OCEAN REMOVAL

Positive Polar Converts Cruise Ship Into A Floating mCDR Research Lab

by **Sasha Ranevska** · May 19, 2025 · 2 minute read

Image courtesy of Positive Polar

Ocean wildlife restoration company Positive Polar has ventured into combining cruise ship travel with marine carbon dioxide removal (mCDR) research, converting a cruise vessel into a floating research lab.

The company's flagship vessel, called the Polar Angel, is a premium cruise ship that also serves as an ocean restoration hub and biotechnology laboratory.

Equipped with cutting-edge scientific facilities and a research lab, the ship also features interactive areas where guests can participate in ongoing work as citizen scientists.

Through this innovative creation, Positive Polar offers cruise guests a chance to experience scenic vistas while observing, participating in, and funding ocean biotechnologies onboard.

Inspired by the ocean's "biological carbon pump," Positive Polar has developed an environmental solution that mimics the positive environmental impact of whales.

As a marine species, whales play a vital role in supporting the continuous carbon processing cycle in oceans. By circulating nutrients in the ocean water, these giant mammals enable a feedstock for phytoplankton—the microscopic organisms that produce oxygen, keep the ocean water less acidic, and boost its CO2 intake capacity.

Positive Polar intends to use the revenue generated through its innovative cruises to channel funding towards proprietary technologies that help transform ship waste into tools that build up the ocean's health.

The company will be able to host 200 guests onboard each cruise ship, expecting to have 5,000 passengers per ship annually.

Relevant: Ocean Visions Launches New mCDR Ecosystem Database To Streamline Sector Communication

Through its novel cruise ship travel approach, Positive Polar is providing customers with a guilt-free sea travel experience that is focused on contributing towards a healthier climate.

Looking ahead, the company plans to scale its environmental impact by licensing its technology, hoping to generate hefty financial gains for its investors and power reinvestments into ocean restoration.

Recently, the company launched its first equity crowdfunding campaign, where interested parties can choose to support its solution and gain a part of the cruise line in exchange.

Read more: The National Academies Ocean Studies Board To Establish A Standing Committee On mCDR

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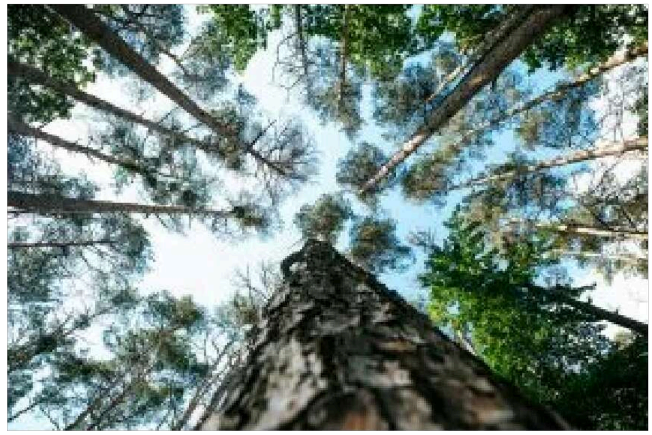

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BIOMASS PRICES REMOVAL

CO280 And JPMorgan Chase Sign New CDR Agreement Priced At Under $200p/t

by **Sasha Ranevska** · May 20, 2025 · 4 minute read

Image courtesy of Unsplash

Large-scale carbon removal developer CO280 and banking company JPMorgan Chase announced that they have signed a carbon dioxide removal (CDR) offtake agreement priced at under $200 per ton.

This trailblazing deal marks one of the lowest-priced carbon removal agreements to be delivered via an engineered CO2 management solution.

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The collaboration will leverage a pioneering low-cost CDR scaling approach developed by CO280, centered around retrofitting pulp and paper mills to capture biogenic CO2 from boiler stack emissions.

Once captured, the CO2 gets permanently stored deep underground, generating carbon removal credits that are offered to buyers like JPMorgan Chase, who are looking to address unabated operational emissions.

The carbon removal for this agreement will be provided through a project that will capture and permanently store biogenic carbon emissions from a pulp and paper mill on the U.S. Gulf Coast, with technology supplied by SLB Capturi.

To ensure the highest standards of quality, CO280 and its partnering mills adhere to the Frontier Biomass Sourcing Principles and Carbon Direct Biomass Sourcing Principles when sourcing biomass for CDR projects.

