



An Emerging Opportunity in Carbon Dioxide Removals

August 2025

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Head, Sustainable
Investments

CONFIDENTIAL

CIBC Global Asset Management

A Rich History of Service

CIBC Global Asset Management | Size Metrics



Assets

\$264B+ Assets Under Management¹



Rank

Top 100 Global Asset Manager

CIBC Global Asset Management | Employee Metrics



Employees

225+ Qualified Investment Professionals



Experience

19+ Average Years of Industry Experience

CIBC Global Asset Management | North American Footprint



¹Based on Canadian Asset Management's \$177B of assets under management includes \$35B in multi-asset and notional currency overlay mandates and \$29B in 3rd party sub-advised assets and U.S. Asset Management's assets under management of \$87B (as at December 31, 2024). All figures expressed are in USD.

CIBC Leadership in Carbon Management

Leveraging our Experience for Access and Insights

- Early support for carbon management has established CIBC as a credible and leading bank ecosystem for market participants
- CIBC is uniquely positioned with intellectual capital built through early participation and advocacy for carbon markets to add value for investors and stakeholders and accelerate a critical industry supporting the climate transition



carbonplace



Combining our long history of managing credit with institutional expertise in carbon management to support execution

Established Relationships Across the Carbon Ecosystem

PROJECT DEVELOPERS



"CIBC is well known to us and is advanced in their understanding of the carbon dioxide removal ecosystem. Their idea to unlock debt financing to catalyze our industry is much needed."

- Paul Needham, CEO



"CIBC Asset Management is helping to unlock the capital that CDR desperately needs. We look forward to continuing our collaboration with CIBC to support innovative access to capital."

- Jim Mann, CEO & Founder

BUYERS



"As an early purchaser of carbon dioxide removal credits, we would welcome a source of flexible institutional capital to help finance carbon project developers that we are supporting."

- Mitchel Selby, Lead, Sustainability Fund

NGO



"CIBC has been an early supporter of the carbon removal industry in Canada. It would be helpful for the Canadian industry to gain access to debt financing to facilitate large-scale, durable carbon removal solutions."

- Na'im Merchant, Executive Director

CIBC has supported project developers, buyers, government entities, NGOs, and philanthropic organizations in supporting their carbon management initiatives

Carbon Dioxide Removal (CDR)

Removal of greenhouse gases is critical to achieving long-term climate goals

1

Private Capital Is Essential
For Achieving Net Zero

2

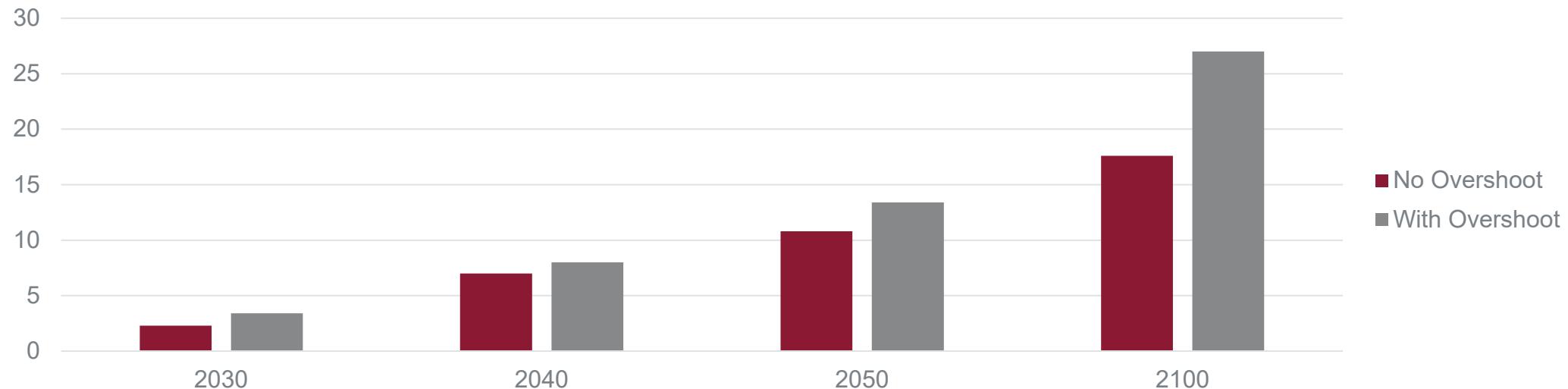
Sustainable Private Debt
Has Been Relatively Scarce

