

puro·earth

Biochar's Market Momentum: Leading the Carbon Removal Revolution

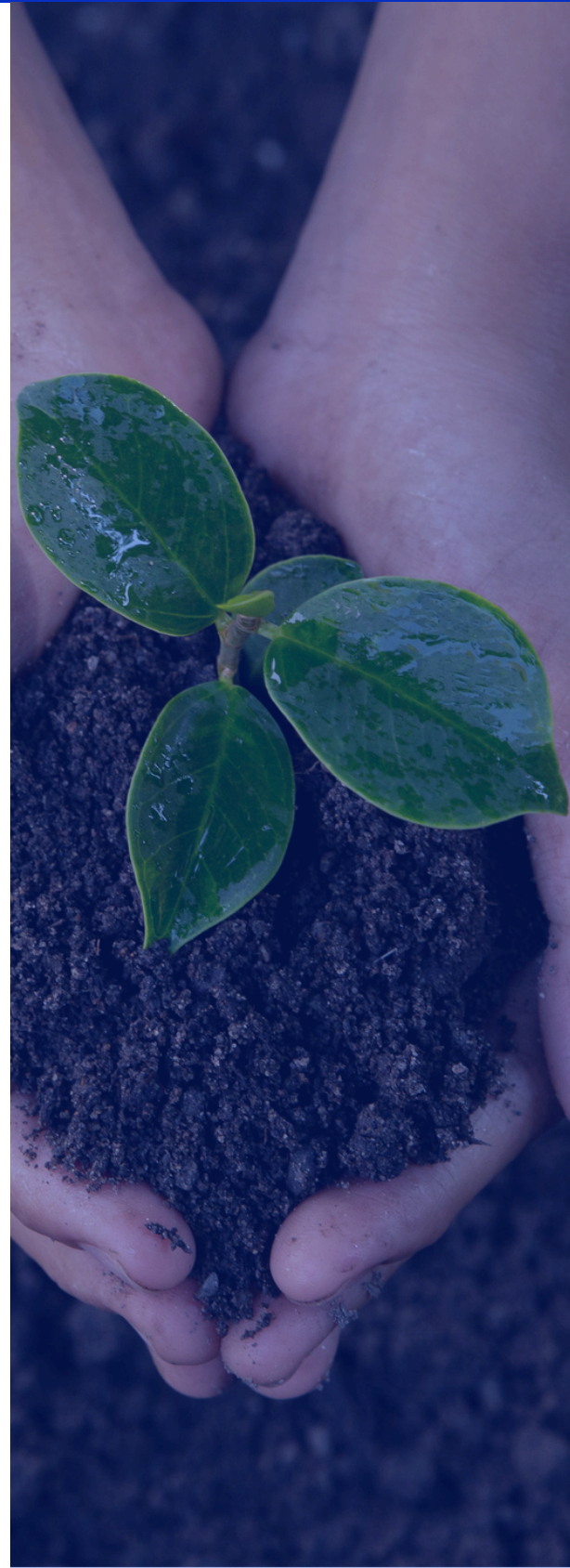
Data as of June 11, 2025



Biochar has rapidly established itself as a leading durable carbon dioxide removal (CDR) technology, outpacing other solutions in both market acceptance and operational scale. This report provides an in-depth analysis of the biochar market's growth, performance, and evolving dynamics from its early adoption stages through June 2025.

Drawing on data from Puro.earth and industry benchmarks, this report highlights biochar's significant role in the CDR sector, with biochar suppliers delivering the majority of market-verified durable removals to buyers in recent years.

Key areas explored include the exponential increase in biochar CORC (CO₂ Removal Certificate) issuance, strong market liquidity, and maturing market mechanisms such as price transparency and the role of intermediaries. In addition, the report examines who is driving demand for biochar credits—identifying trends by geography, industry, and corporate buying patterns. The following pages aim to provide investors, project developers, and stakeholders with timely insights into biochar's trajectory, supporting informed decisions in the rapidly evolving CDR landscape.

