

Reforming the voluntary carbon market

How to solve current market issues and
unleash the sustainable potential



Compensate

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Abstract

In summary

The voluntary carbon market is at a crossroads. It's expected to grow exponentially and help humanity fight global warming. But severe risks and potential harm loom if the growth happens only on paper.

For offsetting – and the voluntary carbon market – to truly make a difference, it must be done well. Only then will it become the tool against climate change that it can be. This means that offsetting should support emission reductions as a primary climate change mitigation tool and that offsetting should always have an actual climate impact. Because the current market is riddled with greenwashing, the market needs to change its ways when it comes to transparency. Only this will enable people to trust the market – and offsetting – in the future.

Compensate is a Finnish nonprofit and impact startup offering businesses and individuals easy access to high quality carbon capture. These two key building blocks: transparency and climate integrity, are needed in order to ensure that carbon capture truly makes a difference in mitigating climate change, and are thus the foundation for Compensate's way of working.

Compensate has developed a set of individual sustainability criteria to evaluate and screen carbon capture projects. The criteria helps Compensate choose projects that have a positive impact on the climate, but also on biodiversity, human rights, and for local communities.





This criteria goes beyond international standards, which is evidenced by the fact that 90% of evaluated projects fail the criteria. The reasons vary, but are all equally alarming. Some projects can not be considered additional, others have serious permanence risks. Some have unreliable baselines, because assumed deforestation is largely inflated. Worryingly, many projects also cause serious human rights violations.

It is evident from Compensate's experience then, that the voluntary carbon market has much work to do. In its current state, the market can not effectively become a tool to fight climate change.

The market must acknowledge these current flaws and understand the risks associated with carbon neutrality and net-zero claims. The need and the potential of nature-based solutions must be recognized, and overall quality and transparency must be supported going forward.

A photograph of a clear blue sky with scattered white clouds. The clouds are more prominent in the lower-left and middle-left areas, while the upper-right is a solid blue. The word "Forewords" is centered in white text.

Forewords

Foreword: Antero Vartia

Emission reductions are unambiguously the most crucial tool in climate change mitigation. Unfortunately it's become evident reductions alone are no longer enough.

If I litter the park daily with a single piece of trash, I'll soon notice the park's filled with trash, going to ruin. The solution then is not to litter every other day. I must stop littering altogether – and I must clean up the mess I've already made. The same logic must apply to the atmosphere.

If humanity is to meet the threshold of the Paris Agreement, we have, at the current rate of emissions, less than eight years to achieve carbon neutrality. After that, the amount of carbon dioxide in the atmosphere should quickly lower. This is impossible to achieve without carbon sequestration. We absolutely must hasten the process.

“We need a paradigm shift: The new starting point should be that the maximum amount of carbon in the atmosphere has now been reached.”

It's no longer sufficient to aim for carbon neutrality in decades' time, the goal should be to enable carbon negativity today. We must take responsibility for all emissions at this moment.

Why is it then that we haven't yet created a functional market for the commodity destined to shape the very fate of our kind? Especially when the demand for carbon sequestration is practically limitless?

Ultimately I believe the reason is twofold.

One, we still do not know who's to pay for carbon sequestration.

We're mentally outsourcing the responsibility. Each of us causes damage, yet we fail to recognize the fact and assign the blame to politicians. Politicians blame everyone outside their borders. The circle of avoiding responsibility is endless. And as long as it remains so, we will fail to effectively mitigate climate change.

Second, we clearly do not trust the current system.

At least here we have good reason not to. Often, the customers of the voluntary carbon market have no insight into what they're actually paying for. As a result, they're sold empty promises. With faulty goods flooding the market, the system cannot function. A price mechanism cannot form and reliability remains nonexistent.



Carbon sequestration is an inevitable part of climate change mitigation. We must help individuals, businesses, and nations understand and accept responsibility for emissions.

“To scale and reach the impact necessary, carbon capture must be made an economically profitable business and the offsetting market profoundly transformed.”

Cogent regulation will become an essential tool for this imperative change.

This is the heart of the document in your hands. I remain confident we will fix the system. The voluntary carbon market is already at a turning point, and growing rapidly. The significant driver behind the expansion is growing awareness, which will force every operator in the market to ultimately do better.

I wish to thank the amazing experts in the Compensate team for the work they’ve done. The results you will see on the next pages. I hope this document will do its part in helping us strive towards a better, more sustainable carbon market – and a better, more sustainable future.

Antero Vartia,
Founder & Chair of the Board,
Compensate



Foreword: **Compensate's sustainability experts**

The climate crisis is the defining issue of our time. It's perhaps the biggest challenge humanity has ever faced. And in the wake of the climate crisis, we are starting to open our eyes to a perhaps even greater challenge, the loss of biodiversity. Luckily, both issues can be tackled with the same solutions. A well functioning carbon market could play a significant role in solving both challenges.

We share a background and long history with sustainability issues.

“Before either one of us joined Compensate, we were skeptical about offsetting.”

It felt like an easy way out, and many offsetting projects were known for their questionable climate impact, shady baselines, often harmful social impacts, and negative impacts on biodiversity.

We joined Compensate with a vision that things could be better. Compensate had set its mission on “always searching for the most sustainable” ways to offset: thus challenging the way offsetting had always been done. We understood that instead of just complaining about the status quo, we could contribute to building a more sustainable market – one that creates true climate impact.

We were not prepared for how bad things are. They are indeed quite terrible.

But there's a lot that can be done, and for the past 12 months, we've been busy at work here at Compensate.

The white paper in your hands came to be because we felt that our stakeholders, market actors, policy makers, and, above all, the countless businesses, organizations, and individuals that rely on carbon offsets as a way of taking climate action, need to understand just how faulty things are today. They need to know and they deserve to know.

“Only by accepting and understanding the reality of today can we create something new, something sustainable.”

A sustainable carbon market is what we work for Monday to Friday. But this is not a job for Compensate only.


In the past year, we've encountered numerous like-minded organizations, tireless individuals and fearless advocates who also work day and night to challenge the current, insufficient quality of the market.

We hope that our effort becomes a useful tool for us all in this joint effort towards something better. This paper is for you.

Niklas Kaskeala,
Head of Sustainability,
Compensate

Eftimiya Salo,
Sustainability Specialist,
Compensate





1.0

Introduction to offsetting

- 1.1 What is offsetting?
- 1.2 The voluntary carbon market
- 1.3 International carbon standards
- 1.4 Types of carbon projects
- 1.5 Characteristics of a good carbon credit

1.1

What is offsetting?

Simply put, carbon offsetting allows individuals, organizations and nations to support environmental projects around the world to balance out their own carbon footprints.

A carbon offset is a reduction in carbon dioxide (CO₂) emissions or other greenhouse gases (GHG), made in order to compensate for emissions caused elsewhere. Offsets are measured in tonnes of carbon dioxide-equivalent (CO₂e), meaning the impact of all greenhouse gases is combined and expressed in CO₂. Each tonne of emissions reduced and removed by an offsetting project creates one carbon credit. Companies, nations, and individuals can invest in these projects directly or buy the credits.

There are numerous types of offsetting projects, but in short they can be divided into two categories: ones that reduce future emissions and ones that soak up the CO₂ already in the atmosphere. For clarity, a carbon emission reduction project is one that reduces emissions (e.g. a wind power project). A carbon capture project is one that removes carbon dioxide from the atmosphere (e.g. an afforestation project).



Carbon credits are certified for quality and impact by internationally recognized standards, and traded in numerous ways through the carbon market. While both support the fight against climate change, the voluntary carbon market is separate from official cap and trade emissions trading, in which governmental organizations allocate and sell emission permits.

1.2

The voluntary carbon market

The basis for the international carbon market and for the pricing of greenhouse gas emissions was created in 1997, when the international treaty the Kyoto Protocol was adopted. The protocol enabled transnational emissions trading and set up mechanisms for emission reduction and carbon removal projects to be developed, financed and implemented by the private sector. The latter became known as the voluntary carbon market (VCM).

While demand in the market is considerable, many questions still riddle the relatively young industry.

First, the effectiveness and actual climate impact of offsetting has been widely questioned. There's a certain amount of skepticism towards these mechanisms. And for good reason: The voluntary carbon market is characterized by a plethora of actors, methodologies, project types, and standards. It's a tough job for businesses, organizations and individual consumers to try to navigate this complex market. Outright opportunism and greenwashing are not uncommon.

Especially in the early days of the voluntary carbon market, the lack of standardized quality criteria generated widespread concern. In response, carbon market actors launched several efforts to create standards and protocols to improve the quality and credibility of voluntary offsets. Standards like Verra, Gold Standard and American Carbon Registry (ACR) have become market leaders in reassuring offset buyers about the quality of the carbon credits that are being bought. Still, these leading standards leave a lot to be desired.

1.3

International carbon standards

Carbon credits are certified under international carbon standards. Globally, the most widely used standards are Verra, Gold Standard and American Carbon Registry.

Verra, previously Verified Carbon Standard (VCS), is a nonprofit organization established in 2005. The Verified Carbon Standard, Climate, Community and Biodiversity Standard (CCBS), and the Sustainable Development Verified Impact Standard (SD VISta) are managed under Verra.

By volume, VCS is the largest voluntary standard in the world. Its 1 600+ projects include renewable energy, forestry, and more. Collectively, the projects have claimed to reduce or remove more than 500 million tonnes of CO₂ and other GHG emissions from the atmosphere.

Climate, Community and Biodiversity Standard (CCBS), established in 2014, certifies land-based climate change projects that focus on community and biodiversity wellbeing, including livelihoods creation and employment, cultural values and protection of endangered species. CCBS is often complementary to the VCS agriculture, forestry and land use projects, as projects could choose to be certified under both standards. To date, close to 200 projects across 60 countries have been validated by the CCBS.

The Sustainable Development Verified Impact Standard (SD VISta) was launched by Verra in 2020. It is a framework for assessing and reporting on the sustainable development benefits of project-based activities. Projects' contributions towards the UN Sustainable Development Goals (SDGs) are listed in the Verra registry.

The Gold Standard, established in 2003 by WWF and other international NGOs, aims to guarantee that carbon reduction projects not only have the highest environmental integrity, but also contribute to sustainable development. Gold Standard has 1 900 projects across 80+ countries. Projects range from renewable energy, end-use energy efficiency, waste management to water, sanitation and hygiene.

Following the adoption of the Paris Agreement and the UN SDGs, Gold Standard launched the Gold Standard for the Global Goals to ensure that projects contribute to the SDGs in a meaningful and measurable way.

The American Carbon Registry (ACR), a nonprofit founded in 1996, is the first private voluntary greenhouse gas registry in the world. ACR is operating both on the voluntary and California compliance market, where ACR oversees the registration and verification of carbon offset projects.



1.4

Types of carbon projects

There are three main categories of carbon projects:

- forestry and land use, including forest conservation, afforestation/reforestation, and soil carbon
- renewable energy
- projects decreasing industrial emissions, including waste disposal and energy efficiency

Forest conservation

Deforestation is an acute problem in developing countries. According to the Intergovernmental Panel on Climate Change, it already accounts for approximately 13% of total global annual greenhouse gas emissions. While interest towards planting trees is growing exponentially, forest protection projects are often unjustly overlooked. Natural forests are resilient to changing conditions and store more carbon than young plantation forests.

In terms of value, Reduced Emissions from Deforestation and Degradation (REDD+) projects were the most dominant project type on the voluntary carbon market in 2019, according to the Ecosystem Marketplace. REDD+ are emission avoidance projects implemented in developing countries rich in tropical forests that are threatened by deforestation. In addition to preventing emissions from deforestation, they also contribute to the SDGs and deliver social co-benefits for local communities, such as employment opportunities, alternative livelihoods, and education.

| Pros | Cons |
|--|---|
| Protecting existing high-density carbon sinks | Unrealistic baseline deforestation: overestimations of impact |
| Protecting biodiversity hotspots | Risk of leakage and illegal logging |
| Addressing socioeconomic causes of deforestation | Permanence and political risks |
| Supporting sustainable livelihoods | Community conflicts, evictions |
| | Restricted access to forests |

Reforestation/Afforestation

Reforestation and afforestation projects create new carbon sinks and restore degraded land. Trees and forests counter soil erosion and degradation by helping nutrients stay in and return to soils. Planting trees also addresses water tables, resulting in better crop yield and food security.

