



The Sustainability Leader's Guide

to Voluntary Carbon Markets (VCMs)



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Introduction

What will happen if we fail to meet Paris Agreement targets and the Earth's temperature rises by over 1.5°C? Experts are forecasting a huge increase in natural disasters, famine, species extinction and mass migration, which some parts of the world are already experiencing. Climate change is also a major threat to business and economic stability. In 2021 alone, climate disasters [cost the U.S over \\$1bn](#).

Policy makers, regulators and governments are taking action. **But without the private sector, net zero isn't possible.** Taken together, countries' national emissions reductions targets, known as Nationally Determined Contributions (NDCs) under the Paris Agreement, are currently not sufficient to limit global temperature increases to 2°C, let alone 1.5°C. As a global community, we need to increase ambition and accelerate emissions reductions and removals. Here the private sector can lead the charge. The net zero transition is inevitable—it presents massive opportunities for organizations that are well prepared and massive risks for those that drag their feet.

We need to use every available resource that will make a meaningful difference. Many of us realize that Voluntary Carbon Markets (VCMs) are a valuable tool to tackle climate change – in fact [annual trading exceeded \\$1bn](#) for the first time in 2021 – but we also understand that the market is complex and comes with its own nuances.

For sustainability leaders, it can take up a lot of time and resources to cut through the jargon, risks and layers of information in order to carry out the due diligence required to understand the market, its methodologies and certifications, and then select high quality projects that result in real climate action.

We have created this guide to facilitate a better understanding of VCMs and navigate you through some of the questions and complexities that surround it, ultimately giving you the ability to deliver your sustainability goals with confidence.



What are Voluntary Carbon Markets (VCMs)?

Voluntary Carbon Markets are international markets that allow the sale and purchase of [carbon credits](#). Often credits are bought by emitters, including individuals and organizations, to allow them to [offset their greenhouse gas \(GHG\) emissions](#). Unlike compliance carbon markets, VCMs are not currently regulated by a centralized authority, such as a government.

Compliance and voluntary markets have developed in parallel, with key developments such as the Kyoto Protocol in 1997 and the Paris Agreement in 2015. At COP26, [the rules relating](#) to Article 6, concerning carbon markets, were agreed. Both types of carbon markets have the potential to incentivize positive environmental outcomes and finance projects that cap, reduce or remove GHGs. However, VCMs lack the regulation and transparency of compliance markets like the EU ETS.

This can make VCMs difficult to navigate, especially for those who lack the experience or resources to properly evaluate carbon project performance. However, VCMs also present a number of opportunities when approached with the appropriate expertise.

“[Decarbonization] is a topic that’s moving right to the heart of the business. It’s not something done on the side by a functional unit. It’s becoming very mainstream.”

Margaret Mistry, VP Carbon Markets at Equinor

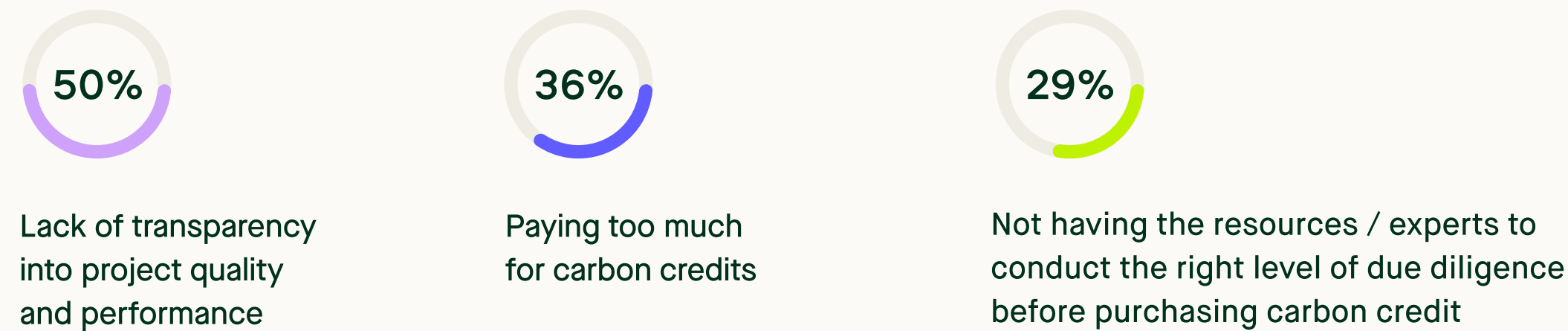
 equinor

Over the years, companies have been called out for “greenwashing” when they used carbon offsetting instead of prioritizing emissions reductions from their business activities. We have also seen examples of substandard projects receiving investment from organizations, which resulted in high profile scandals. This has given the market a reputation of being risky and highlighted that today not all carbon credits are created equal.

What are Voluntary Carbon Markets (VCMs)?

In 2022, Sylvera surveyed 500 ESG decision makers at UK and US corporations with over 10,000 employees, and asked them what they considered to be the biggest risks associated with investing in VCMs. The #1 response was "lack of transparency".

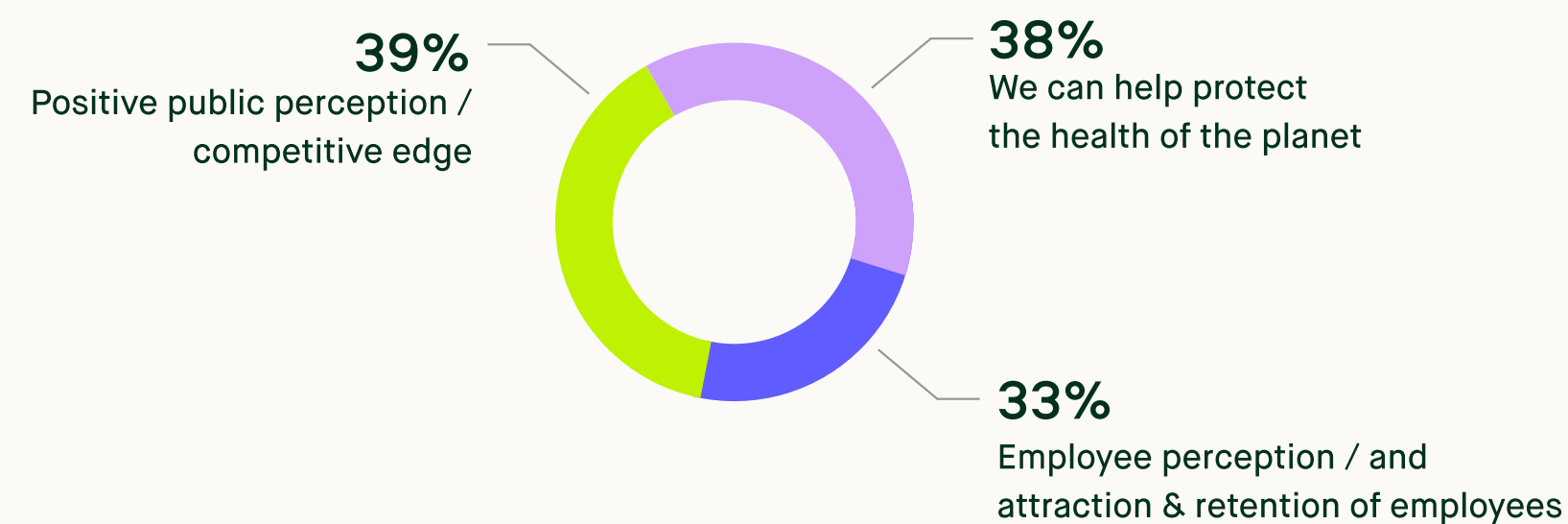
What are the biggest risks that you associate with investing in VCMs?