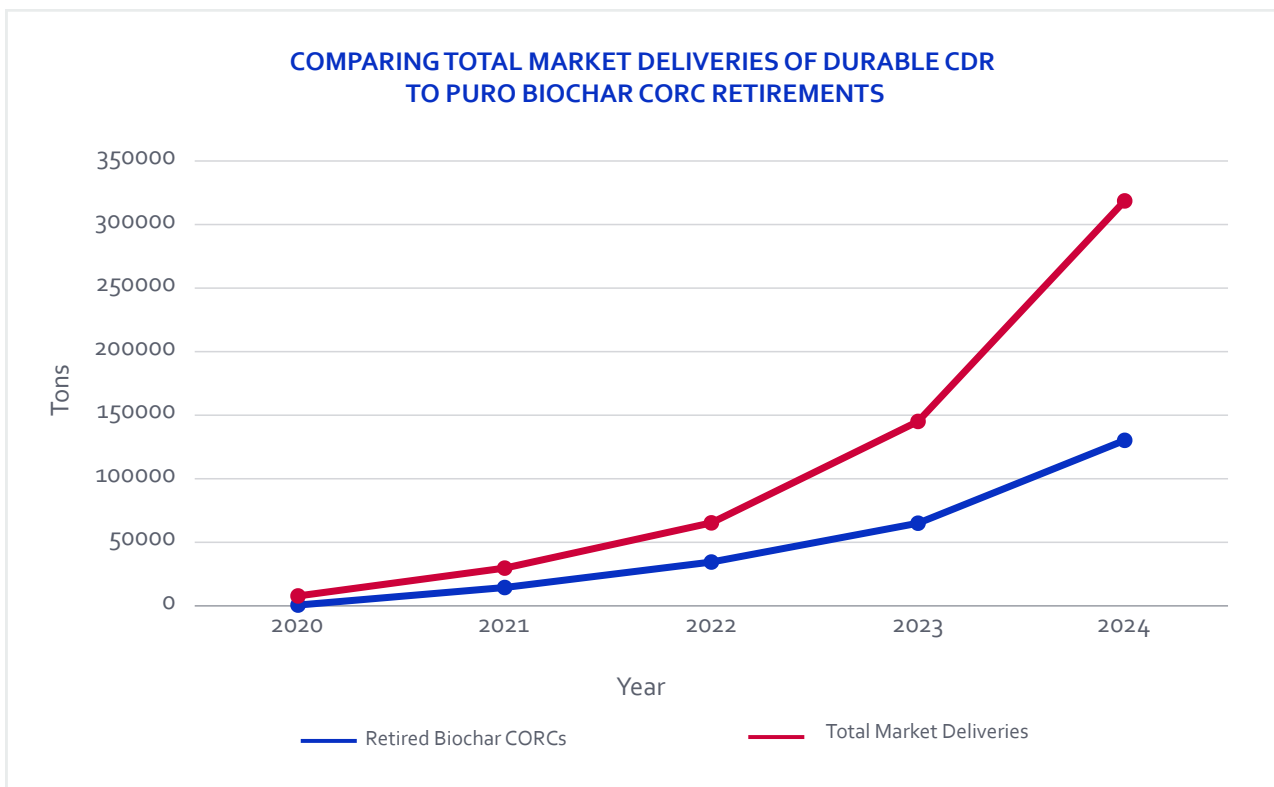


Issuance and Growth

Biochar is widely considered the most mature durable CDR technology available on the market today: eight out of the top ten Suppliers on CDR.fyi's leaderboard for CDR deliveries use biochar methodologies.

"Puro.earth biochar CORCs account for 43% of market deliveries to date"

This market leadership is evident in the following figure, which compares tons of durable CDR delivered across all methodologies from 2020-2024, with the volume of Puro.earth biochar CORCs retired during the same period. Despite representing just one methodology from a single standard, Puro biochar CORCs account for 43% of market deliveries to date.



Source: CDR.fyi and Puro.earth registry data

Total biochar CORCs issued
(As of June 2025)