3

High Demand For
Bespoke Financing

- Intergovernmental Panel on Climate Change Sixth Assessment Report

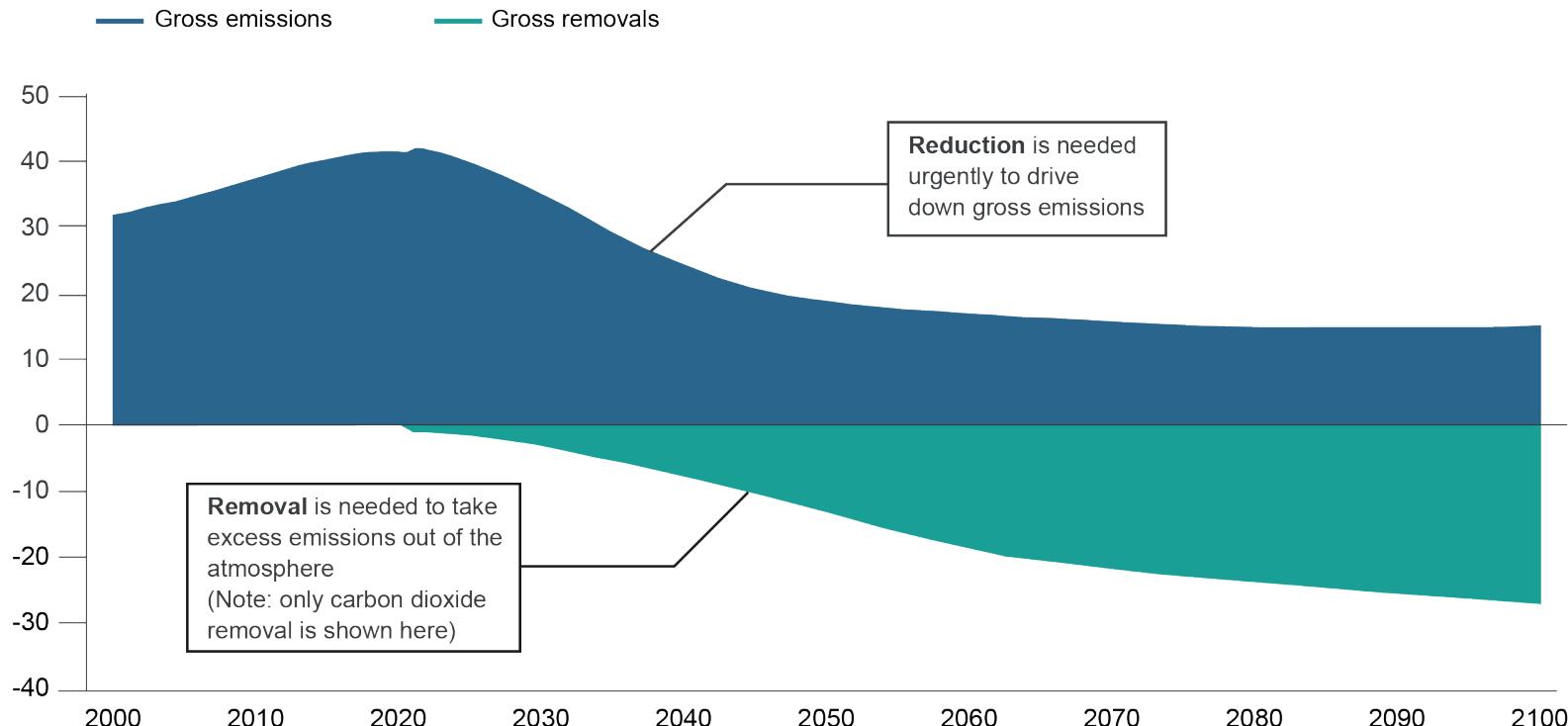
Average CDR required under IPCC 1.5C Scenarios (GtCO₂/y)



Carbon Dioxide Removal (CDR)

Removal of greenhouse gases is critical to achieving long-term climate goals

Emissions and removals of carbon dioxide (Gt CO₂/y)



Point Source Carbon Capture

Reduces a localized source of CO₂, such as **industrial facilities and power plants**. Lowers the footprint of traditional carbon intensive industries. **Critical in supporting scale in carbon management infrastructure**.

Carbon Removal

Pulls existing CO₂ directly from the air using technological and nature-based solutions. Essential for targeting legacy emissions and solving for residual CO₂ challenges.

