AlliedOffsets

VCM 2024 Review

Emerging Trends for 2025

AlliedOffsets

AlliedOffsets is the world's largest database and market intelligence provider for the voluntary carbon market. We aggregate and analyze data to present the most comprehensive dataset on carbon offsetting activity globally. Our dashboard includes data and analysis of over 30,000 projects, including information on pricing, buyers, transactions, brokers, and more.

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2024 Recap

This was another bumpy year for the VCM, with retirements and prices not seeing growth. Quality was a top concern for buyers, and there were several positive developments on that front: ICVCM issued the first CCP approvals to standards and methodologies, while compliance markets made headway on integrating VCM credits for a portion of the compliance allowance. The latter is important because the compliance markets serve as de facto quality standards in the market.

Removals activity continued to grow in 2024, fueled by buyer preference for what they perceive to be higher-quality credits. There was an increase in both NBS and engineered removal purchases, though many marketplaces and buyers who had prioritized engineered solutions in the past have started to move into NBS, as well. That suggests buyers were unwilling to pay for pricier ($100/ton+) credits, and opted for more economical NBS removals.

Over 20m of the NBS credits (~10% of market retirements) were purchased via off-take agreements that will see credits supplied well into the future. This signifies a larger shift of corporate behavior, from purchasing credits on the secondary market, to investing in early-stage projects to secure supply. That trend is likely to continue to grow in 2025.

2025 and Beyond

With the ICVCM driving a focus on quality, demand likely increasing from compliance markets (including Article 6) and data centers, and tightening of methodologies to limit the number of credits generated, there are reasons to be hopeful around the market heading into the new year.

Headwinds remain, however. Trump's election will mean fewer sticks or carrots for US companies to decarbonize. As international emissions trading markets begin to take off, we are likely to find some countries have over-promised the emissions reductions they're able to export. And the over-supply of available credits in the market grew again in 2024. The growth of the over-supply of credits means our forecast for prices in the market remains bearish in the near term.

As climate tipping points are reached, governments and companies need to determine how much, truly, they care about pricing emissions – without that clear direction, the VCM cannot grow in a meaningful way. The efforts that the industry has gone through over the past 18 months mean the VCM is better positioned than ever to help channel funds to climate-friendly projects. Whether or not buyers of credits will put trust in the revamped VCM after two years of controversy will be the main test for the market in 2025.

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What this report covers

Section 1

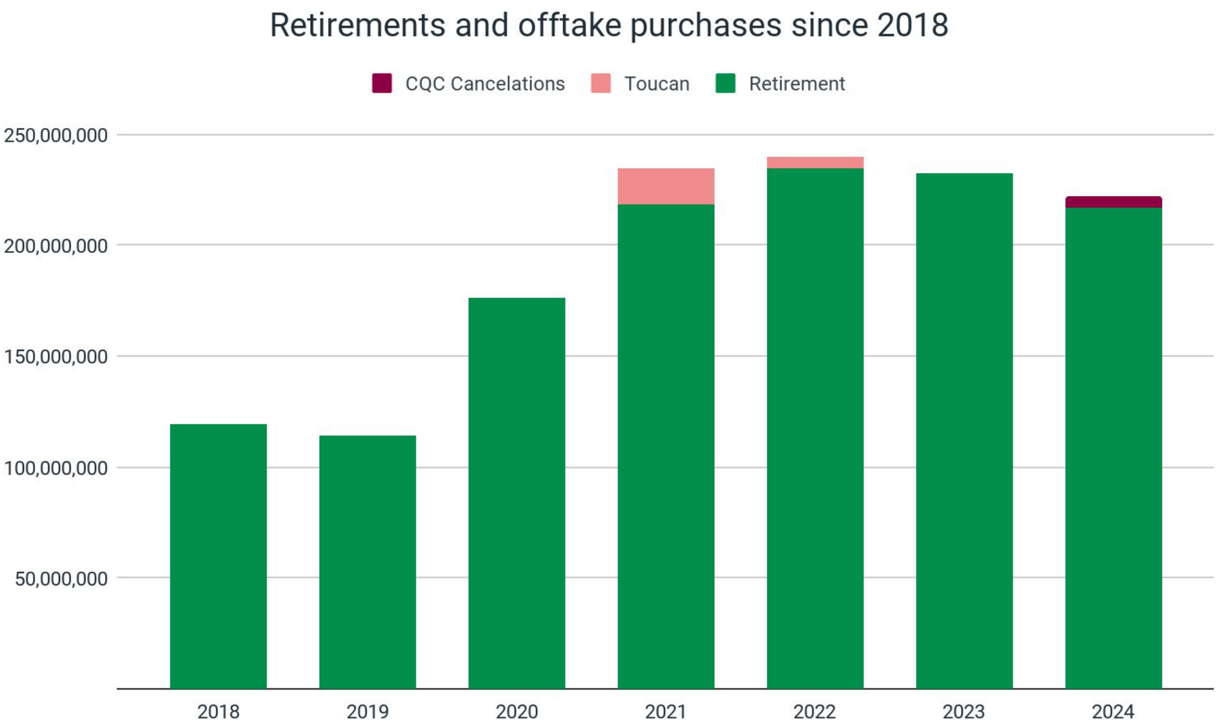
Headline Numbers

The VCM Is (Slowly) Changing

Overall retirement activity in the VCM didn’t see any growth, but that may be a win given the negative headlines and tepid buyer interest.

2024 was a year of focus on quality, and a year of change. Removals saw their largest share of activity, and the makeup of the underlying project sectors and registries is more varied than ever. Expect that to continue in 2025.

Retirements plateauing



2024 retirements and off-registry purchases hit a three-year low, though they were just slightly off last year's figure. In effect, the market's plateaued since 2021.

AlliedOffsets tracks 25 registries, giving us the most complete picture of VCM activity.

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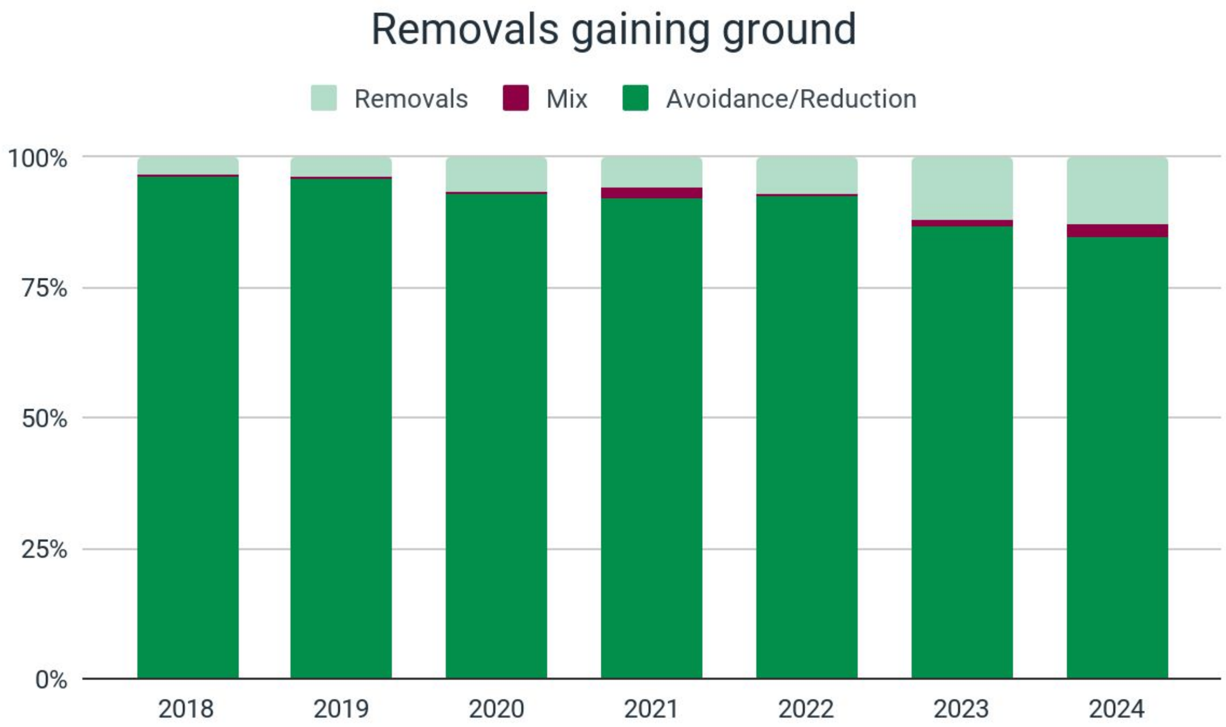
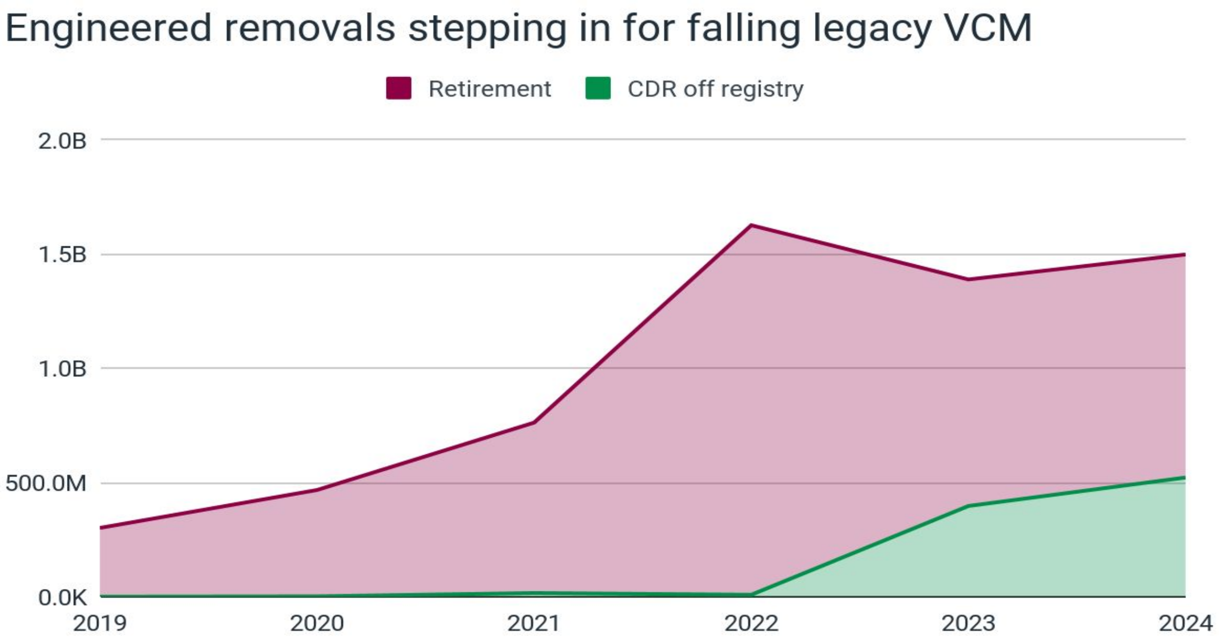
* For reference, we highlighted credit tokenizations in 2021/22 and CQC cancellations in 2024.

