**Inventive intervention for the climate**

*Canadian company Planetary Technologies turns to bold new ideas to tackle ocean acidity.*

by Scott Stoneman, Climate Story Network

Planetary Technologies caused a stir in August 2023 when they helped researchers from Dalhousie University’s Oceanography Department release a pinkish dye into the outfall at the Tufts Cove Generating Station.

That dye-tracing study was part of a new venture that is betting big on carbon removal. Planetary’s wager is that enhancing the alkalinity of seawater will heal marine ecosystems and boost the ocean’s ability to absorb carbon dioxide (CO₂).

Katja Fennel, one of the Dalhousie experts leading the study, says working with Planetary was a practical move.

“This was a mutually beneficial collaboration between our research team and Planetary, which made sense, given the size of the endeavour,” she says.

Will Burt, Planetary’s Chief Ocean Scientist, admits that the method they're using, Ocean Alkalinity Enhancement (OAE), has an unfortunate name.

“It’s complicated, it’s hard to remember, it’s a mouthful,” Burt says.

And in terms of fostering public understanding of the process, the name does not lend itself to helping create a clear picture of what’s actually happening.

OAE is not as straightforward as, say, planting trees to pull CO₂ out of the air. A closer comparison could be made to solar geoengineering, where the idea is for aircraft to eject aerosols into the upper atmosphere in an attempt to block the sun’s rays. Fortunately, OAE is not as complicated, risky, or far-fetched.

The International Panel on Climate Change calls CO₂ the “control knob on climate.” When heat from the sun bounces off the Earth’s surface, greenhouse gases like CO₂ trap some of that heat, forcing it to build up, creating disastrous consequences for the climate system.

The ocean absorbs approximately 40 per cent of the over 35 gigatonnes of CO₂ produced by human activities every year. All that carbon is making the ocean dangerously acidic. The mixture of water and CO₂ creates carbonic acid that threatens aquatic species like mollusks, sea urchins, crustaceans, and corals with extinction.

Holly Jean Buck, the author of books like *After Geoengineering* and *Ending Fossil Fuels,* says that what Planetary is doing is “actually one of the more promising carbon removal approaches, with potential co-benefits for particular ecosystems that are acidifying.”

“That being said, it’s in a very early stage of research,” Buck adds. “We’ll probably know in around three years if it works and what the impacts are.”

Since part of the goal is to also reduce the impact of extraction on the environment, the antacids like magnesium hydroxide that Planetary needs for OAE will have to be ethically sourced. The project is currently at a scale where mining doesn’t make sense, so the company is planning to use the abundance of rock that has already been mined and abandoned by industry.

Planetary’s method could prove to be an effective way to reduce CO₂ in the atmosphere, but it can’t replace the need to drastically reduce carbon emissions. It also won’t change the fact that reducing emissions is far cheaper overall.

“The most important thing we need to do, as fast as possible, is to cut greenhouse gas emissions,” Fennel says. “That has to be the absolute highest priority.”

Planetary aims to restart their operation at Tufts Cove in July, but in the long term they are looking to create a “hub” of sites for OAE across Nova Scotia.

“This idea of healing the ocean is not a trivial one,” says Burt. “We’re on a really scary trajectory in regard to climate, and at this point we all need to be intervening.”

What intervention should look like and whether it will have a positive impact is Fennel’s main focus.

“Because we have procrastinated too long, carbon removal for legacy emissions is all but required,” she says. “There are a bunch of different approaches that are being discussed, and of the group, alkalinity enhancement is the most conscionable.”

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*The Climate Story Network is an initiative of Climate Focus, a non-profit organization dedicated to covering stories about community-driven climate solutions.*