Such projects could be community-led or be organized by timber and logging companies. Reforestation and afforestation projects result in carbon removals as trees sequester atmospheric CO₂. Community-led afforestation and reforestation projects deliver similar co-benefits as REDD+ projects.

| Pros | Cons |
|--|---|
| Reversing soil erosion and soil degradation | Permanence risk |
| Growing new carbon sinks | Risk of carbon leakage |
| Difficult to overestimate the climate impact | Questionable financial additionality of timber plantations |
| Community-led projects have great socioeconomic impact | Risks associated with large-scale timber plantations: fast-growing monocultures of non-native species, lower wages, high unemployment rates of locals due to preference for skilled workers from nearby cities, inflation |

Soil carbon

Increasing the amount of carbon in the soil in agricultural fields has great potential in mitigating climate change. This can be supported through climate smart farming practices. Carbon increases soil fertility and results in higher yields and food security.

Soil carbon projects are still emerging on the voluntary carbon market, but interest towards them is growing. As science is progressing, there is already existing technology that can measure carbon fluxes in agricultural projects.

| Pros | Cons |
|--|--|
| <p>Vast carbon sink potential</p> <p>Additional: farmers adopt the new practice because of revenue from carbon credits</p> <p>Methods increase soil fertility</p> <p>Additional benefits for biodiversity and groundwater</p> <p>Inexpensive compost and natural fertilizers as byproducts</p> | <p>Permanence risk</p> <p>Lacking widespread awareness and know-how</p> <p>Methodologies are criticized for not requiring enough soil sampling and low additionality requirements</p> <p>Soil sampling does not provide consistent results</p> |

Renewable energy

Offsetting has historically been tied to the development of renewable energy. Issuing carbon credits from renewable energy projects was a way to support the development of these emerging technologies when they were still vastly more expensive than traditional energy sources.

In the 2020s, renewable energies have fully emerged, and their pricing is historically low. Therefore, renewable energy is no longer eligible for carbon credit issuance, and international carbon standards are starting to phase these projects out of their registries. As an example, the Verified Carbon Standard (VCS) and Gold Standard stopped accepting new grid-connected renewable energy projects in middle income countries at the end of 2019.

Projects for energy efficiency and avoiding industrial emissions

“Energy efficient” products and services use modern technologies to operate with less energy than is deemed traditional. The majority of energy efficiency offset projects are implemented at industrial facilities. Some energy efficiency projects have to do with waste management or green energy transportation, while others work with energy efficient cooking stoves or LED bulbs.

For these projects, establishing a reliable baseline, monitoring, and evaluating actual efficiency is a very challenging, resource-heavy effort. This often makes them very expensive. At the same time, various national and international policies already incentivize the decarbonization of industries. Other existing financial incentives and support are available as well.

While these projects are sensible and support overall environmental initiatives, their use for offsetting is highly questionable.

1.5

Characteristics of a good carbon credit

A good carbon credit ensures that one tonne of carbon dioxide is either avoided or removed from the atmosphere entirely because of the project.

But to assess whether this sentiment applies to a carbon credit, certain characteristics have to be recognized: additionality, reliability (ie. the climate impact is not overestimated), permanence, single issuance / avoided double counting, and environmental and social net impact. Only through these can credits be compared and evaluated across projects and methods.

Additionality

Additionality separates environmental projects from offsetting projects. While both are great for the climate, only projects that tackle additionality can be used for offsetting. Additionality must be examined on two levels: financial additionality and policy level additionality. While many projects struggle with demonstrating financial additionality, even fewer can tackle the latter.

Financial additionality means that the project would not have happened without carbon credit revenue. In other words, the offsetter is directly responsible for enabling the offsetting action to take place.

Policy level additionality means that the project goes beyond its host country's climate objectives. If a project only enacts what policies already require, the project may be great for the climate, but is not suitable for offsetting. As an example, if a national policy already protects certain types of trees, a project protecting them is not additional on the policy level.

Additionality should be the basic requirement for all credits on the voluntary carbon market. Compensating emissions with additional credits ensures the offsetter actually makes a positive impact and truly reduces the amount of CO₂ in the atmosphere.

Reliability

In forest protection projects, carbon credits are created by predicting the deforestation which would occur if the project didn't exist. Reference areas are used to estimate potential deforestation, and the assumption is that the same "amount" of deforestation would happen in the project area were it not protected. Carbon credits are then issued based on estimated deforestation in the absence of the project. This is done by using a reference area, or regional or national deforestation rates.

Inflating a project's climate impact could result from overestimated baseline emissions or overestimated carbon stock changes. Baseline emissions refer to the CO₂ emissions that would be released in the absence of the project.

Project developers can influence the number of credits issued with the selection of the baseline scenario. The baseline could be artificially inflated by e.g. predicting 100% deforestation were the project not implemented. Projects based on unrealistic and often intentionally exaggerated predictions of the potential deforestation threat have little climate impact. In fact, buying such credits could actually add carbon into the atmosphere, as emissions are not counterbalanced with real, additional offsets. International carbon standards are fundamentally flawed, as they develop and accept project methodologies that allow for the issuance of millions of meaningless credits.

Carbon stocks refer to how much carbon is stored in a forest, which is then multiplied by the area deemed to be deforested. By overestimating its climate impact a project takes credit for what would have happened anyway, thus it does not have a **real climate impact**. Compensating with such carbon credits results in increasing net emissions and speeds up climate change.

For reforestation and afforestation projects, it is difficult to overestimate a project's climate impact, as the starting point is often degraded land or a grassland. However, projects where trees are being planted still have risks related to permanence and carbon leakage.

Soil carbon projects, similarly to afforestation and reforestation projects, have reliable carbon calculations and additionality could easily be proven, as farmers change their farming practices after joining the project. These projects' biggest disadvantage is short permanence if climate smart farming practices are not maintained.

Permanent

Permanence refers to the longevity of the carbon sink born in the project. Compensation claims are valid for the time the amount of CO₂ avoided or removed stays that way.

As an example, the majority of forestation projects have a lifetime of 30 years. If the protected forest is logged immediately after the project is completed, and the trees are used for energy, the CO₂ will be released into the atmosphere.

The longer the permanence, the better the quality of the carbon credit and the bigger the benefit for the climate.

Single issuance / Avoided double counting

Double counting refers to a situation in which two parties claim the same carbon removal or avoidance.

As absurd as it is, missing links between theory and practice have left room for double counting to happen quite often. Commonly, the two claiming parties are an organization offsetting its emission and the host country trying to reach its nationally determined contribution under the Paris Agreement. It's highly problematic because it disincentivizes countries from implementing emission reductions.



Double counting can be avoided by implementing national registries of all voluntary emission reductions and deducting them from national GHG inventories and climate targets.

Net positive social, biodiversity and environmental impacts

For carbon projects to be sustainable, they should result in net positive impacts for local communities, biodiversity and the environment.

Net positive projects do not cause community conflicts, land tenure issues, forceful evictions, human rights violations, or simply worsened health and wellbeing due to restricted access to a forest or nature area.

Net positive biodiversity impacts can include preventing poaching and illegal logging, or reforesting habitats and bringing wildlife back to previously degraded areas.

Negative environmental impacts refer to carbon leakage: Moving the deforestation, which would have happened in the project area if it was not protected, to nearby areas.

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2.0

The voluntary carbon market today

- 2.1 Introduction
- 2.2 Shortcomings of the voluntary carbon market
- 2.3 Initiatives to improve the market

2.1

Introduction

The late 2010s saw a surge in interest in carbon offsets. This happened as more and more corporates and organizations aligned themselves with global climate policies and set net-zero targets. While big industries operate under cap and trade systems, individuals and organizations of every size are looking towards the voluntary carbon market to do their part.

According to Ecosystem Marketplace, in 2019, the most recent year for which data is available, 104 million tonnes of CO₂e were traded through the voluntary market, a 6% increase from the year before. Carbon credits from renewable energy projects were the type of credit sold most often, while forestry and land use credits were the highest in value.

Demand seems to be starting to overtake supply: The majority of project developers have buyers lined up for a portion of their carbon credits. 1 in 3 developers have “sold out” all credits prior to their issuance, as indicated in the annual survey by Ecosystem Marketplace.



In line with the Taskforce on Scaling the Voluntary Carbon Market Report, the market is expected to see exponential growth in the coming years, scaling up 15-fold and reaching a demand of 1-2 Gt CO₂ by 2030. In terms of the value of the market, this would mean an increase from the current 300M per year to 5-30 billion USD (low price scenario), even up to 50 billion USD (high price scenario).

Growth without real impact is, however, worthless.

The growth of the market must come with serious answers to its current shortcomings and with a significant rise in the quality and climate integrity of carbon projects.

2.2

Shortcomings of the voluntary carbon market

The big question: Do offsets create perverse incentives to continue emitting?

Compensation is often cheaper and easier than emission reductions. A major criticism for offsetting is that it just provides an opportunity to continue emitting.

The argument is that offsetting creates “perverse incentives”: Organizations might be tempted to use offsets to achieve reduction goals and not actually reduce emissions first. Similarly, individuals might continue high carbon footprint lifestyles because offsetting is convenient and affordable.

There are some consumer studies that indicate a positive correlation between offsetting and overall positivity towards sustainability and emission reductions. These studies haven't yet proven a causal relationship. Clearly, more research is needed to understand what motivates consumers and organizations to offset.

Rather than completely dismiss the criticism, the industry should face it head-on. First, a stern look inwards is needed. Too often, offsetting providers liken compensation to reductions, making marketing promises that can be classified only as greenwashing.

One key issue is the price of offsetting: If prices are kept low with dubious climate impact and goods sold with greenwashed promises, it is indeed tempting for individuals and companies to choose offsetting over emission reductions. Carbon credits should always be priced high enough to actually match the damage caused: At a high enough level, credits can incentivize emission reductions over or at par with offsetting.

Another possibility for the industry to explore is going beyond “neutralizing” and “balancing”. When there's clearly too much CO₂ in the atmosphere and too little being done about it, offsetting could provide a tool for positive action so that CO₂ is always removed from the atmosphere as well, rather than just not being added to.

The big question: What is being sold?

Offsets are often used for corporate responsibility reasons. It's important for corporate communications to be able to discuss climate action and tangible things the company is doing.

Are consumers and stakeholders told which emissions are included in the carbon footprint calculations? What GHG emission scopes have been included? What's being offset?

What about the projects from which carbon credits are bought: How have they been chosen? Has their impact been evaluated, and by who? How are they monitored?

Companies and offset providers now turn to international standards for quality assurance, as they have limited information about the offsets they are buying. With these widely accepted standards in place, there is also little public pressure on buyers to dig deeper into the projects.

As the following chapters will show, not even the most renowned international standards guarantee real climate impact. Compensate has come across projects with unbelievably overestimated impact, or, worse yet, no impact at all. The market is flooded with millions of essentially worthless credits. Still, these credits have the stamp of approval of the leading international standards, and offsetters keep buying them with no knowledge of the fact they're engaging in a lie. If such credits are used for offsetting, the climate is saved on paper only.

Additionally, as long as buyers have limited understanding of the complexities of the market, the industry has no incentive to improve underlying quality issues. If you can sell bad credits for a reasonable price and the market seems to be growing, why rock the boat? Many offsetting operators also believe sustainability issues should be fixed after the market has first grown to a more substantial size.

But growing the market as-is risks causing active harm to the very thing it is trying to save: the climate.