Share of removals is increasing

More removals credits are being retired than ever before, though still make up a small share of the total market.

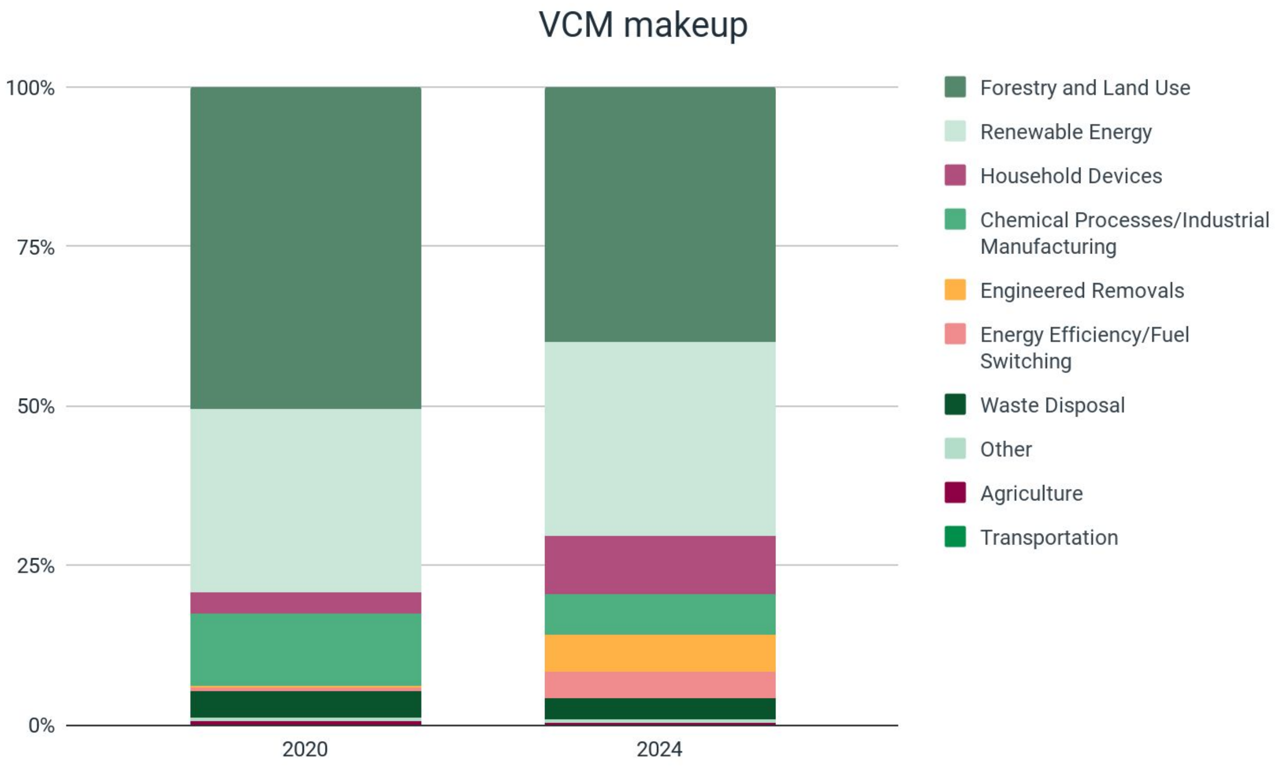


Primary market value



The primary market value (credits sold times price paid) in the legacy VCM has nearly halved since its peak in 2022; in the meantime, the engineered CDR market has stepped in to support the market value, adding more than $500m in 2024.

VCM is becoming (slightly) less homogenous



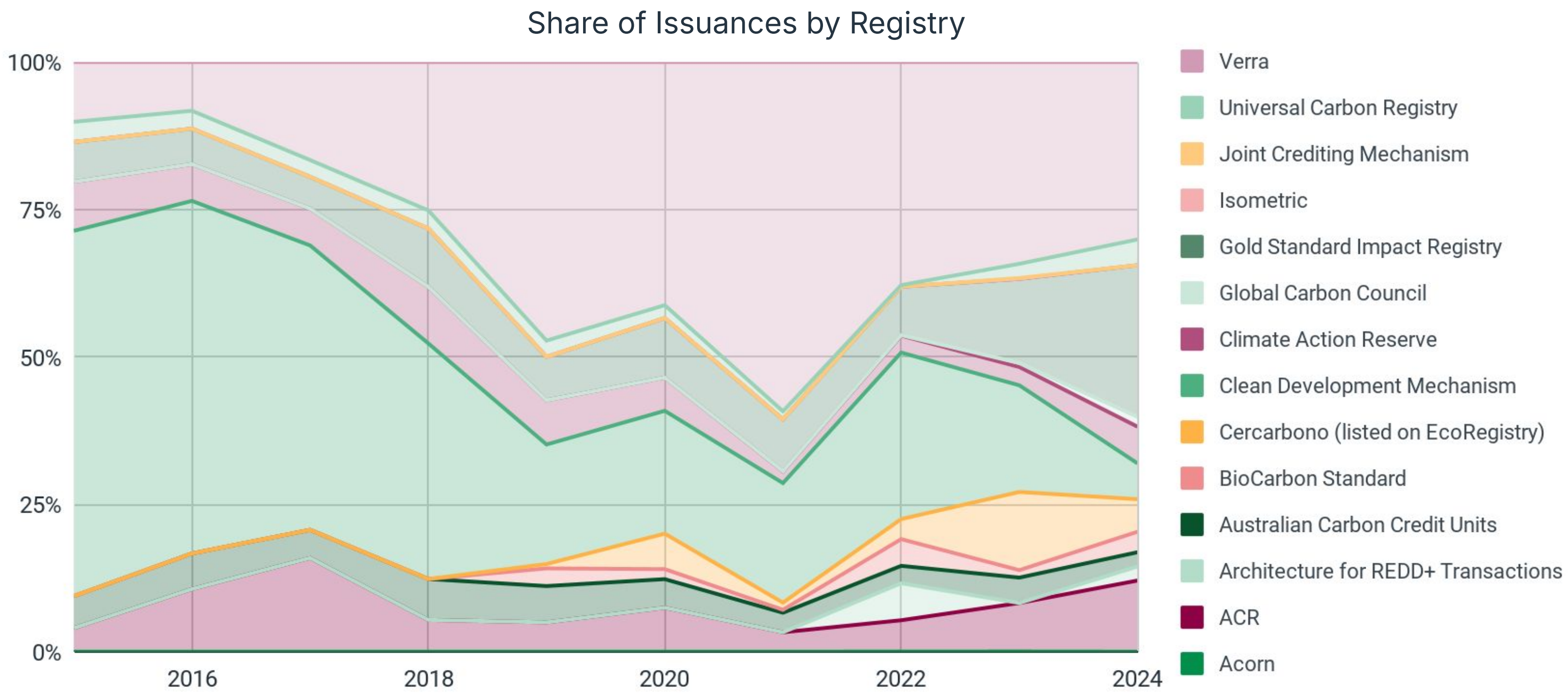
The share of **renewable energy and forestry** credit retirements has gone from:

80%
in 2020

70%
in 2024

Growing market diversity

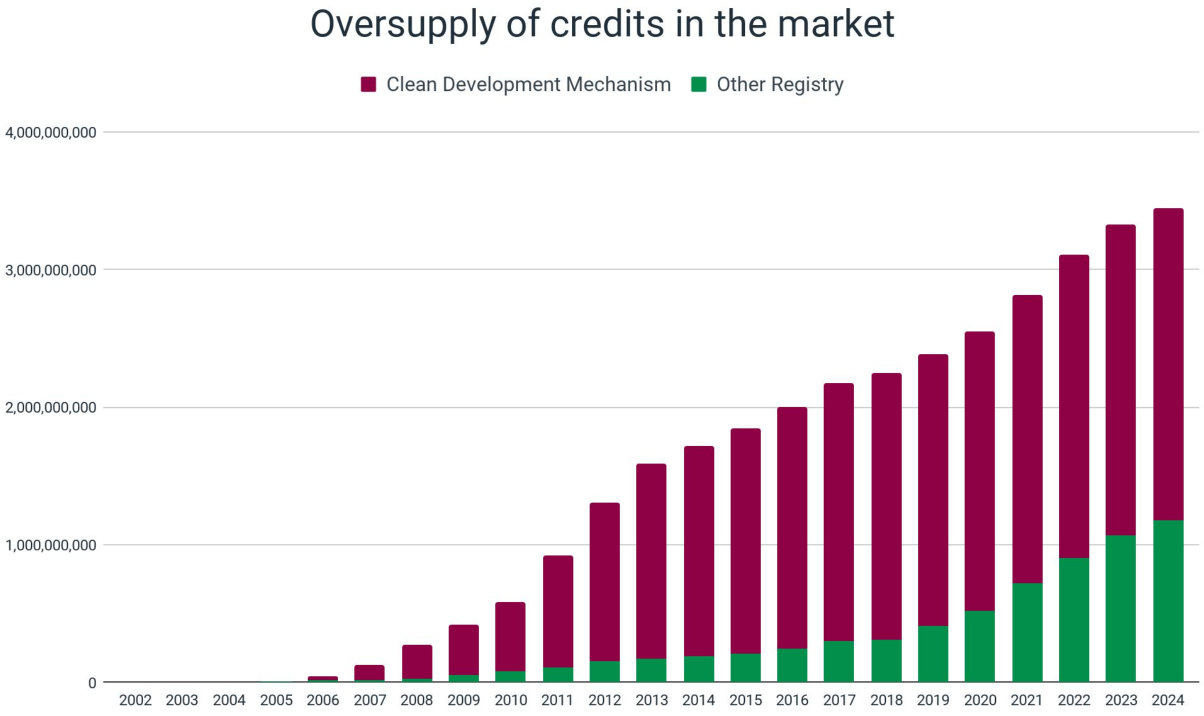
Similarly, the number of registries issuing credits has grown, with newcomers beginning to increase their market share.



Oversupply of credits in the market continues to grow

The number of issued but not retired credits has **continued to increase in 2024**.

While much of that is driven by old CDM credits, **non-CDM issuances continue to outpace retirements**.



