

VERITREE

AUDIT REPORT

Monstercat

NFT Carbon Offset Program

Introduction

As Monstercat begins the process of dropping NFTs to support artist financial sustainability, the company has committed to ensuring that these drops will also support its own environmental sustainability goals. Monstercat has made a promise to go above and beyond simply purchasing carbon credits to offset its emissions, and instead has committed to offsetting well beyond the amount of estimated emissions from their drops; and they'll do it by forming partnerships with innovative organizations who are looking to address issues and concerns about the integrity of existing voluntary carbon markets and who are committed to supporting projects that meet high standards of transparency, traceability, accountability and sustainable development.

In doing so, Monstercat is doing what is considered a 'beyond value chain mitigation.' By undertaking investment in nature outside of its value chain, Monstercat is helping to accelerate the net-zero transition while addressing serious ecological issues. This strategy is in line with emerging best practice that is moving away from relying on traditional carbon offset markets, to a more holistic one that considers a company's broader environmental strategy and performance in relation to its contributions to broader global climate targets.

This report summarizes our findings of veritree, a potential partner for sponsoring reforestation projects, who has created a new system for project teams to monitor, verify and report on progress with greater accuracy and transparency.

Carbon Offsets

What are Carbon Offsets?

In its most basic sense, offsetting carbon is the act of removing greenhouse gases from the atmosphere to compensate for or neutralize the greenhouse gases emitted from a different activity. However, when we refer to "carbon offsets" it refers to a purchase on the carbon market, whereby a company pays a set price per tonne of emissions in the form of an investment in green projects with the assurance that that same amount of emissions will be removed from the atmosphere. These offsets are then used as a replacement for reducing emissions in a company's value chain.

Carbon offsets have been growing in popularity in recent years as awareness about the global climate emergency has increased. This most notably came with the IPCC's *Special Report on Global Warming of 1.5°C* in 2018, which said we must limit the global temperature rise to 1.5°C above pre-industrial levels and reach net-zero emissions by 2050 to avoid climate catastrophe. Many institutions, organizations, and corporations have been building a large body of best practices for setting science-based targets for reducing and offsetting emissions in line with the IPCC's warnings.

What are the common criticisms?

These 'offsets' involve a lot of complexity, like how to accurately measure the amount of carbon removed or avoided, how long it takes to remove or avoid that amount of

carbon, and possible positive or negative externalities associated with the project, like other forms of ecological damage or impacts in local communities. There is also inconsistency about how these projects are verified and validated so corporates can have certainty that their emissions will be neutralized and that any associated negative externalities are minimized while positive impacts are maximized.

Here are a few key challenges with offsetting carbon emissions that should be considered:

1. One of the major criticisms with offsetting carbon is it can be seen as shirking the responsibility to take reduction seriously. The first priority should always be to set science-based targets for reducing emissions within a company's value chain, and only look outside their value chain to mitigate any other emissions that cannot be reduced. This is known as the mitigation hierarchy.
2. Innovative tech projects that promise to suck carbon out of the air are often too expensive to initiate and operate with the investments received from carbon offset purchases. This means that even though they would be impactful if successful, offset purchases for these new technologies can result in little carbon actually being removed from the atmosphere. This is often why many recommend more natural solutions like reforestation.
3. Verification of the amount being offset is often unreliable. Even reputable third party verifiers have been found to verify projects that inflate their numbers, whether inflated intentionally or not. This is due to a lack of universally agreed-upon standards for how to account for and verify offsets, and this inconsistency can lead to inaccuracy.
4. There is a lack of transparency and consistency across projects on what can be considered an 'offset'. For example, a key factor to look for is whether a carbon reduction or removal project is considered additional, i.e. the impact of the project would not have been realized if the project had not been undertaken without the proceeds from the sales of carbon credits. A great example of this is forest conservation projects: while essential to climate change mitigation, they are not offsetting any additional amounts of carbon, but are instead maintaining the status quo, so they would not be considered to have additionality.
5. Another area where we see a lack of transparency is some offset companies who broker these transactions have been found to provide limited information on how funds are distributed and which projects they fund. This can make it challenging to ensure carbon is actually being offset and the projects are being implemented appropriately. These issues have a delegitimizing effect for the industry and lower the standards of accountability.

What are the biggest risks to tree planting projects?