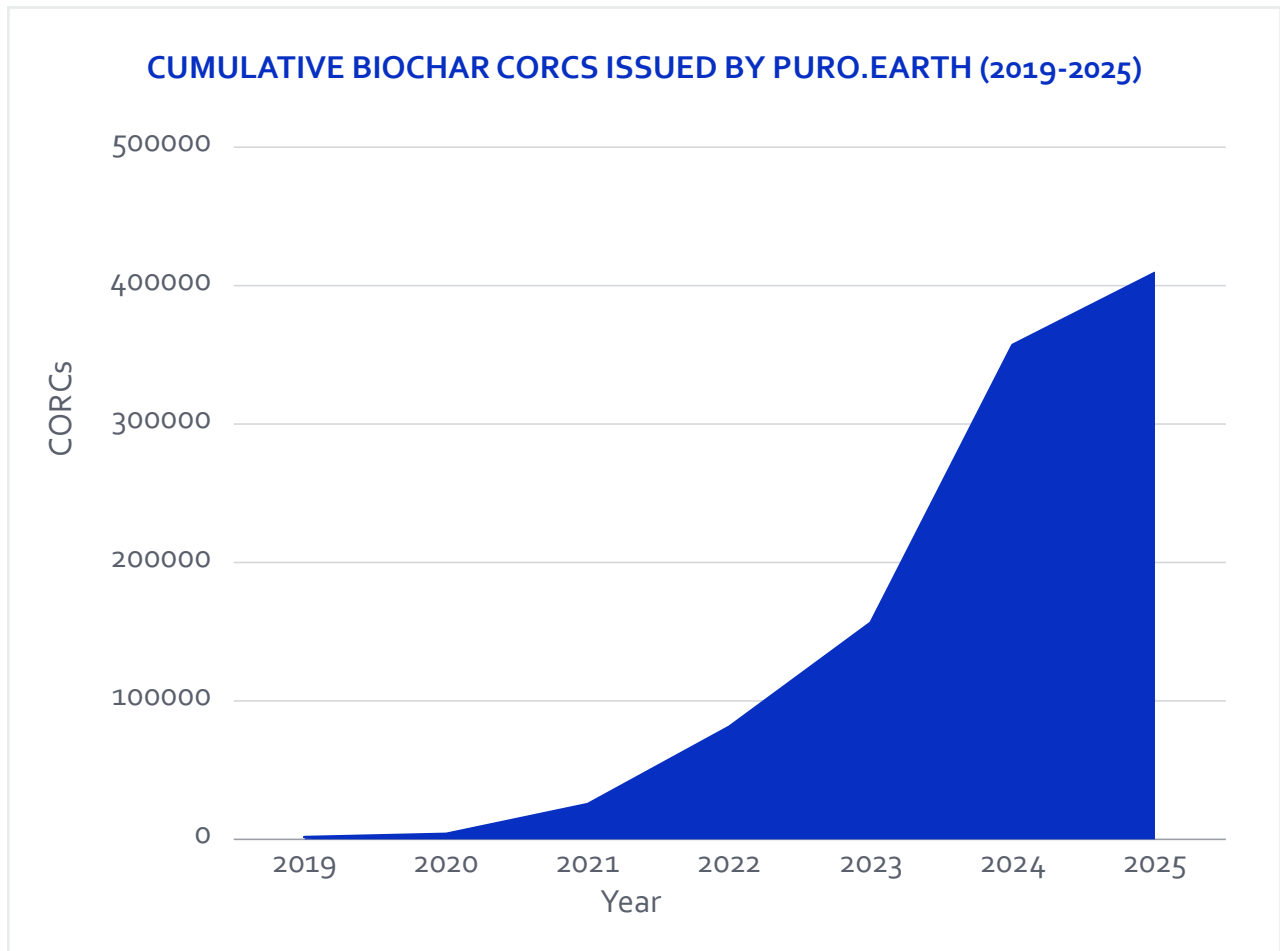
408,000+

Biochar issuances through
Puro.earth growth rate

166% (2023-2024)

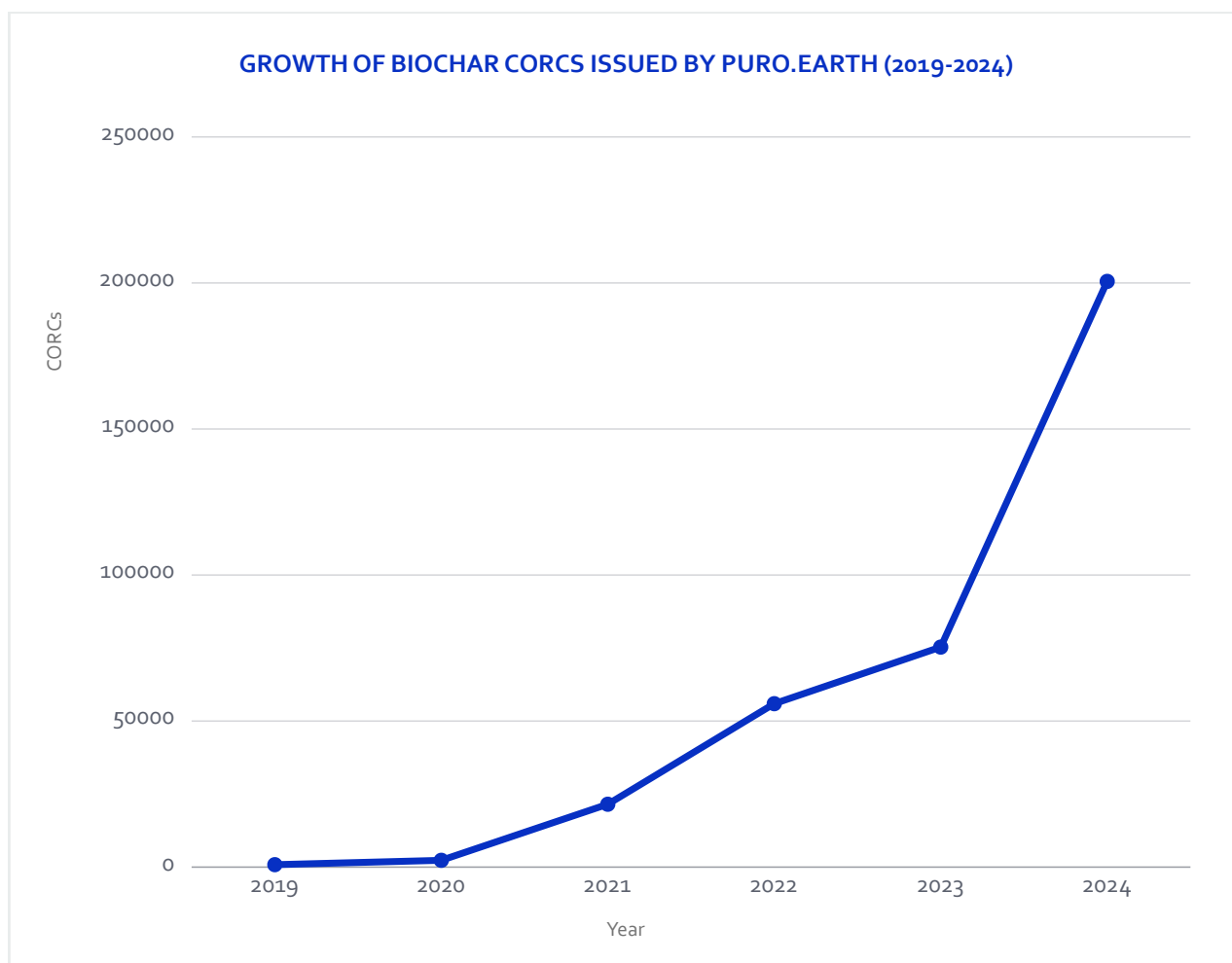
Compound annual growth rate
(CAGR)