Section 2

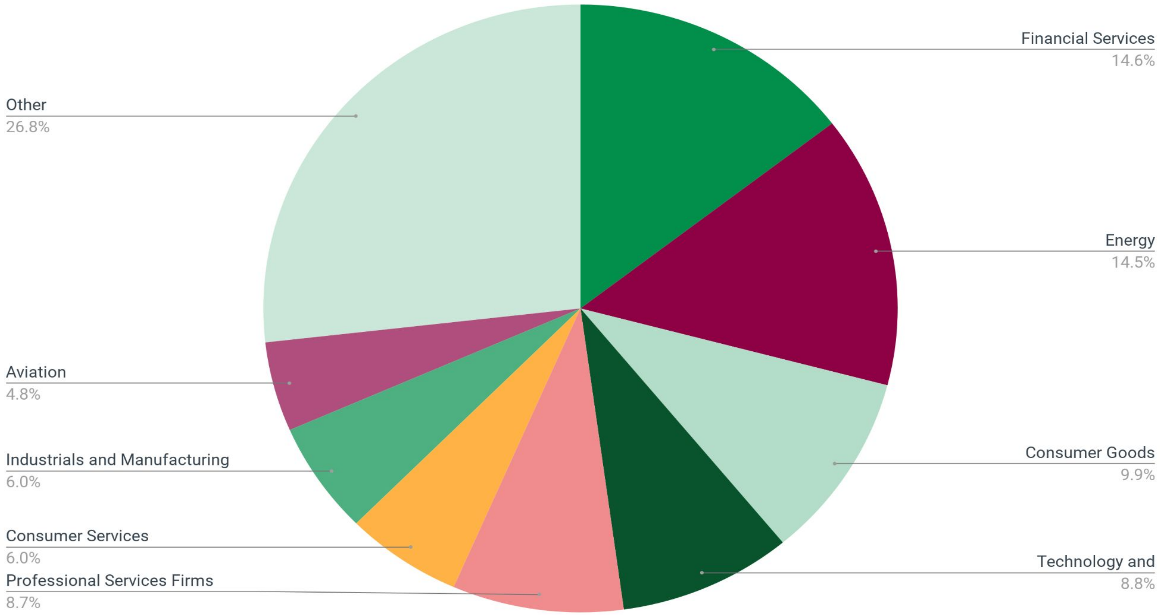
Buyers

Attracting Buyers Remains a Challenge

Energy firms (and Microsoft) drove the majority of retirement activity in the market once again; financial firms represented the largest cohort of buyers.

While more companies than ever engaged with the VCM in 2024, the rate of growth of the entrants slowed.

Buyer by Sector

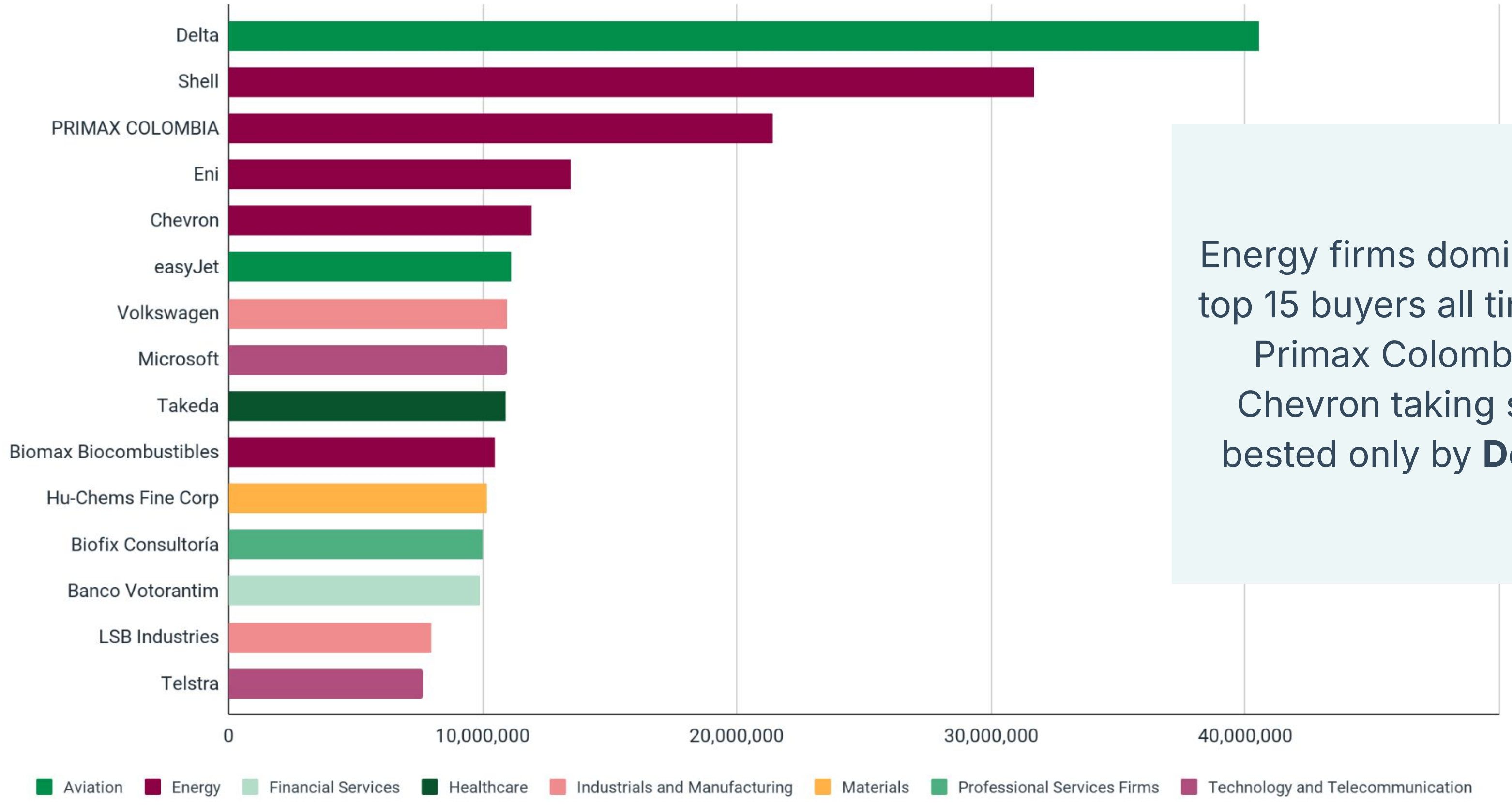


Buyers come from a variety of sectors

The largest cohort of buyers comes from the **financial services** sector.

The **energy sector** come out tops in terms of credits retired.

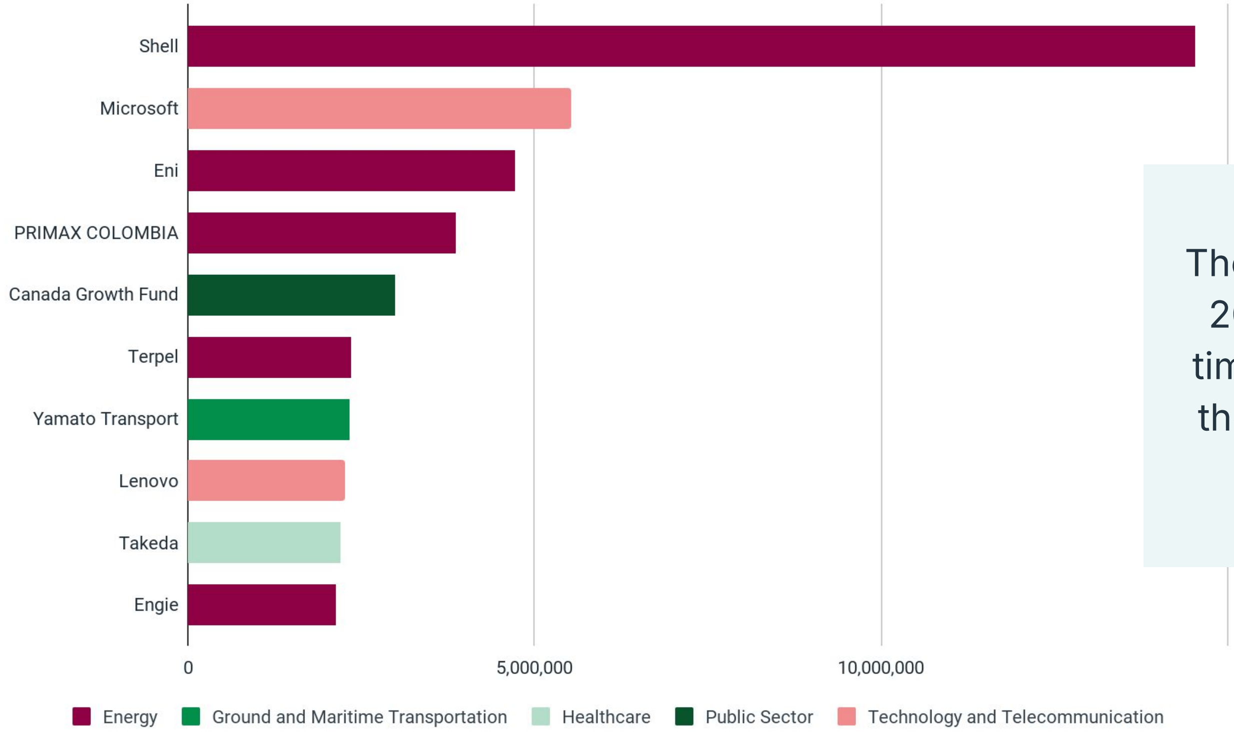
Top buyers all time



Energy firms dominate the list of top 15 buyers all time, with Shell, Primax Colombia, Eni, and Chevron taking spots 2 to 5, bested only by **Delta Airlines.**