Carbon Management Supported by Policymakers

Impact of regulatory environment on the progress of carbon management



Policy Support + Government Procurement

- The Canadian Federal Government implemented an investment tax credit for capital invested in carbon capture, utilization, and storage (CCUS) project. The ITC covers 60% of capital expenditures for new direct air capture (DAC) facilities, capture other than DAC are eligible for a 50% credit, and carbon transportation, storage, and use are eligible for a 37.5% credit
- \$10M carbon removal procurement announced by the Canadian Government in October 2024



Enhancement of 45Q Tax Credit

- The U.S. government has reaffirmed its bipartisan support for carbon capture and storage by preserving the federal Section 45Q tax credit in the “One Big Beautiful Bill Act”
- The bill maintains the 45Q tax credit for point-source capture at US\$85/ton and direct air capture (DAC) at US\$180/ton in dedicated geologic storage. The tax credit now includes parity for the utilization of carbon dioxide. In this new bill, CO₂ used or converted into valuable products or injected and geologically stored in a qualified enhanced oil recovery or natural gas recovery project site will qualify for the same dollar value credit as CO₂ that is permanently sequestered in a dedicated geologic storage site



EU ETS + Article 6

- Policymakers will assess by 2026 whether and how permanent carbon removals could be integrated into the EU Emissions Trading System (EU ETS)
- Article 6 of the Paris Agreement establishes frameworks (notably Articles 6.2 and 6.4) that enable countries to cooperate in achieving their climate targets through international carbon markets, including the trading of carbon removal credits

Carbon Dioxide Removal (CDR)

Approaches and Universe

There are many approaches to CO₂ removal, and all are needed

From managing ecosystems to engineered projects, these approaches remove atmospheric CO₂ and store it in biological or geological systems underground.

Carbon removal projects vary not only by **type of approach and storage method** but also in **price, geographical scope, technological maturity, and co-benefits** (e.g., environmental and social). Some projects even combine natural and technological processes.

Transport and Storage of captured CO₂ is a separate, but important, domain.

Navigating these complexities is challenging

Biogenic CDR



Soil



Afforestation/
Reforestation



Blue Carbon



Biochar

Geochemical CDR



Mineralization



Mineral Alkalinity
Enhancement



Enhanced Rock
Weathering

Synthetic CDR



Direct Air Capture



Electrochemical
Alkalinity Production

Transport and Storage of CO₂

Conventional
CO₂ Storage

In-situ
Mineralization

Ex-situ
Mineralization

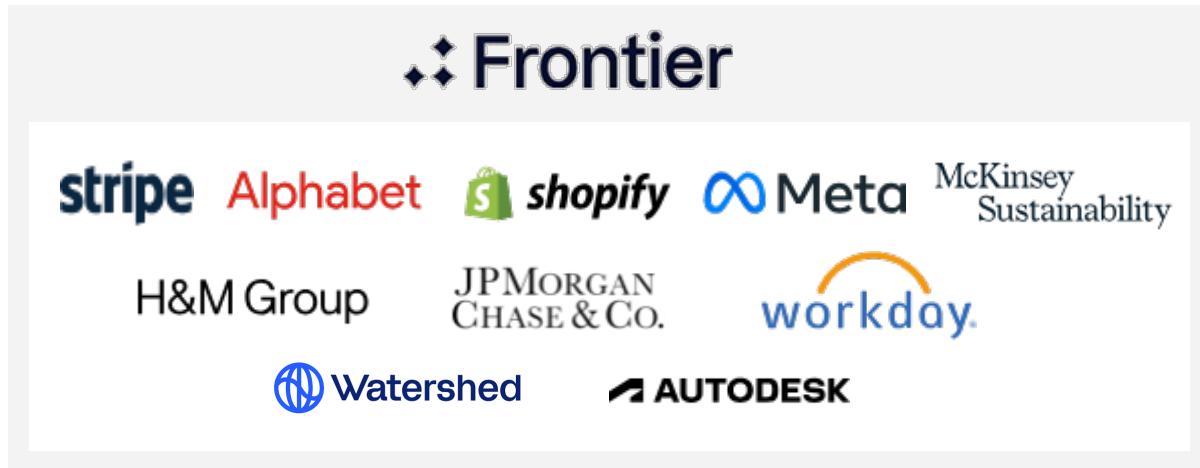
Examples of CDR approaches within each category are non-exhaustive

Carbon Dioxide Removal (CDR)

Procurement of carbon removals is being led by large-cap technology companies

Frontier is an advance market commitment to buy an initial \$1B+ of permanent carbon removal between 2022 and 2030.¹ It was founded by Stripe, Alphabet, Shopify, Meta, McKinsey and tens of thousands of businesses using Stripe Climate.