The big question: The lack of transparency in pricing

The voluntary carbon market is dominated by a handful of major credit resellers. They buy credits from project developers and sell them as offsets to corporate buyers and individual consumers. The profit of the reseller is made in the margin on top of the resale price.

Pricing models are corporate secrets, and few offset providers openly disclose their margins. It remains unclear how much of the credit revenues go to the developer or local communities. Given the complexity of financial streams related to offset projects, and the increasing use of carbon credits for corporate carbon neutrality claims, increasing transparency on pricing is crucial to build trust.

The big question: Current business models do not support emission reductions

If and when market operators base their business on cuts from offsets, they themselves have a perverse incentive: The more emissions, the more offsets, the more credits, and the more profits. Somebody's emissions are another's profit. Logically then, this discourages commercial offset providers from helping their customers reduce emissions.

Typically, offsetting has only been done after emissions have already been created. This has pigeonholed offsetting as a clean up tool. Providing emission calculations and offsetting information before emissions take place could encourage corporations and individuals to avoid and minimize emissions first. These alternative models could push behavior towards a more sustainable direction, and should be explored.

Building models and services that support emission reductions instead of providing an "easy way out" will be crucial if the market wants to create an even wider climate impact that goes beyond offsetting.

The big question: Low quality credits

Low quality carbon projects have no real positive impact on the climate, ie. they do not remove or reduce emissions. In addition, they can also have negative effects on biodiversity, local communities, and the environment. Still, the market is flooded with these kinds of projects. This should be taken as a sign of serious, fundamental flaws in the current system.

Take timber plantations for example: in order to maximize growth and profit, plantations will plant fast-growing species like eucalyptus and use chemical fertilizers and pesticides. This contaminates bodies of water, harms biodiversity and pollutes the soil. Large tree plantations often have well-recorded negative socioeconomic effects: lower wages, higher food prices, loss of jobs, evictions, restrictions on land use, and pressure on locals to sell land.

Using low quality carbon credits with questionable climate impacts is harmful for the climate. This happens when non-additional credits that don't go beyond business as usual are used as offsets. The result is net positive emissions as the compensated emissions are not actually counterbalanced by additional removals or emission avoidance.

2.3

Initiatives to improve the market

Of course, this white paper is not the first look into improving the voluntary carbon market. Some relevant high-profile initiatives have recently emerged: The most notable are the Gold Standard's initiative to align the voluntary carbon market with the Paris Agreement, and the Taskforce on Scaling the Voluntary Carbon Market.

The former tries to solve climate integrity issues, while the latter aims to scale the market while improving its quality. Following is a closer look at both initiatives.



2.3.1

Taskforce recommendations fall short

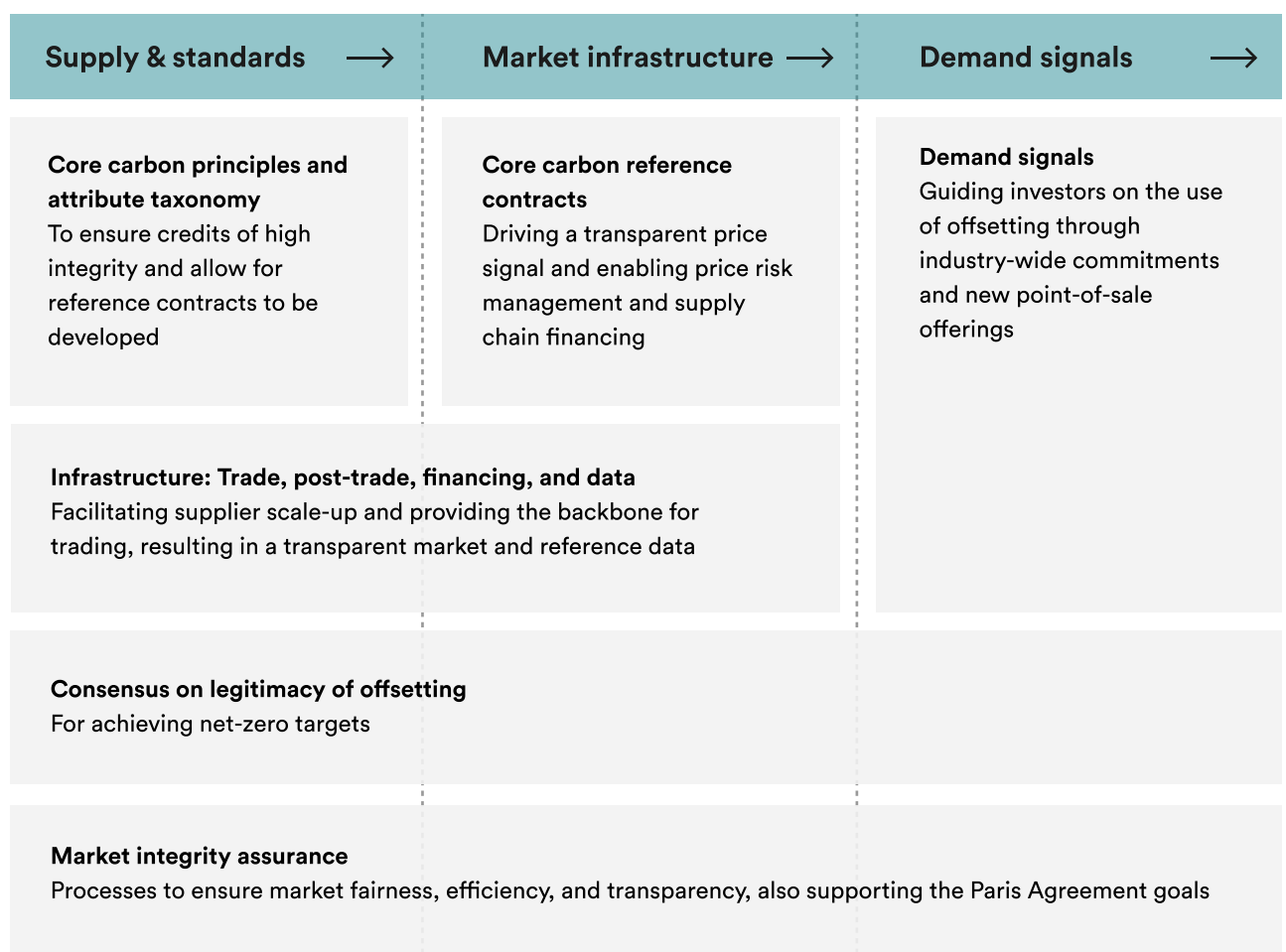
The Taskforce on Scaling the Voluntary Carbon Market is a private-sector led initiative aiming at scaling a transparent, verifiable and robust voluntary market to help meet the goals of the Paris Agreement. It was initiated by Mark Carney, a UN Special Envoy for Climate Action and Finance Advisor to UK Prime Minister Boris Johnson for the 26th UN Climate Change Conference of the Parties (COP26) and a former governor of the Bank of England.

The Taskforce has more than 50 members representing both the demand and supply side of carbon credits, international carbon standards, the financial sector, and market infrastructure providers. The members representing buyers are some of the world's largest corporations: Salesforce, Siemens, Nestle, Unilever, Shell, Total, Tata Steel, Delta, and EasyJet. In addition, the Taskforce has a consultation network of 120+ institutions who support and advise on the group's work.

The Taskforce was first established in September 2020, and its first publication came quickly after in January 2021. The initial recommendation paper paints an accurate picture of the many problems in quality and transparency the current market has. It also raises some long-awaited awareness and a sense of urgency for improving the situation.

The report is also on point on the urgency of the climate crisis. According to the Taskforce, to have a chance of keeping global warming at the critical 1.5 degree threshold, the voluntary carbon capture market must grow to 15 times its current size by 2030, reaching a demand of 1-2 Gt CO₂.

The Taskforce outlines six key areas for action, spanning across three areas: strengthening Supply & standards, Market infrastructure and Demand signals, as shown in the graph below.



Adapted from the Taskforce on Scaling Voluntary Carbon Markets Report (2021)

While the report sets a roadmap for how to reach these goals, it doesn't provide clear implementation recommendations nor solutions. In general, the report leaves much to be desired, outlined in more detail in the following section. If these issues are not resolved, voluntary carbon capture will never become the powerful tool against climate change it could be. The report is referenced with "".

Price

"Setting of core carbon reference contract and its price."

While price transparency and standardization is necessary, prices need to be set high enough. This in turn will encourage industries to reduce emissions and decarbonize. Low-priced carbon credits incentivize companies to only offset and continue with emitting as they have thus far, instead of reducing their emissions.

"Low prices lead to worry over quality or create the perception that there is a lack of confidence in the market."

This cuts too many corners. Low-priced credits should not automatically be associated with low quality, nor high-priced credits with higher quality. In the current market, there are cheap credits with excellent quality, and expensive credits with terrible quality. Simply staring at prices is illogical: Increasing prices of terrible credits will not magically make them better.

Reliable baseline

“All carbon credits should be issued based on realistic and credible baselines.”

While the report recommends a defensible, conservative, credible baseline and regular recalculations to create a “reliable” baseline, it doesn’t define what a reliable baseline is. All existing carbon credits currently have, use and announce baselines. These baselines have been deemed acceptable by their respective standards. This does not make them credible. In its second phase, the Taskforce needs to define clear rules for baseline setting, rules that match the realities of the project area and the potential for deforestation. These new rules then need to be applied to all existing projects currently issuing millions of credits based on unrealistic deforestation projections. Using technology, such as satellite or radar analysis, is one promising method.

“Taskforce will not exclude projects based on vintage/project start date.”

The market is currently saturated with hundreds of low quality forest conservation projects. These projects are issuing millions of credits based on unrealistic deforestation projections, and hence have no real climate impact. If the Taskforce will not exclude existing projects, it must ensure old projects comply with new rules. At the very least, projects should adjust carbon credits issued to be in line with the true impact of the project.

Technology-based removal

“In the longer term, flows will have to shift towards removals incl. technology based removal with highly permanent geologic storage. BECCS and DACCS are too expensive today and will remain above \$100 per ton until we make sufficient investment to drive down cost.”

The Taskforce report supports bio-energy with carbon capture and storage (BECCS) and direct air capture with carbon capture and storage (DACCS).

Compensate does not support the use of bio-energy, ie. energy generated from organic matter, known as biomass, for carbon capture. Trees are much more valuable as carbon sinks or as an alternative to fossil-based materials, rather than as energy. Even wood waste can be better used as a permanent carbon storage, in the form of e.g. biochar, as new technologies develop.

DACCS is expensive and difficult to scale, with prices ranging from 800 to 1 000 USD per tCO₂ removed. While it sounds promising in the long term, when prices are expected to decrease, today DACCS is still emerging. It will take decades to scale it to the extent needed. The future potential of DACCS in the fight against climate change – if all goes well – should not be a reason to delay urgently needed climate action today. In addition, Compensate believes that it is at the very least misleading to present this as a silver bullet that will instantly solve the climate crisis, without the need for cutting emissions.

Avoiding double counting

“Taskforce does not take a view, but simply lays out various positions and points to other initiatives.”

The Taskforce recognizes the double counting issue to some extent, but falls short in providing clear recommendations to solve it. If the voluntary market wants to drive climate action, then it should focus on directing financing towards new reductions, rather than reductions countries have already committed to achieving.

There are possible solutions too. Either the carbon inventories and reporting done by the host countries must be able to adjust to offsetters' claims, or the offsetting claims must be adjusted.

2.3.2

Aligning carbon offset projects with the Paris Agreement

Gold Standard is one of the actors at the forefront of efforts to ensure climate integrity in the market post-2020. To align with the Paris Agreement's rules on market mechanisms, Gold Standard is advocating for ongoing additionality testing, corresponding adjustments and alternative claims, and ensuring climate integrity, resulting in real emission reductions and removals, contributing to sustainable development and to overall climate change mitigation efforts.

Gold Standard will change its requirements to be consistent with the final Article 6 guidance, and these changes will apply to new projects or projects renewing their crediting period.

