Stripe will pay $1 million a year to take carbon out of the air – but will it work?

Major online payments platform Stripe announced on Thursday that it's pointing its sustainability pocketbook toward technologies that aim to capture planet-warming gases from the air and store them in the ground.

The company said it already fully offsets its greenhouse gas emissions, investing in green projects that reduce emissions elsewhere. Achieving that carbon-neutral goal has been considered a gold standard by many companies. Stripe is going one step further by putting its money into technologies that result in negative emissions. It's now committed to spending twice as much as it currently does on offsets of carbon sequestration. It will allocate at least $1 million each year on negative emissions technology by purchasing tons of carbon dioxide that's been taken out of the atmosphere.

It's among the first big companies to do so. Because negative emissions technologies are still in development, they come with a hefty price tag, concerns over whether the technologies are ready, and a dearth of policies that could either encourage or regulate the industry.

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For carbon capture companies that have wanted to break into the mainstream, Stripe's announcement garnered a lot of enthusiasm, and, naturally, the company hopes that others will follow.

“What we really need to see today is other tech companies step up to the plate and make a similar commitment,” Noah Deich, executive director at Carbon180, formerly the Center for Carbon Removal, tells *The Verge*. “A $1 million commitment isn’t even a rounding error for [some] big tech companies, but could be absolutely catalytic for the negative emission technology field and for our broader fight against climate change.”

To avoid the most catastrophic effects of climate change, the planet needs to stop from reaching global average temperatures that are 1.5 degrees Celsius above preindustrial levels. In its groundbreaking report released last year, the United Nations predicted that we could reach that critical point as soon as 2030. It also said that any pathway to avoiding that future would require technology that removes carbon from the atmosphere.

The captured carbon that Stripe has committed to purchasing could come from three types of carbon sequestration that it outlined in the announcement. It hasn’t specified exactly which projects it will fund, but it expressed interest in initiatives that would improve natural carbon sinks like forests and soil. It even mentioned one project that would “hack” plant roots so that they can store more carbon for longer. It could also take on enhanced weathering projects, a process that uses chemical reactions to trap carbon in rock. Lastly, it can purchase recovered carbon from plants that work to directly capture carbon from the air.

Critics say carbon capture is “meant to keep the fossil fuel industry on life support”

How far will $1 million a year go toward slowing climate change? Stripe acknowledged that investing in negative emissions technology is significantly more expensive than its previous policy of paying for carbon offsets, for which it said it spent $8 per ton of carbon. It expects to pay “certainly more than $100” per ton of captured carbon. But

even that amount is optimistic; cost constraints have been an impediment to development for years. The cost per ton of carbon from direct air capture can still reach upwards of $600. At that rate, Stripe's yearly investment would be equivalent to taking just over 300 passenger vehicles off the road for a year.

A cascade of new tech buyers for captured carbon might bring that price closer to $100, meaning that $1 million could displace closer to 2,000 cars.

For now, the real impact Stripe hopes to have is to act as a catalyst for getting more companies to buy captured carbon. In its announcement, Stripe explained, "Researchers and entrepreneurs are working today to create this new industry, and continued progress will require funding for experimental prototypes with initially high cost … This provides an opportunity for Stripe and like-minded early adopters to shift the trajectory of the industry." The company likened the move it's taking to early investors of solar panels, which saw a price drop from about $30 per watt in 1980 to less than $1 per watt in 2019.

There will be other hurdles. Even the most advanced negative carbon technologies are largely still prototypes. Deich believes the technologies are ready for early deployment, even if the stage isn't quite set for them to scale up. "In order for them to get ready for prime time, we'll need to see the technology get deployed at commercial scale for a handful of projects and to have the regulatory and financial mechanisms and broader ecosystem developed around that in a really robust way," Deich says.

Even though there is a scientific consensus on the need to draw down carbon from the air, there are concerns that heavily relying on carbon capture and negative emissions technologies could take away from efforts to cut down on fossil fuel use in the first place. "It kind of compartmentalizes the carbon

emissions piece without actually holding fossil fuel companies accountable for the entire pipeline," explains Adrien Salazar, campaign strategist at the think tank Demos, which has been instrumental in crafting potential climate policy like a federal Green New Deal. "It doesn't address a lot of the co-pollutants that are also produced in fossil fuel combustion that have public health impacts."

Salazar is skeptical that the new technologies will be a silver bullet for big, bad climate change. "The technology is unreliable, it hasn't proven cost effective up to now, and the risk of allowing continued pollution are too great to be investing billions of dollars in a technology that is really meant to keep the fossil fuel industry on life support," Salazar says.

Still, early innovators in negative emissions technologies are clamoring for a piece of Stripe's $1 million commitment. Global Thermostat, a company Stripe mentions in its announcement, has worked on a project that would put captured carbon into soda. A spokesperson for Global Thermostat told *The Verge* on Friday that Stripe hasn't been in contact just yet, but that it would "love to have a conversation."

Christian Anderson, head of merchant intelligence at Stripe, asserts that negative emissions projects need to happen alongside actual greenhouse gas emissions reductions. He tells *The Verge* that the company plans to continue the commitment as long as it's seeing impact, which it will measure by how negative emissions projects are able to scale up and by how much the cost to participate falls. He's optimistic, though, because other tech companies — which he wasn't able to disclose — have already reached out to express interest in joining their endeavor.

"Our motivation for doing this is around doing good for the world," Anderson says. "I think it's a motivation that other companies will definitely be able to get behind."

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