Energy firms continue to dominate in 2024

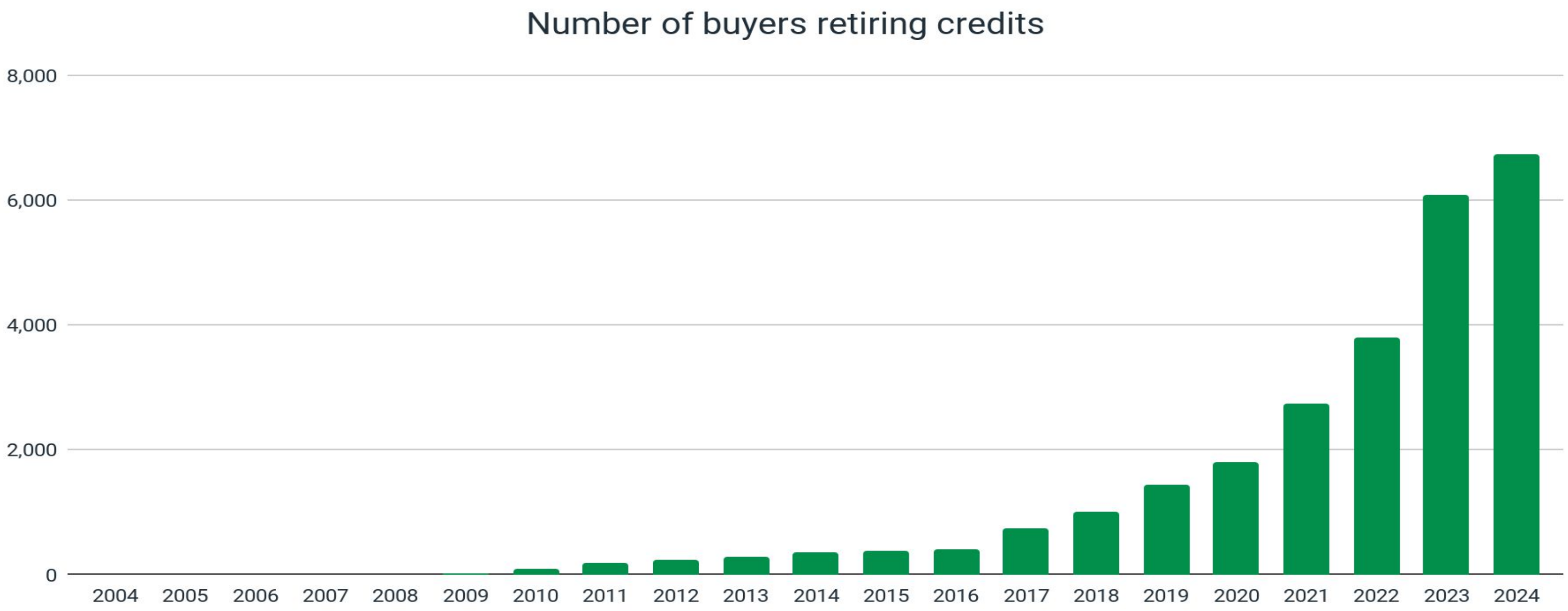
Top buyers 2024



The top buyer in the market for 2024, **Shell**, retired almost 3 times the number of credits of the next most prominent firm, **Microsoft**.

Number of buyers in the market continues to grow

The number of buyers active in the market has continued to increase in 2024, reaching over 6,500 firms for the first time this year, though the growth slowed relative to last year.



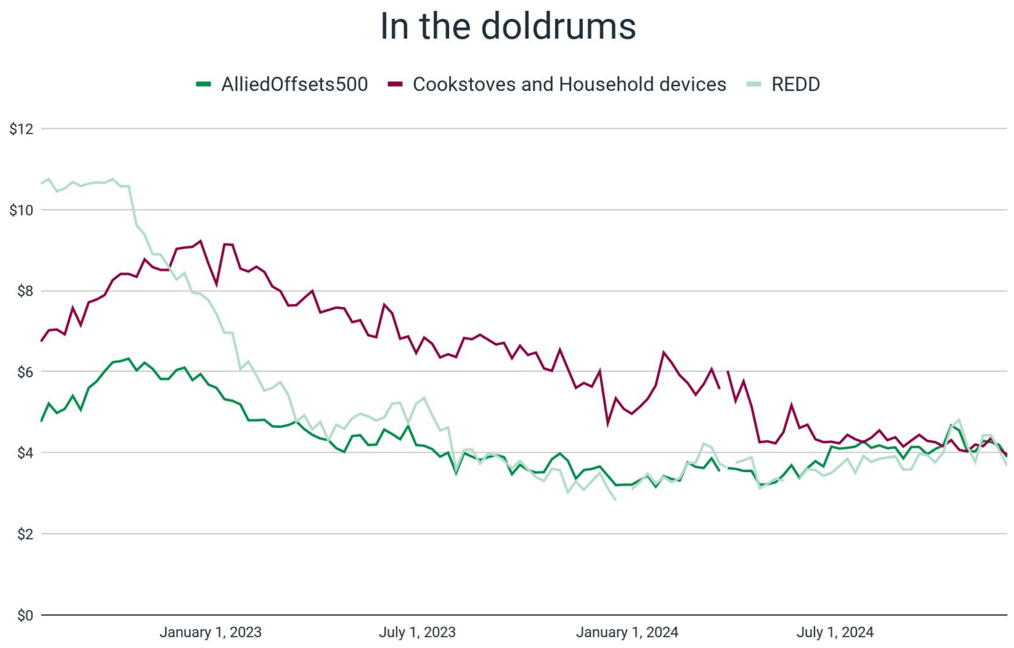
Section 3

Price and Sentiment

At the Nadir

Average prices and market sentiment reached lows not seen since pre-2021.

One part of the market this didn't apply to is NBS removals. With more offtake deals than ever in 2024, and prices consistently higher than in the secondary market, these transactions were a rare bright spot in the VCM.



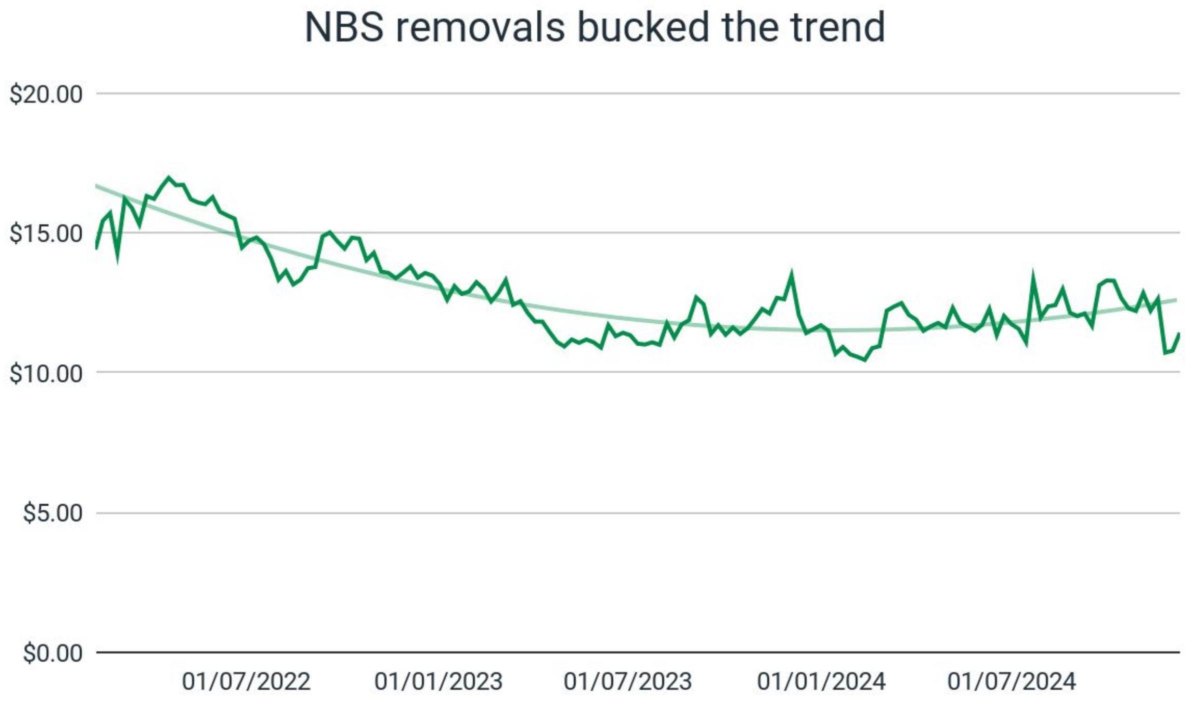
Prices continued downward slide

Prices in the market have generally gone sideways this year, ending a slump since 2023.

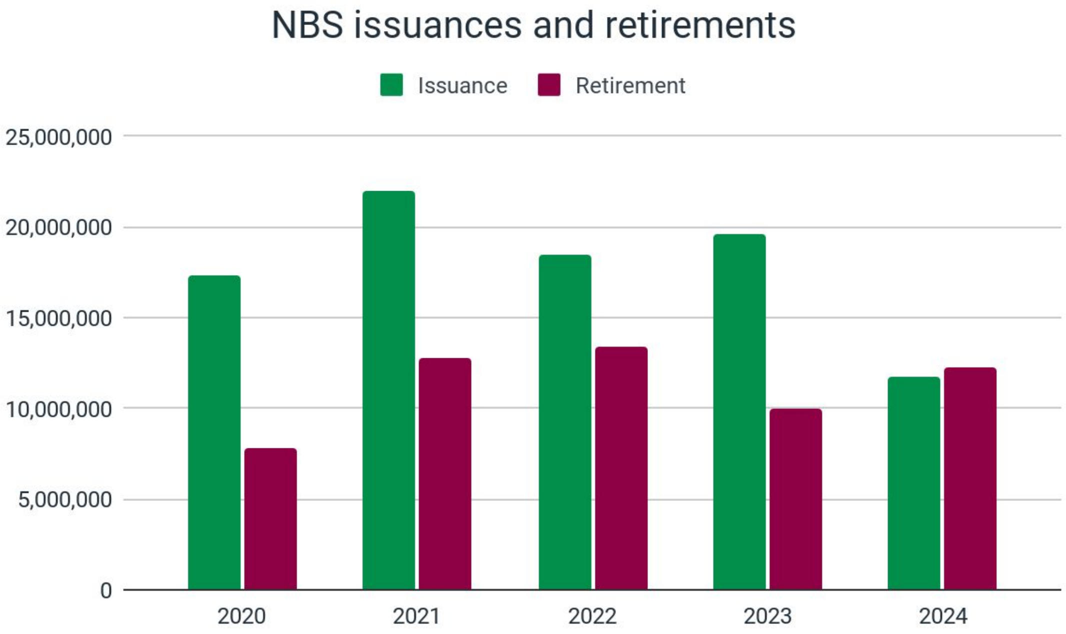
Notably, cookstove credits continued to fall in price following quality concerns. That trend followed for most of the year, though we saw another price slump in Q4, despite a healthy number of retirements in the market.

NBS removals show positive trend

The outlier in an otherwise unhappy picture for credit prices was NBS removals, with credits generally rising throughout the year.

