

The inconvenient truth of carbon offsets

Kevin Anderson¹

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“Offsetting is worse than doing nothing, it is without scientific legitimacy, is dangerously misleading and leads to a net increase in emissions”

¹ Professor of Energy and Climate Change; School of Mechanical, Aerospace and Civil Engineering, University of Manchester. Tyndall Centre for Climate Change Research

Planet Under Pressure was a major conference on the environment held in London. As a climate-change scientist, I was invited to organize a session at it and to present my group's research. I declined the offer, and here is why.

The organisers of the conference said that the event would be “as close to carbon neutral as possible”. There are good ways to achieve this noble goal: virtual engagement such as video conferencing, advice on lower-carbon travel options, and innovative registration tariffs to reward lower-carbon involvement. But, instead, the organizers chose a series of carbon-offset projects financed through a compulsory £35 fee levied on all delegates.

This was unacceptable to me. Offsetting is worse than doing nothing. It is without scientific legitimacy, is dangerously misleading and almost certainly contributes to a net increase in the absolute rate of global emissions growth.

It is true that the projects funded through these and other offsets can help development. And a rise in emissions from industrializing nations is, in the short term, a good indicator of rising prosperity and should be welcomed.

My objection to offsetting and the Clean Development Mechanism (CDM) — the state-sanctioned version that operates under the Kyoto Protocol — is directed at the claims that they reduce emissions to levels at or below those that would have transpired had the activity being offset not occurred. That spurious argument neglects the various possible impacts of an offset and the repercussions of these for emissions in the longer term.

The science underpinning climate change makes clear that the temperature rise by around the end of this century will relate to the total emissions of long-lived greenhouse gases between 2000 and 2100.

Consequently, when considering our impact, we have to look at the total sum of our emissions released in that time; offset projects must be measured over that period. There is no point in reducing emissions by 1 tonne in the short run if the knock-on impact is 2 tonnes emitted in 2020 or even 1.5 tonnes in, say, 2050. The implications of this for the concept of offsetting and the CDM are profound.

For example, if I fly to a climate conference, any claim to offset my emissions must, with a reasonable level of certainty and for a 100-year period, show that the flight emissions plus any emission consequences of the offset projects ultimately sum to zero. It is the immutable impossibility of making such long-term assurances that fundamentally challenges the value of such a claim. Worse still, in a world with rising economic prosperity (fuelled mainly by coal, oil and gas), there is a high probability that offsetting projects contributing to prosperity will increase emissions over and above those arising solely from the activity being offset.

The promise of offsetting triggers a rebound away from meaningful mitigation and towards the development of further high-carbon infrastructures. The UK government's purchase of offsets through the CDM and its simultaneous drive towards both additional airport capacity and the exploitation of UK shale-gas reserves are just two such examples. If offsetting is deemed to have equivalence with mitigation, the incentive to move to lower-carbon technologies, behaviours and practices is reduced accordingly.

Offsetting, on all scales, weakens drivers for change and reduces innovation towards a lower-carbon future. It militates against market signals to improve low-carbon travel and video-conference technologies, while encouraging investment in capital-intensive airports and new aircraft, along with roads, ports and fossil-fuel power stations.

For an offset project to be genuinely low-carbon, it must guarantee that it does not stimulate further emissions over the subsequent century. Although standards and legislation around offsetting and the CDM sometimes consider ‘carbon leakage’ in the projects' early years, it is impossible to quantify with any meaningful level of certainty over the timeframes that matter. To do so would presume powers of prediction that could have foreseen the Internet and low-cost airlines following from Marconi's 1901 telegraph and the Wright brothers' 1903 maiden flight.

Assume I broke my (self-imposed) seven-year refusal to fly, paid my £35 offset and boarded a plane from Manchester to London for the conference. In doing so, I add to the already severe congestion at airports, causing delays and allowing politicians to argue for greater airport capacity, arguments only reinforced by the rise in passengers turning to offsets. To meet increasing demand, airlines are encouraged to order new aircraft, which they promise will be more efficient. Feeling pressure, a future government approves new runways, but the extra flights and emissions swamp efficiency gains from the cleaner engines.

Meanwhile, in an Indian village where my offset money has helped to fund a wind turbine, the villagers now have the (low-carbon) electricity to watch television, which provides advertisers of a petrol-fuelled moped with more viewers, and customers. A fuel depot follows, to meet the new demand, and encourages others to invest in old trucks to transport goods between villages. Within 30 years, the village and surroundings have new roads and many more petrol-fuelled mopeds, cars and trucks. Meanwhile, the emissions from my original flight are still having a warming impact, and will do for another 100 years or so.

Where is the offset in that?

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