199% (2019-2024)



"Biochar has been a cornerstone methodology at Puro.earth, which issued its first biochar CORCs in 2019."

Biochar has been a cornerstone methodology at Puro.earth, which issued its first biochar CORCs in 2019. Since then, issuances have increased exponentially – as of June 2025, Puro.earth has issued over 408 000 CORCs. No longer considered just a pilot or experimental approach, biochar is now entering its next phase of commercial-scale deployment, with operators scaling production around the world — and with Puro.earth certifying the vast majority of biochar credits on the market today.



Notably, momentum has accelerated dramatically in recent years. **Between 2023 and 2024 alone, biochar issuances through Puro.earth grew by 166%.** From 2019 to 2024, the compound annual growth rate (CAGR) reached 199%. While such steep growth is typical of emerging technologies during early scale-up, these figures represent both the maturation of biochar as a CDR solution and growing market confidence in engineered carbon removals.

Market Liquidity Indicators

Data based on CORCs Issued by Puro.earth from 2024 to June 11, 2025

93%

biochar CORCs completed a primary transfer

80%

CORCs issued during this period have already been retired

47 days*

is the average time from issuance to primary transfer

Beyond supply growth, the market for biochar CORCs has undergone a transformation in recent years. While demand has varied over time, and has often been cited as a challenge in the broader CDR market, this trend is less evident for biochar – as reflected in several key market liquidity indicators.

During the reporting period, 93% of biochar CORCs completed a primary transfer, defined as either the first transfer or retirement of the CORC, whichever occurred first. Furthermore, 80% of CORCs issued during this period have already been retired, meaning a beneficiary has taken exclusive ownership of the carbon removal represented by the CORC. The average time from issuance to primary transfer across the entire reporting period is 47 days. *

** Methodology note: This metric reflects the volume-weighted average number of days between CORC issuance and primary transfer (i.e., the first transfer or retirement, whichever came first). It includes unsold inventory (CORCs that have been issued but not yet transferred) by measuring the time from issuance to the data cutoff (June 11 for this analysis). Excluding unsold inventory, the average time to primary transfer would be 36 days.*



