



Shopify & CarbonCure: A Climate Success Story

What the leading global commerce company looks for when buying carbon removal credits

Introduction

In 2019, Shopify launched its Sustainability Fund to catalyze the carbon removal industry, committing a minimum of \$5 million each year in the fight against climate change. So far, this leading global commerce company has committed more than \$30 million to 20+ carbon removal companies, including CarbonCure Technologies.

This case study examines Shopify's reasons for funding carbon removal solutions, what it looks for in projects and developers, how it approaches scaling those solutions, and why it continues to invest in CarbonCure Carbon Credits.

At a Glance

- Buyer:** [Shopify](#)
- Mission:** Be a 100-year company
- Purchase:** CarbonCure Carbon Credits
- Mission:** Scale solutions to climate change
- Uses:** Offset a portion of its carbon footprint
Pass through to businesses on Shopify using the Planet app
Provide carbon-neutral shipping for major shopping weekend Black Friday/Cyber Monday
- Goal:** Scale CO₂ removal through decarbonization of the concrete industry
- Method:** Incentivize CO₂ removal via carbon mineralization
- Key Factors:** Measurability, Permanence, Scalability, Tangible product, Hard-to-abate sector, CarbonCure's team



Why Sustainability Is Core to Shopify's Mission

Shopify is the world's leading provider of essential internet infrastructure for commerce, offering trusted tools to start, grow, market and manage a retail business of any size. It powers millions of merchants in over 175 countries around the world and is quickly becoming the first choice for entrepreneurs everywhere.

Shopify's mission is to be a 100-year company, which is why sustainability is core to its business. Because the platform supports entrepreneurs, Shopify's team considers threats to entrepreneurship, says Stacy Kauk, Shopify's Head of Sustainability. And there's no greater existential threat than climate change.

"As the effects of climate change increase year over year, we're going to see more extreme weather events, food shortages and increasing prices like we're starting to see now. You're not going to be building a business and looking at [how to increase] your revenue when you're just trying to survive," says Stacy.

Carbon removal, she says, is part of the solution.

"If entrepreneurship is going to thrive in the long term, our planet needs to as well."

Stacy Kauk, Head of Sustainability, Shopify



The Case for Carbon Removal

As a socially responsible company, Shopify is building a comprehensive corporate carbon accounting and emissions reduction plan. In addition, it has become a leader in developing programs and initiatives for accelerating carbon removal projects.

The Intergovernmental Panel on Climate Change flagged in its [2018 report](#) the necessity for carbon removal for the long term. Experts say the CO₂ already emitted will impact our climate for hundreds, if not thousands, of years. The

National Academy of Sciences estimates that, even if we stop emissions today, we're still going to need about [10 gigatons/year of carbon removal](#). "What's currently being removed is a drop in the bucket from what is needed", says Stacy.

"We've really focused in on the need to get money behind carbon removal today, so that the solutions we need for the future are there when we need them."

Stacy Kauk, Head of Sustainability, Shopify



Shopify's Carbon Removal Initiatives

- **Shopify Sustainability Fund** – Since the fund launched in 2019, Shopify has committed more than \$30 million to catalyze the carbon removal industry. Each year Shopify spends a minimum of \$5 million from this fund on the most promising solutions and technologies. The goal is to generate demand for carbon removal, enable new companies to prove impact and scale, and drive down future prices of carbon credits.
- **Planet app** – Shopify merchants can add this application to their online store, allowing them to calculate and remove the emissions associated with shipping each individual order purchased on the merchants' sites. This app enables Shopify to leverage the ecosystem of merchants worldwide and bring them along in the carbon removal journey.
- **Black Friday/Cyber Monday campaign** – As part of its Sustainability Fund commitments, Shopify buys enough carbon removal credits to eliminate the emissions from all shipments on its platform over the entire Black Friday/Cyber Monday weekend. While it's a significant investment in and of itself, the greatest value according to Shopify is the awareness the campaign brings to the fight against climate change.
- **Frontier** – This multi-company initiative—founded by Shopify, Stripe, Alphabet, Meta and McKinsey Sustainability—consists of an advance market commitment (AMC) to buy \$925 million of permanent carbon removal credits. The goal of the AMC is to expand the global supply of atmospheric carbon removal with storage of at least 1,000 years, with objectives of achieving a price point of \$100/tonne by 2030 and a volume of 500 megatonnes by 2040.



Shopify's Portfolio of Carbon Removal Solutions

Shopify takes a portfolio approach to purchasing carbon removal credits, seeking to create a balanced variety of engineered and nature-based carbon removal and storage solutions. Its investments fall into nine broad categories: direct air capture, transportation, forest, soil, biomass, ocean, mineralization, storage, and usable products.