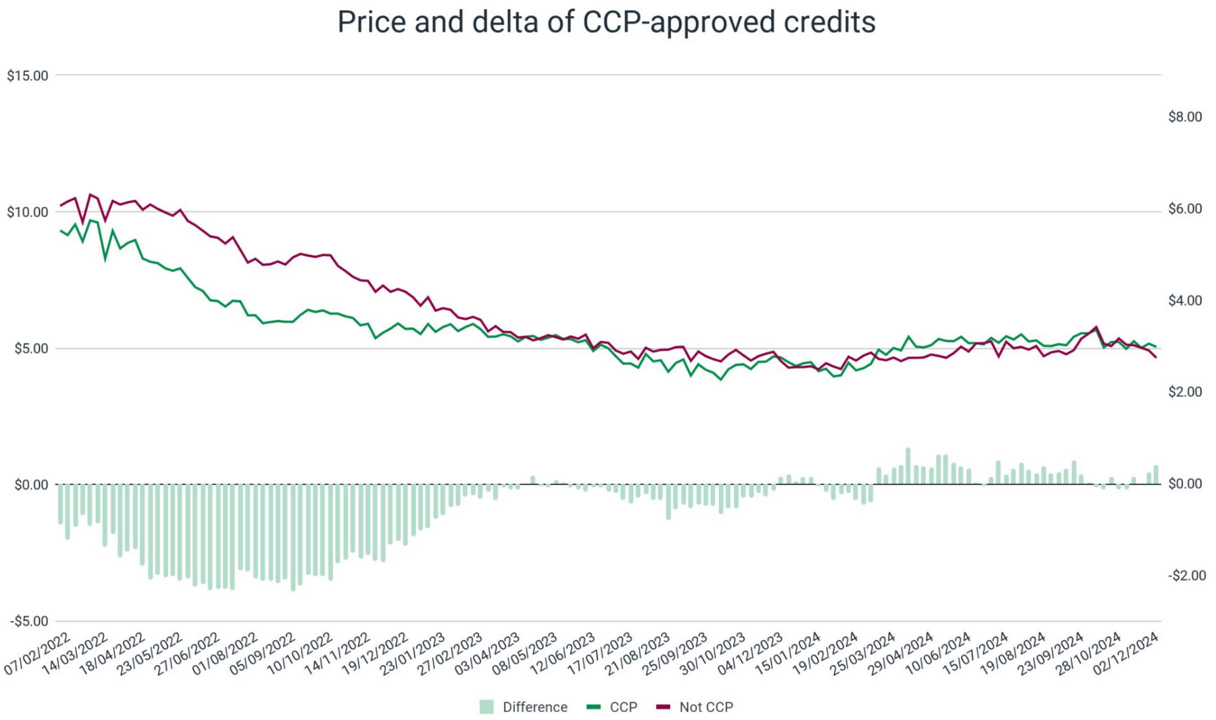


NBS removal oversupply



NBS removals' scarcity has likely played a part in driving up their price – while there is an oversupply of these credits, it's not as pronounced as in other sectors. Indeed, 2024 even saw slightly more retirements than issuances in this part of the market.

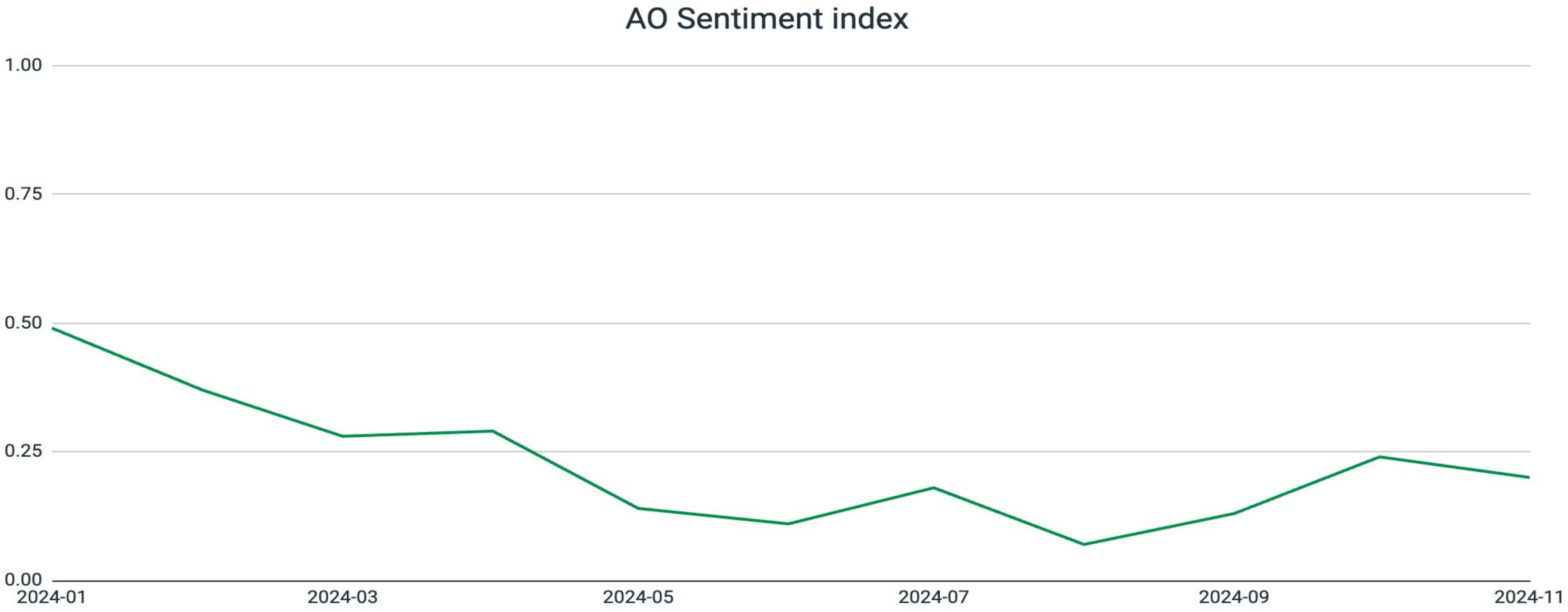
CCP pricing



That’s not the only part of the market where prices behaved as observers would expect: credits tagged as CCP-eligible were generally dearer in 2024 than those not-CCP tagged. This is different from what we saw in previous years. (Though CCPs were not announced then.)

Sentiment slide

Despite some good news in the market, the **market sentiment** (*measured as a combination of user inputs, retirements, and trading activity*) **continued to slide throughout the year**, reaching a low in the slow summer months.



Section 4

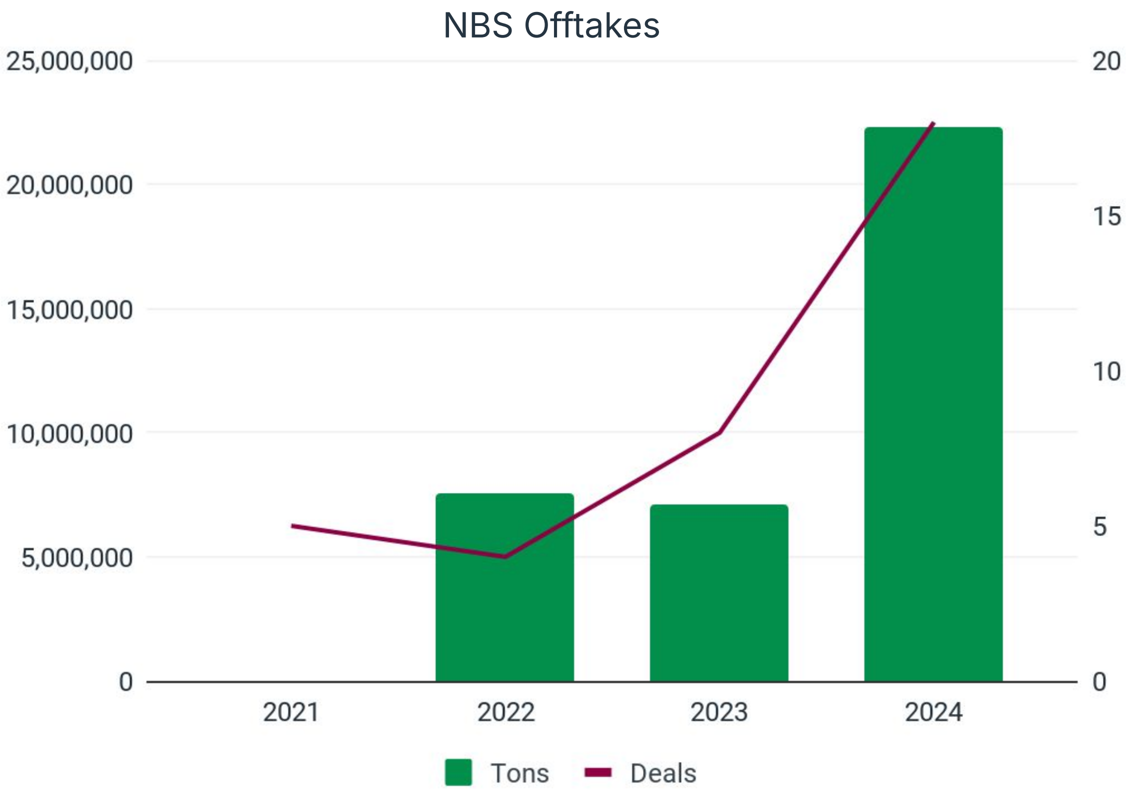
CDR & NBS Offtake Agreements

Key Year Ahead for CDR

After a fruitful 2023, it’s hard to see 2024 as anything but a down year for CDR activity.

2025 promises to be pivotal year for the market. Can prices fall enough to become palatable to a wider group of buyers? As more facilities come online, who will buy their credits? What will happen with the IRA? These questions will define the market next year and beyond.

