is sometimes difficult to establish the additionality of such projects. There are also problems with hydroelectric projects because they can have large negative environmental and social impacts.

On the other hand, besides reducing greenhouse gas emissions some offsetting projects may have beneficial social consequences which are considered sometimes when testing whether an offsetting standard is being met. For example, distributing efficient cooking stoves not only reduces wood burning, and therefore carbon emissions, but can also improve air pollution within homes.

Project standards

There is a plethora of standards one of which any reputable offset project will try to meet. The WWF report mentioned earlier lists ten current standards. It takes the view that "A complete and full-fledged carbon offset standard must include the following three

[4] Wara, M. (2007). Is the global carbon market working? Nature, January 8, 2007: 595-96.

components: Accounting Standards; Monitoring, Verification and Certification Standards; and Registration and Enforcement Systems. Accounting standards ensure that offsets are "real, additional, and permanent." Monitoring, Verification and Certification Standards ensure that offset projects perform as was predicted during the project design. Registration and Enforcement Systems ensure that carbon offsets are only sold once and clarify ownership and enable the trading of offsets.

The WWF appear to favour five so-called "full-fledged" standards. These are the Clean Development Mechanism (CDM), Gold Standard, Voluntary Carbon Standard (VCS), VER+, and Chicago Climate Exchange (CCX).

Ethics

Finally there is a moral question to consider about using offsetting schemes in developing countries. Why should people who are much poorer than us in the UK be encouraged to operate offsetting schemes in their country so that we can continue to live in an unsustainable and even extravagant way? Logically, if we take responsibility for our own emissions, then we should end up offsetting our own extra and 'unavoidable' emissions by our own actions. For example, if we feel we have to buy a larger car than we really need, then maybe we should offset the extra emissions involved by turning down our central heating at home until the equivalent emissions have been saved! It must be admitted however that some offsetting schemes, e.g. distributing cooking stoves, can actually benefit those in less developed countries.

Conclusion

When seeking an offsetting scheme pay attention to the multiple criteria that can be used to assess it. In particular ensure, as best you can, that the scheme meets the additionality criterion, doesn't involve double counting of emissions, actually works to reduce emissions in a timely way and that it will really happen! Ethical Consumer suggests giving to Gold Standard-approved wind or solar energy projects. Another option worth considering is doing

'DIY offsetting' – giving to projects that are not official offsets but have a good chance of cutting emissions.[5]

However, WinACC recommends that we consider offsetting our emissions only as a last resort, after we have reduced our emissions as much as we can. Nevertheless, some travel (and other activities) may be judged to be truly unavoidable for a variety of reasons. In these cases, individuals or organisations may wish to buy assured offset credits from a regulated scheme that ensures that the corresponding emissions reductions elsewhere in the world are both additional and permanent. Alternatively, as regards emissions from flying, you could use WinACC's own, recently introduced, Love Miles scheme designed to help people travelling to visit family in far off places.

However, offsetting is not a "cure" for climate change; the only effective way to combat climate change is to directly reduce our own emissions by changing how we live.

Bob Whitmarsh 21/11/19

[5] https://www.ethicalconsumer.org/energy/short-guide-carbon-offsets