Why should you use Carbon Credits?

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CEEZER

Global carbon levels are too high: Why we need to accelerate climate action

Since 1850, 2,500 billion tonnes of CO_2e (i.e., predominantly CO_2 and other greenhouse gases, hereafter: GHG emissions) were emitted by human activity. Today, we continue to emit around 50 billion additional tons of GHG emissions per year, which accumulate (at least in part) in the atmosphere, resulting in a concentration of approximately 440 ppm. And until we stop adding more GHG emissions, especially carbon, to the atmosphere than we can eliminate, global temperatures will keep rising. To meet the Paris-aligned 1.5°C scenario, absolute atmospheric carbon concentrations will need to be below the current level. This will require the removal of carbon from the atmosphere via technical or natural pathways.

The Paris Agreement aims at limiting global warming below 1.5°C or at least 2°C as compared to preindustrial times. In both scenarios, total net emissions need to be reaching zero before 2050. The “net zero” - as it is often referred to - describes the point where total global emissions equal total global removals. It is a central milestone toward stabilizing global temperatures. There are two crucial components to meet these ambitions:

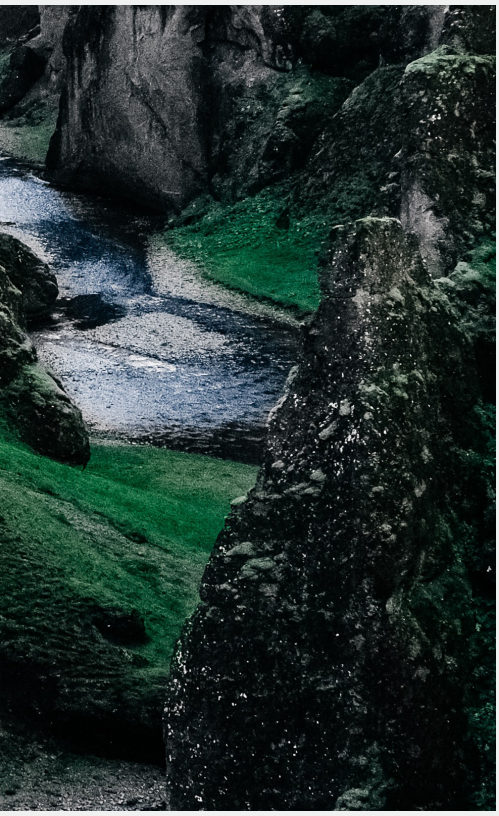
- Across industries and segments, countries need to rigorously decarbonize based on carbon budget calculations.
- Residual, unavoidable emissions need to be removed.

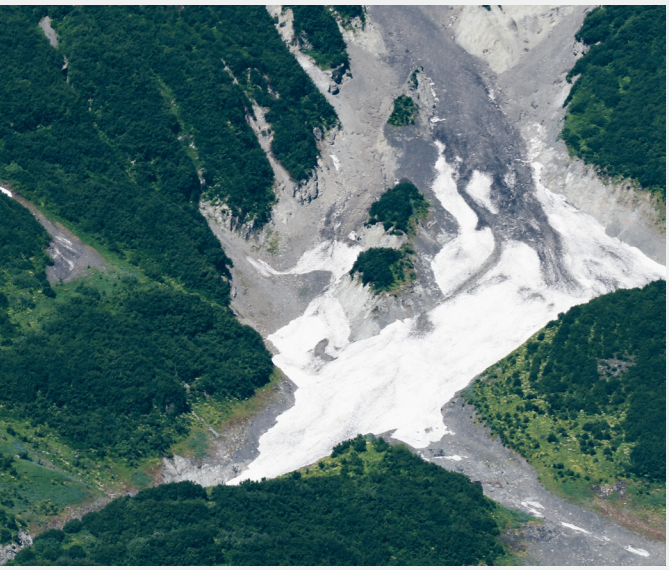
Any delays in decarbonization will lead to an increased need for compensation and technical removal (“negative emissions”).

