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What are carbon credits?

This article explores carbon credits in logistics, how they work, and the likelihood of long-term impact on the logistics industry.



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Few people understood the complexities of the supply chain or its impact on global climate change a decade ago. The supply chain was merely the way goods we wanted were transported from point a to point b. Fast forward to 2020. Every unstocked shelf and missed delivery was blamed on ‘supply chain delays’. The news continually highlighted the number of ships anchored around the world, accompanying bottlenecks globally, and growing environmental concerns... the world took notice and organizations began feeling the pressure to reduce environmental impact at all costs.

World governments issued climate accords, led by Paris in 2015. The target – implement enhanced environmental targets to reduce greenhouse gas emissions by 55%. This was soon followed by further revisions in 2021 and 2022. Global organizations followed with carbon neutrality, net-zero targets to be achieved by 2050. But what does this really mean, and realistically – is it possible, especially in an industry like logistics?? One of the most traditional industries worldwide...

Definite maybe. Maersk is converting ships to green fuels. Apple has committed to increase ocean vs. air shipping (one of the largest sources of emissions). Trucking companies are implementing electric vehicles where possible. Packaging is becoming more sustainable...and much more. As the 2023 supply chain continues to stabilize, companies continue to accelerate carbon commitments by 2030. The needle is moving in the right direction; however, net-zero emissions will continue to be challenging due to several reasons: complex supply chains limit one size fits all solutions, emissions from operations are sometimes unable to be fully mitigated, large investments needed in new technologies can outweigh the benefits, regulations are not in alignment globally, and there is an overall lack of data and reporting. These challenges expose a gap in the market between realistic carbon capture and carbon capture that cannot not be eliminated. The carbon credit market was formed.

Carbon credits are becoming increasingly relevant for supply chains due to their role in environmental stewardship, regulatory compliance, cost savings, and the growing demand for sustainable and transparent business practices. A carbon credit, also known as a carbon offset, is a tradable certificate or permit that represents the reduction or removal of one metric ton of carbon dioxide (CO₂) or an equivalent amount of greenhouse gas (GhG) emissions from the atmosphere.

Let’s run through a quick example - Imagine a global clothing manufacturer that wants to reduce its carbon emissions in its supply chain. They have already implemented energy-efficient

practices in their factories and have optimized their transportation, but they still have residual emissions they can't eliminate entirely. The first step for the clothing manufacturer is to conduct a detailed carbon footprint assessment of its supply chain. This assessment identifies the major sources of emissions, such as energy use in manufacturing, transportation, and raw material production.

After identifying the sources of emissions, the company implements various emission reduction initiatives within its supply chain. For example, they might invest in more energy-efficient machinery in their factories, switch to renewable energy sources, or optimize their transportation routes to reduce emissions. Despite these efforts, emissions remain that are difficult to eliminate completely.

To offset these emissions, the clothing manufacturer decides to purchase carbon credits. The Carbon credits are typically generated by projects or activities that reduce or capture greenhouse gas emissions. These projects can take various forms, such as reforestation, afforestation, renewable energy generation (e.g., wind or solar power), methane capture from landfills, energy efficiency improvements, and more. company then selects specific carbon credit projects to invest in. These projects are typically in areas such as reforestation, renewable energy, or methane capture.

Let's say they invest in a reforestation project that plants trees to sequester carbon dioxide from the atmosphere. The clothing manufacturer ensures that the chosen carbon credit projects are well-documented and meet established standards for carbon offset projects. This includes verifying that the reforestation project indeed sequesters the expected amount of carbon. To generate carbon credits, a project must adhere to specific standards and protocols. Independent third-party organizations verify and certify that the project is genuinely reducing or removing emissions. There is 2024 legislation coming with detailed standards – stay tuned for more info.

The company purchases a number of carbon credits equivalent to the emissions they couldn't eliminate through their own initiatives; One carbon credit represents the removal or reduction of one metric ton of CO₂ or its equivalent in other greenhouse gases. These carbon credits can be bought and sold in carbon markets. Value ranges from \$40-400 and is often determined based on the avoidance to capture continuum. Companies, governments, or individuals purchase carbon credits to offset their own emissions. The price of carbon credits may vary depending on the project and market conditions.

Carbon credits are used in both compliance and voluntary markets. Compliance markets are typically established by governments or regulatory bodies and require specific entities to meet emissions reduction targets. Companies in these markets may buy carbon credits to meet their obligations. In voluntary markets, individuals and organizations choose to purchase carbon credits as part of their sustainability and corporate social responsibility efforts.

By purchasing carbon credits, the clothing manufacturer effectively offsets the emissions they couldn't eliminate within their supply chain. The carbon credits represent a reduction in emissions elsewhere that compensates for their residual emissions. The company can now report on its reduced carbon footprint, considering the emissions reductions achieved through its internal initiatives and the carbon credits it purchased. This information can be communicated to stakeholders, including customers, investors, and the public, to demonstrate their commitment to sustainability. When a carbon credit is used to offset emissions, it is considered retired, and the emissions it represents are considered effectively neutralized.

Carbon credits are tradeable commodities whose price is determined by a) the amount of carbon pulled from the atmosphere (i.e. avoidance to complete capture) and b) market forces and

their negotiating power in the market. This will change as future legislation is enacted. Sociopolitical pressures will lead to continued sustainability initiatives in logistics; however, we are more likely to see a rise in funding for sustainable projects vs. long-term sustainability in the industry itself.