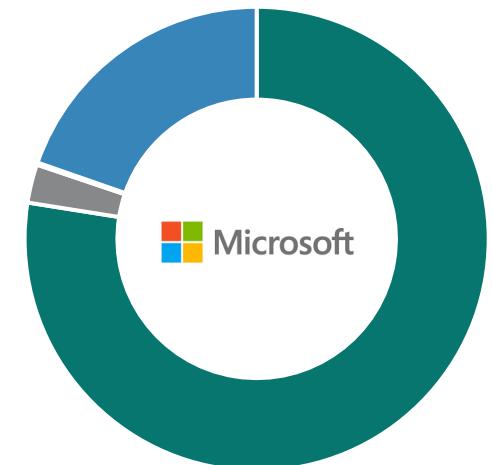
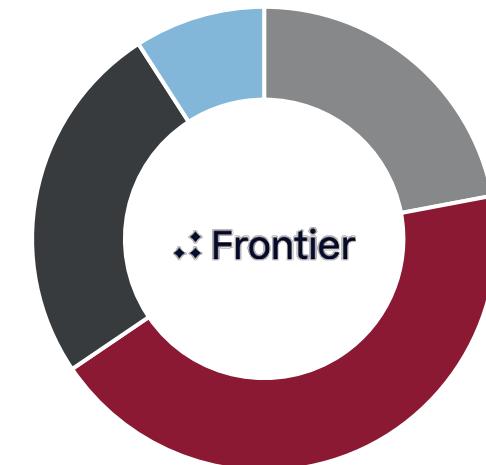
Separately, Microsoft has led with a series of high-volume offtakes.



1. Frontier has contracted \$328.4MM as of October 23, 2024; All figures USD, unless otherwise stated

Which CDR approaches are leading?

Most purchases have been of nature-based solutions, but hybrid and engineered procurement is growing rapidly



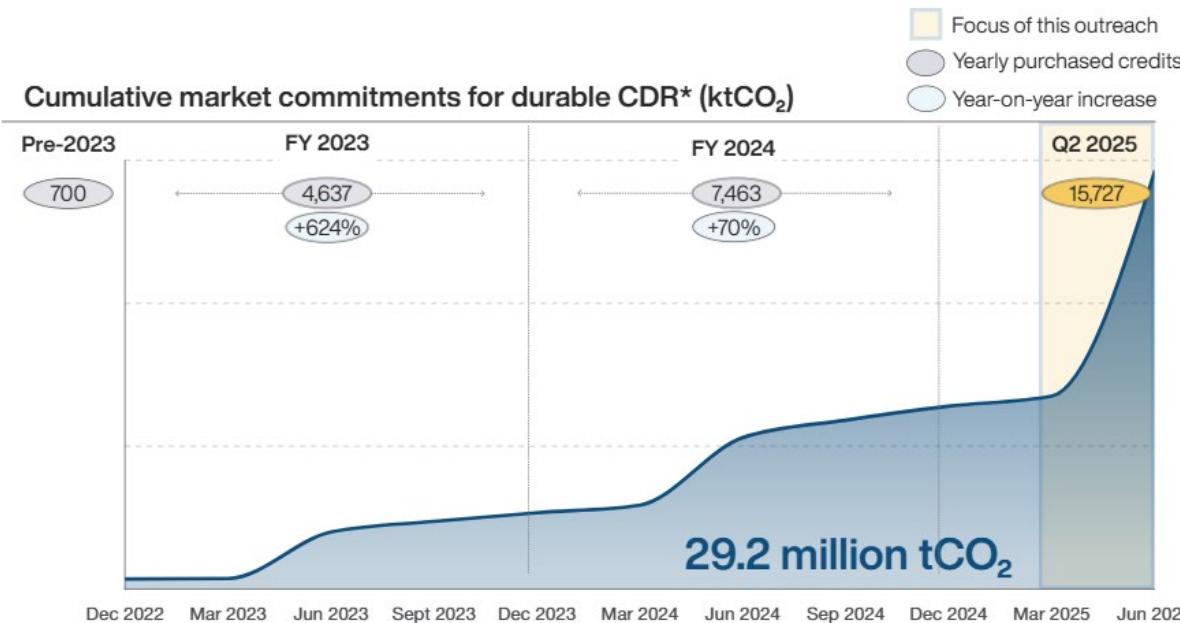
ARR/Reforestation
BECCS
BiCRS

Direct Air Capture
Enhanced Rock Weathering
Mineral Alkalinity Enhancement

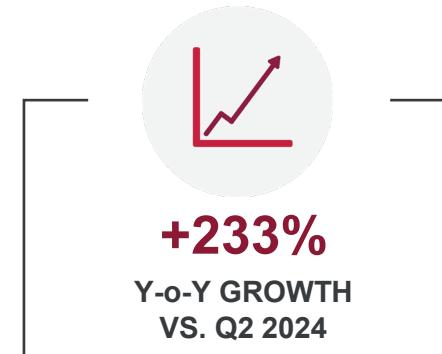
Data above is based on offtake agreements signed and not of other types of purchases
Frontier also signed an offtake with Exergi supporting a BECCS project but contracted volume was not disclosed so omitted from this data set

Market and Industry Growth

In a Landmark Quarter, the CDR Market More than Doubled in Size – From 13.5M tCO₂ to 29.2M tCO₂



* CDR contracts excluding MOUs. Purchases include pre-purchases, spot purchases, and offtake agreements.