With this, Gold Standard is setting an example for how to take into account the project's host country policies and long-term climate measures, and thus prevent the project from taking credit for efforts that would be part of Nationally Determined Contributions (NDC) under the Paris Agreement. In addition to the already existing requirement for updating the baseline every five years, some methodologies could also use dynamic baseline scenarios.

A corresponding adjustment will be required in cases where carbon credits are used for offsetting claims. Projects in Least developed countries (LDCs), Landlocked developing countries (LLDCs), and Small islands developing states (SIDS) and conflict zones, will be provided extra time to comply with the corresponding adjustment requirement. For these projects, the requirement will be applied to credits issued after 1 January 2025. The Gold Standard registry will classify credits in different categories according to the claim buyers can make. This approach will support the issuance of credits with or without a pending corresponding adjustment, which could be sold to companies willing to provide financing for climate change mitigation projects, without the need to make an offset claim. The Gold Standard will also advocate for clear and credible alternative claims, where buyers will support host countries in reaching their commitments under the Paris Agreement, rather than making carbon neutrality claims.

Alternative claims are also supported by Carbon Market Watch, a nonprofit association working to ensure that carbon pricing and other climate policies cut pollution and drive a just transition towards zero-carbon societies. In the so-called contribution model, companies could finance climate projects without claiming the associated emission reductions as their own. As opposed to claiming carbon neutrality or net-zero, the new contribution model provides the foundation for more transparent communication in terms of company emissions, emission reduction efforts and financing directed to climate action. In addition to Gold Standard and Carbon Market Watch, according to Carbon Market Watch, organizations that reportedly support the contribution model are the Science-Based Targets Initiative, NewClimate Institute, and Boston Consulting Group.



As discussed throughout this white paper, the majority of projects overestimate their climate benefits, resulting in one carbon credit not being equal to one tonne CO₂ avoided or removed from the atmosphere. And while using such credits towards achieving corporate net-zero targets is misleading, under the contribution model companies will only claim that they finance climate change mitigation projects. Not making an offset claim will shift the focus from carbon removal and allow companies to also support projects with high biodiversity values and that restore vital ecosystem services.

Compensate supports the new contribution model and is actively engaging in this matter with other like-minded actors.

Sources and further reading

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A close-up photograph of a Bird of Paradise flower (Strelitzia reginae) with vibrant yellow and blue petals and large green leaves. The image is dark and moody, with the flower's colors standing out against the deep green background.

3.0

Compensate

- 3.1 Introduction
- 3.2 Compensate's sustainability approach

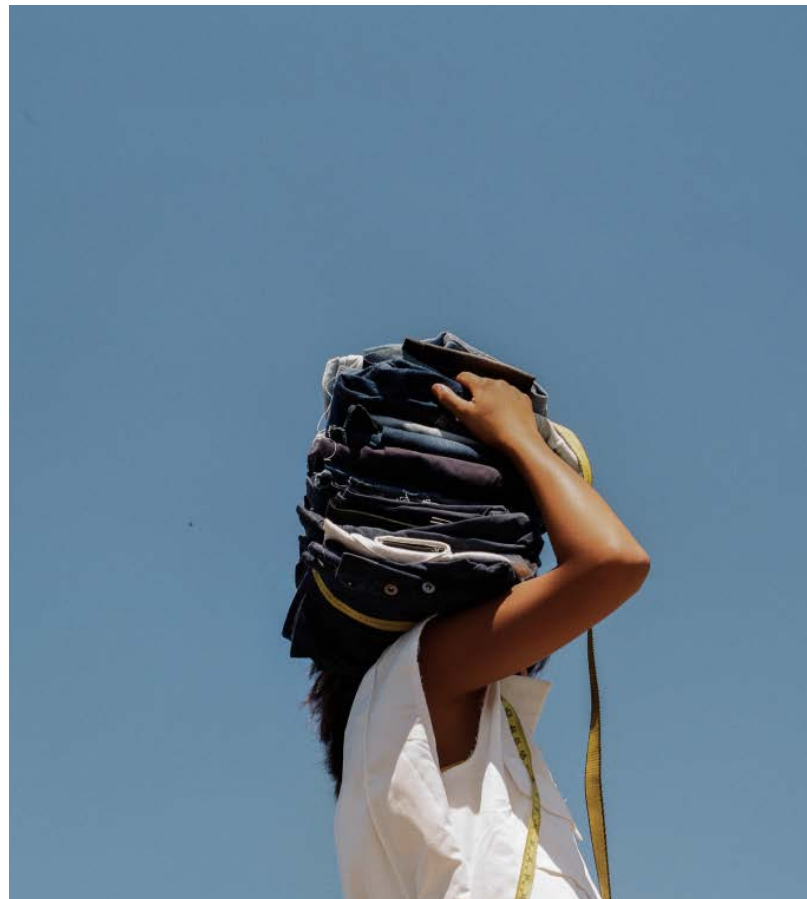
3.1

Introduction

Compensate is a Finnish nonprofit and impact startup offering businesses and individuals easy access to high quality carbon capture. Compensate consists of the Compensate Foundation, that handles carbon credit purchases, and Compensate Operations Ltd., that handles day-to-day operations of the organization.

Compensate was established in 2019 by Finnish entrepreneur and former member of parliament, Antero Vartia. Today Compensate works with partners in the Nordics and Europe, and is building a carbon marketplace based on full transparency and integrity to set a new standard for the carbon market industry.

These two key building blocks: transparency and climate integrity, are needed in order to ensure that carbon capture truly makes a difference in mitigating climate change, and are thus the foundation for Compensate's way of working.





To increase transparency, the Foundation's bank statements together with project certificates are published on Compensate's website, and carbon credit purchasing invoices are available upon request. Building trust and transparency also shows in Compensate's financial model, which differs from that of most offsetting providers. Partners pay a license fee to gain access to Compensate's services, with compensation payments billed separately. Services for individual consumers are offered for free. This ensures that 100% of the compensation payments are directed to purchasing carbon credits, and that Compensate's interests are aligned with those of its partners: to reduce emissions. To further ensure that credit purchases are fully invested into carbon capture projects, Compensate only works with project developers or exclusive sellers, thus avoiding additional brokerage fees.

To ensure climate integrity, Compensate has developed its own criteria to evaluate carbon capture projects. This evaluation criteria is pivotal to Compensate's sustainability approach, which ensures climate integrity in three ways:

1. close collaboration with the scientific community,
2. highly selective carbon capture portfolio and
3. overcompensation.

3.2

Compensate's sustainability approach

3.2.1

Collaboration with the scientific community

Compensate works closely with academia in the field to identify the most cost-effective, reliable and sustainable means of carbon capture.

Compensate's Scientific Advisory Panel consists of 12 world-renowned experts in climate and atmospheric sciences. Compensate's evaluation criteria was developed in collaboration with the Panel.

The Panel monitors research and practical applications in the field, advises Compensate on project evaluations, and assists in project mapping and carbon capture issues. The Panel convenes regularly with Compensate, and has an advisory role.

3.2.2

Highly selective carbon capture portfolio

Like investment managers manage a fund to deliver the best value, Compensate manages a diverse carbon capture portfolio to deliver the best possible climate impact. This portfolio allows Compensate to maximize its clients' investments into carbon capture.

The portfolio is diverse and dynamic, making it possible to mix a wide range of project types with different prices, while regularly monitoring and replacing existing projects with better ones. Currently, the portfolio consists of a selection of nature-based solution projects, including forest conservation, afforestation and reforestation, blue carbon, soil carbon, and biochar. The share of each project is determined by the project's climate integrity score and its price, allowing for the best impact-cost ratio.

80% of the portfolio focuses on established methodologies, including forest conservation and reforestation and afforestation projects. 20% is dedicated to innovative carbon capture methods. All projects are evaluated on climate impact, biodiversity, social issues and human rights. Compensate applies its own evaluation criteria to all forest-based projects.

Innovative projects are evaluated in a simplified manner, as these methodologies are still emerging and do not yet meet the strict criteria used for established methodologies. Compensate wants to incentivize the development and market access of these new methodologies, knowing their vast potential in helping solve the climate crisis and the many limitations of more traditional projects. These methodologies include nature-based solutions like soil carbon and blue carbon (underwater carbon capture), and more technological approaches like negative emission products or processes, as well as direct air capture and storage of CO₂ with machines. Many of these new methodologies are being developed in pilot projects around the world, and some projects are already creating and selling verified carbon credits.

By investing into innovative carbon capture, Compensate helps its clients not only compensate for their emissions with methodologies that would otherwise remain quite expensive, but also support these modern solutions to fight climate change. Compensate is also able to work closely with project developers to solve whatever remaining climate integrity issues they might have.



In 2021, Compensate's goal is to develop evaluation criteria for biochar, which will mean biochar can be included in the portfolio's established methodologies.

3.2.3

Real climate impact and overcompensation

Due to the many uncertainties in carbon projects, which are not always rigorously taken into account or mitigated, Compensate can't be confident that one carbon credit equals one tonne of CO₂ removed from the atmosphere. By scoring projects against its evaluation criteria, Compensate is closer to estimating the true climate impact of one carbon credit.

This is done by dividing the project's score from the evaluation process with the maximum points available. The result is that the credits in these projects, which are being sold as equivalent to one tonne CO₂, actually correspond to less: e.g. 0.6 tonnes of CO₂ removed from the atmosphere.

To ensure true climate impact of one tonne, Compensate overcompensates or buys more credits than would technically be necessary to make a compensation claim. Compensate's price per tCO₂e has built-in overcompensation. Each project is given its own overcompensation factor determined by its climate integrity score.

Overcompensation is important not only to ensure real climate impact, but also to remove more carbon from the atmosphere than a product or a service emits. Compensate believes that whenever we create CO₂ emissions, we should commit to removing at least an equal amount from the atmosphere. Even though emission reductions are the primary way to fight climate change, we have surpassed the point where that is enough. The safe levels of CO₂ concentrations in the atmosphere were already exceeded in 1987. In addition to radically reducing emissions, we need to remove excess CO₂ from the atmosphere. Overcompensation makes this possible.

Why does Compensate overcompensate?

- 1:1 compensation only achieves carbon neutrality at best, it does not remove CO₂ from the atmosphere.
- We have a historical responsibility to remove CO₂ in order to be on the path of limiting global temperature rise below 2 degrees C. The "safe level" of CO₂ in the atmosphere of 350 ppm was surpassed in 1987.
- Overcompensation mitigates the climate integrity risks involved in all carbon capture projects and the uncertainties in carbon footprint calculations.

A hand is shown from the side, reaching out over a dark, textured surface that resembles soil or gravel. The hand is positioned in the lower right quadrant of the frame, with fingers slightly spread. The background is a close-up of the dark, granular material, creating a sense of depth and texture. The lighting is soft, highlighting the skin of the hand against the dark background.

4.0

Compensate's project evaluation and selection

- 4.1 Introduction
- 4.2 Compensate's project criteria
- 4.3 Applying the criteria in practice
- 4.4 Outcome of the evaluation process

4.1

Introduction

In early 2020, Compensate, together with its Scientific Advisory Panel, developed a set of project evaluation criteria which go beyond international standards. This strict criteria challenges the offsetting field and its current standards. The criteria covers climate integrity, community wellbeing and biodiversity and is outlined in full in section 4.2. The criteria is applied to nature-based solutions, or what Compensate defines as “established” methodologies. Innovative carbon capture projects are evaluated in a simplified manner, as these methodologies are still emerging.

In short, Compensate’s project evaluation process is as follows:

Screening

- Checking that all documents and reports are in place
- Assessing permanence and carbon leakage risk with the help of open source satellite analysis data and in close collaboration with the project developer
- Desktop research on community conflicts in the project area



Pass and fail criteria

- Is there a reliable baseline?
- Is the project financially and policy level additional?
- Is there clear carbon ownership?
- Is double counting avoided?

