

CARBON OFFSETS

If you're a big emitter of carbon, then you won't get to carbon net zero without using offsets. This can apply to your own emissions and those produced downstream by customers. Carbon offsets, runs the thinking, are an essential part of the mix along the road to net zero.

Or are they? Critics of the burgeoning offset market claim that carbon offsets and the carbon credits they produce can be a short-term, lower-cost substitute for achieving actual carbon reductions. They allow polluters to carry on polluting, providing they invest in removing or avoiding carbon elsewhere.

What's more, it is claimed, there are numerous projects which don't deliver additional carbon benefits. Offset investment in already viable renewable energy projects is put forward as a good example of this.

'Businesses are setting decarbonisation plans on the basis they can use carbon removal capacity which may not actually exist,' says Jim Elliott of the Green Alliance, a UK-based lobby group. 'Carbon removal options come with very different costs,' he says. 'Highly polluting industries, including oil and gas and aviation, are significant early movers in the voluntary carbon offset market and they are channeling large amounts of money towards nature-based solutions like tree planting.'

Short-term fix

An argument levelled against this approach by Elliott and others is that it can be a cheap fix in the short term – carbon credits purchased instead of more expensively engineered carbon removal. Besides, notes Elliott, the benefits of sequestered carbon from, for example tree planting, can take a long time to arrive.

Oil and gas majors have been particularly active in the voluntary carbon market. This year, BP Target Neutral, BP's not-for-profit carbon offsetting business, will support projects in India, China and Mexico. Over the past 10 years the business claims to have helped customers offset over 2.5mn tonnes of carbon. By investing in, for example, a large solar energy project in India, BP Target Neutral is both providing capital funding for the project and making it a more attractive proposition to other investors.

This can work well in developing countries where large-scale renewable energy

Do carbon offsets belong on the road to net zero?



projects can be hard to get off the ground. Rigorous independent verification of a project is deemed essential and BP Target Neutral for one claims this happens with all its offset projects.

The aviation sector, for another example, which is under pressure to invest more in cleaner but more expensive jet fuel (the 'jet zero' option) uses Verra, a US nonprofit to generate carbon credits in forestry projects. The issue is how much additional deforestation do these projects prevent and how much carbon is avoided?

Renewable energy, now cheaper than ever, is another contender for carbon offset skepticism. The Indian power company, Adani, for example, has attracted criticism for generating carbon credits for large-scale renewable energy schemes that are already viable and well invested. As Gilles Dufrasne of Carbon Market Watch notes: 'If you buy carbon credits from a large-scale renewable electricity project you are making zero difference to the environment.'

Removing additional carbon

The rule then for offsets – and a rule that BP Target Neutral claims

An essential component on the road to net zero, say some, or a short-term and limited substitute for achieving real carbon reductions, according to others – Nick Cottam takes a careful look at the use of carbon offsets.

to take very seriously indeed – is that the carbon credits they generate should remove or replace what would have been additional carbon. If you buy into an existing scheme with surplus credits it shouldn't count as an offset. Complicated – yes, fiendishly. Open to abuse? Almost certainly.

Another oil and gas major Total now TotalEnergies has forged a close relationship with the Adani Group which includes the development of renewable assets across India. Following the deal, the two companies have taken a 50% stake in one of the world's biggest single location solar projects, a 648 MW behemoth in Kamuthi, Tamil Nadu.

To date the project has generated more than 3mn carbon credits, according to data compiled by the Berkeley Carbon Trading Project. The ambition of tycoon

The benefits of sequestered carbon from tree planting can take a long time to arrive

Photo: Shutterstock

owner Gautam Adani is to build the world's largest solar power company by 2025. The project, which will deliver power to five states in India, is projected to produce 15.5mn carbon credits over 10 years, linked to emissions savings from 2017 onwards.

Carney – we need new carbon offset markets

In the UK, notes Jim Elliott, the Green Alliance would like to see a public body mandated by government to oversee not just the offset market but also the overall role of carbon removal in reaching net zero. The Office for Budget Responsibility has estimated that the total cost of reaching net zero by 2050 could reach £1.4tn, although this could be offset by savings achieved through greater energy efficiencies.

As the UK government comes under growing pressure to turn bold ambition into practical delivery, the Green Alliance warns against abuse as industry and the financial sector seek to scale-up the voluntary carbon market to demonstrate action and progress.