This validated why Sylvera was founded: to provide the necessary data infrastructure to bring trust and transparency to the VCMs, enabling them to scale. After all, we know that VCMs can be hugely beneficial to sustainability strategies and with the right information, you can mitigate risks by investing in high integrity projects.

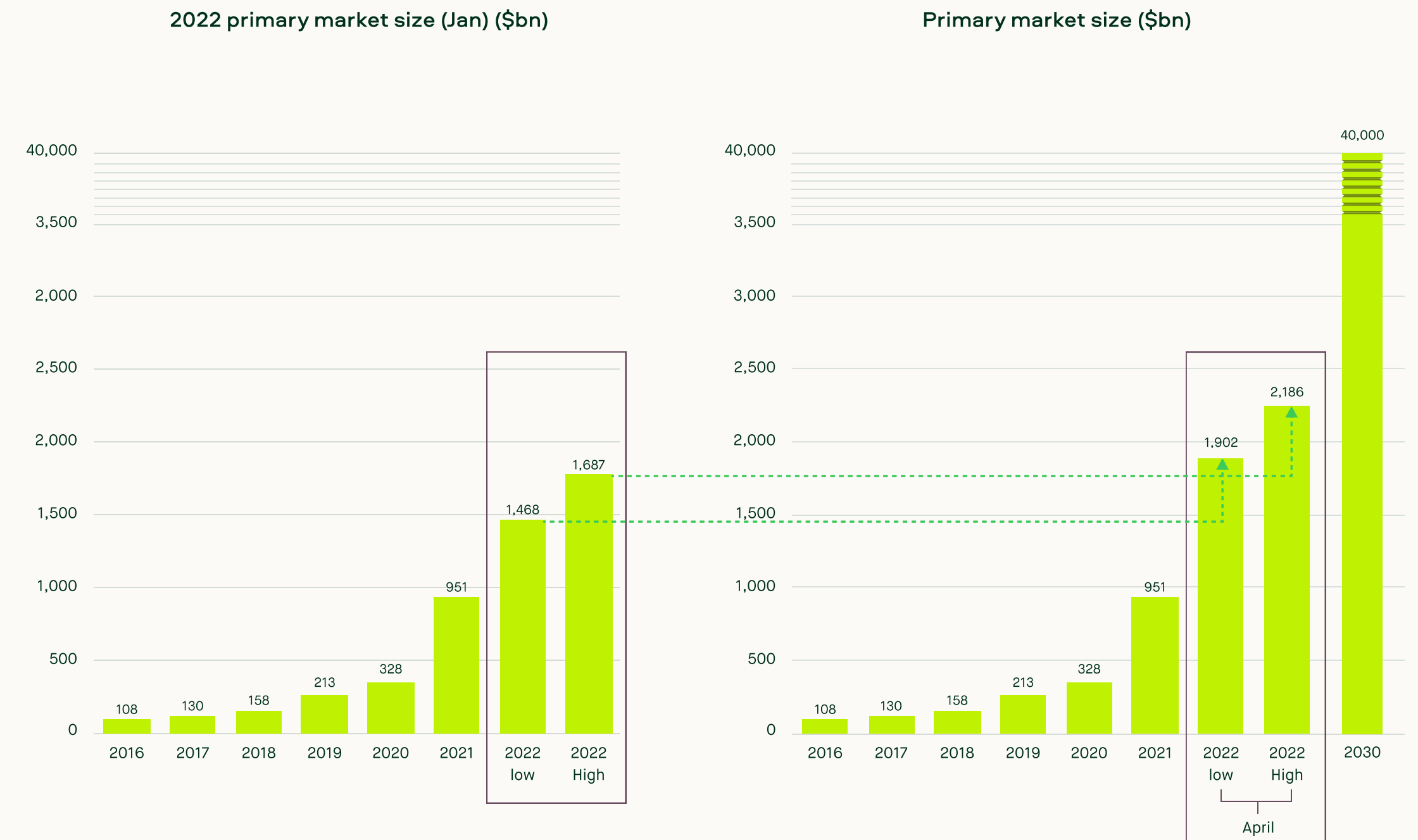
Despite potential risks associated with VCMs, interest and investment is growing. Our survey results revealed that ESG leaders also believe investing in VCMs can play a role in climate strategies.

What are the biggest benefits that you associate with investing in VCMs?



With the increased urgency to spearhead climate strategies and the growing interest in VCMs, it's no wonder the market has experienced rapid growth over the past five years. In 2022, market value is expected to reach \$2bn and predictions for 2030 reach [\\$40bn](#).

The value of the primary VCM is projected to reach \$2bn in 2022



Source: [Trove](#)

How do VCMs work?

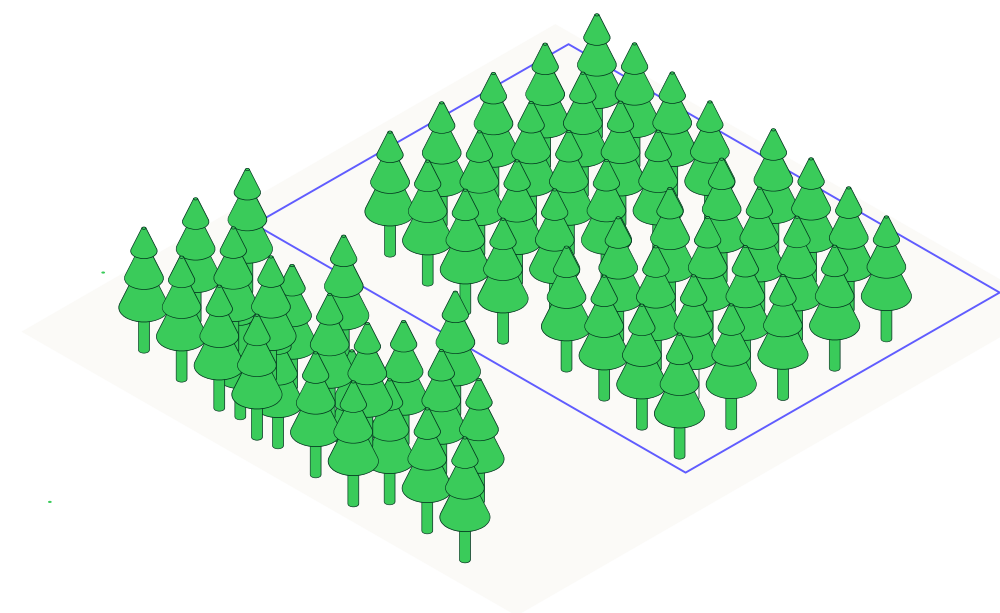
Carbon crediting projects can broadly be divided into two categories: avoidance and removals.