Evaluating and scoring projects

- Evaluating projects against the criteria by using all documentation available in the Verra and Gold Standard databases and desktop research
- The Scientific Advisory Panel assists with evaluating the reliability of the baseline and the changes in carbon stocks
- Using satellite map analysis, complemented with discussions with the project's forest experts, to evaluate the reliability of the baseline deforestation projections and to monitor for illegal logging
- Allocating scores for each of the three main categories: climate integrity (50 points), community wellbeing (25 points) and biodiversity (25 points)
- Projects which gain more than 50 points are added to the portfolio

Continuous monitoring and re-evaluation

Compensate is responsible for monitoring and ensuring that the projects continue to perform as intended, hence they are re-evaluated in the following cases:

- New monitoring and verification reports are issued (every 2-3 years)
- Ongoing monitoring for illegal logging using an open source satellite analysis tool and media mentions of the project
- When projects are due to update their baselines (every 10 years)

4.2

Compensate's project criteria

Compensate Foundation has, in co-operation and with guidance from its Scientific Advisory Panel, formed a criteria for evaluating all projects from which it buys emission reduction units. This evaluation criteria is applied to all projects from February 2020 onwards, and projects are re-evaluated when new monitoring and verification reports are published, the baseline is updated, or the project has been approved by the Panel for a fixed term to ensure their compliance to the following criteria.

As a baseline, the projects must be certified with global, industry standards, ie. the Verified Carbon Standard (VCS) or the Gold Standard and, in addition, qualify for enough points according to Compensate's criteria.

The criteria takes into account climate integrity, community wellbeing and biodiversity, and the long term viability of the project. The evaluation happens in three (3) phases.

Phase 1: Screening Process

To be approved for Compensate's evaluation, the project must first fulfill the requirements at the screening stage. The screening is conducted by Compensate or its direct affiliates. The requirements are as follows:

- Project documentation. Project documentation must be available and up to date, including project description, monitoring and verification reports, preferably produced in the past 2 to 3 years.
- Updated baseline is available.
- Deforestation and possible carbon leakage evaluation: Report on whether significant deforestation within or in close proximity of the project area has occurred immediately before or after the project has been initiated. If yes, the project is disqualified due to the high risk of carbon leakage and/or illegal logging.
- Conflict mapping. Report on whether land tenure conflicts, evictions, or human rights violations have occurred due to, because of, or as a direct effect of the project initiation. If yes, the project is disqualified.

Phase 2: Pass/Fail Criteria

In phase 2, projects are evaluated on climate integrity, social impact, and biodiversity. The evaluation is conducted by Compensate or its direct affiliates. The requirements are evaluated as pass/fail as follows:

Climate integrity

1. The project is financially additional and after Art. 6 of the Paris Agreement is operational the project must also be policy additional,
2. double counting is strictly prohibited,
3. the project has proof of clear carbon ownership,
4. and the project has a reliable baseline.

Wellbeing of local communities

- The Project Developer and the Project respect internationally proclaimed human rights and shall not be complicit in violence or Human Rights abuses of any kind as defined in the Universal Declaration of Human Rights.
- The Project recognizes possibilities for deterioration of livelihoods of local people and mitigates possible negative impacts to communities, for example by respecting customary rights.

Biodiversity

- The project activities have a net positive impact on biodiversity.

Phase 3: Points criteria (0-100 points)

In phase 3, projects are evaluated in more detail on a points system. In addition, all projects that pass phase 2 are evaluated by Compensate with the assistance of the Scientific Advisory Panel. Projects with more than 50 points are considered for the portfolio.

Climate integrity (0-50 points)

Permanence (0-10p)

- The project has a non-permanence risk analysis and consequent deductions for non-permanence risk when calculating net GHG emission reductions.
- The project has a buffer account.
- Upfront crediting is strictly limited or not allowed.
- Mitigating the risk of non-permanence beyond the crediting period.

Leakage (0-10p)

- The project assesses and manages activity leakage and implements consequent deductions when calculating net GHG emission reductions.
- The project assesses and manages market leakage and implements consequent deductions when calculating net GHG emission reductions.

General carbon accounting quality assurance (0-20p)

- The project has independently validated methodology for GHG accounting & the project has independent third party validation and verification of monitoring results (Yes/No).
- The project has reliable baseline modelling, including analysis of the reference situation, and has conducted an uncertainty assessment when calculating net GHG emission reductions.
- The project includes all relevant carbon pools and GHGs and has a reliable estimation of the carbon stock development under the baseline scenario

Project viability (0-10p)

- The project has a detailed management plan to show how the drivers of deforestation and forest degradation are credibly addressed.
- The project is successfully managing internal risks as described in the risk analysis and risk management plan.

Wellbeing of local communities (0-25 points)

Community impacts (0-10p)

- The project generates additional measurable benefits for socio-economical community development, including recognition of the underlying causes of deforestation and forest degradation and improving livelihoods through adoption of alternative livelihoods, training and employment opportunities.

Stakeholder & community process (0-15p)

- The project has a public, inclusive and transparent process, applying free, prior and informed consent during project development and implementation.
- The project has set up a formal input, feedback and grievance mechanism for providing stakeholders with an opportunity to submit any feedback or raise grievances during the entire project life.

Biodiversity (0-25 points)

The project demonstrates no net degradation in existing landscape function and services, and is following a High Conservation Value (HCV) approach. (0-5p)

- E.g. The project does not cause direct/indirect erosion and/or water body instability, incl. 1) measures to ensure soil protection and minimize erosion, 2) measures to ensure that surface and ground waters are protected.

The project's net impact on biodiversity is positive, compared to the biodiversity conditions under the without-project land use scenario. The project has undertaken measures to mitigate negative impacts on biodiversity and for maintenance or enhancement of the high conservation value attributes. (0-20 points)

- The project has a positive impact on the habitat of naturally occurring species, the population trends of threatened and/or endemic species, threatened or rare ecosystems.
- The project demonstrates that no invasive species and/or GMO species are introduced into any area affected by the project.
- Monitoring confirms the effectiveness of measures taken to maintain or enhance the population trends of endangered/vulnerable/trigger species in the project zone. The project ensures the accuracy of reported biodiversity changes in the project area by utilizing appropriate monitoring methods, including remotely sensed and satellite images for monitoring and reporting changes in forest cover, and consultation with biodiversity experts/scientists.
- The project takes actions to mitigate possible negative impacts on biodiversity outside the project area.

Monitoring and re-evaluation procedure

Following the selection of projects, Compensate has the responsibility to monitor and ensure that the project continues to perform as intended. Projects will be re-evaluated according to the project evaluation criteria when:

- New monitoring and verification reports are issued (every 2 to 3 years depending on the project).
- Based on the re-evaluation and how the project scores using the criteria, either the overcompensation will be adjusted or, if the project scores lower than 50 points, using the project will be discontinued.
- Projects are due to update their baselines. In most projects the baseline is updated every 10 years.

In addition:

- Monitoring is also performed on an ongoing basis by identifying recent news and media publications about the projects, inquiring for additional information from the project developer or the affiliate body responsible for the marketing and sales of carbon credits, and re-evaluating the project in the light of new information.
- Compensate will consider organizing an independent verification when necessary or if requested by the Panel to address possible concerns discovered during the evaluation.

4.3

Applying the criteria in practice

Compensate's evaluation process looks for two main things: climate integrity and positive impact beyond carbon capture. To assess climate integrity, Compensate evaluates projects on additionality, avoiding double counting, performance in terms of true climate impact, and permanence. To assess positive impact beyond carbon capture, Compensate evaluates projects on social and environmental co-benefits and the stakeholder consultation process.

4.3.1

Climate integrity

Additionality

Additionality is tested by asking “Would the carbon sink exist in the absence of the project?”. If the answer is yes, then the project is deemed not additional, as it does not bring any impact beyond the business as usual scenario. Project developers usually only address financial additionality, meaning that the project would not be financially sustainable on its own without the revenue from carbon credits.



Compensate goes further and also assesses policy level, environmental and technological additionality:

- Policy level additional projects do not contribute to national or international climate targets, thus they do not replace already planned climate change mitigation actions.
- Environmentally additional projects result in lower levels of emissions than would have otherwise occurred under the business as usual scenario. For instance, forest conservation projects with inflated and unrealistic estimates for deforestation do not actually avoid the claimed CO₂ emissions, as even without the project the actual deforestation would just be a small fraction of the estimate.
- Technological additionality refers to whether the project introduces technological practices that go beyond conventional practices in carbon capture projects. Examples include emerging technology based carbon capture, such as biochar, soil carbon that utilizes dynamic baselines or sensors quantifying carbon fluxes, and direct air capture and storage.

Avoiding double counting

While market players are divided in their views on whether double claiming of voluntary carbon credits should be allowed, Compensate advocates for avoiding double counting by making a corresponding adjustment.

Corresponding adjustments mean that the amount of CO₂ removals claimed by the offsetter through the purchase of carbon credits are deducted from the project host country's national greenhouse gas inventory. This means that these removals will not contribute to the host country's national climate targets. In this way, emission reductions or removals will only be claimed once: For instance, in the case of corporate offsetting, only by the company making the compensation claim.

Compensate ensures double claiming is avoided by purchasing pre-2020 issued carbon credits not affected by the new, post-2020 accounting rules, monitoring host countries' Nationally Determined Contributions (NDC) under the Paris Agreement, and not purchasing credits from developed countries, if the project developer has not ensured the exclusion of the emission reduction from national GHG registries.

In addition, Compensate welcomes the potential future differentiation of claims into offset claims and “contribution claims”. Under the contribution model, companies finance climate action and help countries meet their NDCs without making a compensation claim. The contribution model is quickly gaining traction and is currently being endorsed by Gold Standard and the Science Based Targets Initiative, among others. The new model enhances transparency and honest communication, thus avoiding misleading PR campaigns. It also incentivizes companies, organizations and individuals to fund climate action and support the goals of the Paris Agreement.

Performance

Project performance, or whether the project actually removes carbon from the atmosphere, is evaluated on the basis of the reliability of the baseline deforestation projections, carbon stock changes, how deforestation drivers are tackled, and by monitoring for illegal logging and carbon leakage. To evaluate if the project is halting and preventing future deforestation Compensate uses:

- All documentation available in the Verra and Gold Standard databases, including project description documents, monitoring and verification reports
- Satellite analysis complemented with discussions with the project's forest experts and, if applicable, additional technology-based monitoring e.g. radar for validating the baseline modelling
- Expert opinion by the Scientific Advisory Panel
- Desktop research

In addition to the expertise of the Scientific Advisory Panel, Compensate utilizes an open source satellite analysis tool in the project screening process. While the accuracy of satellite analysis varies for different forest types and should by no means be used as the only indicator of a project's performance, it provides the foundation for further discussion with project developers. The initial satellite analysis can be used to check the reliability of the baseline by comparing deforestation in the project area and a reference area, and by monitoring deforestation trends before and after the start of the project. This helps identify red flags, such as an unreliable baseline, illegal logging, or carbon leakage, all which can then be further investigated with the project developer.

Relying solely on satellite analysis can underestimate the actual deforestation that is happening, due to different forest definitions used by the project and the satellite analysis. There are also significant discrepancies between deforestation values using satellite analysis versus radar analysis, highlighting the importance of using multiple tools for project evaluation. While satellite analysis is based on images taken by a camera, radar transmits an electronic signal that reaches objects on the ground and is reflected back, resulting in a more accurate analysis.

In addition to the above, Compensate conducts desktop research on corruption risks, which could be the cause of illegal logging and poaching, even with the knowledge of local authorities. Compensate also evaluates if the project is tackling the main drivers of deforestation in the project area. In many cases, these drivers are socioeconomic, as forests are the only source of income for local communities. In these cases, Compensate analyzes whether the projects create new employment opportunities or provide income diversification through new sustainable livelihoods or direct cash payments.