The recent IPCC report confirmed that, under current trajectories, there is a significant gap between expected emission levels under current implemented policies and the needed levels to keep global warming at bay.

The report states that:

“Carbon Dioxide Removal (CDR) is necessary to achieve net-zero CO_2 and GHG emissions both globally and nationally, counterbalancing ‘hard-to-abate’ residual emissions. CDR is also an essential element of scenarios that limit warming to 1.5°C or likely below 2°C by 2100, regardless of whether global emissions reach near-zero, net-zero, or net-negative levels.





While national mitigation portfolios aiming at net-zero emissions or lower will need to include some level of CDR, the choice of methods and the scale and timing of their deployment will depend on the achievement of gross emission reductions, and managing multiple sustainability and feasibility constraints, including political preferences and social acceptability”.

Thus, the report emphasizes that the investment in negative carbon emissions through voluntary carbon removal will play a major role in meeting the commitments of the Paris Agreement. And even after reaching net zero, negative emissions remain a key factor in maintaining stable temperatures.

In fact, despite global campaigns and serious efforts to cut emissions immediately, annual emissions continue to rise globally, reaching new all-time highs every year. Current frameworks do not seem to incentivize emissions reductions to a point that is in line with the Paris Agreement. Reduction activities are often slow as they require alignment with internal structures and processes as well as investment and design cycles. In this light, technologies that remove carbon from the atmosphere now become more and more important.

