Frontier

CARBON REMOVAL PURCHASE AGREEMENT

	Purchase overview
Description	Stripe, Inc. (“**Stripe**”), Shopify (“**Shopify**”), and H&M Group (“**H&M**”) for themselves as members of Frontier, will purchase 360 metric tons of carbon dioxide removal from the first two years of operation of Banyu’s pilot project at the Natural Energy Laboratory of Hawaii Authority (NELHA) which uses a reversible photoacid to capture CO2 from seawater. The project is detailed here.
Type	Direct Ocean Removal
Purchase amount	$500,000
Service quantity	360 metric tons
Price	$1,387 / metric ton
Estimated delivery schedule	The Purchase Amount will be allocated according to the following schedule: **Year** | **Quantity** (Net metric tons of CO_2 removed) 2024 | 1 metric ton (10t pilot) 2025 | 0 2026 | 359 metric tons (commercial unit)
First customer? *(alongside other Frontier buyers)*	Yes
Largest customer? *(Frontier buyers combined)*	Yes
Estimated delivery start & completion	Dec 2024 - 2026
Interim milestones & payment schedule	We anticipate these steps will be important markers of progress toward delivering carbon removal.

Subject to Section 2 below, the Purchase Amount will be payable 45 days after Company provides Buyer an invoice and evidence of achieving the following milestones, subject to Buyer's reasonable requirements, and Buyer's acceptance:

Payment (USD)	**Milestone**	**Estimated date**
$500,000	Upon execution of the agreement	August 2023
$0	Operation of field prototype under real-world conditions demonstrating: ● Carbon removal efficiency from seawater of >80% (and >40% based on all seawater pumped, which includes raw seawater used to regenerate photoacid) ● Extraction of CO2 (purity >50%) from seawater ● Successful light delivery system using sunlight for photoactivation ● No measurable leakage of photoacid or degradation products in water effluent	Q4 2023
$0	Continuous operation of field pilot for >6 weeks, demonstrating net energy requirement of <1 MWh/t and that all the components of the proposed commercial demonstration project work together as required. Validate MRV approach and share revised MRV approach with Frontier. Notify Frontier of first ton successfully removed.	Q4 2024
$0	Engineering and construction plans finalized for 360 tCO2/yr commercial demonstration unit.	Q2 2025

		Contract signed with host facility and storage partner for commercial demonstration.	
	$0	Construction completed of first commercial demonstration unit and operations started	Q2 2026

	Pre-conditions for future purchase
Description	Upon Company achieving all of the conditions below, Buyer, or an affiliate thereof, for itself or in connection with Frontier, may enter into negotiations for a new offtake agreement. These criteria summarize what would make us excited about the further trajectory of this project. However, at our discretion, we may be willing to engage in this conversation earlier - especially if it would meaningfully advance your progress.
General	• Delivery of 100% of initial tonnage, with third party measurement, reporting, and verification (MRV) evidence of tons removed. Public reporting of tons delivered, price per ton, and protocol used at time of delivery • Completion of a third-party lifecycle analysis (LCA) to confirm the net tons removed for this project • Updated LCA for future deployments that demonstrate declining future process emissions and improving net negativity • Updated techno-economic analysis (TEA) providing significant evidence that a sub-$100/ton capture cost by the date projected in the application to Frontier is achievable and highlighting key cost sensitivities. Differences between current experimental values and TEA assumptions for $100/ton highlighted, including a plan to narrow the gap between actual and modeled performance is presented • Evidence of ongoing responsible community engagement and efforts to achieve the highest standards of safety, compliance, and local environmental outcomes • Meeting with Frontier and potential site visit upon delivery and achievement of project-specific renewal conditions to answer any questions about the results

Project-specific	● Demonstrated key performance parameters of pilot system under continuous operation > 6 weeks ○ Energy requirement <1 MWh/t ○ Stability of photoacid with a half-life under process conditions of at least 10 days ○ Scalable light delivery system with footprint < 10 m2/t/y ● Ecosystem impact assessment prepared demonstrating safety of Banyu's approach including monitoring studies on effluent water and mesocosm studies showing process water is safe for discharge into the ocean ● Provide photoacid strategy for scaled deployments, including mechanism of immobilization and plan for synthesis/supply chain at scale ● Provide revised TEA for various infrastructure permutations including integration with coastal infrastructure and standalone plants, showing potential to achieve Frontier's cost and scale targets ● First commercial site identified, including required permits secured