Permanence

Permanence, or how likely it is that the forests will stay standing, is evaluated in terms of political stability in the host country, risks from natural disasters, and the likelihood of logging in projects aiming to prevent planned or unplanned deforestation. Compensate selects projects which address these leading drivers of deforestation, thus mitigating permanence risks.

Almost all VCS-certified conservation and reforestation projects are in developing countries, where there is high political and corruption risk. This impacts permanence. Often, the project land is state owned, meaning the government has given permission to implement the project for e.g. 30 years. However, Compensate wants to make sure that the forest is not logged after the project ends. Some projects try to minimize this risk by signing a contract for maintaining forest management practices for 30, 60 or even 100 years after the project ends. While such contracts are good to have in place, these cannot be trusted completely, as a lot can change even in the short term.

Permanence risk due to natural disasters is high for projects in areas vulnerable to rising sea levels, forest fires, and hurricanes. For these kinds of projects, Compensate takes a closer look at how the project mitigates permanence risks. For instance, some projects in fire-prone areas establish firefighting ground units to mitigate potential fires, while areas prone to flooding implement climate change adaptation activities, such as planting mangroves.

Unplanned deforestation is usually caused by small-scale subsistence farmers expanding agricultural land and meeting their charcoal needs. In these cases, Compensate evaluates if the project is taking the necessary steps to change practices by offering better alternatives. This could include providing support for starting climate smart farming, where, instead of shifting to new areas, locals are farming a permanent area, or introducing new sustainable livelihood activities that do not exacerbate deforestation.



Projects preventing planned deforestation bear the highest permanence risks, as the landowner will proceed with the initial plan of deforesting the land after the end of the project, unless there are measures in place to prevent this from happening. For instance, in the case of logging or palm oil concessions, there is a risk that the government will just log the forest after the end of the project, unless there is a moratorium on logging/palm oil concessions in place.

4.3.2

Positive impact beyond carbon capture

Social and environmental co-benefits

Compensate firmly believes that all carbon capture projects should leave local communities and the environment better off. However, this is not always the case, especially in forest conservation projects such as REDD+, where local communities might be evicted from the project area or prohibited from accessing the forest, their only source of income.

Human rights and wellbeing are of the utmost importance, and projects should not generate carbon credits at the expense of local communities, also referred to as “carbon colonialism”. To uncover possible human rights violations, evictions and community conflicts, Compensate conducts desktop research reviewing scientific and media articles as part of the project evaluation process. Not only is avoiding community conflicts and providing social co-benefits important from an ethical point of view, but also helps stop illegal logging if the project is well-received and supported by the local communities.

Compensate only selects projects that deliver unquestionable local community benefits and improve livelihoods. This is done by taking a closer look at the project’s benefit sharing principles and the risk for possible social disparities. For instance, if only landowners or a small number of people would receive a cash benefit or improved infrastructure, this leaves the majority of the population at a disadvantage, who are landless or do not benefit directly from the project. Not delivering on the project's promises could leave local communities feeling betrayed, thus fueling conflicts, protests and anti-project violent activities.

Projects should generate additional measurable benefits for socioeconomic community development, including recognizing the underlying causes of deforestation and forest degradation, and improving livelihoods through the adoption of alternative livelihoods, training and employment opportunities. In addition, local communities’ needs should be taken into consideration and they should be allowed access to the forest to collect dead wood and other edible, non-timber products.

Compensate only supports community-lead reforestation projects, where subsistence farmers are trained to plant and take care of the trees on their own lands. In return these farmers receive a direct cash payment, which helps lift them from poverty and incentivizes longterm tree protection and care.

Compensate does not support large-scale timber plantations, which have various negative impacts both on local communities and the environment. For local communities, this includes lower wages, loss of jobs, pressure to sell land for low prices, and higher food prices. From an environmental point of view, timber plantations use monocultures of non-native species that are harvested in cycles (10-20 years). In order to maximize growth and profit, plantations will plant fast-growing species like eucalyptus and use chemical fertilizers and pesticides. This contaminates bodies of water, harms biodiversity and pollutes the soil.

Compensate also does not support large-scale commercial timber plantations since these have questionable financial additionality. The timber business will exist even without revenue from carbon credits.

Stakeholder consultation process

Compensate selects projects with transparent and inclusive stakeholder consultation processes. Often, project permit contracts are signed between a project developer and government officials, leaving communities without a say prior to the start of the project. Compensate selects projects that are either: open for everyone to join by signing an individual contract, or where local communities have given their free, prior and informed consent, and also have decision-making power over the sustainable development activities the project invests in.



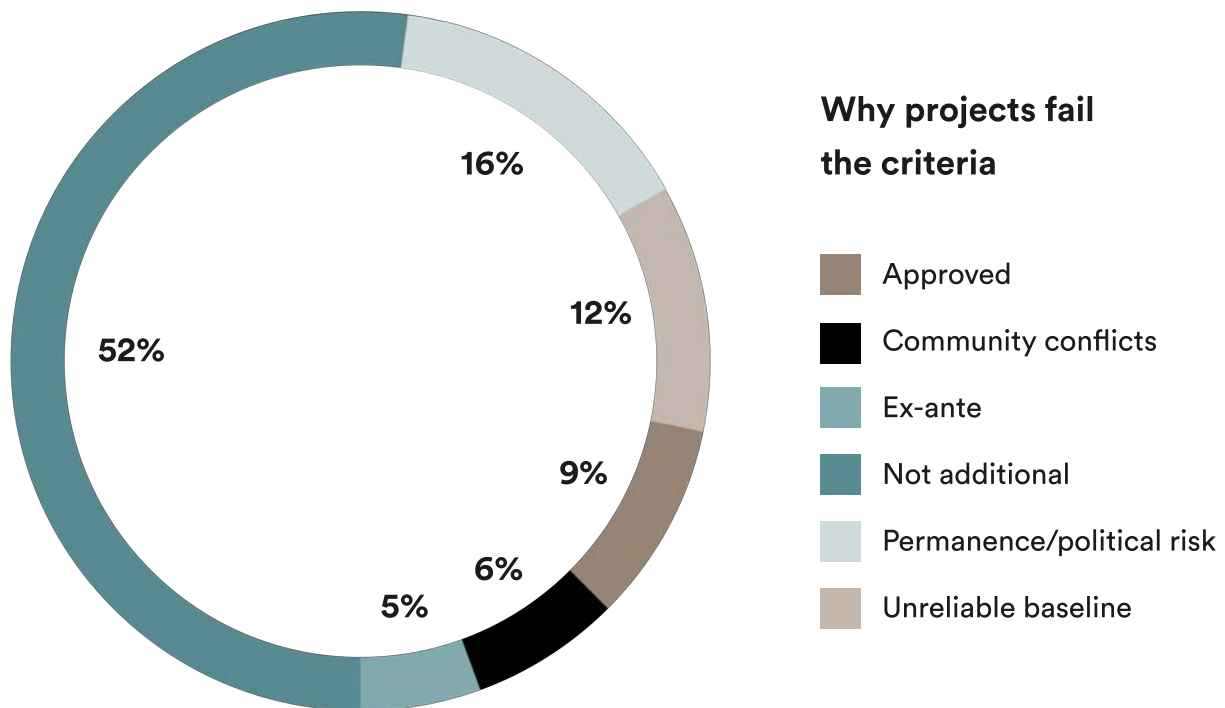
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Outcome of the evaluation process

Since Compensate started using its criteria in the beginning of 2020, it has evaluated over 100 nature-based, mostly forest conservation and afforestation/reforestation, projects. All evaluated projects are certified by international standards such as Gold Standard, Verra, Plan Vivo, American Carbon Registry and Climate Action Reserve and are often in the top tier of projects within their relevant standards in terms of quality and co-benefits. Many of the projects have also been highly recommended by resellers and have sold carbon credits to some of the largest companies in the world.

Out of these, only 9% have successfully passed Compensate's evaluation process.

That 90% of the projects fail the criteria indicates serious problems in the current international standards, making it clear that there is a need to raise the bar in order to achieve actual climate impact. The following chart shows the reasons why projects fail the criteria. Most alarming is that more than half (52%) of the projects are not additional, meaning that they do not contribute to achieving any climate benefits compared to if the project hadn't existed.



Additionality (52% of projects fail)

- **Selling carbon credits by protecting forests which were never in danger.** Examples of these include projects where the project developer is the same entity as the landowner, or in improved forest management projects across e.g. US cities. The claim is that in the absence of the project, the city or forest owner will log 100% of the trees in 5 or 10 years. This is not likely to happen, as these forests may have been in the possession of the landowner for decades without the threat of being deforested. For carbon credits to be real, the sale of the credits needs to generate or incentivize an environmental benefit, which is not happening in these cases.
- **Commercial timber plantations.** These afforestation/reforestation projects are often organized by logging or timber companies, and trees are harvested as soon as they reach maturity. These types of projects, where there is a clear business model e.g. in the form of a profitable timber plantation, do not pass the financial additionality criteria, as the project could be implemented without the need for revenue from carbon credits.

- **Lack of policy level additionality.** This happens when project activities are already included in national laws and policies. Examples include protecting a forest in a country where there is a moratorium on converting natural forests to palm oil plantations (Indonesia) or a moratorium on granting new timber concessions (Democratic Republic of Congo). Another example is reforestation projects in China on state-owned land: these cannot be considered additional, as large-scale reforestation activities are already covered under Chinese government policy.
- **Displacement of deforestation.** Protecting an area designated to be a logging concession can result in carbon leakage, or displacement of the deforestation. In this case, the government will agree to grant conservation concession status to the project area, only to grant the logging concession to another area.

Permanence risks (16% of projects fail)

- **Unstable political situation.** There are significant risks in what happens to forests after the projects end, especially in countries with unstable political situations and high risk of corruption. The main drivers of deforestation in tropical rainforests are cattle grazing and soy and palm oil production. If these are occurring in the project region, there is a high risk that after the project ends, the government will grant permission to these companies to log the forest and use the land for the production of commodities. Risk countries include Brazil and Indonesia. Hopefully, the Paris Agreement goals and strong demand from the voluntary carbon market will help governments realize that protecting forests is important, creating a more stable environment for establishing carbon projects.
- **Regions prone to natural disasters.** Natural disasters threaten carbon capture projects across the globe. In 2020, one-third of Bangladesh was under water in the worst floods in a decade, meaning coastal mangrove restoration projects in Bangladesh could bear significant risks of destruction and loss of carbon sinks. Forest protection projects in California could be devastated by future forest fires and coastal projects might be affected by rising sea levels.

- **Postponing timber harvest till after the project ends.** This can happen in cases where landowners have the right to manage the land, and they give up their logging rights for the duration of the project. This is not a sustainable solution, as the harvest will most likely occur after the project ends.
- **Illegal logging.** Projects are not always successful in halting deforestation, and illegal logging remains an issue despite conservation activities. Tree cover loss over time can be monitored using open source satellite analysis tools. In some cases, illegal logging happens due to high corruption and even the involvement of local authorities.

Unreliable baseline (12% of projects fail)

- **Unrealistic deforestation projections.** A common issue observed in many projects is artificially inflating the baseline emissions in order to generate more carbon credits for the project, thus taking credit for what the project did not do. An example of this would be taking a small, heavily deforested reference area next to a big city or coast, and using this to predict 100% deforestation of an entire project area that is isolated, with small population density, over the next 30 years. The result is the issuance and sale of carbon credits where one carbon credit does not equal one tonne of CO₂ removed from the atmosphere. Such credits do not have any positive impact on the climate and in fact can do more harm by adding CO₂ to the atmosphere as emissions are not in reality counterbalanced with additional climate impact.

Community conflicts (6% of projects fail)

- **Human rights violations and evictions.** In order to establish projects that generate carbon credits, landowners (such as governments) may forcefully evict people living on the project area territory. Often the evictions can lead to human rights violations.