Tree planting projects intended to restore ecosystems and sequester carbon can vary widely in terms of how they are designed, implemented, monitored and verified. There are a number of risks that might affect the outcomes:

1. Like other carbon offset projects, tree planting can cause more harm than good: some have been found to damage ecosystems by planting trees not native to the region or by planting in other vital ecosystems that were never forests to begin with, like grasslands. They can also cause social and security issues among local communities, or worse, evict communities altogether.
2. Tree planting projects are also exposed to similar risks to over- or under-estimating the amounts of carbon sequestered. Trees, if not properly cared for, can die before they reach maturity, and different species of trees sequester different amounts of carbon. Oversimplified calculations that do not factor in a tree survival rate or use a standard sequestration amount per tree can overestimate the carbon sequestered from a project.
3. Another challenge with tree planting projects is related to timeframes for carbon sequestration. Unlike some other forms of carbon removal, tree planting projects lack permanence, which means they only sequester carbon for a set period of time before it is released back into the atmosphere when the trees die, whether through natural causes like forest fires or through man-made causes like logging. It also takes several years for forests to mature enough to sequester the amount of carbon that was originally promised, which means carbon that was emitted today may not actually be fully sequestered for even 25 years, depending on the tree species.

veritree

Who is veritree?

[veritree](#) is a company that utilizes blockchain to manage a suite of tools that verifies its partners' reforestation projects with greater accuracy, specificity and transparency. Their platform allows reforestation partners to track their planting progress, monitor tree growth, and report to project sponsors using secure, accurate data from seedling to maturity stage. Project sponsors would have the opportunity to purchase tree tokens on Cardano, where each tree token represents one tree planted on one of their projects.

[Cardano](#), the first blockchain to be based on peer-reviewed research, also has additional environmental considerations: it uses Ouroboros, a proof-of-stake protocol that is estimated to be [up to four million times as energy efficient as bitcoin](#) and [improves security](#) over traditional proof-of-work protocols.

veritree does not offer carbon credits to formally offset a certain amount of emissions. Instead, they connect sponsors with their vetted tree planting partners who do the work on the ground. Sponsors and partners can then use veritree's tools to track progress, and veritree is able to work with project sponsors to purchase a set number of trees based on the amount of carbon they are looking to sequester.

Who are their partners?

veritree works exclusively with reforestation and agroforestry partners with high standards of transparency, accountability and expertise. Reforestation involves planting in areas that used to be forested but have been degraded. This is widely considered a good approach to adopting nature based solutions to tackle climate change as long as it is done right: it goes beyond simply conserving existing forests (which is also integral to mitigating climate change) while avoiding damage to other established, vital ecosystems where trees may not belong.

All of their planting partners are thoroughly vetted to ensure they meet the highest standards in project development and reforestation. This means they must work alongside local communities, ensuring positive social and environmental outcomes from the projects. Typical questions veritree might ask potential partners includes:

- How often are partners visiting the site?
- Are locals paid to work on the project?
- What species of tree will be used and how were they chosen?
- How are they guaranteeing protection of the trees once planted?
- What is their survival rate?
- What species of animals live in the area and will they be helped by the project?
- When is the rainy season and dry season?
- What are the relationships like among the people who work on site?

A full list of questions is included in a separate appendix for Monstercat's internal reference.

veritree's partners also maintain a high standard of transparency with reporting. They have calculated success rates among their trees planted, account for different sequestration rates depending on the tree species, and continuously monitor growth areas to track progress throughout the trees' lifecycles. This ensures they are tracking and reporting impact metrics resulting from the project, including carbon sequestration, as accurately as possible.

For example, one of their planting partners, Eden Reforestation Projects, provides a detailed [FAQ](#) where they explain how they are addressing some of the typical risks to reforestation projects, such as the specific species of trees planted, who owns the land they plant on, and how they track tree survival rate. Another planting partner, Trees for the Future, shows in their [annual report](#) how they are tracking and reporting on specific, measurable outcomes related to their projects.

veritree partner projects are often co-owned by the local communities and create paid jobs for local workers, including both men and women. They also often involve planting native fruit trees or other edible plants to promote local health, food security, sustainable agriculture, and economic development while also supporting reforestation.

Are they managing the major risks?

Reduction over offsetting: veritree also offers sustainability advisory services in addition to their reforestation verification and sponsorship platform. While sponsoring projects

does not help Monstercat to reduce its emissions, it is a viable option for mitigation beyond value chain by neutralizing residual emissions that cannot be reduced or eliminated.