Carbon credits are tradeable units sold by project developers that have been created with the purpose of reducing, avoiding or removing GHGs in the Earth's atmosphere. Each carbon credit is measured as one ton of carbon dioxide (CO₂) or an equivalent GHG that is or will be avoided or removed from the atmosphere.

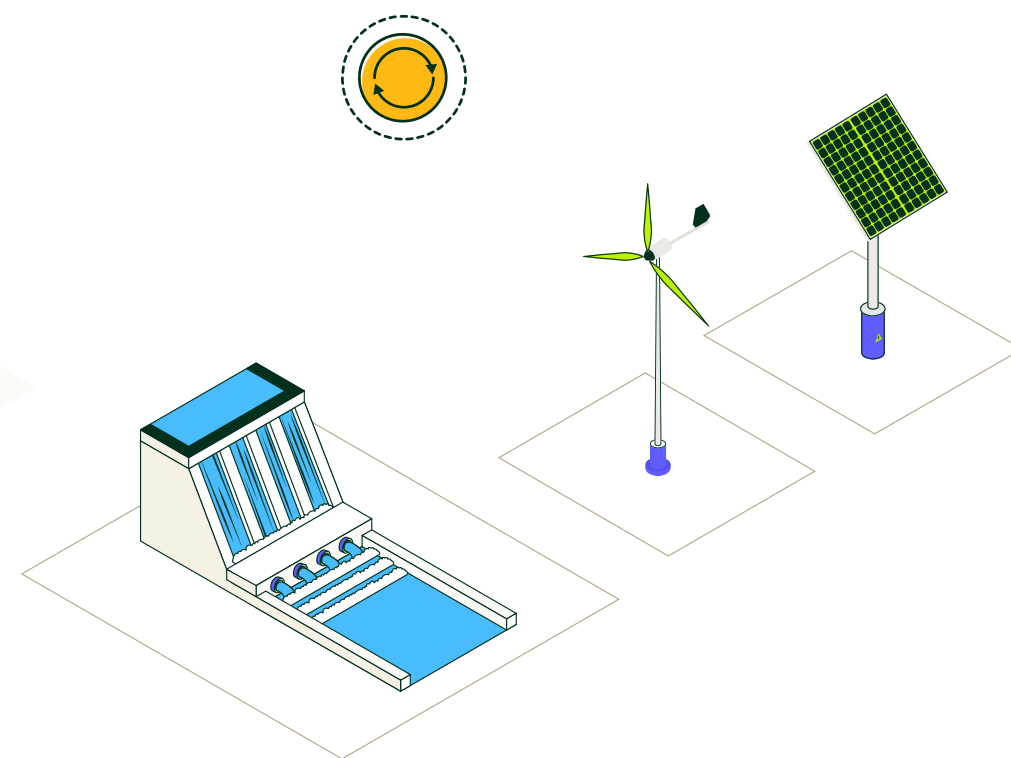
Avoidance and reduction projects

Fund activities that **reduce** GHG emissions, for example protecting a forest from deforestation, or improving renewable energy generation on the grid.

Nature-Based Solutions



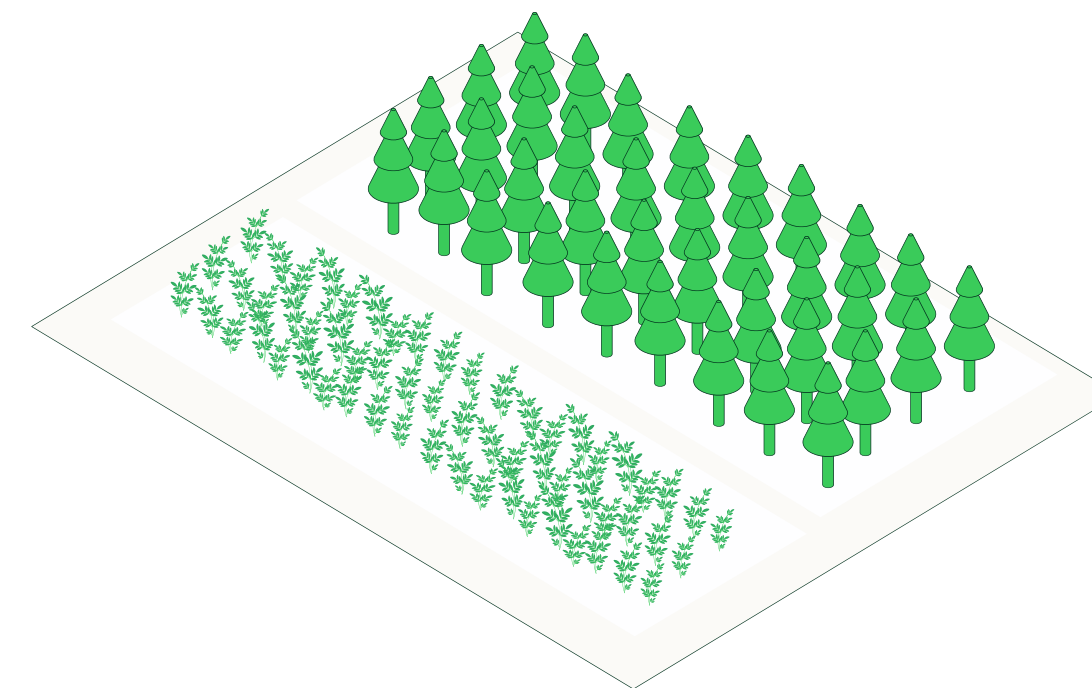
Technological Solutions



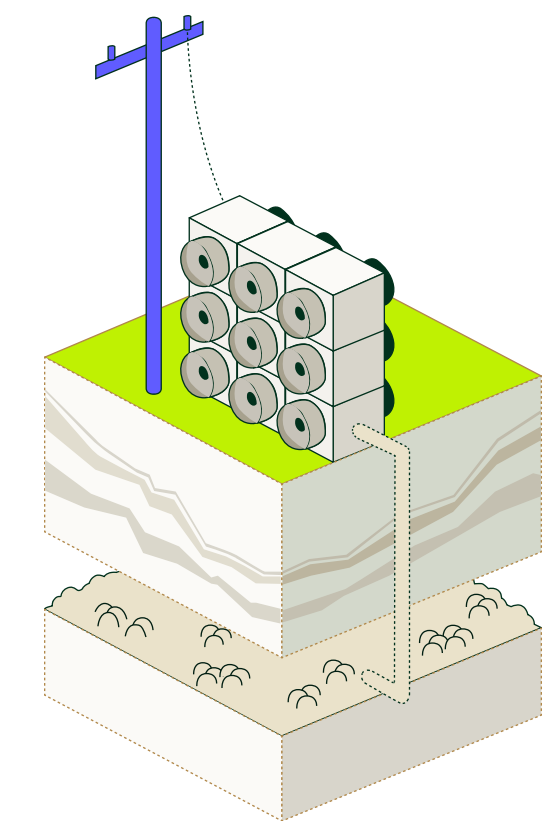
Removals projects

Fund activities that **remove** GHGs from the atmosphere, for example planting a forest that will absorb CO₂ as it grows, or implementing direct carbon capture (DAC) technology.