Emission reductions needed to meet Paris targets without net-negative emissions

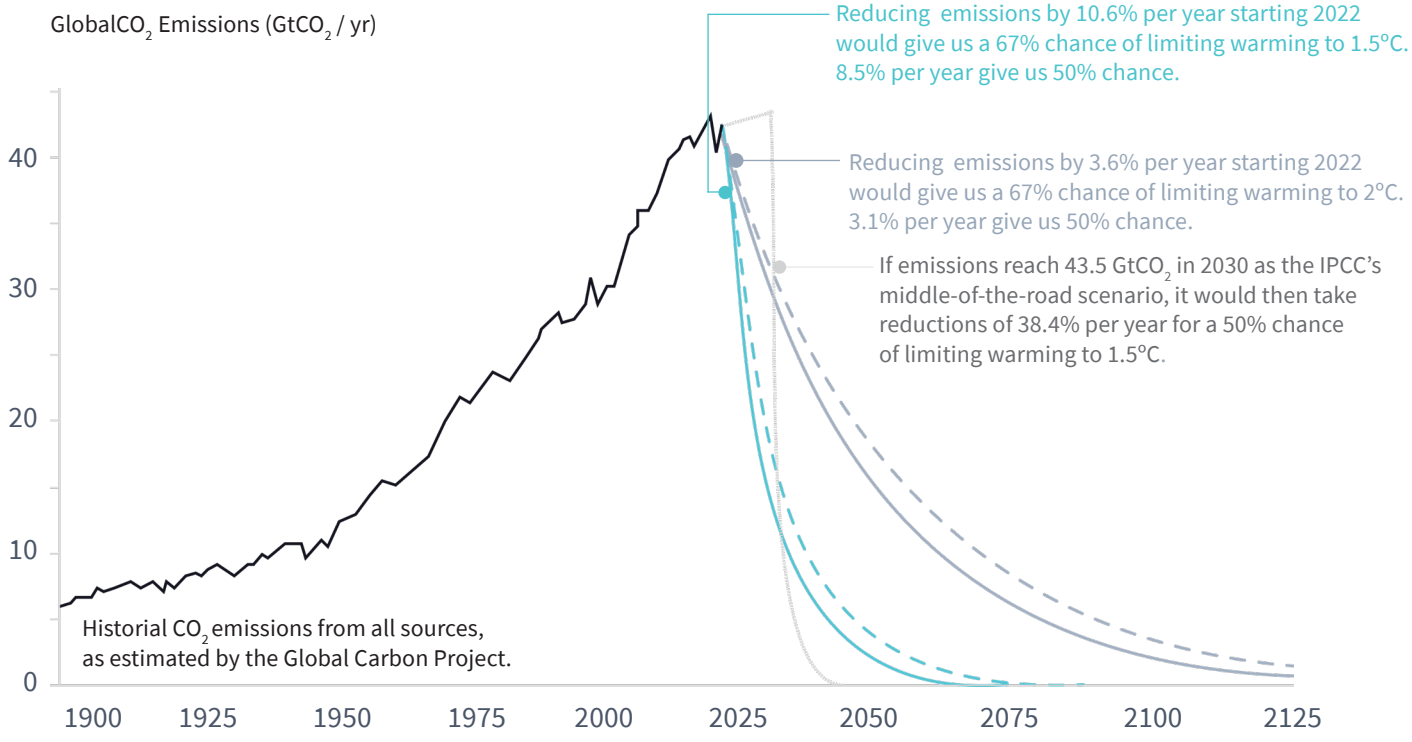


Exhibit 1: Solid lines indicate emissions reductions needed for a 67% chance of limiting warming to 1.5°C (blue) or 2°C (light grey). Dashed lines indicate reductions needed for a 50% chance of meeting those same targets. Source: Institute for Carbon Removal Law and Policy. Inspired by a chart by Zeke Hausfather.

Already, corporates need to contribute beyond regulation

Just like countries or societies, companies are following net-zero pathways by applying identical principles – reducing their own emissions as quickly as possible, while compensating for unavoidable (or delayed) emissions within the voluntary carbon market. Much like for the planet, carbon removal usually stays a requirement for companies after reaching minimum emissions in the long run.

Generally, companies follow three steps on their journey:

- Measure and track the footprint (Scope 1,2, and 3) – ideally based on a solid net-zero methodology like the Science-Based Target initiative (SBTi).
- Decarbonize operations (by changing operations, energy sources and ways of working).
- Offset and remove unavoidable, residual emissions (with a focus in carbon removal).

For some companies, it is highly complex to reduce emissions: besides changing to renewable energy, direct operations like production or sourcing can only be changed using complex and time-intensive reduction strategies. Although emissions reduction targets are defined in many cases, roadmaps on how to achieve these targets are often unclear. Serious reduction activities need time to adjust to current operational structures and to harmonize with investment or even

design cycles. Thus, reducing emissions can be resource intensive (time, manpower), detrimental to current processes, and expensive using today's technologies; in some cases, emissions are simply impossible to be eliminated at all. For example, calcination, a chemical reaction that occurs in the production of cement, accounts for a large share of the cement sector's carbon emissions but can currently not be replaced at scale. In those cases particularly, corporate climate action effectively requires the use of "negative emissions" to reasonably make a pathway that is compliant with the global targets.

While measurement and maintenance of carbon footprints is becoming a regular exercise for companies of all industries and sizes, the IPCC report suggests that both the internal emissions reduction programs and the external compensation and removal need to be heavily accelerated and, most importantly, parallelized. With current decarbonisation trajectories being insufficient, the avoidance and removal of emissions through credits is increasingly important.

The paradigm of reducing first, compensating and removing second currently does not seem to yield the right results.

Current policy leads to little net reduction and only slow change in emission levels – meaning any possible contribution, both internal and external – is needed urgently and simultaneously. Practically, pioneering organizations have already shifted to neutralize their emissions while reduction is underway – using the voluntary carbon market.

Carbon credits as a piece to the puzzle in the decarbonization journey

Carbon credits are tradable “negative emissions”. They are a certificate for a verified and measured reduction or removal of a ton of CO_2e from the atmosphere. They can be used as a financial instrument for companies to compensate for or remove GHG emissions from their own operations. In the larger context of corporate climate action, they are an important complement to internal reduction efforts and, especially in the case of removal, a crucial part of net zero target strategies, as also suggested by the latest assessment report of the IPCC. Companies can use carbon credits as tradable negative emissions to reduce and remove their unavoidance emissions now.