Risks with innovative technologies: Rather than using new technologies to remove carbon from the atmosphere, veritree is using technology to improve upon the accuracy of existing reforestation projects, rather than investing in offset technologies that require significant investments to become operational.

Offset verification can be unreliable: In addition to vetting their project partners for transparency, accountability and expertise, veritree's platform is also intended to provide a stronger mechanism for tracking and verifying projects. Being able to better monitor project progress and track individual tree growth will create a mechanism for reporting greater accuracy, and will allow project sponsors to receive up-to-date, detailed information.

Lack of consistency in what is an 'offset', and lack of transparency from offset companies: veritree does not sell productized offsets that are typically used in carbon markets; however, they will work with project sponsors to purchase an appropriate number of trees based on the emissions sponsors are choosing to offset. In doing so, they avoid traditional carbon markets and instead focus on the reforestation efforts. By exclusively focusing on reforestation projects, which have additionality, they are also ensuring more carbon sequestration and greater mitigation beyond its value chain.

Negative externalities to tree planting: veritree's partners are specifically vetted to avoid the common negative externalities associated with tree planting projects. They all ensure local involvement in decision-making, and plant appropriate trees in appropriate areas for the region. Some go beyond preventing negative externalities to also providing additional benefits, like increased health, food security, gender equality, and economic development. While vetting does have to rely on the honesty of the partner to a certain degree, veritree also checks in on projects in person and does additional research on partners wherever possible.

Over-reporting the amount offset: Because these partners maintain high standards of accountability and transparency, most make their information about tree species and survival rates available to people who are interested. We can then use this information to validate the numbers being reported. veritree's verification platform is also set up to better validate these numbers as well, providing an additional layer of verification and accountability.

How long does it take to sequester the carbon emitted, and how long is it sequestered for: It is true that there is a finite amount of time carbon stays sequestered when you invest in tree planting - the hope is that in the long-term, there will be a greater number of viable, more permanent solutions for Monstercat to invest in. In the meantime, veritree's vetting process includes considerations for extending the lives of the trees planted, like ensuring long-term ownership of the land and plans for forest management.

It is also true that it can take a long time to sequester the amount of carbon emitted now through planting new trees. While veritree cannot change how long it takes for tree growth, they are able to work with project sponsors to plant enough trees to ensure those emissions will be offset sooner. However, this might require planting an exponentially greater number of trees. For

example, some estimates say that old growth forests are around ten times more effective at capturing carbon than young forests, and so could require purchasing at least 10 times the number of trees to offset sooner.

Recommendations

There is no catch-all solution to capturing the carbon already emitted into the atmosphere. It requires a combination of approaches with consistent investment and a continued focus on reduction. However, Monstercat is on the right track with a plan that will offset emissions in a way that is responsible and effective.

Does R&G approve of veritree as a partner: Yes. veritree appears to have considered and is managing most common risks associated with carbon offset programs and tree planting projects, and is circumventing traditional carbon markets altogether to offer solutions for mitigation beyond value chain. Their blockchain-enabled approach also allows for greater monitoring from project sponsors, and aligns well with Monstercat's goals.

Does R&G approve of Monstercat's approach to offsetting emissions: In terms of its plans for offsetting emissions, Monstercat has a strong approach. Because research on blockchain emissions is so new, offsetting by a large multiplier will be helpful for ensuring that Monstercat accounts for possible under-calculations or emission sources that may have been overlooked. Offsetting those emissions quicker than the industry standard by purchasing trees at an additional multiplier will also be crucial so that the worst damage to our climate isn't already done before these emissions are finally offset. We would recommend moving forward with the drop as long as these considerations remain in place.

What are ways to improve this solution more: Because the priority should always be placed on reduction before offsetting, R&G recommends that Monstercat still proceed with a company-wide emissions audit to identify sources of emissions in its own value chain, and reduce them as much as possible before looking at other offset opportunities. Additionally, Monstercat should continue monitoring new advances in blockchain technology closely. Blockchains focused on the environment have been entering the marketplace with goals of being less carbon-intensive. These solutions may not be mature enough to build Monstercat's Web3 strategy and support the economic sustainability of its artists yet, but Monstercat should continue experimenting, and even investing, into those alternate blockchains in order to help them become a viable option for Monstercat's NFTs and reduce the emissions from future drops.