Offtake agreements take off in 2024



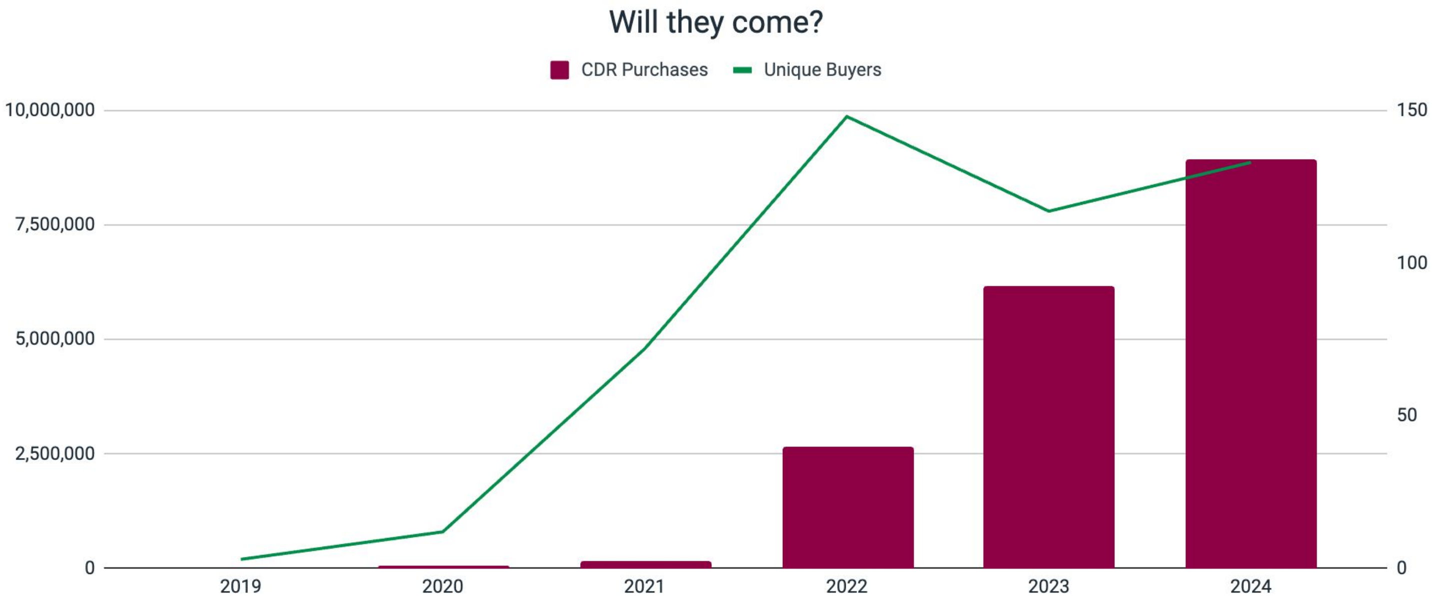
NBS offtakes see increased activity

We saw the number of offtake agreements for NBS projects more than double, to **18 deals representing over 20m tons in 2024**.

The average price for credits is **over $20/ton**, higher than credits on the secondary market.

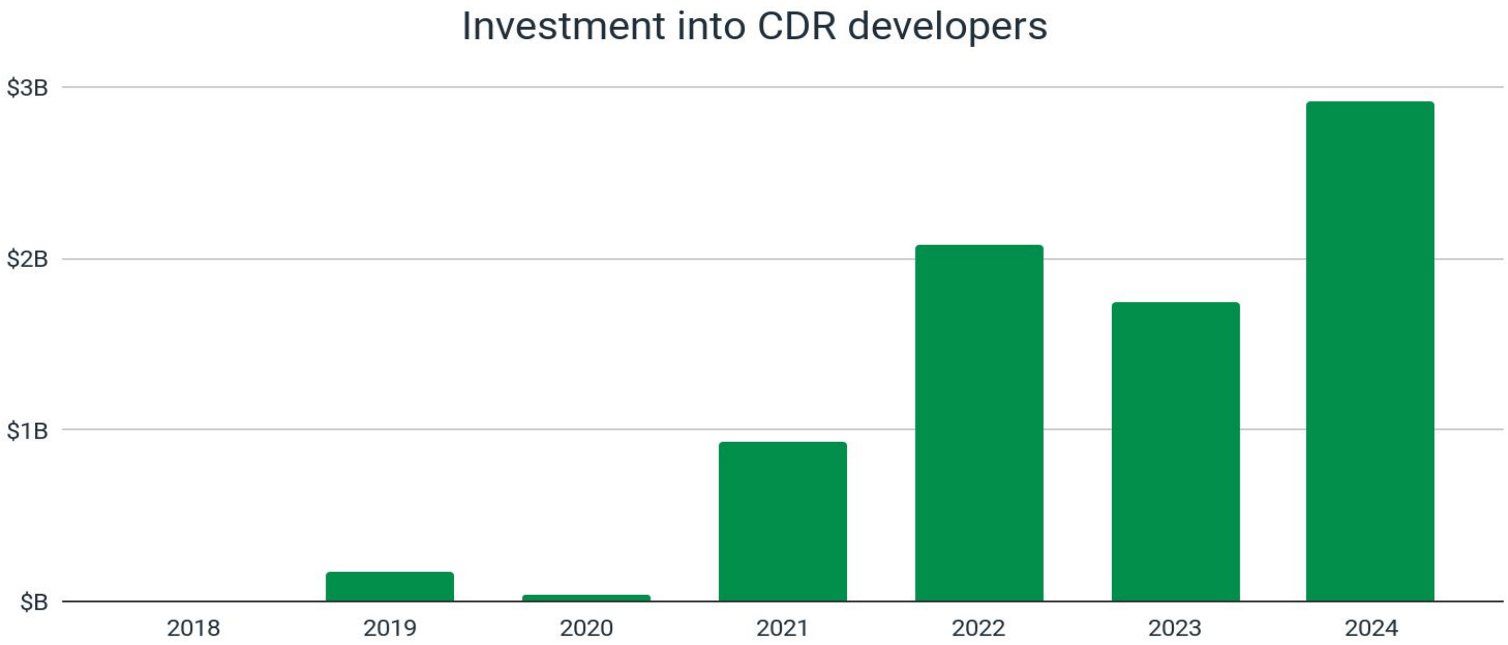
CDR buyers plateauing

The number of unique CDR buyers in the market has not increased since the peak in 2022. We track just under 1,000 CDR companies in the market, meaning there are 6 to 7 suppliers for each buyer of credits.



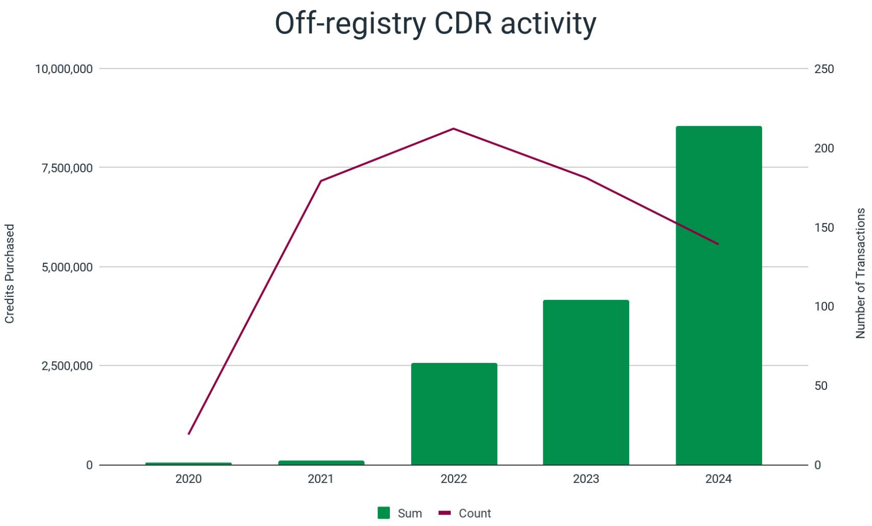
Investment into CDR continues

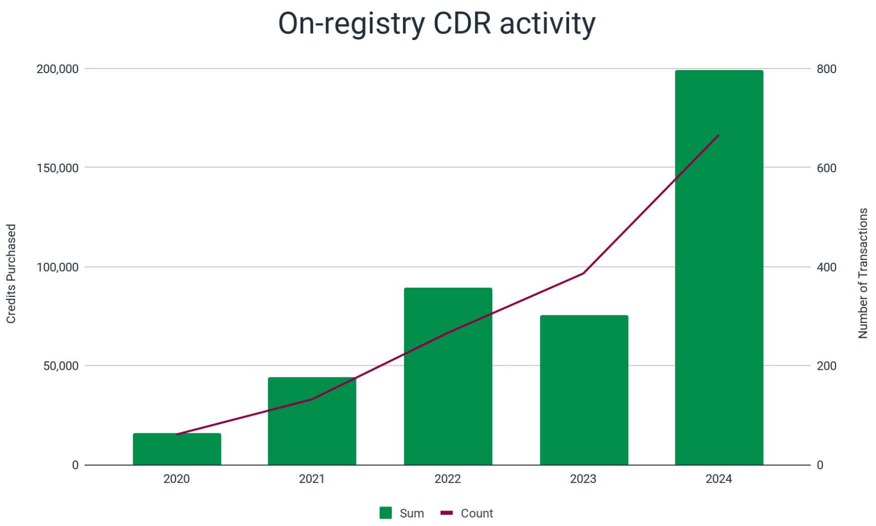
However, private investors continued to put money into CDR technologies, increasing the amount of capital going into these technologies to **nearly $3b in 2024**.



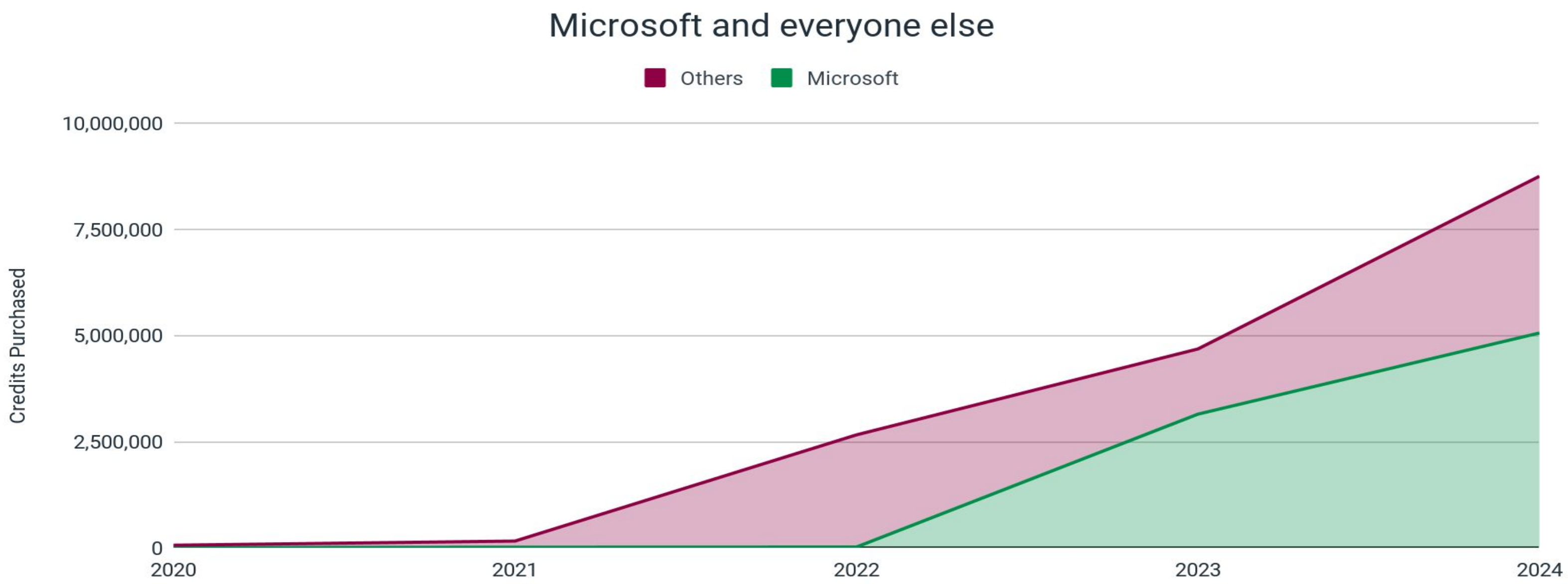
CDR activity is moving onto registries

In a sign of continuing maturity for the market, we saw more transactions and credits retired on registries than ever before in 2024, as the number of off-registry transactions declined for the second year in a row (though these large off-take agreements still make up the largest portion of the credits bought).