Nature-Based Solutions



Technological Solutions

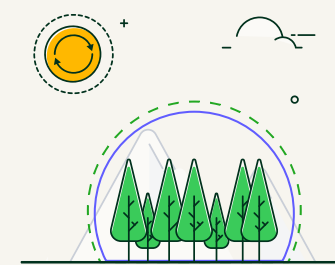


There is an ongoing debate about which is more effective, but in reality both are essential in the fight against climate change. Currently removals credits make up 3% of the market and non-removal nature-based solutions make up 45%. To learn more on avoidance vs. removals, read our [deep-dive article](#).

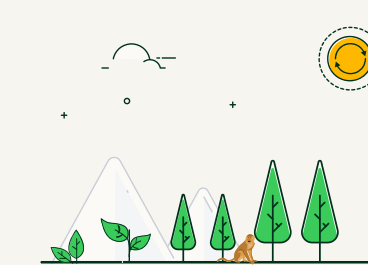
What are the types of carbon projects?

There are a number of project types in the VCMs. They all fundamentally serve to either avoid, reduce or remove emissions, but may also have additional benefits.

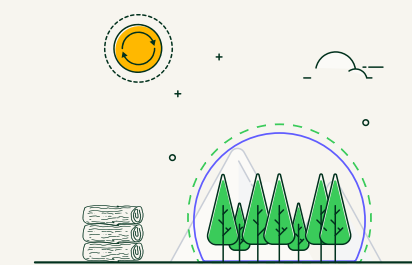
Nature-based solutions (NBS) or natural climate solutions (NCS):



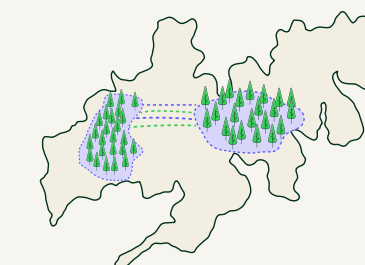
REDD+ (AUD & APD)



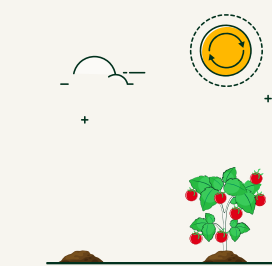
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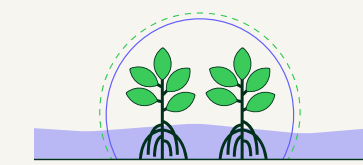
IFM



Jurisdictional and Nested REDD+

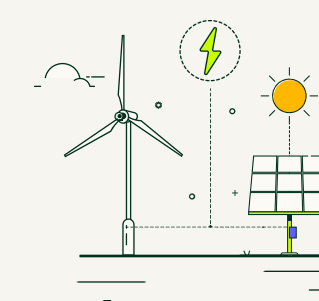


Regenerative agriculture

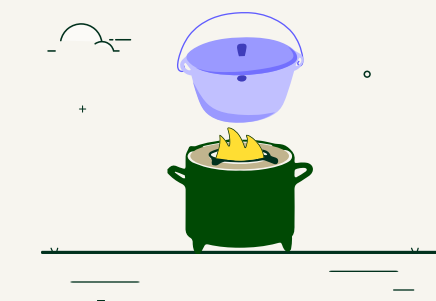


Blue carbon projects

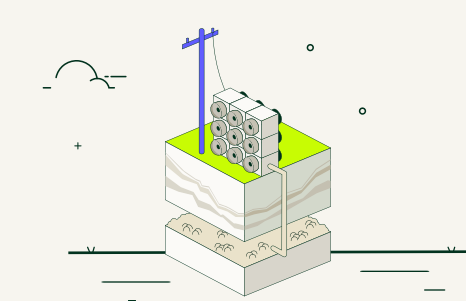
Renewables projects



Cookstove projects



Direct Air Capture (DAC) projects



What are the types of carbon projects?

By purchasing credits, you are normally funding the project's activities; however, this is usually not the case for larger-scale renewables. Since the quality of carbon projects can vary, it's important to understand how they are designed, implemented, and monitored – and whether they align with your organization's sustainability goals.

These projects make up the vast majority of VCM credits:

Nature-based solutions (NBS) or natural climate solutions (NCS)

They are the [largest carbon project category](#) in terms of numbers of projects and issued credits. NBS can contribute to protecting one of the Earth's greatest carbon sinks: our forests and soils. They also encompass agricultural and other land projects. There are several nature-based carbon credit project types:

There are two broad types of REDD+ projects in the VCM:

1. REDD+ Reducing Emissions from Deforestation and Degradation



The initiative to **Reduce Emissions from Deforestation and Forest Degradation** was originally introduced in 1997 at Kyoto. REDD+ attaches financial value to the carbon stored in forests and adds an incentive to reduce human impact that results in greenhouse gas (GHGs) emissions. The 'plus' in REDD+ refers to the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. Unlike some other project types, REDD+ is readily available and can offer co-benefits for local communities, such as additional income streams. Understanding the scope and impact of these activities can help buyers determine whether the project is aligned with their own priorities. These are avoidance/reduction projects as they assess the relative avoidance of emissions in a pre-project scenario of high deforestation compared with lower deforestation during the project's lifetime.

- **AUD (Avoided Unplanned Deforestation)**

These projects aim to protect forests from localized agents of deforestation, such as deforestation caused by local communities growing crops for subsistence agriculture, or deforestation due to illegal logging.

Examples of AUD project activities could include financial support to local communities so they have the means to boost yields from existing farmland, or training locals in patrolling for illegal deforestation activities.

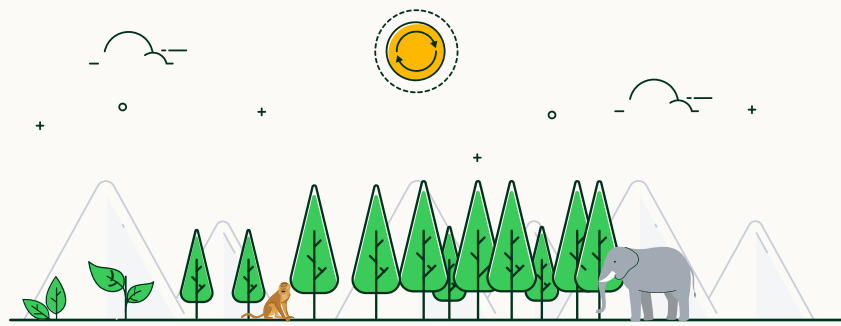
- **APD (Avoided Planned Deforestation)**

An APD project primarily seeks to protect forests from commercial agents of legally permitted deforestation, such as for forest conversion to crop plantations or cattle ranches. These projects also aim to protect the forest from secondary agents of deforestation, i.e. illegal loggers.

An example of an APD project might be protecting an entire project area from being cleared by a company or landowner that has well-documented plans to convert the forest into a commercial palm oil plantation.

What are the types of carbon projects?

2. ARR Afforestation, Reforestation, Revegetation



These projects fall under the “removals” category. They tend to convert degraded and barren land through tree-planting.