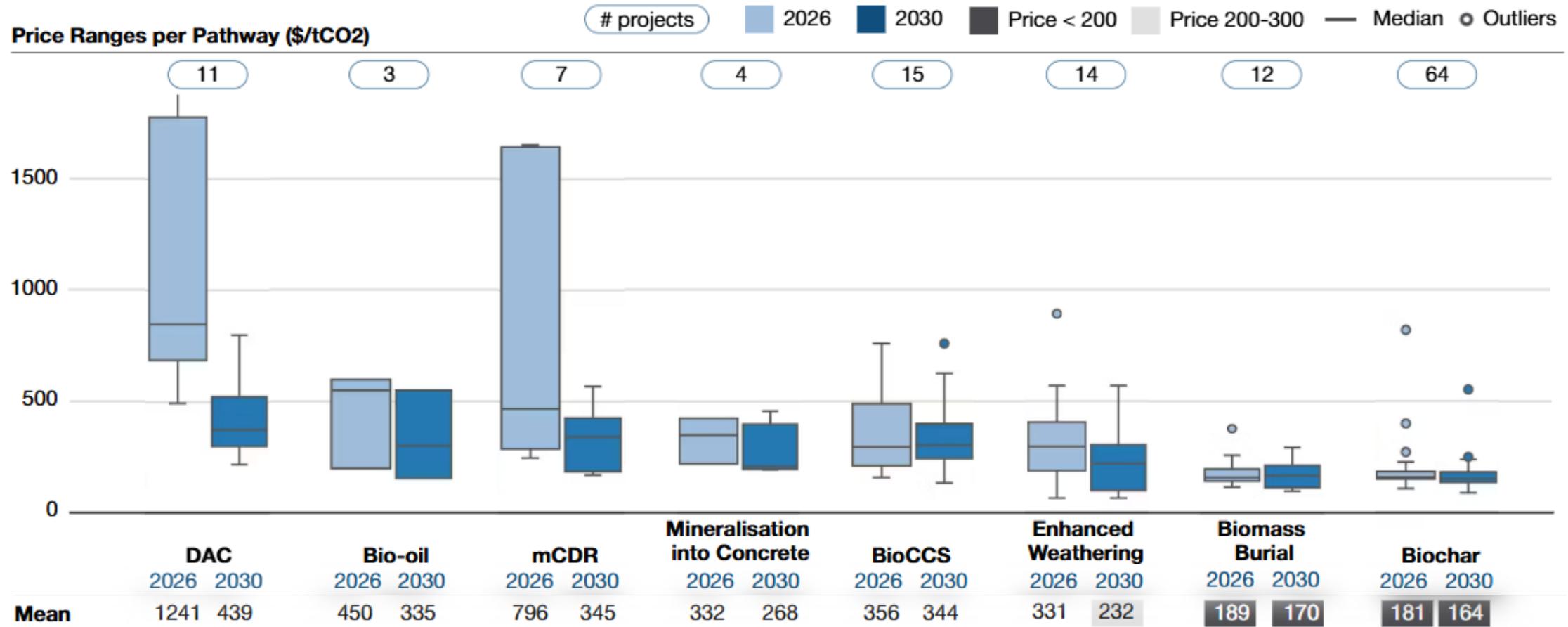


Key Insights

- The durable CDR market witnessed an unprecedented surge in Q2 2025, more than doubling in size in the space of just three months
 - The market jumped from 13.5 million tCO₂ to 29.2 million tCO₂
 - This growth was fuelled by 15,727 kt of new CDR contracts, representing a 233% year-on-year growth compared to the same period last year
- Remarkably, 2025 has already recorded over twice as many credit purchases than the whole of 2024, with April 2025 recording more purchases than the seven previous quarters combined