The average time from issuances to primary transfer

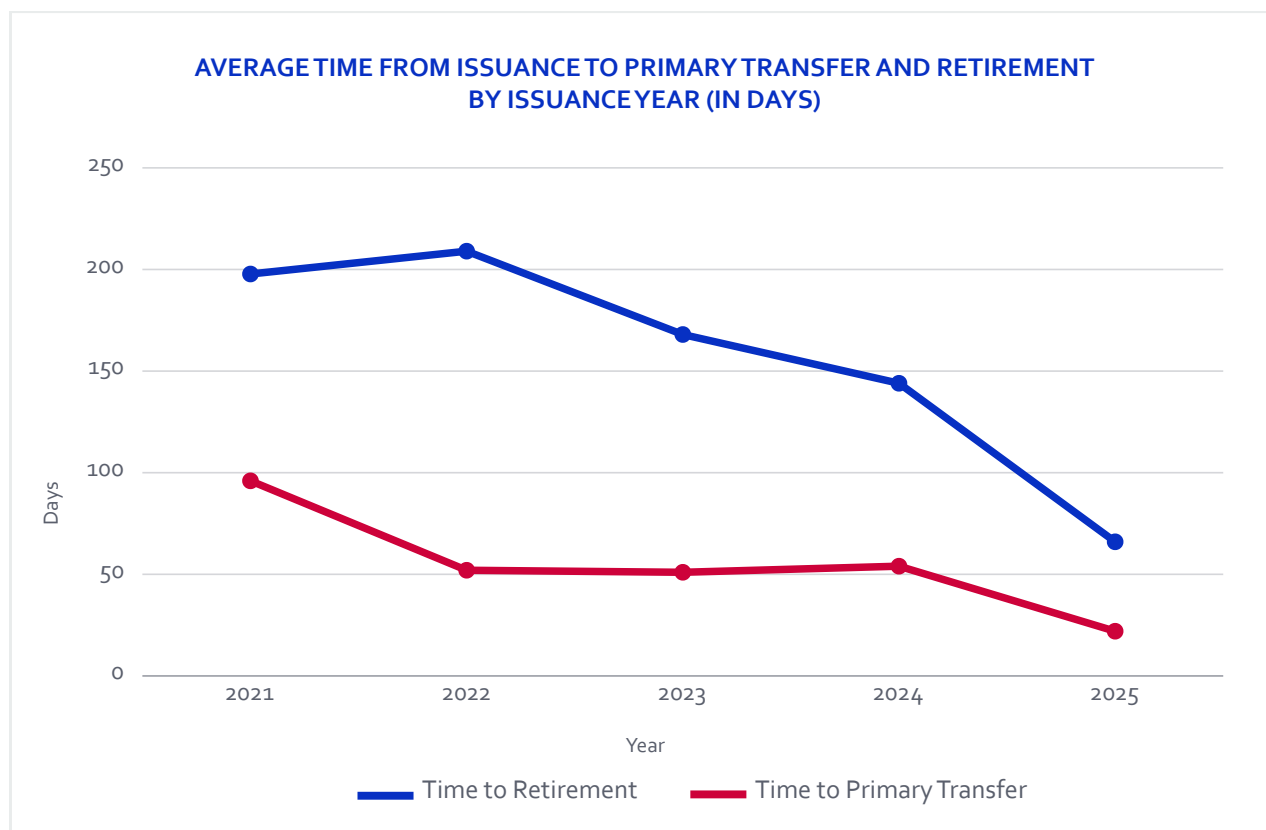
2021 Average **95 Days**
2025 Average **↓ 22 Days**



The average time from issuances to retirements

2021 Average **197 Days**
2025 Average **↓ 65 Days**

The following figure illustrates another significant trend: the decreasing time between issuance and both primary transfer and retirement. For CORCs issued in 2021, the average time to primary transfer was 95 days; for CORCs issued in 2025 (as of June 11), this has fallen to just 22 days. A similar pattern is observed for retirements, with the average time dropping from 197 days in 2021 to 65 days in 2025.



This trend is partly driven by an increase in offtake agreements for biochar CORCs, which typically results in rapid delivery upon issuance. The forward market for biochar CDR also signals continued growth in this regard. Among the top 20 biochar Suppliers on CDR.fyi (by tons sold), more than 500,000 tons of CDR have been delivered with an additional 2,000,000+ tons contracted for future delivery.

Altogether, these metrics suggest an increasingly active and healthy market for biochar CORCs, offering confidence to both investor and project developers.

