WHY CARBON NEUTRALITY
IS A THING OF THE PAST

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WHITE PAPER

THE HISTORY OF CARBON OFFSETTING AND TRADING

The discussion of emission offsetting has been around for almost six decades, first taking physical root in the US Environmental Law in 1970s. The 1977 US Clean Air Act created one of the first tradable emission offset mechanisms. This Act allowed a permitted facility to increase its emissions and in return it had to pay another company to reduce its emissions of the same pollutant[i].

The first ever land based carbon offset project took place in 1988, where the energy company, Applied Energy Services, funded the planting of 52 million trees in Guatemala to offset the emissions of its first coal power plant in Connecticut, US.

The Kyoto Protocol, in 1997, encouraged nations to participate in climate change mitigation through credit trading between nations. Developed countries could buy credits from projects in developing countries and developed countries can get credits from projects carried out in other developed countries.

Lastly, in 1999, the International Emissions Trading Association was formed, releasing the first ever voluntary carbon-market standards, to help companies looking to voluntarily offset their emissions[ii]. Contrastingly to prior legislation, voluntary carbon offsets are created, verified, and transacted outside of governmental bodies and regulations[iii].

WHAT ARE CARBON OFFSETS?

Carbon offsets, sometimes referred to as carbon credits, is the avoidance or removal of greenhouse gas (GHG) emissions, measured in tonnes of carbon dioxide equivalent (CO_2e)[iv]. Countries, companies, organisations, and individuals can purchase these offsets.

Carbon avoidance (or reduction) credits refer to investments in projects or activities that prevent the release of emissions that would have occurred under a hypothetical business-as-usual scenario. Examples include investment in solar/wind farms, rescuing food from landfill, and deforestation prevention.

Carbon removal (or storage) credits on the other hand, extracts emissions from the atmosphere. This can be through investment in natural solutions, such as tree planting and mangrove forest restoration, or technological, such as carbon capture and storage[v].

CARBON OFFSETTING & CORRUPTION

The validity of many carbon offset schemes has been in question, with a study finding 90% of rainforest carbon offsets from Verra, the world's leading carbon standard, being deemed as worthless[vi]. Only a handful of Verra's rainforest projects showed evidence of deforestation reduction. It has also been reported that millions of carbon credits are generated by overestimating levels forest preservation.

It has been reported that communities, mainly indigenous, have been forcefully evicted from their homes in order to make way for reforestation projects. With many projects focusing on carbon capture, this often results in the establishment of non-native, fast-growing monocultures that negatively affect biodiversity and soil-related ecosystem services[vii].

CARBON NEUTRAL VS NET ZERO

Though often used interchangeably, Carbon Neutral and Net Zero are two distinct approaches to addressing carbon emissions. If a business, service, or product is labelled as Carbon Neutral it means carbon offsets have been bought to balance out the CO_2 emissions, or optionally CO_2e emissions, created during business

activities or production of said product. Typically, only scope 1 and 2 emission must be offset (see Figure 1) [viii].

However, carbon neutrality has come under much criticism as it does not require any reduction in emissions. It is claimed to be used as tool for greenwashing as companies can carry on polluting and still be labelled as carbon neutral. Greenpeace describes it as a "Licence to keep polluting, distracting us all from the real work of cutting emissions"[ix]. In addition, it does not require the offsetting of Scope 3 emissions which make up on average 75% of a company's total GHG emissions[x]. Carbon neutrality claims also do not necessarily cover non-CO2 GHGs, which make up 24% of global GHG emissions[xi]. It is important to note that the Science Based Target Initiative (SBTi) does not recognise and validate carbon neutrality claims.

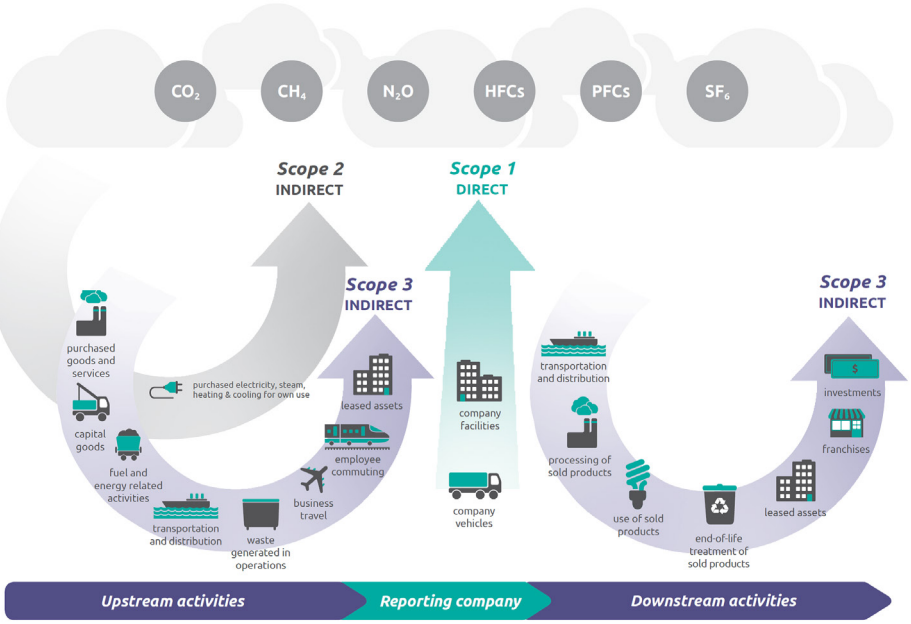

Figure 1: Overview of scopes and emissions across the value chain[xii].