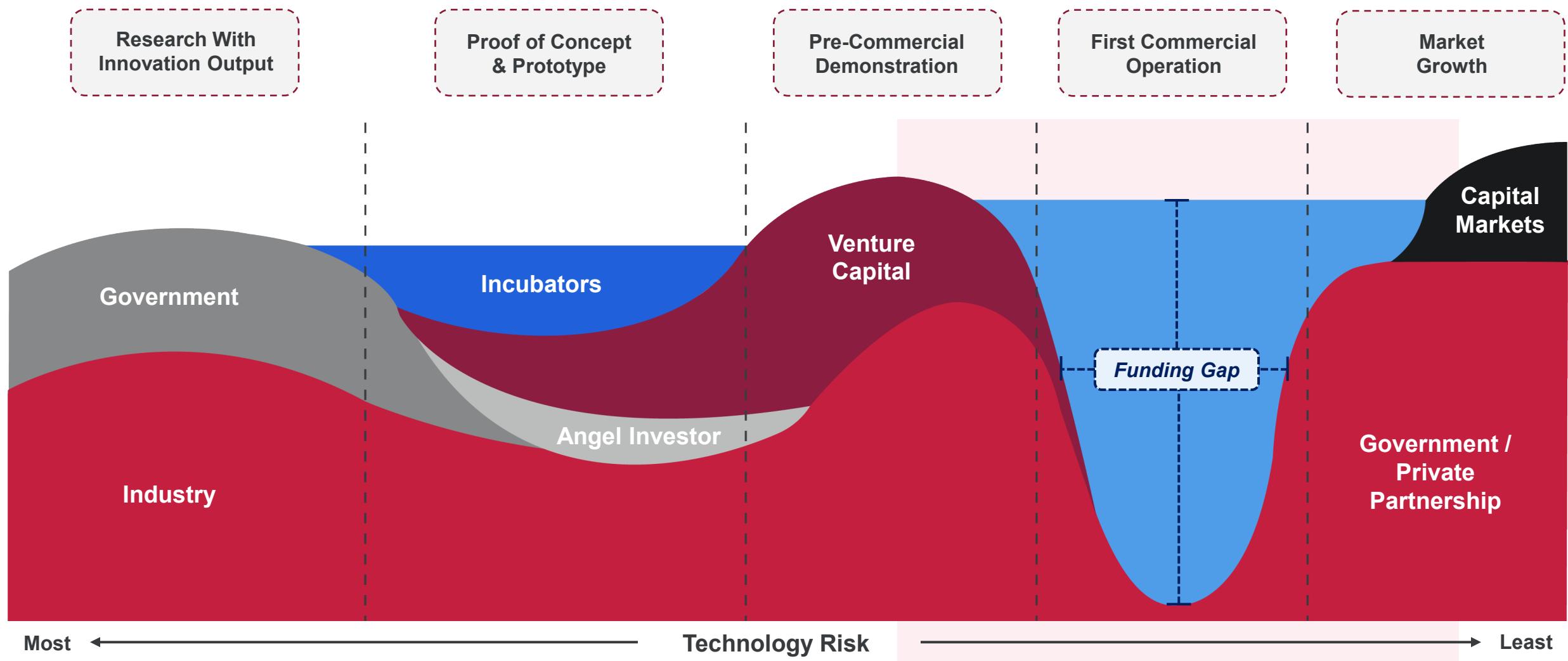
CDR Pricing Dynamics

Credit Pricing Ranging Anywhere From \$150 / tonne for Biochar, to \$1,800 / tonne for DAC



Carbon Dioxide Removal (CDR) Company Financing Lifecycle

Flexible Capital is Essential To Solving the Project Finance Valley and Critical in Scaling the Industry



Private Debt in Support of Scale

An Attractive Opportunity for Investors While Catalyzing an Essential Industry to Support Real World Decarbonization



Debt Provides Investors With Security In An Emerging Industry

- Demand for flexible debt is rising as the industry undergoes rapid maturation
- Reduces consolidation risk as companies compete for market share by technology and process type
- Produces regular cashflow and maturities create structured liquidity



Market Dynamics Favour Debt

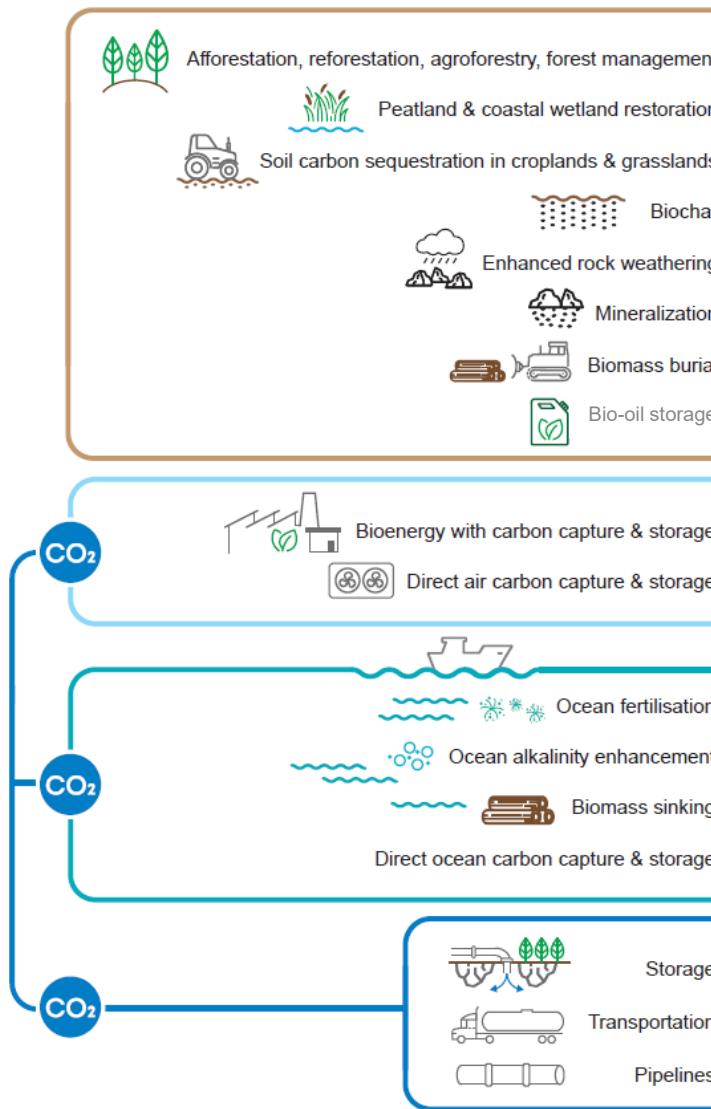
- Long term pricing dynamics will vary across technology types as they experience scale, impacting investment outlooks and making debt more favourable in the capital stack
- Structuring creates flexibility and risk management benefits that support investor interests