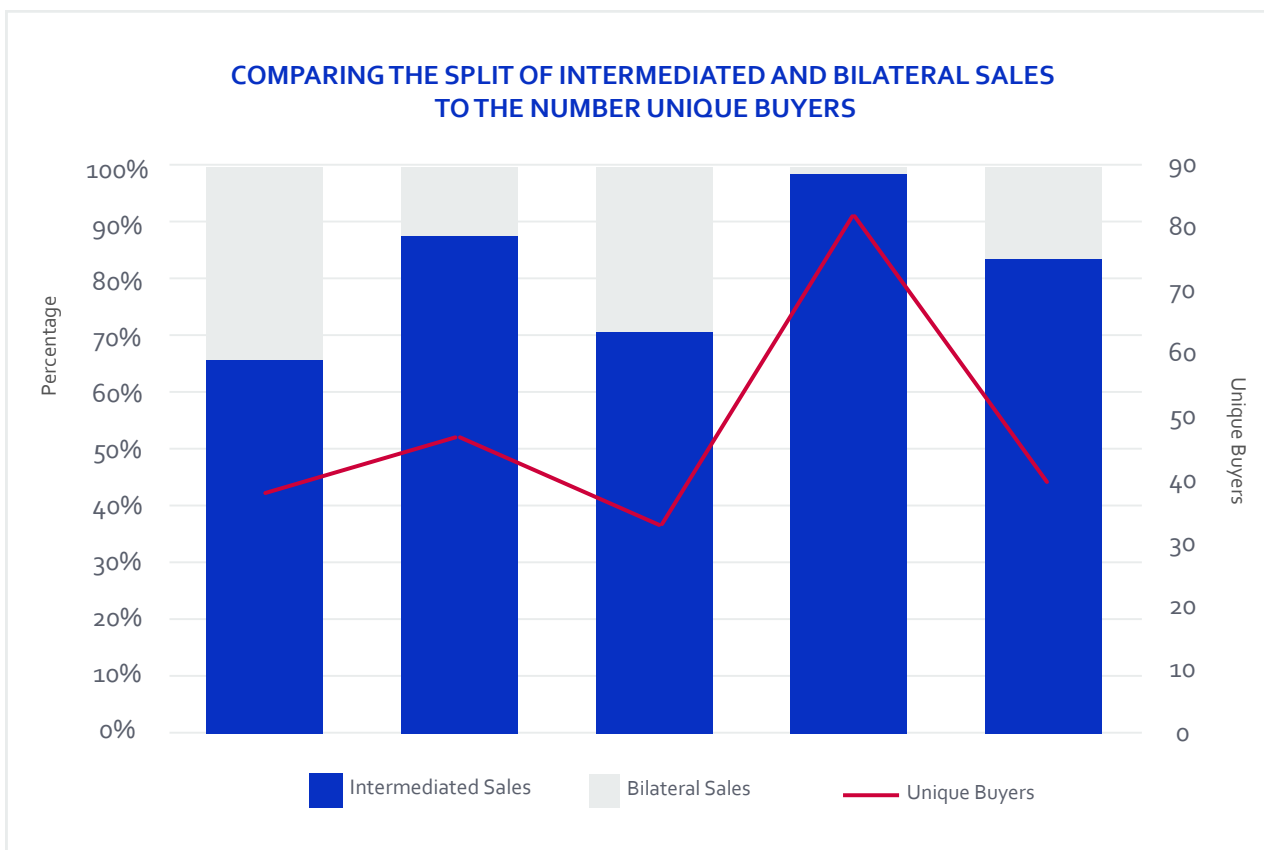
Market Maturation Indicators

Increasing Market Intermediation

Intermediated sales dominate the biochar market, with 85% of CORCs sold through intermediaries rather than via bilateral agreements directly with the end buyer.

Intermediation can contribute to a more efficient market. Rather than each corporation developing in-house expertise to procure biochar CDR credits, working with intermediaries allows buyers to leverage existing networks and knowledge, significantly shortening the learning curve.

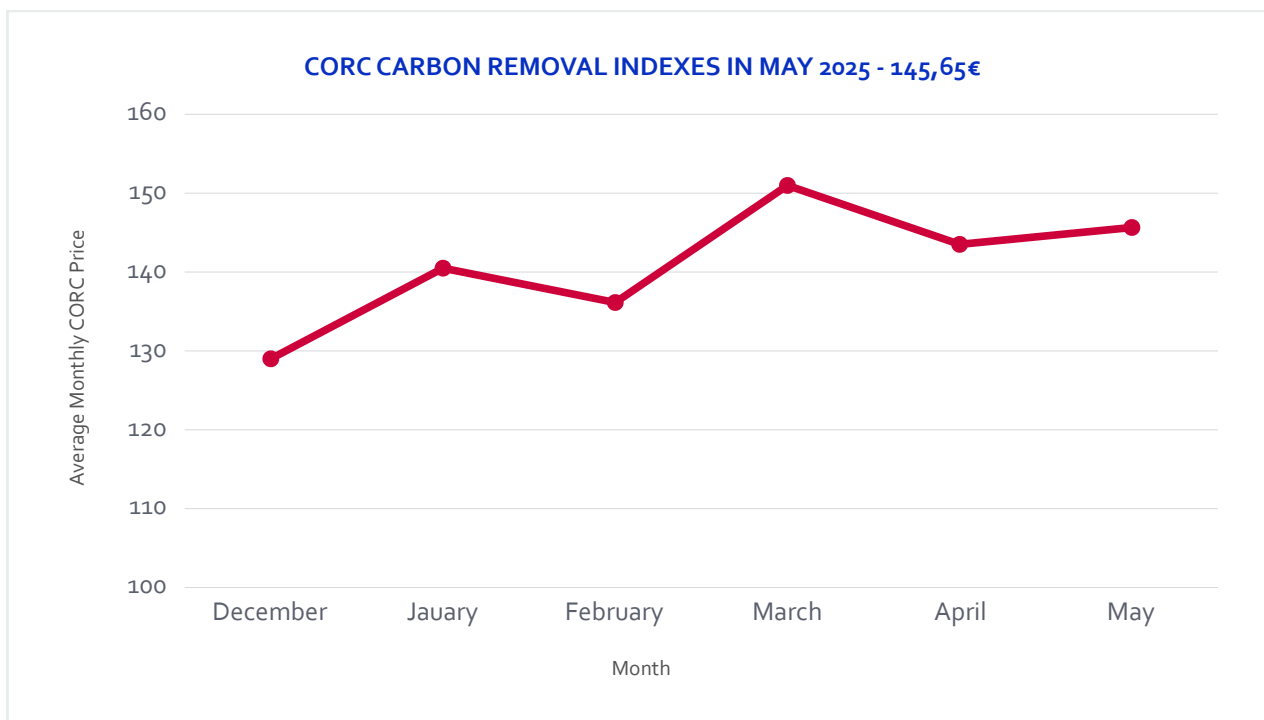
As a result, intermediaries can play a critical role in attracting and onboarding new buyers to the market. This relationship is examined in the following chart, which compares the share of Intermediated sales versus Bilateral sales in relation to the number of unique end-buyers retiring biochar CORCs each quarter.