The voluntary carbon market is the most effective way to purchase negative emissions. While traditionally brokers and resellers have dominated the market, there is a current shift to more direct models that allow for complete end-to-end traceability in every transaction. The reason for this shift is that credits can differ quite significantly in quality and impact despite being certified by the same standard. Hence, to use the voluntary carbon market with the right level of confidence, corporates need to consciously evaluate different negative emission technologies, their risk profile and their effectiveness.

Carbon avoidance and removal key components to reach sustainable pathways

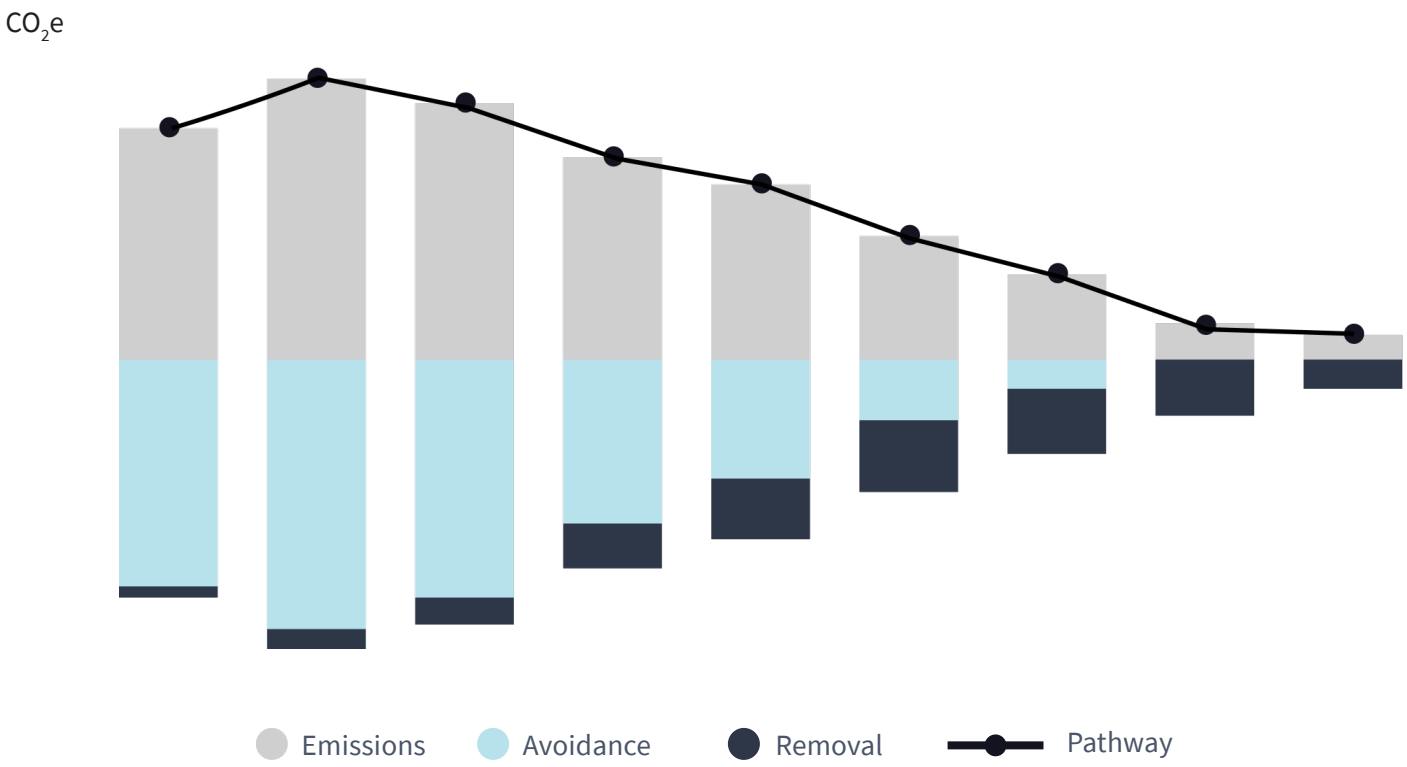


Exhibit 2: An illustrative decarbonization pathway for a corporate. Corporates that have defined their decarbonization pathway can take twofold action to respond to the global need for emission reductions. 1) Achieving a reduction of emissions from operations (gray); and 2) simultaneously avoiding or removing any remaining emissions (blue). The share of removal (dark blue) is increasing over the coming years, reflecting the need to move from avoidance only towards actual removal.

