

Factsheet – Carbon offsetting

What is carbon offsetting?

A carbon offset is an action to reduce emissions of carbon dioxide (or to take carbon dioxide out of the atmosphere) to compensate for emissions from human activities. Carbon offsetting involves calculating a person or entity's (e.g. Jersey's) greenhouse gas emissions. Once calculated, you buy credits from emission reduction projects. These projects must prevent or remove the equal amount of greenhouse gas emissions elsewhere.

There are two types of markets that sell carbon offset credits:

1) The compliance carbon market. The United Nations Framework Convention on Climate Change (UNFCCC) governs this market. There is a framework of regulation that is set at an international level. Jersey has no mandatory greenhouse gas target reduction obligations. Jersey's emissions count in the UK's legally-binding emissions target.

2) The voluntary carbon offset market. This market is separate from government targets. This is a non-regulated market. Carbon credits sold through this market are called verified emission reductions (VER). At the moment, there are no accepted regulations or protocols to govern them. The credits generated cannot be traded. Credits are awarded to projects that can show they reduce greenhouse gas emissions.

With the ongoing discussion around the delivery of the Paris Agreement these market structures may change and we are therefore focussing on the voluntary market in the rest of this factsheet.

The voluntary market

When someone buys a carbon offset credit, they are helping to fund a project somewhere in the world which either has negative carbon emissions (removes carbon from the atmosphere) or helps reduce emissions which would otherwise have occurred.

These projects are often in developing countries (e.g. parts of Africa and Latin America), and often bring other benefits too - such as biodiversity, education, jobs, food security, and health.

These projects vary and include things like:

- Projects that displace the use of fossil fuels. Low carbon alternatives such as hydro, solar, wind, biomass or tidal projects;
- Projects that reduce the amount of fossil fuel energy used e.g. the provision of fuel efficient stoves;

- Projects that capture carbon emissions e.g. afforestation, reforestation, avoid deforestation, methane capture.

Projects have to show how they meet international carbon accounting standards. There are many standard setters in the market. The largest ones are The Gold Standard and VERRA's Verified Carbon Standard (VCS). The standard sets the core rules and requirements, which apply to any project, program or activity that receives a certificate.

Once a carbon credit is purchased, then it must be cancelled with the standard setter. This is to make sure it has been accounted for and cannot be used again.

Opportunities and challenges of carbon offsetting

Challenges:

- It can be hard for buyers to navigate various standards to find high quality carbon credits that will guarantee a real reduction in carbon emissions at transparent prices.
- There is a lack of regulation and overall standards.
- Schemes vary in quality.
- It's hard to estimate how much carbon dioxide has really been removed through the project.
- It can be difficult to prove that the project has actually resulted in additional carbon reductions (this is referred to as additionality). This is particularly problematic for projects that stop a negative action rather than create a positive one. One such example would be a project that prevents deforestation. Some companies and countries have chosen not to support such offset projects for this reason.
- It relies on consumers/buyers of the credits knowing the quantities of greenhouse gases emitted by their activities in order to buy sufficient offsets to fully cover their activities. This calculation often underestimates the amount, as it is difficult to calculate indirect (scope 3) emissions.
- Verification and compliance can be expensive.
- There have been some scandals in the past. These have included cases of fraud, human rights abuses, and land rights issues.

Opportunities:

- Things are changing for the better. Lessons have been learnt and many projects offer co-benefits beyond emissions reduction.
- An international taskforce has developed recommendations on scaling voluntary carbon markets. The taskforce was chaired by Mark Carney, former head of the Bank of England.
- The recommendations include:-
 - developing a set of core carbon principles,
 - an attributed taxonomy (classification system),
 - encouraging a global carbon price, and,

- a standard methodology for measuring and verifying emissions.

The continuing negotiations on the UNFCCC Paris Agreement will make more changes. One big change will be how both the voluntary and compliance carbon markets will be governed. A significant difference is likely to be that carbon trading should generate a net benefit for the climate, rather than being a zero-sum game.

This means that the buying and selling of carbon credits will ensure a net reduction in emissions. This is instead of just offsetting the carbon dioxide released in one country with savings elsewhere. There is still a lot of discussion on this. It could mean governments buying some credits that would be cancelled or set aside. These would not count towards an overall offset figure.

How much is it going to cost?

There is no clear cut answer. This will vary. It depends on the projects, their location, and the type and size of the transaction. It is important to remember that the cost of verification and compliance is not priced. This means that the market price for a credit is not the 'true' cost to the purchaser.

Market price for voluntary carbon credits can go up and down. It can change e.g. the impact of COVID-19 saw a sharp drop in price. It averages around \$3/tCO₂e (below average price of compliance market). Projects that result in additional benefits to the local community generally cost more. This is a basic price not including co-benefits.

We can do a very rough calculation of how much offsets could cost for Jersey for it to be carbon neutral in 2030. It is estimated that there will be around 277,000 tonnes of emissions that we haven't been able to reduce in 2030 that would need to be offset each year. Taking these estimated amounts of carbon and a range of different costs per tonne of offsets, it could cost the following each year:

- \$3 per metric tonne x 277,000 a year = \$831,000 / £635,000 a year
- \$20 per metric tonne x 277,000 a year = \$5.54 m / £4.2 million a year
- \$50 per metric tonne x 277,000 a year / \$13.85 m/ £10.5 million a year

The current market cost of a carbon offset is different from how much the world values avoided carbon emissions. Many people believe that the value to the world of removing carbon from the air or not emitting one tonne of carbon dioxide is much higher than the price of offsets. This is the price that countries should be willing to pay for the overall public good to the world for any action that reduces carbon emissions. The World Bank estimates that the value will need to be \$40-\$80/tCO₂e to achieve the goals of the Paris Agreement.

Local sequestration is different from carbon off-setting

Carbon sequestration is the act of capturing carbon dioxide from the atmosphere, storing it, and preventing it from being re-released. This typically includes a range of

artificial and natural processes that capture carbon as part of industrial, agricultural and land-use activities.

Global offsetting is different from the contribution of on-Island sequestration activities. This is in line with international reporting requirements.

On-Island sequestration activities would reduce Jersey's total carbon emissions. This net effect is counted for in Jersey's Scope 1 emissions.

Jersey's small geographical size limits the potential for on-Island sequestration at scale.

For more information see the separate factsheet on carbon sequestration.

Read more on carbon offsets:

Offsetting and the low-carbon transition, FAQs, Gold Standard

<https://www.goldstandard.org/resources/faqs>

How do emissions trading systems work? Grantham Research Institute on Climate Change and the Environment, LSE.

<https://www.lse.ac.uk/granthaminstitute/explainers/how-do-emissions-trading-systems-work/>

What is a carbon price and why do we need one? Grantham Research Institute on Climate Change and the Environment, LSE.

<https://www.lse.ac.uk/granthaminstitute/explainers/what-is-a-carbon-price-and-why-do-we-need-one/>