The elephant in the room



Microsoft continued to dominate the market in terms of retirements and purchases of CDR credits, though its share of the market slipped from 67% of credit purchases in 2023 to 57% in 2024. **Overall, Microsoft is responsible for more than 50% of purchases in the market.**

Section 5

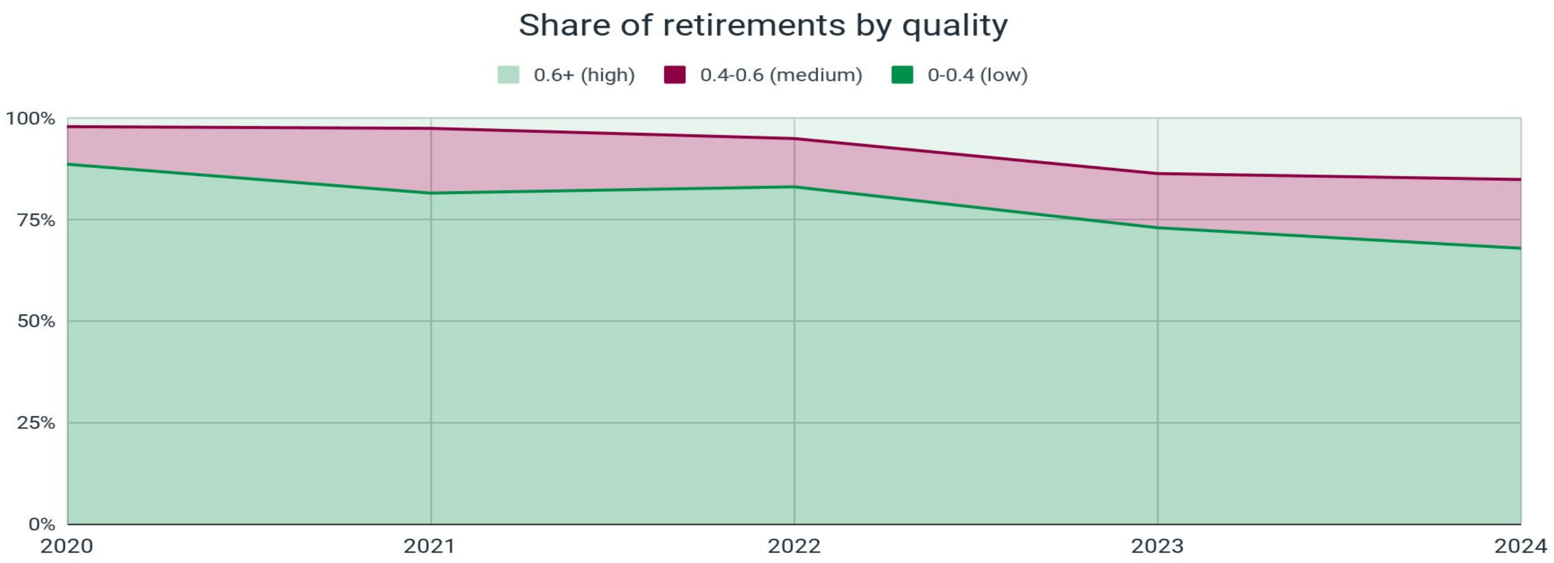
Quality & Integrity

Will It Be Enough?

Integrity and quality have been the key topics of the VCM in the last two years.

The market now has more ways than ever to tell potential buyers whether the credits they’re buying are actually a ton of carbon. Will this be enough to convince buyers they won’t wind up in the front pages of a newspaper, accused of greenwashing?

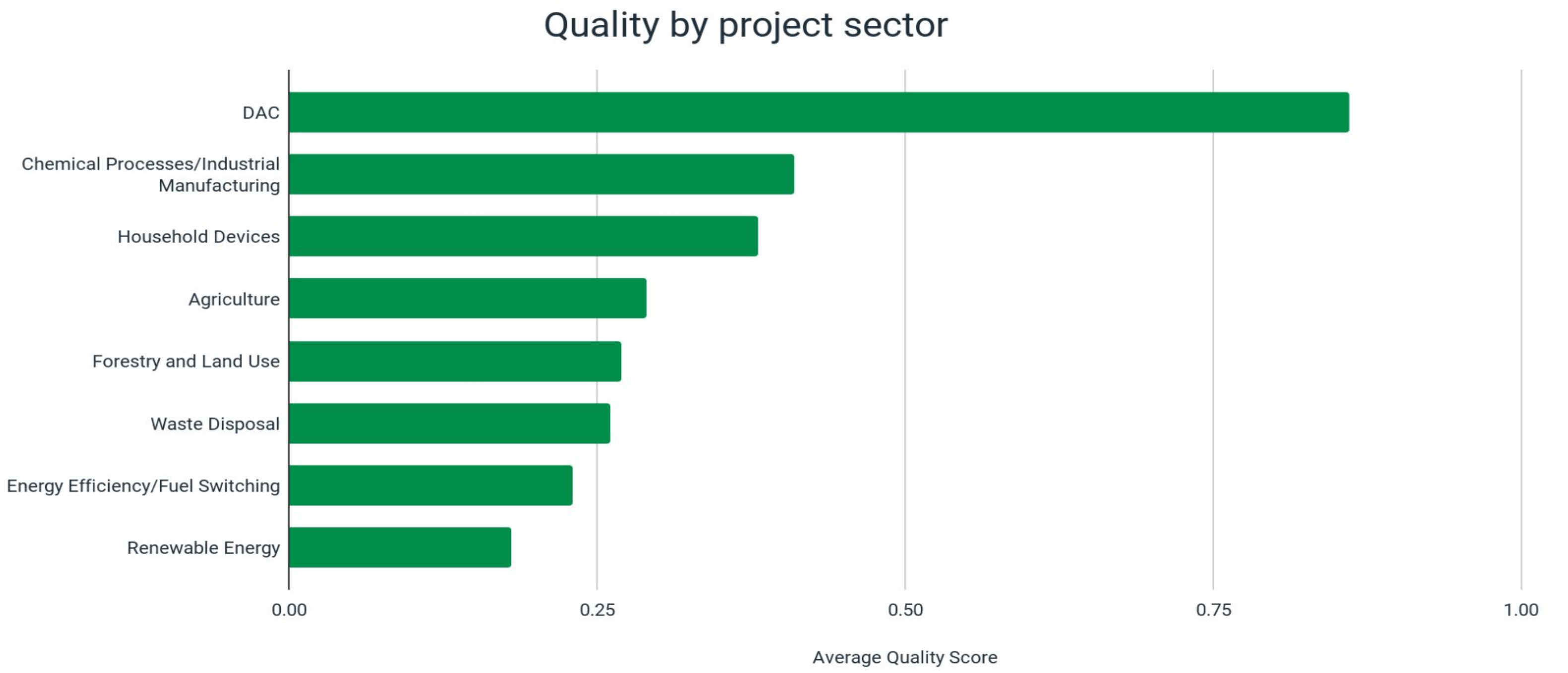
Quality of retirements continues to improve



In September, we launched a standardized quality score for 10,000 projects in our database. Based on the standardized rating of projects, we can see that the share of credits that are retired from low quality projects has dropped from ~88% in 2020 to 67% in 2024.

Quality by sector

The quality of projects in the market varies widely, but there's a clustering around the project sectors.

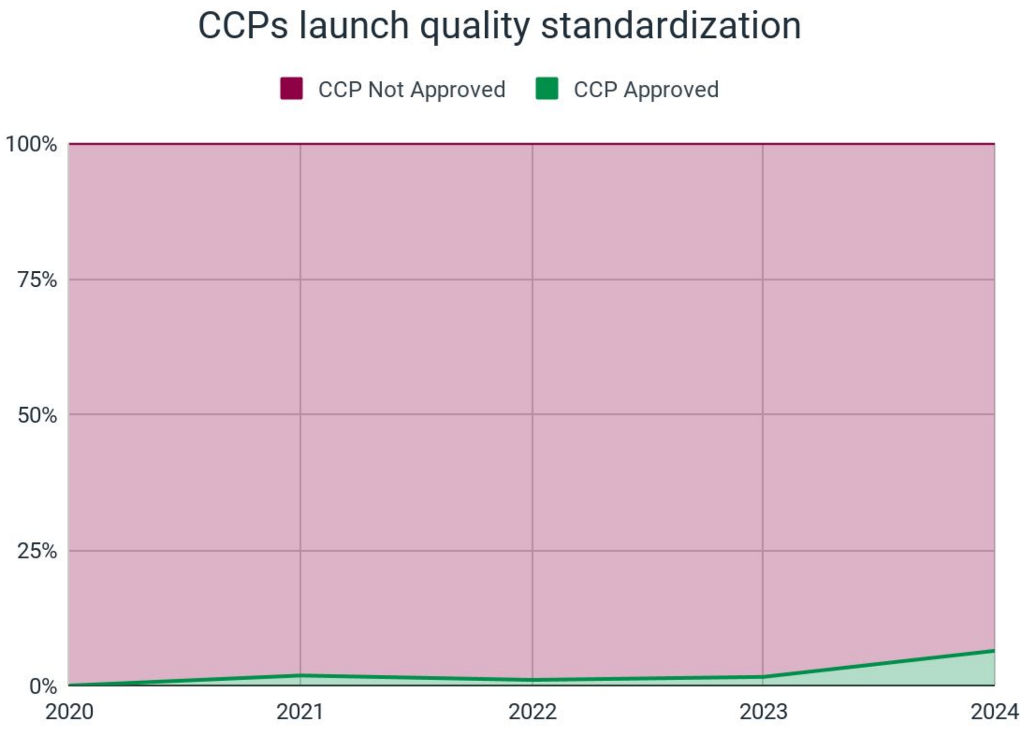


Price-quality correlation is weak

We see very **little correlation of price to quality in the market,** other than at the very top of the quality scale, where engineered removals pushing the price for the top quality projects to over $150 / ton.