Moving from avoidance to removal

A good example of fundamental differences across credits is the question of avoidance vs removal. In the long-term, only removal will have the required impact of reducing the net carbon concentration. This does not mean that avoidance or reduction credits do not have an impact and a function in accelerating decarbonization – but it means that optimal climate action calls for increased investment in carbon removal over the upcoming years.

Monitoring and consequently increasing the share of removal credits in corporate credit portfolios is hence a key task for corporate climate action.

One current challenge is that carbon credits can either be certified emission reductions or certified carbon removals – independently from the certification process. The difference is as follows: Carbon avoidance/reduction credits either avoid an additional emission or reduce an existing emission by 1 tonne. If a corporate emits 1 tonne and offsets with an avoidance reduction, the net atmospheric CO_2 will still be 1 tonne higher than before (but not 2 tonnes as would have happened without the avoidance credit's underlying activity taking place).

Conversely, removal credits reduce the net content of CO_2 in the atmosphere. If emitted 1 tonne of CO_2 is compensated for with 1 tonne of removal, the concentration of CO_2 in the atmosphere is actually held stable.

The difference can be hard to identify. Take the example of forestry credits. A credit can "avoid" emissions by saving forests from deforestation, or can "remove" carbon by increasing biomass in trees. Indeed, both credits have a verified and often additional effect. And both types of credits can bear real results.