Price Stability and Transparency

Nasdaq's CORC Biochar Price Index (CORCCHAR) provides first-of-its-kind reference prices for CDR credits, bringing greater transparency and price discovery to the market. The index reports the volume-weighted average price for biochar CORCs on a monthly basis, drawing from transaction data recorded in the Puro Registry. It includes both spot trades and pre-purchase agreement transactions.

Since the start of 2025, the index has showed stability, consistently ranging between €125 and €145 per CORC.



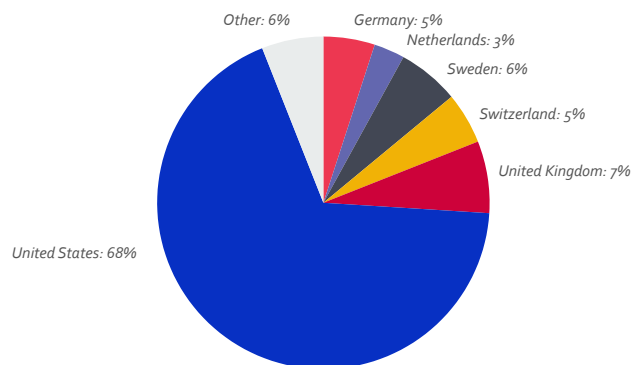
End-User Insights and Retirement Trends

Data based on CORCs Issued by Puro.earth from 2024 to June 11, 2025

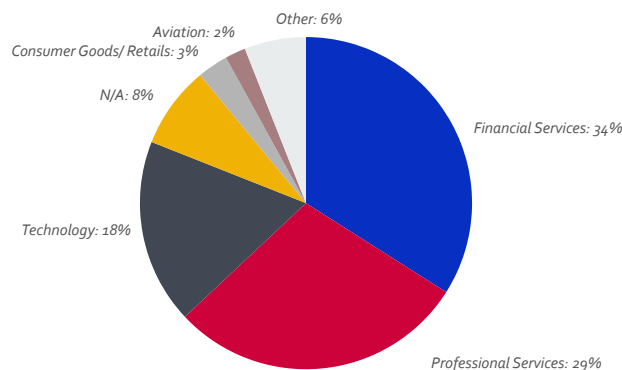
This section reviews key demographics of biochar CORC end-users — i.e., the beneficiaries reported at the time of retirement. Geographically, demand is concentrated in the Global North, with 68% of beneficiaries based in the US and the remainder primarily located in the United Kingdom and the European Union.

Unsurprisingly, beneficiaries are primarily from industries such as financial services, professional services, and technology companies, which aligns with the broader trends observed across the CDR market to date.