An example would be restoring a rainforest and ecosystem by replanting trees. These projects can also offer numerous co-benefits for local communities and biodiversity since they can provide jobs and increase biodiversity. This long-term ambition can span from 20 years, up to 100 years.

5. Regenerative agriculture



These projects implement soil-enhancing agricultural techniques capturing carbon in the soil and converting it into a more stable carbon sink.

For example, stopping the use of synthetic pesticides and fertilizers or improving biodiversity and crop rotation by moving away from monocultures.

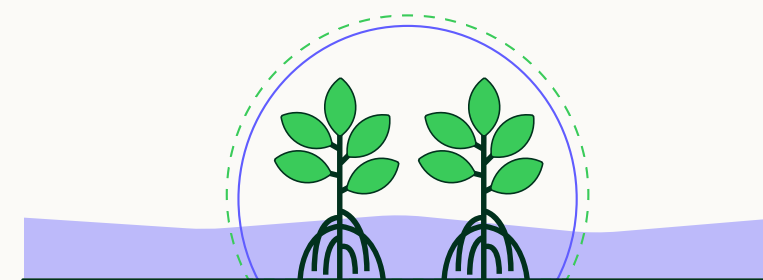
3. IFM Improved Forest Management



IFM projects aim to better maintain current forest stock during logging activities.

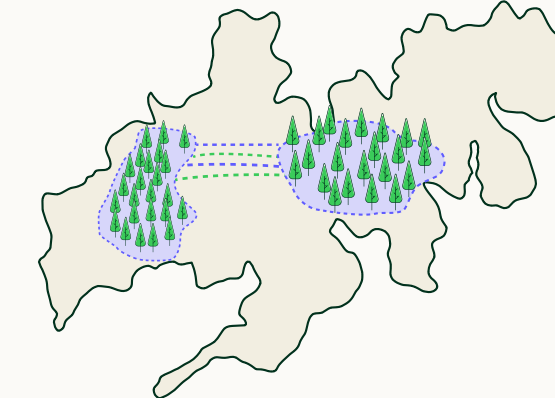
For instance, managing a mature forest with selective timber harvesting in combination with activities to maintain the mature forest cover, increasing the carbon sequestration. 90% of these projects are located in the USA and Mexico, with over 65% based in the US.

6. Blue carbon projects



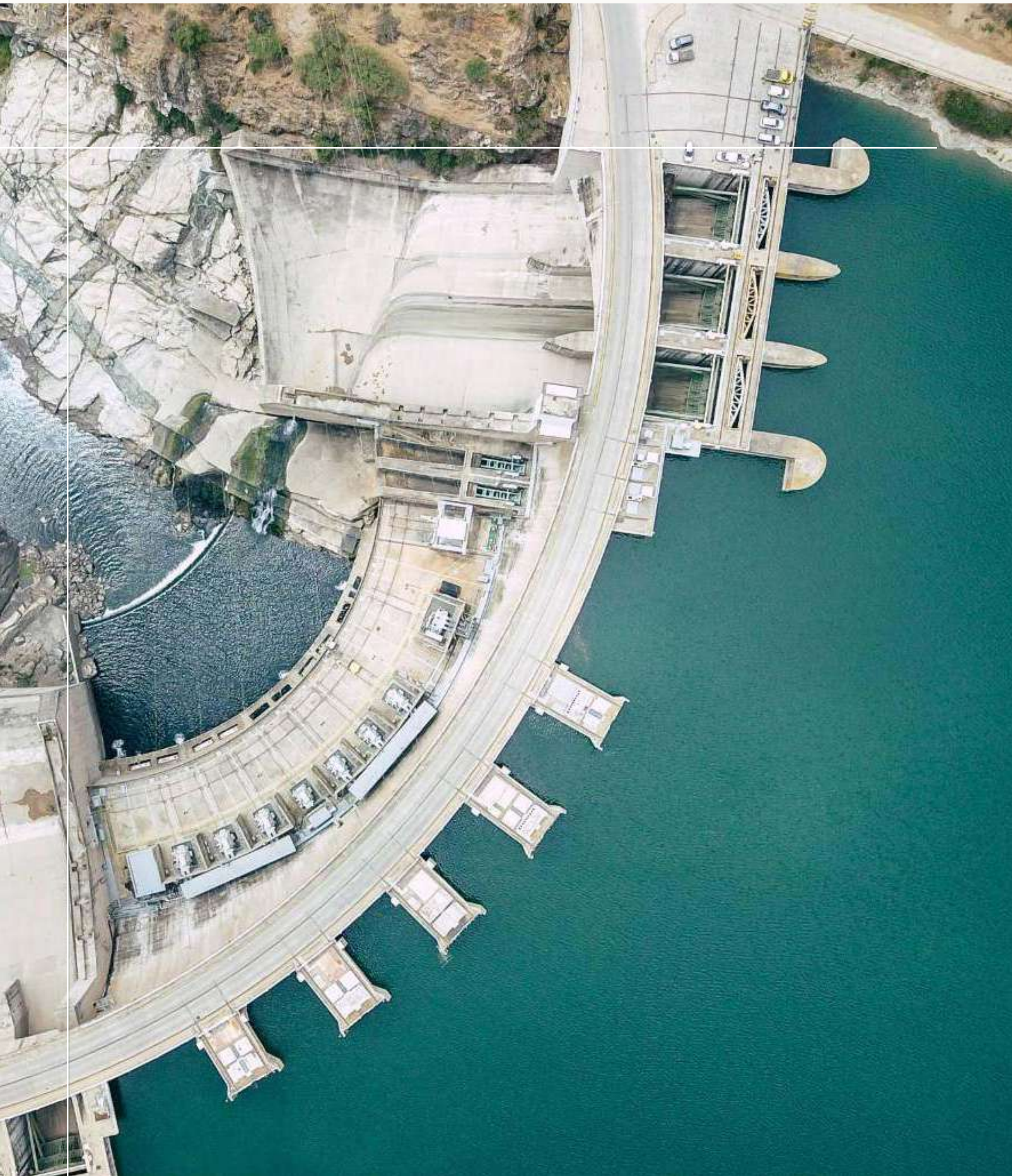
These projects focus on the restoration and conservation of coastal and marine ecosystems, such as mangroves. These ecosystems sequester large amounts of carbon, making them powerful and biodiverse carbon sinks.

4. Jurisdictional and Nested REDD+



Jurisdictional initiatives aim to establish forest baselines at jurisdictional (i.e. region or country) levels, in order to enable more accuracy and a greater scale of impact.

Jurisdictional crediting mechanisms include ART TREES (used by the LEAF Coalition), Verra JNR and the California Tropical Forest Standard; and results-based financing mechanisms like FCPF World Bank and Green Climate Fund also operate at the jurisdictional scale. **To date no jurisdictional credits have entered the market, but issuances are expected to grow very significantly in the years ahead.**



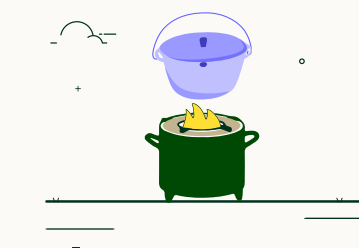
What are the types of carbon projects?