While Shopify is open to a wide array of potential solutions at various readiness levels, Mitchel Selby, Program Manager for Shopify's Sustainability Fund, says it looks for projects and developers with these key attributes:

1. **permanence** – the length of time the solution can keep CO₂ out of the atmosphere—the longer the better, so the CO₂ isn't re-emitted in the near-term.
2. **scalability** – the capacity for the solution to grow in size—so that it can draw down meaningful amounts of CO₂ at a price accessible to more buyers. Projects should at least be proven in a lab, with a team capable of “pushing the right buttons” in order to scale.
3. **additionality** – would the capture and storage take place without the purchase of credits? Shopify even likes to take it one step further, asking what a purchase from Shopify would do for a business right now, so the team can assess pivotal times to buy and at what quantities to leverage its purchasing power.



The Search for High-Quality Credits

Shopify first learned about CarbonCure in 2020 through the CarbonXPRIZE—a multi-year competition with a \$20 million prize package for the most viable carbon removal solutions in the world. At the time, CarbonCure was a strong contender with its latest carbon mineralization technology for the concrete industry. CarbonCure went on to **win the grand prize in 2021**, but Shopify was already convinced.

In 2020, it purchased CarbonCure carbon credits to provide carbon-neutral shipping for Shopify merchants for the Black Friday/Cyber Monday shopping weekend, and then again in 2021, along with additional purchases to offset a portion of its carbon footprint.

“It’s nearly impossible to find credits in the market with this level of permanence and verifiability at the quantities CarbonCure has available right now.”

Stacy Kauk, Head of Sustainability, Shopify



Verified Carbon Standard

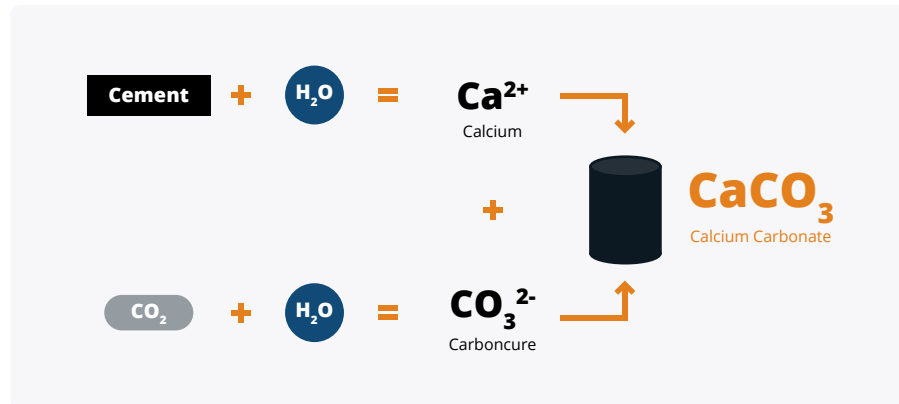
CarbonCure’s **Verified Carbon Standard Methodology for CO₂ utilization in concrete production**, which is approved by Verra, sets out robust criteria for quantifying reductions in carbon emissions and ensures quality factors such as **additionality** and **permanence**.



CarbonCure's Award-Winning Technology

CarbonCure's innovative, award-winning technologies use carbon mineralization in the production of concrete. When captured CO₂ is injected into the concrete mix, it reacts with cement to form a mineral that is permanently locked in the concrete. Captured CO₂ can also be injected into concrete wastewater filled with cement particles, turning it into reusable mix material, reducing waste while permanently removing CO₂. Plus, the strength provided by the mineral enables concrete producers to reduce the amount of cement they use, further lowering the carbon footprint of concrete production.

Concrete produced using CarbonCure generates carbon credits for removal and reduction. The revenue from CarbonCure carbon credits is used to incentivize the adoption of the technology by concrete producers and encourage them to incorporate CO₂ into more production—further driving down cement usage and carbon emissions. Carbon credit revenue also allows CarbonCure to accelerate entry into emerging markets and to research and develop new technologies to capture and store CO₂.



Why CarbonCure?

CarbonCure stood out to Shopify for its earliest investments for a number of reasons.