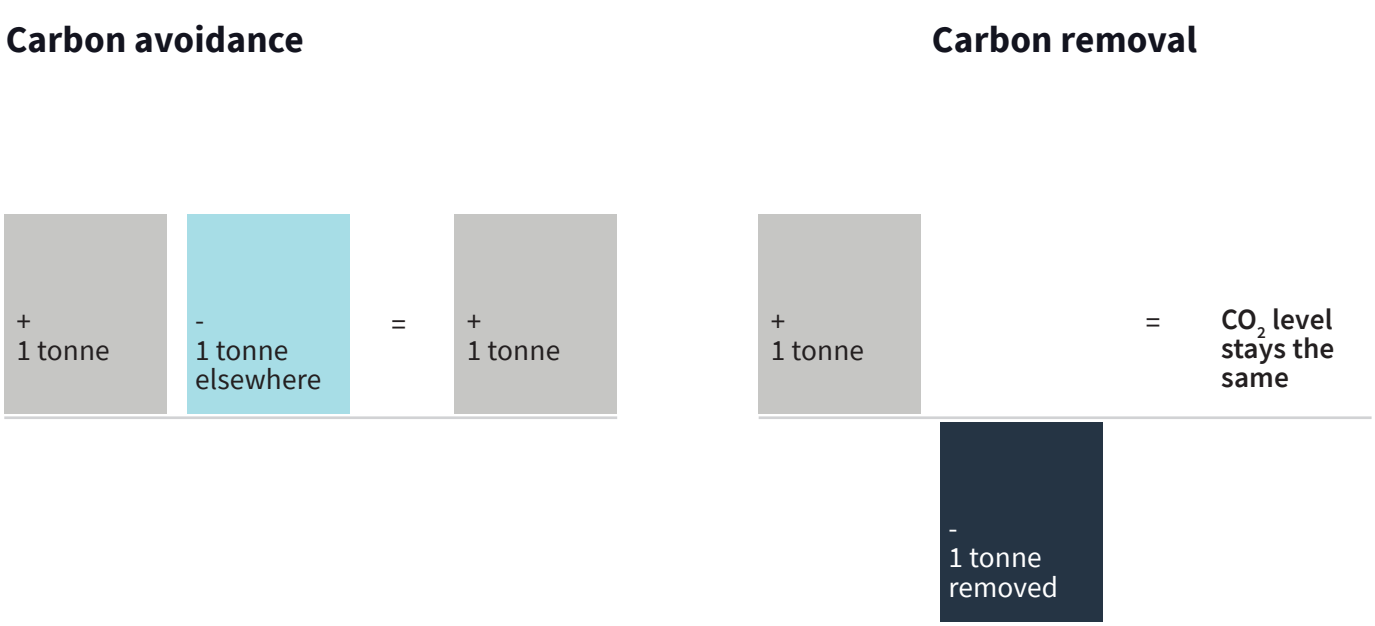


Exhibit 3: A graphical representation of the difference between Avoidance strategy versus Removal strategy. Source: Inspired by Swissre, 2020.

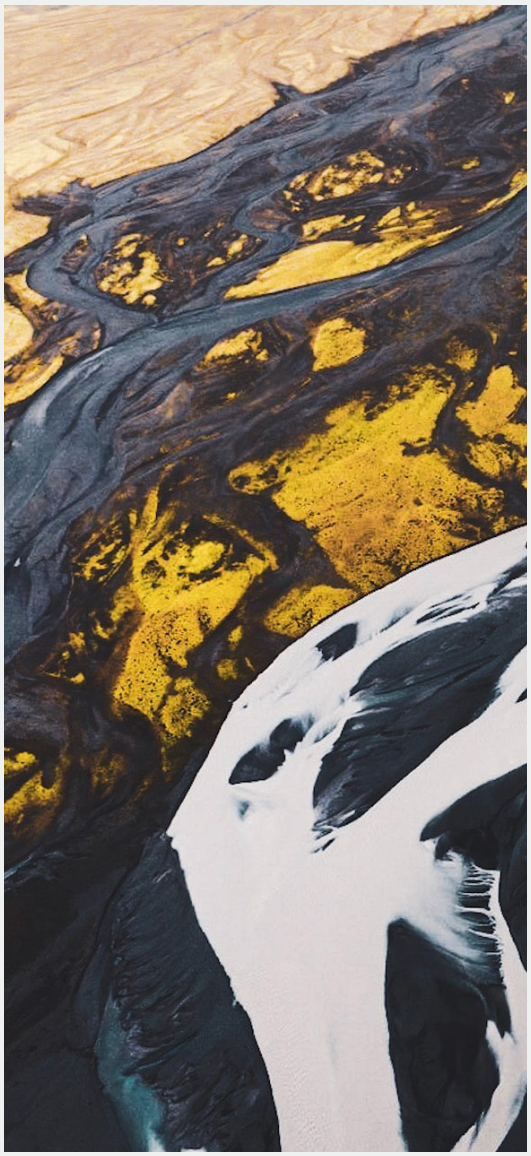
Current supply of removal is limited by the early stages of most technologies or limited scale of existing projects. Our own data on the global certified credit market indicates that **only 7% of existing credits qualify as removal** – with a larger share of nature-based removal credits (i.e. afforestation and reforestation) and the emerging niche of technical removal (i.e. Biochar or Direct Air Capture).

As supply is constrained, companies need to compile a portfolio of credits that consists of avoidance and removal credits – and increase the share of removal over time in line with the latest data from scientists on the effectiveness. In the short term, avoidance credits are a useful and required tool to help drive down emissions globally – especially outside of Europe where compliance systems are lacking.

The challenge for companies is to find the most impactful and best-verified avoidance credits – based on detailed project data from certifiers and, in an ideal case, also from suppliers directly. Only with an objective, global view on the supply landscape can companies reasonably assemble an optimized portfolio – and only through direct transactions with suppliers can companies ensure that their investments will have real impact.