Renewables projects



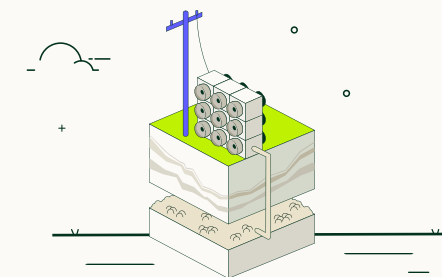
These projects aim to direct society's dependence on traditional fossil fuel energy sources, such as oil and gas, to renewable energy sources such as hydro, solar and wind. These projects can also offer co-benefits such as job creation.

Cookstove projects



Through these projects, buyers introduce energy-efficient processes to local communities, particularly where cooking on open-fires is common. Projects usually involve replacing traditional wood and fire cooking methods with cookstoves that are provided through the project. This can offer long-term sustainable benefits for communities, as well as remove carbon emissions produced from smoke pollution and deforestation.

Direct Air Capture (DAC) projects



DAC technology sucks CO₂ from the air and stores it geologically. These projects also sit within the “removals” category and although [the technology is growing in popularity](#), it is currently costly to scale and does not offer any co-benefits. DAC credits do exist, but they are in short supply. What's more, they're currently not part of the VCMs in the traditional sense, because they are not registered under a certification scheme.

There also exists a number of up and coming removal technologies, such as biochar (a cross between a NBS and technological project) and carbonated cement, to name a few. These projects are still at a very early stage and have yet to scale.

How do carbon credits make it to the market?

In order for a project to be set up, a developer must first go through the following high-level steps:

Step 1.

Ensure that the project they are planning to develop is additional.

Step 2.

Select a relevant methodology under which to develop a project. Carbon certification bodies such as Verra and the Gold Standard have developed several methodologies covering virtually all climate project types. New methodologies, for example for biochar, are being created as these novel project types gain traction.

Step 3.

The developers will then write the Project Description Document (PDD) which shows compliance with the methodology of choice. It includes (ex-ante) estimates of how many carbon credits the project will be responsible for per year (vintage, which corresponds to the year when the emission reductions or removal took place).

Step 4.

The PDD is reviewed and validated by an auditor, before the project is registered on the registry. Project activities can start a couple of years before the project is validated as project development is a time consuming process.

Step 5.

The developer then monitors project activities as per its monitoring plan to assess how many credits a project is responsible for, once the project has officially started.

Step 6.

An auditor then verifies the monitoring report created by the developer, covering a specific time period. Once that is complete, a verification report is published on the registry alongside other project documentation and the credits are issued.

Developers typically sell ex-post verified and issued credits, but some can choose to sell them ahead of issuance to secure funding for project activities, for example.

Although projects require a lot of time, resources and auditing to issue credits, low-quality credits can still enter the market.



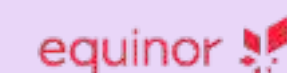
How to approach carbon credit due diligence

The lack of regulation in VCMs means the quality of a project and credit can vary greatly depending on variables such as carbon performance, additionality, permanence and co-benefits. These are the defining attributes of whether a project is of high quality or not. To thoroughly assess a carbon project's performance requires a significant amount of time and resources. Without proper due diligence, you could invest poorly designed, low quality projects, which do not achieve meaningful climate impact or even harm communities and could result in significant financial loss and, even worse, reputational damage.

“Absolute emissions reduction has to come first. We have a target to reduce our scope 1 and 2 emissions by 50% by 2030, and 90% of that must be absolute reductions. So we’re following a mitigation hierarchy: first we avoid and then we reduce and only offset when other measures have been prioritized.”

“We fully expect to be scrutinized thoroughly on the offsets that we might use. As such, we have very high thresholds for quality in terms of what kind of offsets we will use. The thresholds include: how are the offsets verified, what type of projects they relate to, and whether – in addition to addressing carbon – they are including community co-benefits like biodiversity. Not least, the ratings are integrated into our quality filters. We expect this framework to be interrogated by stakeholders and that’s why we’ve put it in place.”

Margaret Mistry, VP Carbon Markets at Equinor



Carbon Project Checklist: what you need to know before investing

✓ Carbon Performance

Carbon credits issued are based on a project's emissions reductions or removals. This information comes from the verified audits of projects, following the developer's monitoring. As a buyer, it's vital to know if the project is accurately reporting on its activities which directly translate to its overall avoidance or removal of CO₂ or CO₂e.

Why does this matter? A single carbon credit is equivalent to one metric ton of CO₂e; therefore the number of credits issued by the project must be an accurate reflection of the amount of emissions that have been or can be reduced or avoided, if it is to have any positive impact. There are cases where projects inflate emissions reductions or removals and therefore more credits are issued than should be allowed. Quantifying carbon impacts can be tricky and requires high quality data; a lot of these cases of inflation might not be intentional or done in bad faith by the project developers. It's also worth noting that complex and inconsistent standards and documentation make it difficult to assess the design and performance of carbon projects.

✓ Additionality

The concept of additionality is fundamental to a project's integrity and to qualify as a carbon offset.

Why does this matter? Carbon reductions achieved with the funds from credits need to be over and above any business-as-usual activities that would have happened without credits being sold and the project being developed. If credits were awarded to a business-as-usual project, then emissions would not actually be avoided or removed in addition to what would have happened anyway. For example, if there was no risk of a forest being cut down, but credits for a project protecting it were sold anyway, then this wouldn't be considered additional. Although projects undergo third-party checks before credits are issued, additionality can be difficult to verify and measure without the proper infrastructure and technology.

✓ Permanence

This refers to the time period that carbon will likely remain sequestered or avoided.

Why does this matter? Risk factors such as human activity and disasters can affect the longevity of a project's impact, which will ultimately affect its emissions reductions. For example, if a forest project is located in a region with a high prevalence of fires, if one occurs the forest could be lost to it and this would release the carbon that had been sequestered to the atmosphere. Permanence can sometimes be difficult to determine when purchasing credits because risk factors may not always be visible and can be subject to rapid change.

✓ Co-benefits

Some carbon projects, such as nature-based ones, go beyond emission reductions by implementing activities that benefit local communities and biodiversity.

Why does this matter? If a project were to protect a forest, but disrupt the livelihood of local communities by cutting off an essential income supply then it is a poorly designed project and does not align with UN Sustainable Development Goals (SDGs). Another example would be planting non-native species of trees that are not appropriate for that area or planting monoculture, both of which could be detrimental to local biodiversity. A well designed project will positively impact communities and biodiversity; for instance the project could create income sources for locals, provide them with services.



Policy & regulation implications to consider

While the VCMs are not currently regulated anywhere in the world, they are largely shaped by the broader policy environment relating to climate change and national decarbonization strategies. This is likely to continue to grow in the coming years, during which we also expect to see financial and market regulators take an interest in VCMs activity and the subsequent claims buyers make.

