

## Stripe's \$1m eco push selects 4 CO2 removal projects

### Remember the climate change crisis? Irish brothers' \$36bn payment giant Stripe makes four purchases to enable removal of CO2 from the atmosphere.

[Stripe](#), the payments company founded by Irish brothers Patrick and John Collison and which was [recently valued at \\$36bn](#), is keeping up with its pledge to spend at least \$1m per year on the direct removal of carbon dioxide from the atmosphere and enable long-term storage.

As part of the company's stated [Negative Emissions Commitment](#), the company has struck deals with four companies from a short-list of 24 negative emissions tech firms that have imaginative and innovative solutions to the climate crisis.

The company is responding to the need to remove approximately 6 gigatons of CO2 per year from the atmosphere by 2050 – roughly the equivalent of the United States' annual emissions.

Stripe's request for projects was divided into two broad categories: carbon storage in the biosphere such as planting trees or modifying agricultural practices to store carbon in soil; and carbon storage outside the biosphere such as injecting it into stable rock formations underground.

"The world will need a portfolio of negative emissions approaches across these two categories to meet the 2-degree warming target sensibly adopted by many governments," explained Ryan Orbuch, project co-leader at Stripe.

"We believe Stripe can make the most impact by focusing our purchases on the latter category to help these solutions improve.

"From 24 promising applications, we've selected four high potential projects that exemplify the kinds of innovation required to advance the field. We're especially excited to be the first purchaser from three of the four projects. In cases where the projects are still quite early and have low capacity in 2020, we've pre-purchased volume for future years."

The four companies that Stripe has cut deals with are:

### **Climeworks**

*Capture + storage*

*Zurich, Switzerland*

*322.5 tons at \$775 per ton*

[Climeworks](#) uses renewable geothermal energy and waste heat to capture CO<sub>2</sub> directly from the air, concentrate it, and permanently sequester it underground in basaltic rock formations with [Carbfix](#). While it's early in scaling, the capacity of this approach is theoretically nearly limitless. It's also permanent and straightforward to measure. Climeworks has an ambitious cost and volume curve, with a long-term price target of \$100-200 per ton.

"Though this technology is expensive today, we're optimistic it will decrease in cost quickly with more early purchasers," said Orbuch.

## **Project Vesta**

*Capture + storage*

*San Francisco, USA*

*3,333.3 tons at \$75 per ton*

[Project Vesta](#) captures CO<sub>2</sub> by using an abundant, naturally occurring mineral called [olivine](#). Ocean waves grind down the olivine, increasing its surface area. As the olivine breaks down, it captures atmospheric CO<sub>2</sub> from within the ocean and stabilizes it as limestone on the seafloor. This is a compelling approach because it provides permanent sequestration with the potential for very high volume at low cost. Questions remain about safety and viability: to validate coastal enhanced weathering, more lab experiments and pilot beach projects must be performed.

"Stripe is Project Vesta's first customer and our purchase will accelerate their safety study and deployment timeline," said Orbuch.

## **CarbonCure**

*Storage only*

*Halifax, Canada*

*2,500 tons at \$100 per ton*

[CarbonCure](#)'s technology sequesters CO<sub>2</sub> in concrete by mineralising it into calcium carbonate (CaCO<sub>3</sub>)—as a bonus, this has the side effect of actually strengthening the concrete. This solution is compelling because it's permanent, relatively low cost, and could scale to the size of the global concrete market, sequestering >0.5 gigatons of CO<sub>2</sub> annually. Today, CarbonCure captures most of its CO<sub>2</sub> from industrial emitters such as ethanol, fertilizer, or cement plants. In the future,

CarbonCure's technology could use CO2 from direct air capture technologies once they become more readily available and economical, forming a full negative emissions technology.

"Stripe is CarbonCure's first customer to purchase carbon sequestration, and the transaction will enable them to subsidize their costs," said Orbuch.

## **Charm Industrial**

*Storage only*

*San Francisco, USA*

*416 tons at \$600 per ton*

[Charm Industrial](#) has created a novel process for preparing and injecting bio-oil into geologic storage. Bio-oil is produced from biomass and maintains much of the carbon that was captured naturally by the plants. By injecting it into secure geologic storage, they're making the carbon storage permanent.

"Stripe is Charm Industrial's first customer for this approach, and Stripe's purchase lets them begin testing this year," Orbuch added.

***Pictured at top: John and Patrick Collison, co-founders of Stripe***

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