Necessary To Drive Scale

- Market participants and project developers have identified the lack of debt and project finance as a key barrier to scale
- Debt offers an attractive risk / reward prospect and impact to scaling the carbon dioxide removal industry

Carbon Dioxide Removal (CDR) Landscape



Capture process	Carbon storage pool	Category	Tech readiness	Investment readiness	Expected return	Origination pipeline
B	VSS	Conventional	Medium	Medium	Conservative	High
B	VSS	Conventional	High	Medium	Moderate	Moderate
B	VSS	Conventional	Medium	Medium	Moderate	Moderate
B	VSS	Novel	Medium	Medium	High	High
G	M	Supporting services	Medium	Medium	Moderate	Moderate
G	BE/M	Supporting services	Medium	Medium	Moderate	Moderate
B	VSS	Supporting services	Medium	Medium	Moderate	Moderate
B	GF	Supporting services	Medium	Medium	Moderate	Low
<hr/>						
B	GF	Conventional	Medium	Medium	High	High
G	GF	Conventional	Medium	Medium	High	High
<hr/>						
B	MS	Conventional	Medium	Medium	Conservative	Moderate
G	M	Conventional	Medium	Medium	Moderate	Moderate
B	MS	Conventional	Medium	Medium	Conservative	Moderate
G	GF	Conventional	Medium	Medium	Conservative	Moderate
<hr/>						

Legend

Capture process

B	Biological
G	Geochemical

Carbon storage pool

VSS	Vegetation, soils & sediments
BE	Built environment
GF	Geological formations
MS	Marine sediments
M	Minerals

Category

Conventional
Novel
Supporting services

Readiness

High
Medium
Low

Expected Return

High
Moderate
Conservative

Origination pipeline

High
Moderate
Low

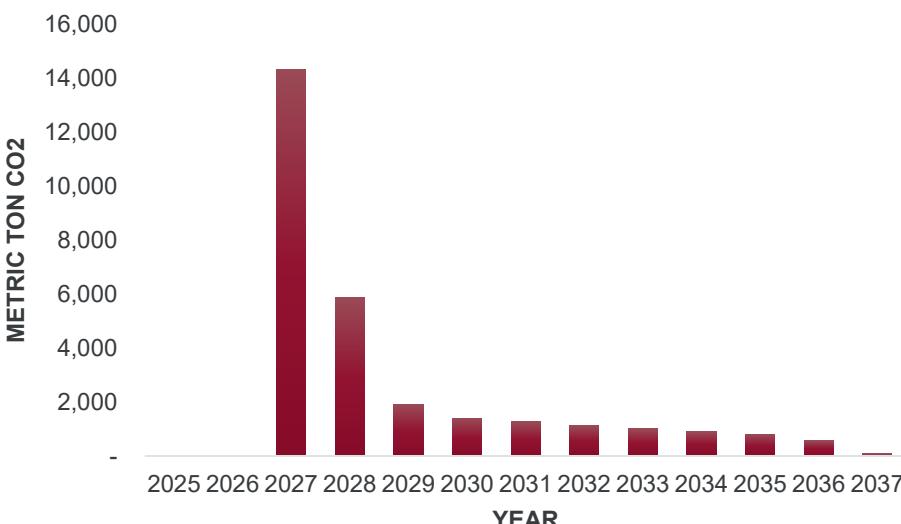
Transaction case study: Enhanced Rock Weathering

Prospective Terms

Security	Senior - GSA
Headquarters	UK & Canada
Offtake	Signed
Pricing	1400
Upfront fee	N/A
Maintenance covenants	Leverage