Additionally, the carbon removal credits are verified through rigorous third-party assessments, and CO280's measuring, reporting, and verification (MRV) approach aligns with protocols established by leading standard-setting bodies.

CO280 and JPMorgan Chase are embarking on this partnership following a Memorandum of Understanding signed by the two companies back in 2023.

Under their newly announced agreement, JPMorgan Chase invested in 450,000 metric tons of carbon dioxide equivalent ($mtCO_2e$) that is set to be delivered over 13 years.

For CO280, this deal comes a month after the company inked a landmark agreement with tech giant Microsoft, who invested in a massive 3.685 million tonnes of CDR to be delivered over a period of 12 years.

In an exclusive commentary for Carbon Herald, CO280 CEO Jonathan Rhone shared more details on the factors that enabled the company to offer its CDR services at this affordable price.

He explained:

"First, by retrofitting existing pulp mills to capture biogenic CO2 from boiler stack emissions, we're able to take advantage of the existing infrastructure, which reduces cost and risk vs. developing greenfield projects.

Second, pulp mills generate large volumes of CO2 in stack emissions (typically 500,000 to over 1 million tons per year), which drives lower costs through economies of scale.

Third, the concentration of CO2 in mill stack emissions is 300X more concentrated atmospheric CO2, which makes it more efficient and lower cost to capture than DAC.

Fourth, we're using commercially proven, liquid amines post-combustion capture technology supplied by SLB Capturi, which is lower cost and risk vs less proven technologies.

Finally, the majority of US mills are located in the Gulf Coast, which has access to some of the most cost-effective CO2 transport and storage infrastructure in the world."

CO280 is working on establishing partnerships with pulp and paper companies with the goal of building a network of more than ten carbon removal projects, which would enable an annual CDR volume of ten million tons.

This vision forms part of a strategy for creating a new class of carbon removal project, which, as CO280 explains, is profitable, bankable, and scalable.

Relevant: Massive Deal Between Microsoft And CO280 Paves The Way For Pulp And Paper Decarbonization

Through these efforts, CO280 will unlock billion-dollar investments in the U.S. pulp and paper industry while also helping the U.S. position itself as a leader in global carbon markets.

Commenting on the company's vision for the future and how it will benefit the pulp and paper industry, CEO Jonathan Rhone says:

"We're already working with the major pulp and paper companies in the US and Canada with about a dozen projects in active development and another 25 projects targeted for replication. Our goal is to be the largest and lowest risk supplier of permanent, high-quality, and affordable CDR in the world with a relentless focus on meeting the needs of CDR buyers.

By 2030, we have a realistic line of sight to deliver several million tons per year of CDR plus another 10 million tons per year under construction and 20 to 30 million tons per year in development.

To achieve scale, we've created a network of project partners across the value chain, including pulp and paper companies, capture technology suppliers, CO2 transport and storage service providers, EPCs, CDR buyers, and project investors, to create a project execution "playbook" that's bankable, scalable, and repeatable.

For pulp and paper partners, our joint venture business model provides a low-risk opportunity to transform their economics by increasing mill EBITDA by up to 2X, diversifying revenue, enhancing competitiveness, and decarbonizing operations."

When asked about his opinion on the current CDR market and what could introduce bolder investments and accelerated development in this industry, Jonathan Rhone states,

"The CDR market is in the early stages of growth and expansion. It has grown dramatically from about 30,000 tons in 2020 to 8 million tons in 2024 and 13 million tons so far in 2025. It remains dominated by a few large buyers, but we're seeing the emergence of new buyers and new vertical markets such as aviation, shipping, pharmaceuticals, advanced materials, automotive, and others.

Attracting more capital and accelerating market growth requires several things to happen. First, CDR suppliers need to execute and deliver CDR commitments on time and on budget. Second, CDR costs need to come down across the board. Third, CDR quality and integrity must continue to be a top priority for suppliers. Fourth, long-term CDR offtake agreements *with creditworthy buyers like JPMorgan, Microsoft, and the Frontier buyers are required to attract project financing, which will in turn drive scale and lower cost.*

Over the longer term, stable carbon policies and regulations are needed for sustained market growth and scale."

Read more: Aker Carbon Capture And CO280 To Develop New Projects In Pulp And Paper Sector

CDR PRICING CO280 JPMORGAN CHASE PULP AND PAPER INDUSTRY