- 1. Additionality in a hard-to-abate sector.** Shopify recognized the opportunity to decarbonize a hard-to-abate sector by incentivizing and accelerating the adoption of CarbonCure technology. “It really was the first time I understood what the revenue from a carbon credit could achieve,” said Stacy. “The concrete sector is not going to spend money to retrofit its plants voluntarily...that’s really tough in sectors that have very limited margins.”
- 2. Alternative, lower-emission product.** The ability to accelerate the adoption of a lower-emission alternative to standard concrete was appealing to Shopify. “The more that concrete buyers become aware they can build their facility with CarbonCure concrete, the more it’s going to increase demand”, says Stacy. “It will be a nice flywheel effect that our initial purchase of carbon credits has started.”
- 3. Tangible example of carbon removal.** Buying a credit for a colorless, odorless gas can seem pretty intangible. Stacy says “What’s great about CarbonCure is that it’s easy for buyers of credits and buyers of concrete to understand what is physically taking place in a community and see it with their own eyes.”
- 4. Permanence** – Shopify recognized the impressive durability of carbon mineralization in concrete, storing carbon for millenia. “The longer we can keep carbon dioxide out of the atmosphere, the better,” says Mitchel “putting CO₂ into concrete is virtually permanent.”
- 5. Measurability** – CarbonCure’s engineered solution uses **precision technology and can trace every molecule of CO₂ from capture to storage.** “You know exactly how much CO₂ is being injected into each unit of concrete,” says Mitchel. “That’s a huge leg up for CarbonCure’s solution over other solutions, which can face a much more difficult time with MRV.”
- 6. Scalability** – “Carbon removal through concrete is just such a promising solution due to its scalability,” says Mitchel. “Concrete plants exist worldwide, this industry is not going anywhere, and the CarbonCure carbon removal solution takes advantage of existing industry infrastructure.”
- 7. CarbonCure’s team** – Shopify has confidence in CarbonCure’s ability to scale and in its impact right now. “CarbonCure delivers credits on time, even with short notice, and provides detailed documentation that gives us confidence that the carbon storage has taken place,” says Stacy.



The Potential for Positive Impact

The construction industry is **the second-largest industry on the planet** and, as far as human utilization is concerned, **concrete is the most-used product, second only to drinking water**. It has the scale to have a massive impact. Carbon removal and this industry are natural partners.

As the world looks to double its entire building stock over the next 40 years—most of the growth is happening in emerging markets. Purchases of CarbonCure carbon credits allows CarbonCure to move into those emerging markets far faster and earlier, and to layer in new technologies so the company can scale up and have a much more significant impact.

“CarbonCure is one of the leading carbon storage companies globally. By purchasing carbon credits from them now, we’re helping them scale up on their journey to store carbon at climate relevant scales by 2030.”

Stacy Kauk, Head of Sustainability, Shopify

CarbonCure’s Mission

CarbonCure is on a mission to make concrete a climate solution and reduce embodied carbon—the emissions associated with building material manufacturing and construction— in the built environment by 500 million tonnes annually by 2030.



Shopify's Advice for Carbon Credit Buyers

Based on their experience in evaluating and selecting carbon removal projects to support, Shopify's sustainability team offers the following advice to companies looking to make the most impact with their sustainability budget and carbon credit purchases.

1. Use all the tools you have to fight climate change.

Don't just focus on buying carbon removal. It's just one element of a complete solution, alongside deep emissions reductions and other tactics. Do as much as you can with the position you have and the company you work for. Every company has different levers to pull, to change how it does business, and to change how the world works to fight climate change.

2. Start now to de-risk your climate solution.

A big benefit of buying carbon removal now is that you're participating in and learning about something you're likely going to be required to buy to deal with your carbon footprint in the future. You build knowledge, connections and, if you start buying and putting some longer-term contracts in place, you can secure supply when you need it.

3. Stay flexible and support solutions at any price point.

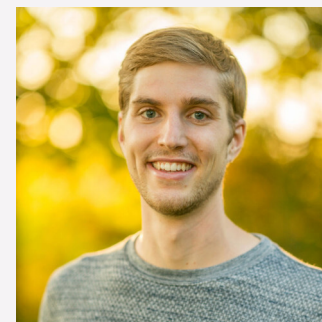
Carve out a portion of your sustainability budget for carbon removal and a portion for emissions reductions. For carbon removal, stay flexible and make sure you don't tie yourself into purchasing certain volumes, because that drives you to lower-price solutions. Support quality solutions regardless of how much they cost now; if you do that now, they'll be available at a lower price down the road.

4. Leverage the work already being done to assess carbon credit projects.

You don't require an RFP every time you want to make a purchase. You can feel confident in the work and the due diligence that's been done to date. Shopify has a partners page listing the more than 20 companies they support. They invite you to go to their website and to reach out if you have questions about specific companies



Stacy Kauk
Head of Sustainability, Shopify



Mitchel Selby
Sustainability Fund Program Manager, Shopify



Invest in CarbonCure's Carbon Credits

Make a concrete impact to fight climate change

Hundreds of concrete producers around the world use CarbonCure's award-winning technologies to decrease the embodied carbon of concrete, reducing and permanently removing ten's of thousands of tons of CO₂ each year, and generating high-quality carbon credits you can trust to deliver immediate, scalable, high-impact climate benefits.

For more information about purchasing carbon credits from CarbonCure, visit carboncure.com/carbon-removal.
To get in touch with a CarbonCure representative, email us at sales@carboncure.com or call us at
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