GEOGRAPHIC DISTRIBUTION OF END-USERS



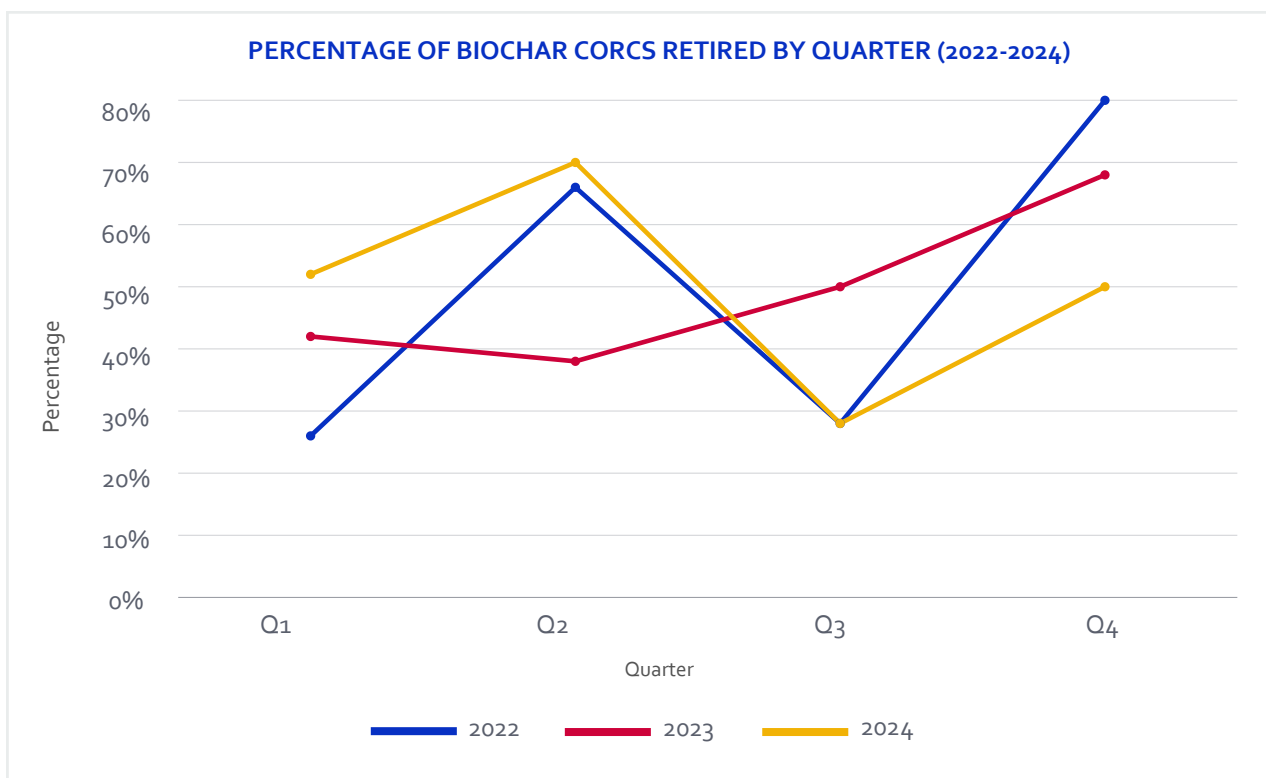
INDUSTRY SECTOR BREAKDOWN OF END-USERS



Retirement Patterns

The figure below shows when retirements occurred throughout the calendar year during the period from 2022 to 2024. While some patterns emerge — such as increased retirement activity in Q4, and heightened activity in Q2 during 2022 and 2024 — there are no consistent, widespread trends that can be confidently extrapolated from this limited dataset.

The increased activity in Q4 and Q2 may correlate with corporate sustainability reporting cycles, though further analysis is needed to draw any firm conclusions.



Key takeaways



Biochar dominates durable CDR markets

Puro.earth biochar projects have delivered 43% of market-verified durable CO₂ removal volumes through June 2025, establishing biochar as the leading CDR technology in both volume and market maturity.



Rapid growth in CORC issuance

The issuance of biochar CO₂ Removal Certificates (CORCs) has grown exponentially, reflecting greater investment, improved methodologies, and increased project deployment. **Puro.earth biochar CORCs account for 43% of market deliveries to date.**



Maturing market ecosystem

Enhanced price transparency, the growing role of intermediaries, and robust liquidity signal a maturing marketplace for biochar-based CDR, improving confidence among investors and buyers. 85% of CORCs sold through intermediaries.



Diversifying demand

A broadening mix of buyers, spanning different geographies, industries, and company types, is fueling demand for biochar credits and broadening the market's foundation.



Benchmark for durable removals

Biochar's operational track record and transparent verification protocols now serve as a benchmark for the broader durable CDR sector, shaping both investor expectations and regulatory frameworks.



Ongoing innovation and scrutiny

In addition to strong growth, the sector continues to innovate around measurement, permanence, and sustainability, with market stakeholders maintaining focus on scientific rigor and carbon accounting integrity.



Thank you!

Thank you for taking the time to read this report.
Visit puro.earth/biochar to learn more about our methodology.

If you have any questions or
would like to discuss our findings further, please don't hesitate to
[contact Puro](#) today.