Meanwhile, Jim Elliott has warned that a 'trader's charter' could turn offset trading into a license to pollute, the UN's Special Envoy for climate action and finance Mark Carney has called for the creation of new carbon offset markets which he says: 'will help to conserve our carbon budget and protect nature.'

When it works well, carbon offsetting appears as a useful, arguably essential part of the net zero mix. In developed countries offsets can provide a lower carbon stepping stone for energy intense emitters while in developing countries the purchase of carbon credits can provide some of the poorest people in the world with access to clean energy.

The problem, says Edwin Aalders of the consultancy DNV, is that offsets are not always measured with the same standards. 'All programmes have their own way of comparing additionality,' says Aalders who was involved in setting up the VCS Program for accrediting carbon offset projects in 2009. 'This means you are not always comparing apples with apples or even apples with pears.'

VCS, the world's most widely used voluntary programme, has certified around 1,700 projects responsible for reducing or removing more than 630mn tonnes of carbon and other greenhouse gas emissions from the atmosphere. Used mainly in

developing countries, the scheme is designed to ensure that the emissions reductions generated by these projects are actually occurring. It is about credibility in what has become a crowded market.

Carbon offsets or actual carbon reduction?

As Jim Elliott points out, there is only so much land and energy for doing the job. In the UK, he says: 'We currently have no mechanism for deciding which businesses and sectors should be allowed to continue to emit and offset with carbon removals, and which need to reduce their emissions to zero.'

As for all those net zero targets which are continuing to multiply across sectors and countries, the clue is in the term itself. Oil majors and other big emitters of carbon are still likely to be causing emissions well into the second half of this century. But if at least part of the business is zero carbon – via renewable energy investments, engineered solutions and indeed offsets – then reaching the net zero target is at least possible.

Net zero targets as agreed at COP26 and elsewhere involve a global shuffling of the energy pack – reduce, remove, replace and offset, depending where you are at base camp.

Delivery, as the UK government would now admit, is everything, which is why big emitters, including oil and gas and aviation, have been significant early movers in the voluntary carbon offset market. The cost of transition, even for an oil major, is significant, and as costs continue to rise, including in the offset market, it has become important to get the best bang for your bucks.

Historically, offset-approved projects covering everything from solar energy to tree planting and forestry protection have been orders of magnitude cheaper than the expected cost of engineered carbon removals.

What is happening, claims Jim Elliott is: 'early movers are locking up the cheapest forms of carbon removal for decades into the future, making it much harder and more expensive for arguably more essential and poorer sectors, such as agriculture, to reach net zero. As the pandemic has shown, we can survive without flying but we can't live without food.'

Developing countries need offset investment

The counter argument is that smaller, more needy projects, often in developing countries, need

Oil majors and other big emitters of carbon are still likely to be causing emissions well into the second half of this century

offset investment. They also need the likes of BP Target Neutral to generate confidence in the project and the developing world needs rich countries and rich companies to show that carbon neutral energy and the preservation of carbon absorbing nature is both possible and viable as a catalyst for economic growth.

Although the value of the voluntary carbon market is still a fraction of the compliance carbon markets, the Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimates that demand for carbon credits could increase by a factor of 15 or more by 2030, when the market could be worth up to \$50bn. BP, it seems, wants more of the action, and has already invested in Finite Carbon, the biggest US producer of carbon offset credits, which helps landowners sell their forests as carbon sinks.

In 2018, BP Target Neutral purchased around 850,000 tonnes of carbon credits which it claims are helping to improve the living standards of some of the world's poorest people as well as helping to reduce and remove customer emissions. Each credit purchased is a tradable certificate that represents one tonne of carbon dioxide equivalent either removed or prevented from entering the atmosphere.

Jim Elliott is unequivocal in his opposition to over relying on an offset market, which he says is currently slowing progress in reducing actual emissions. In the UK he says: 'We are currently at a crucial stage where all the effort must go now into making sure the country can meet its legally binding target of reaching net zero. A body along the lines of an Office for Carbon Removal is needed to make sure carbon removals are credible and contribute positively to meeting net zero in a sustainable way.'

A natural brake on the offset market, adds Edwin Aalders, is that more companies in energy and other sectors are focusing on Scope 3 emissions [indirect emissions that occur in a company's value chain up and down the supply chain]. 'Downstream activities that used to be seen as offsets have become Scope 3 obligations by corporations,' he says. 'It's far more focused on pushing your commitments into your supply chain and helping your supply chain achieve them.' ●