Policy & regulation implications to consider

The key policy and regulatory initiatives currently shaping the VCMs are:

- **The Paris Agreement**, which sets the global goal to decarbonise all human activity, and is the ultimate driver for all climate action. The Paris Agreement operates on a cycle whereby every five years each country is expected to submit an updated and more ambitious national climate action plan (a Nationally Determined Contribution, or NDC). The next round of updated NDCs are due by 2025.
- **The Task Force on Climate-related Financial Disclosures**, or TCFD, which describes a set of global principles for climate-related disclosures which a growing number of national regulators are enshrining. This includes all members of the G7. Companies' TCFD reporting is becoming more detailed every year, and increasingly covers companies' use of carbon credits.
- So far 2022 has witnessed two notable policy reversals in key countries, which have rattled the markets. Papua New Guinea announced a moratorium on new REDD+ projects, while similar developments in Indonesia resulted in a number of large projects pausing issuance. While there is a reasonable likelihood that 'business as usual' could return to both countries by the end of the year, these examples serve as a reminder that specific national circumstances always have the potential to impact the VCMs.

“What we have seen in the U.S. – especially since the proposal for climate disclosures from the SEC – is a sharpened focus from the corporate world on the decarbonization topic. This comes with increased ownership of the decarbonization plan including offsetting by the CFO, in addition to the Head of Sustainability. It is an important and positive development for the voluntary carbon markets, since carbon credits are an asset and should be treated as such on the balance sheet.”

Torsten Lichtenau, Senior Partner Bain & Co



Policy & regulation implications to consider

In the coming years we expect the following to also play a significant role in shaping the VCMs:

- The **US Securities and Exchange Commission (SEC)** recently released a draft rule on climate disclosures, along the lines of the TCFD. However, the draft SEC rule includes substantial disclosure requirements on the details of carbon credits being retired, which would bring a new level of transparency to the markets.
- There are two industry-led groups, the **Integrity Council for Voluntary Carbon Markets (IC-VCM)**, and the **Voluntary Carbon Markets Integrity Initiative (VCMI)**, which are due to issue their recommendations later this year. Both could be market-shaping. The IC-VCM is setting out high-level identifiers for credit quality (which align very closely with Sylvera's ratings frameworks), while the VCMI is looking into the claims that companies can make based on their use of carbon credits.
- Last year the International Financial Reporting Standards (IFRS) Foundation announced the creation of a new **International Sustainability Standards Board (ISSB)**, which has been gathering momentum and hiring senior staff ever since. The ISSB is expected to issue guidance to the markets on sustainability reporting, potentially including how carbon credits should be accounted for.
- Building on the success of the TCFD, there is now a **Task Force on Nature-related Financial Disclosures (TNFD)**, which aims to have a similar impact, and which could also influence how the markets view carbon credits. The TNFD released a 'beta' version earlier this year, which it seeks to iterate over the coming months, drawing on industry feedback.

In the medium- to long-term there is also a growing likelihood that the emissions will be subjected to some form of carbon pricing (such as a carbon tax, or a cap-and-trade scheme) in multiple jurisdictions. Many companies currently apply a "shadow carbon price" to understand what their potential exposures would be if some or all of their emissions, and those relating to their supply chains and investments, were covered by such policies. From a risk management perspective, you want your organization to be prepared.

“One very positive outcome of [climate disclosures] would be if we had more of a race to the top. In other words, that companies were competing, not only on the basis of robust disclosure but practices. ... You’d have people looking to see who is making the best use of these credits, who is not only engaged in avoidance and reduction to get to the goals for 2030 and 2050, but also how are they accelerating the transition by contributing through these other mechanisms to bring capital to places that otherwise wouldn’t have the capital - both to nature-based and technological-based solutions.”

Annette Nazareth, Chair of the ICVCM and former SEC Commissioner



How Sylvera can help you on your journey?

Sylvera's independent ratings platform was designed to give sustainability leaders, traders and asset managers confidence in the VCMs. Our carbon project reports are comprehensive and accessible, and can be used by sustainability teams to help educate board members and other key decision makers about specific carbon credit investments, their potential impact, and how to best manage the risks associated with the VCMs.

What sets us apart?