A new era of the market is coming

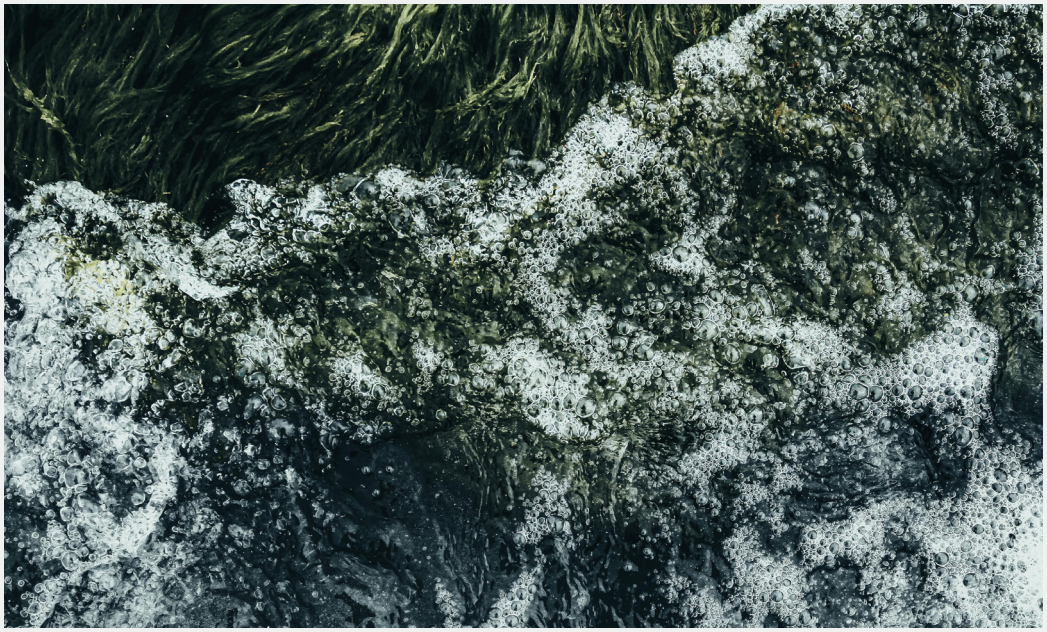
The move towards objective, portfolio-driven purchases of negative emissions will be accelerated by the increased need to report climate-relevant data. Climate change is a significant risk category not only for our planet, but also companies. The US Securities and Exchange Commission (SEC) has recently announced that public companies are now required to report on Scope 1-2 emissions (and Scope 3 in some cases), carbon offsets (including detailed information of the credits used like vintages and certification), and climate-related risks.



While the main purpose of SEC reporting is to allow investors to gain a fact-based understanding of exposure to climate risks and their potential effect on the future performance of the reporting company, it is also intended to provide information of the management of these risks. The use of negative emissions is one important tool of climate risk management and is expected to be examined with more scrutiny by investors in the future. Companies that want to score in that space will need to actively manage negative emission portfolios in line with international targets and be able to monitor and adjust not only volumes and prices but also key quality criteria.

To do so, three things will be required:

- End-to-end transparency on transactions leading to direct transactions with suppliers.
- A harmonized view on credit portfolio volumes and quality across credit types, technologies, and certifiers.



- Access to relevant reporting data of their portfolio, facilitating e.g., benchmarking, forecasting, or long-term impact assessment.

Similar requests come from investors from the EU and worldwide, who are increasingly sensitive to climate exposure. Accordingly, acquiring and managing voluntary carbon credits with rigor and data is expected to be a key skill for any company over the next decades.

Building a balanced and impact-optimized portfolio of negative emissions can complement every company's climate impact, especially when other measures and internal reductions run slow. To be most effective, a focus on direct transactions with developers in the primary market ensures investments in credits that make a difference on the ground.

If you are interested in learning more about CEEZER and how to start building an optimized portfolio of carbon credits, visit www.ceezer.earth or contact us at info@ceezer.earth.

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