- **The project has not delivered the promised benefits.** The project might not have delivered benefits like building schools, or the communities might be dissatisfied with the benefit sharing process. For instance, carbon credit revenues might be invested in facilities (grain or rice shelters or mills) that only benefit a few members of the community, or benefit sharing is only intended for landowners, while many of the community members are landless.

Ex-ante (5% of projects fail)

- **Compensating emissions today with removals taking place in the future.** Ex-ante credits mean planting a sapling and selling carbon credits based on the potential CO₂ this sapling will sequester as it grows to maturity over the next 50 years. While growing new carbon stock is crucial for mitigating climate change, offsetting today's emissions with projects that will sequester the same amount of CO₂ over the next 50 years cannot be called compensation. The accepted practice is that compensation takes place with carbon credits that are sold after the carbon removal or emission avoidance has taken place, not the other way around. Nevertheless, new reforestation activities should be financed in their own right, without the need to make compensation claims and be part of companies' climate action portfolios.

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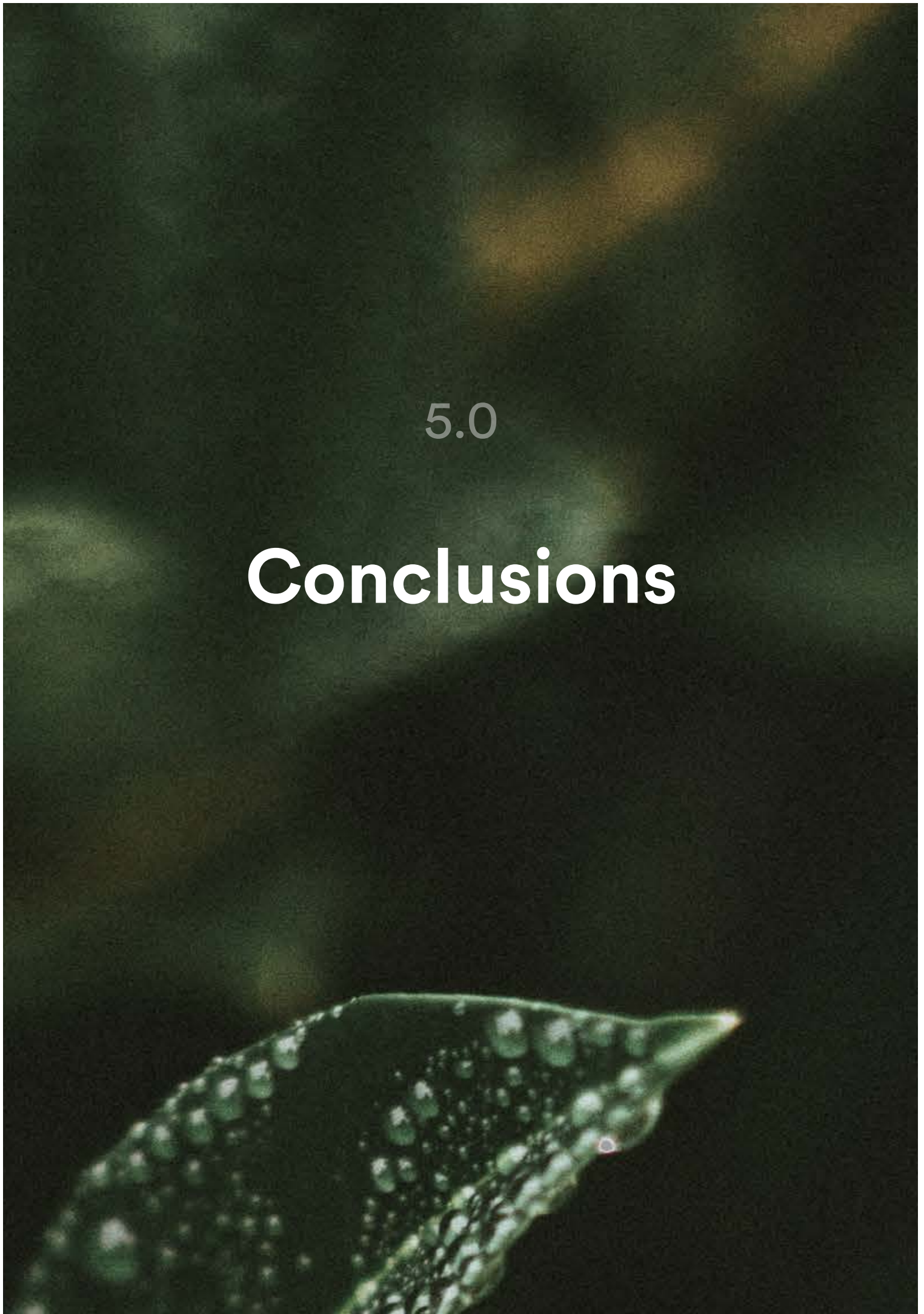
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Conclusions



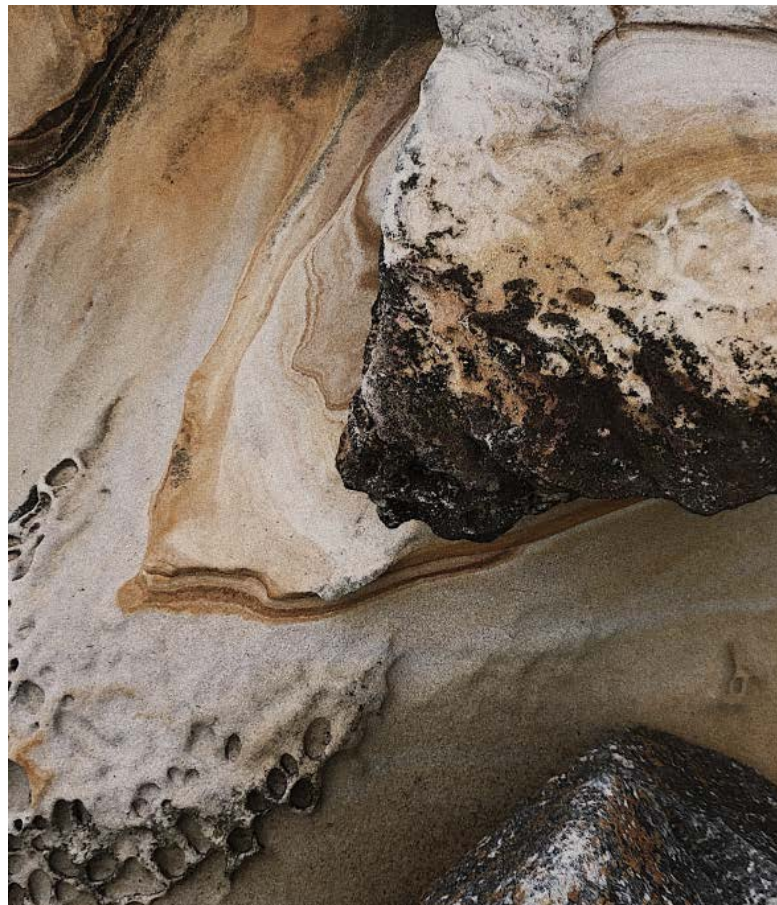
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Conclusions

The voluntary carbon market holds great potential as a tool for mitigating climate change. However, in its current state, its role is only marginal. According to the Taskforce on Scaling the Voluntary Carbon Market, to reach this potential the market needs to grow 15-fold by 2030: from the current 300M per year to 5-30 billion USD (low price scenario), even up to 50 billion USD (high price scenario).

The big question is, will this growth deliver on climate impact as well? In the current state of affairs, many questions remain on the quality of carbon credits, and whether they actually deliver benefits to the climate, people and the environment.

Over the past year, Compensate has seen that over 90% of projects we have evaluated fail basic sustainability checks. All evaluated projects are verified under international carbon standards. The vast majority of evaluated projects have been nature-based, mostly either forest protects or afforestation/reforestation projects.



The most common issue, in over half of projects, is that the projects are not additional, ie. they do not actually remove any more CO₂ from the atmosphere than would be the case if these projects did not exist.

Other issues that cause projects to fail include permanence risks (16%) meaning the carbon is likely to be released back into the atmosphere after the projects ends, unreliable baselines (12%) or exaggerated estimates of deforestation in the absence of the project, community conflicts (6%) related to the project, and the use of ex-ante credits (5%) for offsetting, meaning the emissions of today will only be removed in the future.

A new robust system cannot be built if the flaws of the existing one are not first acknowledged. But knowing its many flaws, the voluntary carbon market cannot be scaled unless the quality of carbon projects is improved. The current market needs to be disrupted, making room for robust methodologies to replace the loosely set minimum requirements for projects. Today, the means exist to set strict additionality criteria and realistic estimations of the benefits projects deliver, based on science and technology.

All in all, a stronger foundation needs to be laid to ensure that scaling the market by 2030 results in real, additional climate impact.

What does all this mean for those looking to offset? And what needs to change so that project developers, governments and offsetting customers can create a truly sustainable voluntary carbon market and drive climate change mitigation?

In the short term, the flaws of the current market mean significant risks for corporate net-zero targets and whether these targets can truly be met. In the long term, different kinds of benefits from nature-based solutions, enhanced quality and price transparency, and new kinds of climate claims could provide keys to a more sustainable carbon market.

Will corporate net-zero targets achieve real climate impact?

Recent growth in corporate net-zero targets is very similar to the Paris Agreement pledges countries have made. While countries commit to doing better in reducing their emissions, a recent UN analysis confirms that the latest round of national climate pledges will only cut emissions by 2% over the next decade, thus falling “far short of what is required” to achieve the targets set out in the Paris Agreement.

While companies claim they only purchase carbon credits for offsetting unavoidable emissions, there is little transparency on companies' efforts to reduce emissions from operations, and how much of net-zero targets are achieved by offsetting. Company emissions cannot simply be balanced out by purchasing carbon credits. It is known that emissions stay in the atmosphere for 300-1000 years, whereas a tree can sequester CO₂ for several decades or until its logged and burned, then releasing all the CO₂ back into the atmosphere. This is why the best way to mitigate companies' climate impacts is to reduce emissions.

Moreover, it is not easy to estimate the climate impact of offsetting tied to net-zero commitments, simply because the quality of carbon projects varies significantly. Overestimating the climate impact of projects leads to misleading estimations of the amount of CO₂ removed from the atmosphere.

In theory, fulfilling corporate net-zero pledges should lead to a reduction of CO₂ in the atmosphere, but in practice the result could as well be an increase in CO₂ instead. The net increase in emissions is the result of using low quality carbon credits that claim to have climate benefits, but in reality do not change the amount of CO₂ in the atmosphere.

The outcome is that companies keep emitting CO₂ into the atmosphere and these emissions are not counterbalanced by the carbon capture projects they buy credits from.

Nature-based solutions hold more than just climate potential

In terms of project types, there is exponential interest towards technology-based carbon capture and storage. While all types of carbon projects are needed in the fight against climate change, it is misleading to present technology-based methods as a silver bullet. These methods do not yet exist, are energy intensive, and slow and expensive to scale.

Nature-based solutions, including conservation of existing forests, reforestation, soil carbon, biochar and blue carbon, have received global recognition for their importance in climate change mitigation, and today occupy the largest share of the voluntary carbon market in terms of value, according to the Ecosystem Marketplace. In addition, nature-based solutions deliver climate change adaptation benefits: protecting wetlands provides protection from storm surges and sea level rise, and forests protect water supplies and prevent landslides. By focusing solely on putting a price on carbon, the potential of these other ecosystem services for mitigating climate change or helping with climate change adaptation in their own right have been unjustly overlooked. The value of ecosystem services provided by conserved or restored natural areas can even exceed the value of the generated carbon credits. For instance, according to the World Resources Institute, the value of ecosystem services of wetlands, including flood protection, improving fish habitats, and water purification, are worth up to 15 trillion USD. And while many forest conservation projects deliver questionable carbon benefits due to weak climate integrity, they have high biodiversity values and provide various ecosystem services well worth more than their carbon price.