Unparalleled depth & accuracy

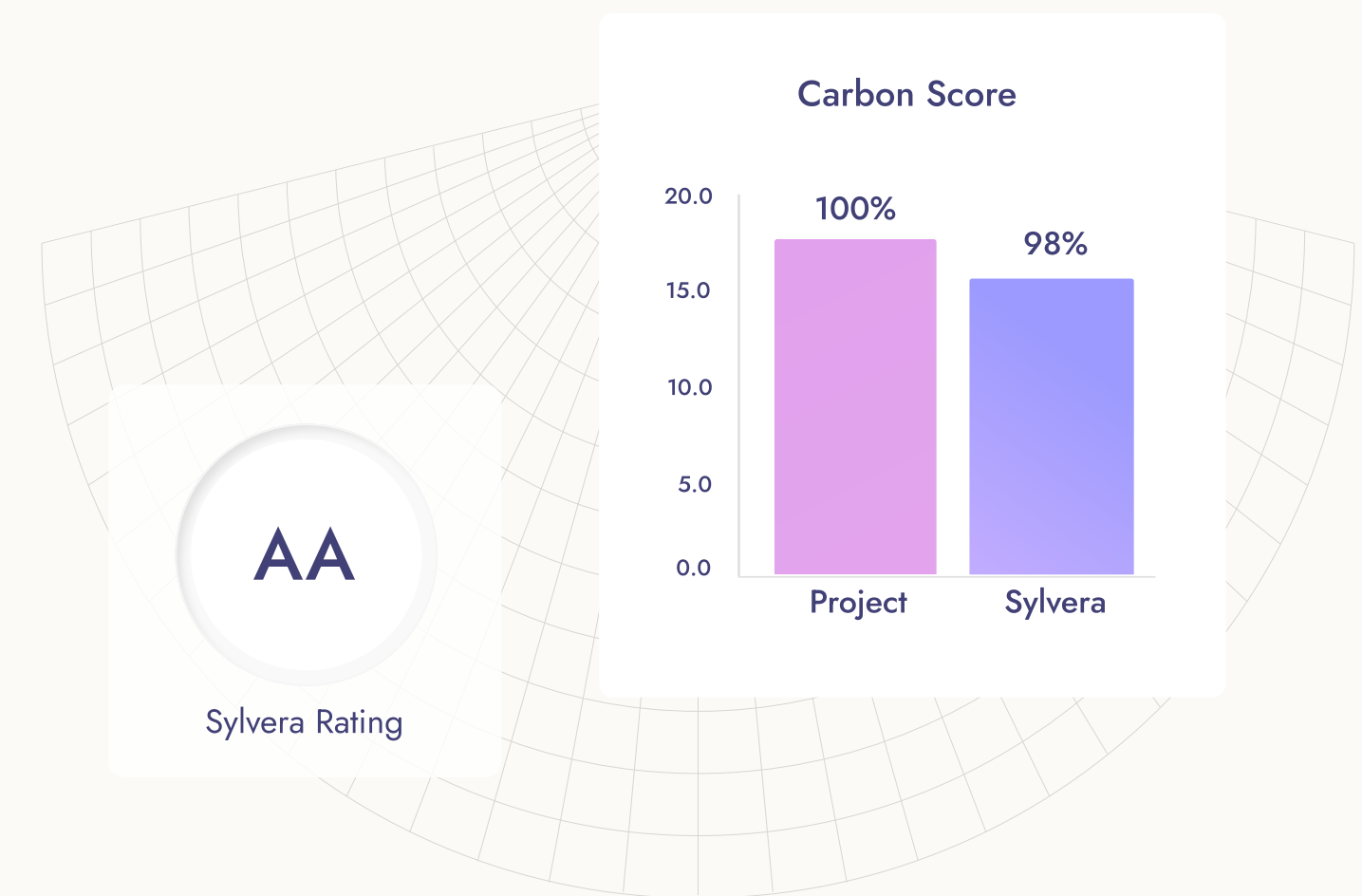
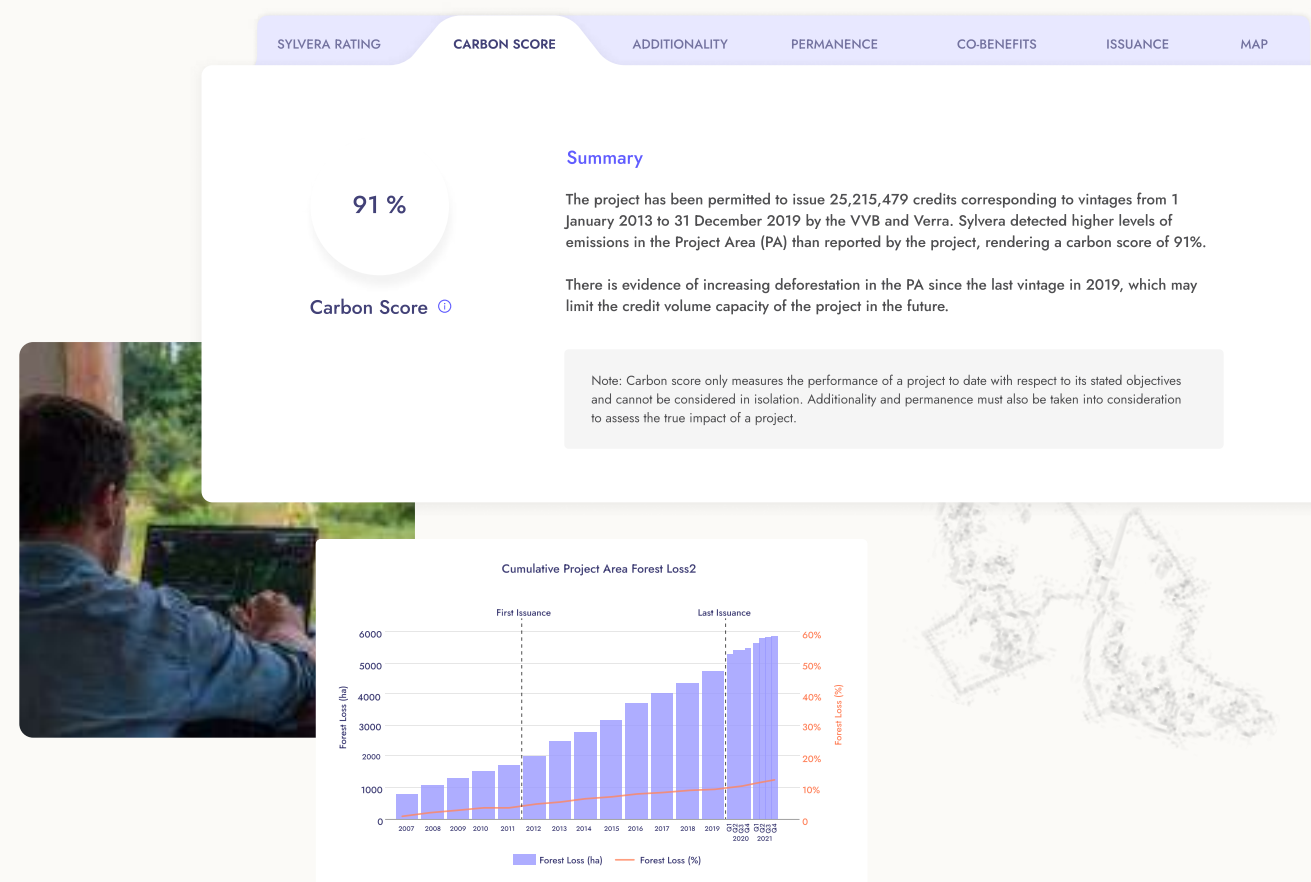
No other platform provides the level of detail and nuance in carbon project assessments and ratings. We build robust and bespoke ratings frameworks and production systems for each project type. Our ratings are not generated by algorithms alone, but by a team of experts analyzing a variety of quantitative and qualitative data, who then distill it into detailed reports.

World-leading technical and scientific expertise

We leverage proprietary data and machine learning technology to produce the most comprehensive and accessible insights on carbon projects. We have a large and growing team of experts who hold advanced degrees, working across our Multi-Scale Lidar, Geographic Information System (GIS), Ratings and Machine Learning disciplines.

Independence

We don't sell or trade carbon credits and we never will. We also aren't paid by developers to rate carbon projects. This means we avoid conflicts of interest, and you can trust that our ratings and reports are unbiased.



Conclusion

With Sylvera's carbon intelligence platform, you can:

- Save time and money on due diligence, and protect your organization's reputation.
- Avoid bad investments and missed opportunities by getting a view of the whole market and comparing quality and price side-by-side
- Continuously monitor the performance and risks associated with carbon offsetting projects

When incorporating carbon offsetting into sustainability strategies, it is imperative that buyers only engage with high integrity projects that will have a positive impact on the climate and local communities. Failing to do so will not only put your organization's reputation at risk and be costly, but it will also have a detrimental effect on the environment.

VCMs have the power to drive much needed sustainable development and climate impacts. Further infrastructure needs to be put into place to ensure issues around inaccurate project claims and data are resolved; overcoming these discrepancies and being a source of truth in the carbon markets is why Sylvera exists.

In the first instance, organizations have a responsibility to avoid and reduce carbon emissions within their business. We understand that not all emissions can be completely avoided at this stage, which is where high quality offsets can play a role in helping reduce global emissions.

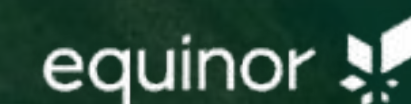
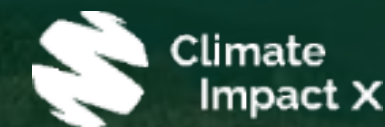


By investing in high quality carbon projects, there is scope to make a meaningful contribution today in the fight against climate change.



Who relies on the Sylvera platform?

Customers & Partners:



Contact us to learn more.

Sylvera is a leading carbon data provider. Our mission is to incentivize investment in real climate action. To help organizations ensure they're making the most effective investments toward net zero, we build software that independently and accurately automates the evaluation of carbon projects that capture, remove, or avoid emissions. With Sylvera's data and tools, businesses and governments can confidently invest in, benchmark, deliver, and report real climate impact. We're backed by renowned investors like Balderton Capital, Index Ventures, Insight Partners, LocalGlobe, and Salesforce Ventures.

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