In 2013 the IPCC Fifth Assessment Report stated to stop global warming, additions of CO2 into the atmosphere have to reach zero[xiii]. This view was amplified in 2018, with the IPCC Special Report claiming net zero emissions of CO2 and deep reductions in non-CO2 emissions is required to meet a 1.5 degrees temperature rise by 2050.

In comparison to carbon neutrality, Net Zero is about cutting all GHG emissions to as close to zero as possible and then the purchase of carbon offsets for the very essential, hard to decarbonise, emissions that remain. The SBTi Net-Zero Standard requires companies to target to achieve a 90% reduction in Scope 1, 2 & 3 emissions by 2050 in order to be verified. This is in line with keeping global warming to 1.5°C, as specified by the Paris Agreement. The leftover emissions must then be neutralised through high quality and verified carbon removal credits as opposed to carbon reduction credits[xiv].

Committing to net zero goals can give a competitive edge in the market. We are seeing increased awareness surrounding sustainability, with customers preferring to support businesses that are in line with their values[xv]. Likewise, businesses that communicate their net zero targets accurately can enhance their brand image.

Embracing net zero can create long term resilience for companies. Proactive measures position businesses ahead of regulatory shifts that are most likely to be implemented and prepares companies to thrive in a low-carbon future.

CHALLENGES TO NET ZERO

While there are many benefits to pursuing net zero emissions, there are multiple challenges that come along with trying to achieve it.

Transitioning to net zero will most likely require large upfront investments in renewable energy (such as solar panel installation), energy efficient technologies (HVAC systems), and process improvements. SMEs with less financial resources may find it difficult to manage these costs. Whilst net zero can lead to long term savings, returns on investments are neither immediate nor guaranteed.

Achieving net zero will most likely require collaboration with suppliers in order to capture scope 3 emissions. Achieving consistent standards and reducing emissions across the supply chain can be complex, especially if suppliers do not currently prioritise sustainability.

In addition, there is a risk of reputational damage if net zero claims are not backed by real action, leading to allegations of greenwashing. Net zero efforts need to be transparent, credible and communicated to all stakeholders.

Lastly, the process of becoming net zero is a complex one. It will most likely require coordination across all departments and stakeholders. Internal workplace training will be required to ensure participation from all team members.

MOVING FORWARD

There is increasing need and pressure for real action to be made. The move towards Net Zero should be seen as an opportunity for both business growth and demonstration of social responsibility. The need for extensive forward planning for successful delivery should not be ignored.

Businesses need to prioritise the collection of robust and accurate data concerning their carbon footprint across all scopes in order to put in place attainable carbon reduction targets. Likewise, increased stakeholder engagement is pivotal in driving emission reduction across the value chain.

It needs to be considered that carbon offsetting projects can distort economies and take land and resources away from the local communities that need it most. Extensive research should be made into selecting the most ethical and appropriate offsets, not choosing merely on price.

This approach ensures that the pursuit of Net Zero is not only a strategic business opportunity but also a demonstration of ethical accountability. Through the reduction of emissions, funding of high-quality projects, and proactive stakeholder engagement, businesses can demonstrate a commitment to both environmental sustainability and social responsibility.

i. https://interactive.carbonbrief.org/carbon-offsets-2023/timeline.html

ii. https://interactive.carbonbrief.org/carbon-offsets-2023/timeline.html

iii. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3981914

iv. https://www.lse.ac.uk/granthaminstitute/explainers/what-are-carbon-offsets/

v. https://www.lse.ac.uk/granthaminstitute/explainers/what-are-carbon-offsets/

vi. https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthlessverraaoe#:~:text=Revealed%3A%20more%20than%2090%25%20of,shows%20%7C%20Carbon%20offsetting%20%7C%20The%20Guardian

vii. https://www.lse.ac.uk/granthaminstitute/publication/towards-a-co-crediting-system-for-carbon-and-biodiversity/#:~:text=Focusing%20solely%20on%20carbon%20capture,and%20soil%2Drelated%20ecosystem%20services.n

viii. https://sciencebasedtargets.org/blog/net-zero-jargon-buster-a-guide-to-common-terms#:~:text=%E2%80%9Cresidual%20emissions%E2%80%9D.,Under%20the%20Net%2DZero%20Standard%2C%20most%20companies%20are%20required%20to,claim%20to%20be%20net%2Dzero.

ix. https://www.greenpeace.org/international/story/50689/carbon-offsets-net-zero-greenwashing-scam/

x. https://www.wri.org/update/trends-show-companies-are-ready-scope-3-reporting-us-climate-disclosure-rule

xi. https://www.c2es.org/content/internationalemissions/#:~:text=CO2%20accounts%20for%20about%2076,6%20percent%20to%20global%20emissions.

xii. https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf

xiii. https://eciu.net/analysis/infographics/net-zero-history

xiv. https://sciencebasedtargets.org/blog/net-zero-jargon-buster-a-guide-to-common-terms#:~:text=%E2%80%9Cresidual%20emissions%E2%80%9D.,Under%20the%20Net%2DZero%20Standard%2C%20most%20companies%20are%20required%20to,claim%20to%20be%20net%2Dzero.

xv. https://positiveplanet.uk/achieving-net-zero-for-smes/