Compensate's vision for 2030 is that the voluntary carbon market will include a new instrument, in addition to carbon credits: payments for ecosystem services through which financing could be directed towards climate change mitigation and adaptation.

Clarity is needed in offsetting claims

Post-2020, many of the projects selling credits on the voluntary market will contribute automatically towards their host country goals under the Paris Agreement. In order to claim that emissions have been compensated, it is simply not acceptable to use emission reduction or removals that have already been counted and claimed by the host country of the project. If the voluntary market wants to drive climate action, then it should focus on directing financing towards new reductions, rather than reductions that countries have already committed to achieving.

Possible solutions to this include making a corresponding adjustment, so that the carbon credits purchased abroad are excluded from the host country's target, or adjusting the offset claim. This "contribution claim" model has recently gained traction and been endorsed by Gold Standard and the Science Based Targets Initiative. Under this model, companies would finance climate change mitigation projects but not make an offset claim, rather helping countries meet their Paris Agreement goals.

Compensate welcomes the contribution model. This will allow projects to be financed either by issuing carbon credits or that support climate action and ecosystem services without the need for quantifying carbon removals. This will provide more funds for more informal, local community-led projects that would otherwise face barriers in registering a project under some of the international carbon standards.

The model also benefits companies, as it enhances transparency and honest communications, thus avoiding misleading PR campaigns on net-zero and carbon negative products and services. By adopting the contribution model, companies can demonstrate their true climate impact by reporting both their greenhouse gas emissions, how they reduce them and what financing they provide for climate action.

Ensuring quality and price transparency

Understanding carbon offsets has proven to be a difficult task if you are not an expert in the field. While the goal of international carbon standards is to simplify this by using carbon credits as a universal unit, where each credit should be as good as any certified carbon credit under the standard, this is rarely the case.

While quality varies tremendously, especially when it comes to nature-based solutions, this is not something carbon credit sellers or resellers necessarily tell buyers. Disclosing such information is not in the seller's best interest, as selling low quality credits could undermine their reputation. Sometimes, sellers are not even aware of the quality of the credits they sell. When challenged on the quality of credits, businesses and offset providers stand behind the international standards as a means of assuring the quality of the offsets. But as Compensate has discovered, not even the most renowned international standards can guarantee real climate impact.

The methods with which carbon removals or emission avoidance are calculated differ in each project, and this is only described in the project description documents. Without looking “under the hood”, one cannot be sure that the project is additional or that credits are issued based on realistic deforestation projections. Furthermore, due to the complexity of the calculations, local conditions prior to the project, and drivers of deforestation, it is difficult to interpret how reliable the used methodology and forest change models are unless you are an experienced forest science expert.

Oversimplifying this information or not asking questions is like buying a product with nice packaging without being able to see what is inside the box. Pictures of wildlife and local community members are often used as the main marketing materials, and at this stage all projects look attractive.

Another issue is the lack of price transparency. Resellers offer carbon credits to individuals and companies at much higher prices than what they pay for the credits. Taking a large cut from an inflated carbon credit price results in very little money actually reaching the project and local communities.

If the market is expected to scale 15-fold by 2030, it is crucial that buyers not only ask the right questions and use expert services in project evaluation, but that sellers also become more responsible and transparent, both in terms of quality and price. It is plausible that critical buyers will want to have a direct link with project developers, thus making redundant the extra layer of resellers and brokers.

Reforming the market will require a collective effort

At Compensate, we have learned much over the past year about finding, evaluating and choosing carbon projects. One of the most important lessons has been prioritizing dialogue and working directly with project developers to ask tough questions and discuss the results of our external research. We will continue this work, and continue to refine our sustainability criteria based on new findings and tools that we can use to evaluate projects. We will keep an open mind to continuously improve on our own work.

Of course, reforming the voluntary carbon market is not only about what Compensate does. All market actors have to realize that we need to collectively raise the bar on sustainability in order for the voluntary carbon market to have any significant impact on mitigating the climate crisis. At Compensate, we firmly believe that market mechanisms are a useful tool in fighting climate change. But they can only live up to this potential if used with high integrity.

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The background of the slide is a photograph of a bright blue sky with scattered white clouds. The clouds are more prominent in the lower-left and middle-right areas, while the upper-left is a clearer blue.

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Recommendations



Policy makers

“Using both carrot and stick policies”

- Encourage industries to reduce their emissions.
- Enable mechanisms solving the double counting issue, resulting in more carbon removed from the atmosphere.
- Adopt policies that prevent low quality credits from being sold on the market.

Buyers

“Avoid, reduce, compensate”

- Emission reductions are the primary way to solve the climate crisis. Don't buy your way out of the climate crisis by offsetting emissions while continuing operations business as usual.
- Compensating unavoidable emissions should be done by choosing high quality projects with demonstrated true climate impact.
- Find an offsetting partner that doesn't just blindly trust the existing international standard, but paints a more realistic picture of the climate impact of projects.

Project developers

“Less is more”

- Select a conservative and science-based approach when choosing the methodology for calculating carbon credits.
- Choose a quality over quantity approach: selling ten times fewer, high quality credits at a premium price is better than saturating the market with low quality credits with overestimated climate impact.

A photograph of layered rock formations, likely sedimentary, showing distinct horizontal and slightly tilted strata. The rocks are dark grey to black, with some lighter, tan-colored layers visible. The texture is rough and weathered. The word "Terminology" is overlaid in white, bold, sans-serif font in the center of the image.

Terminology

Carbon offsetting

A carbon footprint means the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by an action.

A carbon dioxide equivalent or CO₂ equivalent, abbreviated as CO₂-eq, is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global warming potential (GWP) by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

Global warming potential (GWP) is a term used to describe the relative potency, molecule for molecule, of a greenhouse gas, taking into account how long it remains active in the atmosphere.

Carbon neutrality / net zero means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon dioxide from the atmosphere and then storing it is known as carbon sequestration. In order to achieve global net zero emissions, all worldwide greenhouse gas emissions will have to be counterbalanced by carbon sequestration.

Carbon negativity means removing CO₂ from the atmosphere, or sequestering more CO₂ than is emitted.

A carbon sink is any system that absorbs more carbon than it emits. The main natural carbon sinks are soil, forests and oceans. According to estimates by the European Parliament, natural sinks remove between 9.5 and 11 Gt of CO₂ per year. Annual global CO₂ emissions reached 38.0 Gt in 2019.

Carbon offsetting allows individuals, organizations and nations to support environmental projects around the world to balance out their own carbon footprints.

A carbon offset is a reduction in carbon dioxide emissions or other greenhouse gases (GHG) made in order to compensate for emissions caused elsewhere. Offsets are measured in tonnes of carbon dioxide-equivalent, meaning the impact of all greenhouse gases is combined and expressed in CO₂.

A contribution claim is an alternative claim to offsetting which could be used post-2020 to avoid double counting. Under the contribution claim model, organizations and individuals may make voluntary contributions to the net zero goals of the Paris Agreement by financing emission reductions through the purchase and retirement of carbon credits.

Carbon credits

Carbon credits / Verified Carbon Units (VCUs) represent a reduction or removal of one tonne of carbon dioxide equivalent (CO₂e) achieved by a project. VCUs are characterized by a number of quality assurance principles that are confirmed through the project validation and verification process. VCUs are ultimately purchased and retired by an end user as a means of offsetting their emissions.

Issuance refers to creation of project and VCU records on the international carbon standard project database with deposit of VCUs in the Seller's Registry Account.

Leakage is the net change in anthropogenic greenhouse gas (GHG) emissions by GHG source which occurs outside the Project boundary, and which is measurable and attributable to the Project.

Monitoring means the collection and recording of all relevant data, as set out in the Monitoring Plan, for determining the Project baseline, measuring GHG Reductions attributable to the Project, Project emissions and Leakage, as applicable, conducted in accordance with the Standard.

Monitoring Report is the document indicating the result of Monitoring within the Verification Period conducted by the Seller or an entity contracted by the Seller in accordance with the Monitoring Plan and calculating the amount of GHG Reductions that the Project has generated during each calendar year during the Verification Period.

GHG Reduction means the removal, limitation, reduction, avoidance, sequestration or mitigation of one metric ton of emissions of Greenhouse Gases from the atmosphere, measured in a single (one) metric tonne of carbon dioxide equivalent (the unit of measurement used to indicate the global warming potential of greenhouse gases), and includes all legal and beneficial rights and title to the GHG emission reductions and any current or future right, credit, interest, certificate, offset, allowance, entitlement or benefit, whether recognized by any law, regulation, contract, regime, publication, policy, program or fund that arises or may arise from or in connection with the GHG emission reduction.

Project Description or PD is the main document involved in the development and Validation of the Project which includes (inter alia): a description of the Project and the Project boundary; description of the baseline methodology; the duration and crediting period of the Project; description of additionality; description of the environmental impacts of the Project; the Monitoring Plan; and relevant calculations. Upon Validation, the PD must be submitted to the Board for Registration of the Project.

Project Documents means all and any document(s) in respect of the Project and the Contract VCUs that are required and made public by the Registry, the Standard and the Board, to enable the Registration of the Project and issuance of the VCUs.

Registry means a registry system approved by the Standard that issues, holds, transfers, retires, suspends, cancels and provides custodial services over VCUs.

Validation means a thorough, independent assessment of a proposed Project against the applicable Standard requirements by a Validator. During validation, the Validator assesses whether the project design of the proposed Project complies with the relevant requirements set out by the Standard, the applicability conditions of the selected methodology and guidance issued by the Board. The Validator reports the results of its assessment in a validation report which includes a positive validation opinion only if the proposed Project complies with the applicable Standard requirements. Upon a positive validation opinion, the proposed Project is submitted for Registration.

Verification means the periodic independent assessment (including a site visit) and ex post determination by a Verifier of the Project GHG Reductions over the Verification Period in accordance with the Standard rules.

Verification Report is a written report prepared by the Verifier that independently assesses the amount of GHG Reductions generated by the Project during the Verification Period specified per calendar year.

Reducing emissions from deforestation and forest degradation (REDD+) is a mechanism developed by Parties to the United Nations Framework Convention on Climate Change (UNFCCC). It creates a financial value for the carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. The premise is that developing countries protect forests and receive results-based payments from the carbon credit revenues. REDD+ goes beyond simply deforestation and forest degradation and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

International climate agreements

The Paris Agreement is the first-ever universal, legally binding global climate change agreement, adopted at the Paris climate conference (COP21) in December 2015. The Paris Agreement sets out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C. It also aims to strengthen countries' abilities to deal with the impacts of climate change and support them in these efforts.

The Kyoto Protocol, adopted in Kyoto, Japan in 1997, commits 37 industrialized countries and the European Union to the so-called Kyoto target of reducing their greenhouse gas emissions by an average of 5% against 1990 levels over the 2008-2012 period. At the 2012 United Nations Climate Change Conference there was an agreement to extend the life of the Kyoto Protocol until 2020.

International carbon standards

Verified Carbon Standard/VCS establishes the standards for quantifying and verifying GHG emission reduction projects under the voluntary carbon market. VCS Version 3 is the applicable version of VCS program documents from 8 March 2011.

The Climate Community and Biodiversity Standard (CCBS) is designed for evaluating land-based carbon projects. Its most recent rules were published on 21 June 2010 by the CCB Association and are intended to be used by project proponents and independent auditors.

The Gold Standard is a standards body ensuring that climate and development funding amplify the impact of projects and verify their outcomes. Gold Standard has a broad NGO Supporter Network and over 1 400 projects in more than 80 countries.

Plan Vivo is a standard that supports communities and smallholders on the forefront of the climate crisis. It supports projects and tackles climate change through carbon credits.

The American Carbon Registry (ACR), a nonprofit enterprise of Winrock International, was founded in 1996 as the first private voluntary greenhouse gas registry in the world.

The Climate Action Reserves ensures integrity, transparency and financial value in the North American carbon market.

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Bou

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