Offtake Information

Counterparty	Microsoft
Purchase amount	\$15.2M USD
Tons contracted	29,313



Project Considerations

- **Execution:** Experienced management team with active sites in credit production. Site plans and land use agreements in place to fulfill deployment for offtake.
- **Social and Harms and Benefits:** Minimal risk to community impact. Project drives job creation and minimizes fertilizer use, leading to lower impact on local ecosystems.
- **Environmental Harms and Benefits:** Introduction of wollastonite to agricultural land creates co-benefits by releasing essential nutrients, improving soil health and increased crop yields.
- **Additionality and Baselines:** Protocol accelerates a natural process creating additionality. Regular measurement is required to establish adequate baselines.
- **Measurement, reporting, and Verification:** Defined protocol with secured sourcing for lab work and data. Process meets established registry protocols.
- **Durability:** Low risk for reversal and long storage periods.
- **Leakage:** Production of feedstock, transportation, and delivery can be emissions intensive. Projects are sourced close to production facilities to minimize leakage.
- **Regulatory and Policy Considerations:** Projects are compliant with local and national frameworks and have obtained necessary permitting.

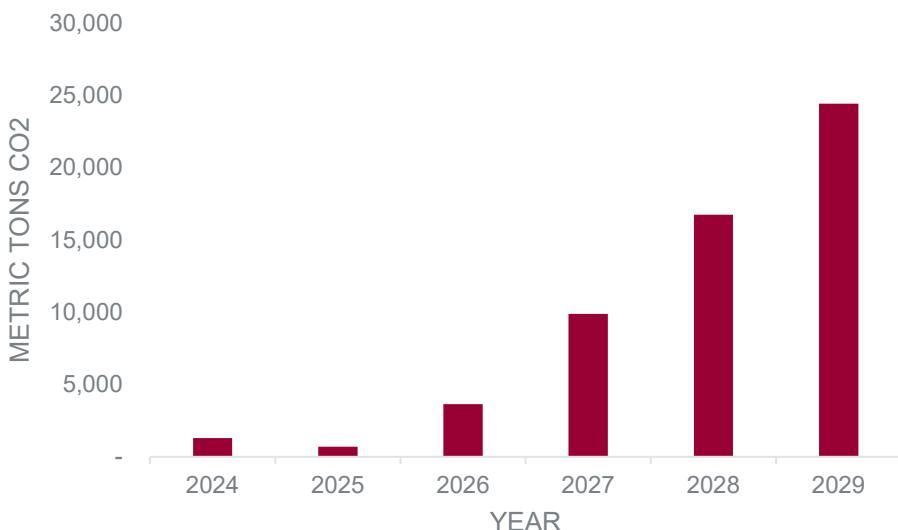
Transaction case study: River Alkalinity Enhancement

Prospective Terms

Security	Senior - GSA
Headquarters	Canada
Offtake	Signed
Pricing	1200
Upfront fee	N/A
Maintenance covenants	Leverage

Offtake Information

Counterparty	Frontier
Purchase amount	\$26.9M USD
Tons contracted	56,753



Project Considerations

- **Execution:** Management has successfully completed a pilot project and has comprehensive site plans in place to meet near and mid-term requirements for a series of offtake agreements.
- **Social and Harms and Benefits:** Extensive engagement with Indigenous communities to obtain free and prior informed consent. Community education and buy-in in support of ecosystem co-benefits.
- **Environmental Harms and Benefits:** Introduction of limestone to river systems creates co-benefits by reducing acidity and improving system health, this process improves fish stock and health.
- **Additionality and Baselines:** Protocol improves capacity for carbon sequestration via a natural process. Establishing baselines can be difficult given potential conflicts with other river enhancement programs.
- **Measurement, reporting, and Verification:** Defined protocol with sensor deployment to collect and report data. Process has been recognized by registries and aligns with offtake requirements.
- **Durability:** Low risk for reversal and long storage periods.
- **Leakage:** Production of feedstock and transportation can be emissions intensive. Projects are sourced close to production facilities to minimize leakage.
- **Regulatory and Policy Considerations:** Projects are compliant with local and national frameworks and have obtained necessary permitting.

Key Takeaways

Carbon emerging as one of the largest commodity markets of the next century

1

Intersection of an emerging industry and climate action

- Carbon management is an essential industry for real world decarbonization
- The industry has reached a critical juncture where scaling is needed to meet climate scenarios
- Policy environment is supportive for CDR

2

Private Debt is essential to drive scale

- Infrastructure like asset class requires debt solutions to execute against contracted cash flows
- Unique environment where flexible lenders can set terms, be selective, and demand significant yields
- Protections of debt reduce risk

3

Portfolio Benefits

- Solution climate commitments by scaling a critical industry for transition
- Exposure to an emerging growth asset class with diversification benefits
- Strong risk adjusted return potential

Thank You

Disclaimers

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