Score Range	Average Price ($)
0 - 0.1	5.41
0.1 - 0.2	4.23
0.2 - 0.3	5.61
0.3 - 0.4	11.08
0.4 - 0.5	9.22
0.5 - 0.6	8.85
0.6 - 0.7	8.75
0.7 - 0.8	7.8
0.8 - 0.9	8.07
0.9 - 1	173.69

CCP approved credits starting to pick up steam



ICVCM’s Core Carbon Principles tags started to be applied to projects, and we’ve begun to see the first signs of the impact they are having in the market:

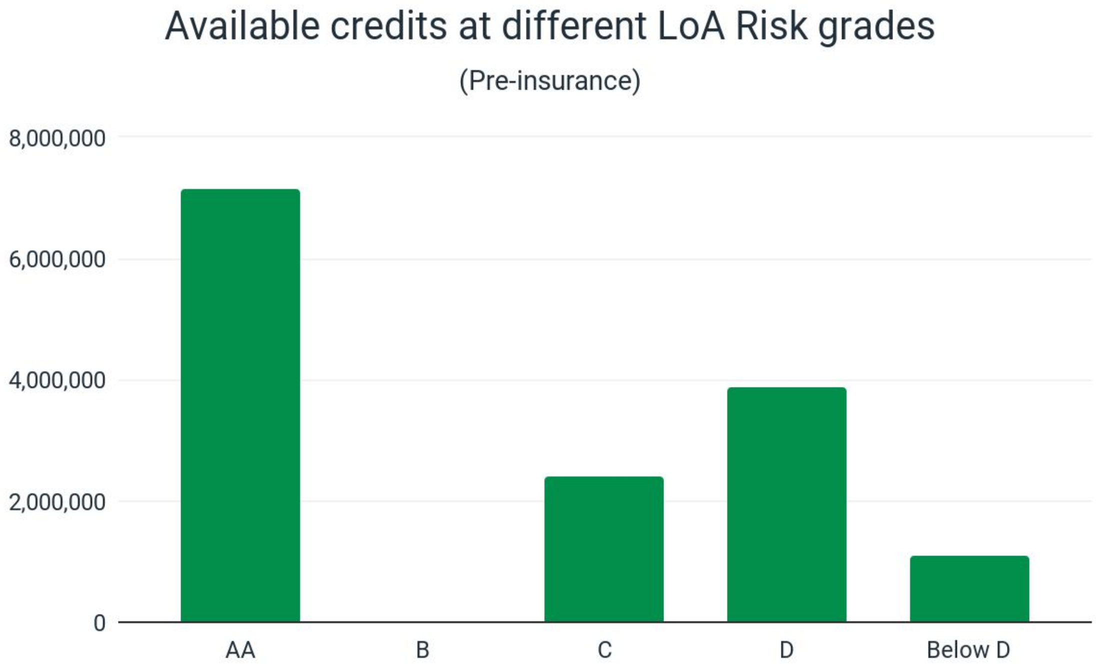
CCP-tagged credits have seen an increase from **~1% to over 6%** in their share of the overall retirements.

LoA impact

80%
price increase

We have seen an **average 80% increase** in prices for credits that receive an LoA for a corresponding adjustment.

However, our assessment of risk of revocation of LoAs is high for most credits that have secured LoAs.This will be a key area to watch in 2025.



Section 6

2025 and Beyond

What’s On the Horizon

Over the last 12 months, AlliedOffsets has developed the most comprehensive forecasting model for the VCM.

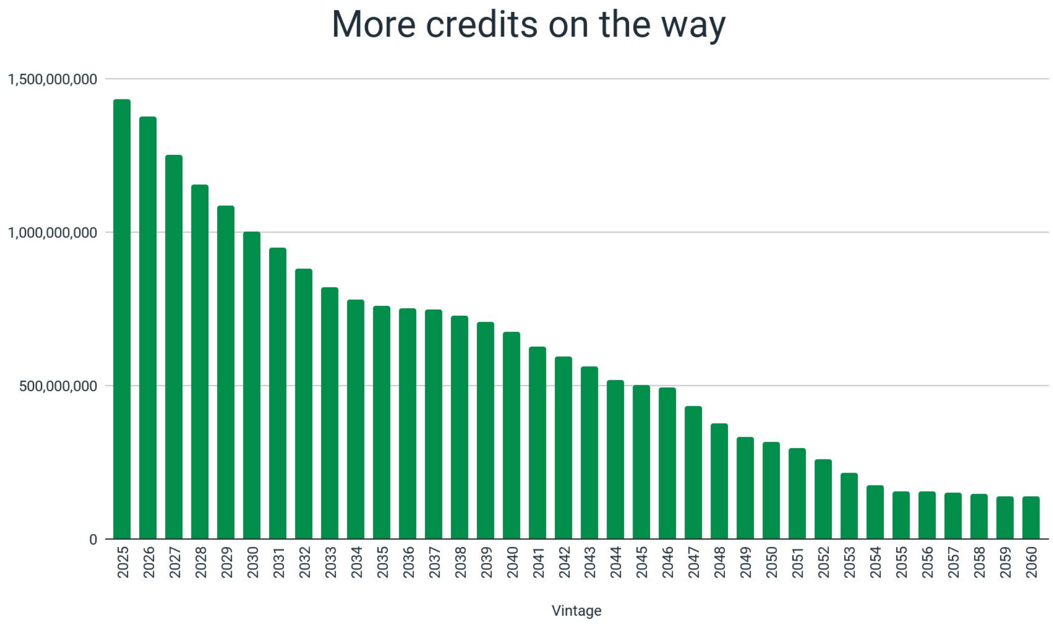
What do the outputs of our model tell us about how the market may develop in 2025 and beyond?

Oversupply needs to come down

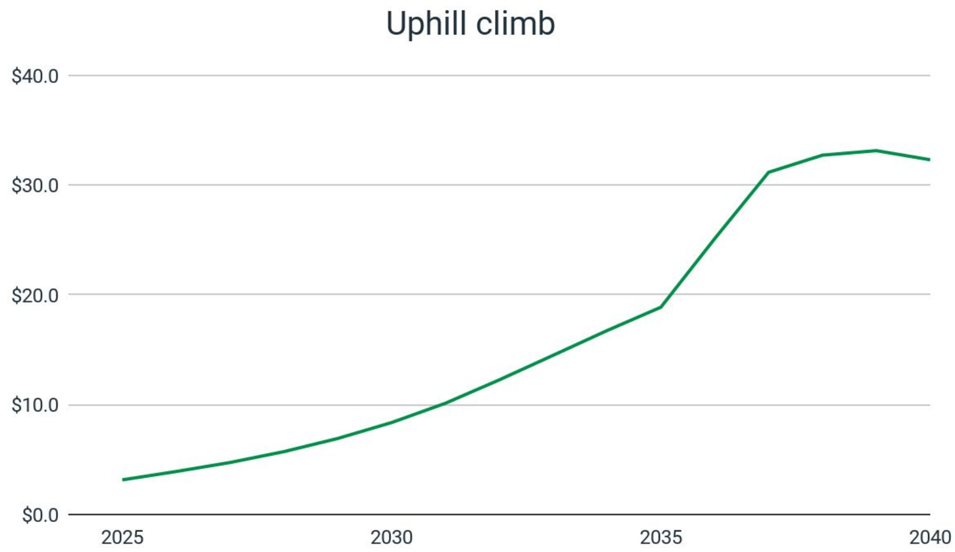
The VCM is currently oversupplied: there are too many credits available to buyers.

Without some of the credits being effectively wiped out (e.g., non-CCP credits, or recalculating credits based on new methodology versions), or demand shifting to projects that are short in supply (e.g., NBS removals), it's difficult to see how prices can grow much above their current rates.

The number of credits that are scheduled to be issued from active and pending projects (chart to the right) will add more to the oversupply in the coming years.



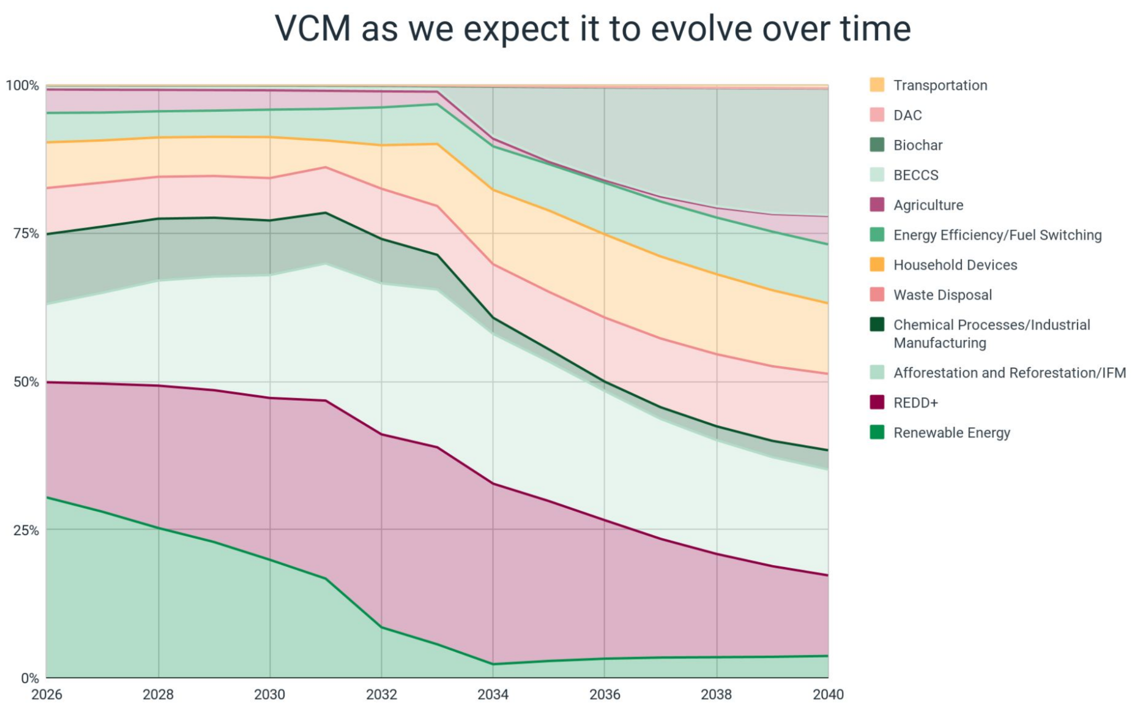
Pricing projections



Carbon Credit Pricing
There is no single price for carbon credits in the market. However, we can track how prices in the market, on average, have performed over the past several years, and how that affects relative demand between projects. For instance, when REDD+ projects came under scrutiny, their prices fell rapidly; however, the number of credits retired from these projects increased. This is partially because buyers were willing to switch from renewable energy credits to REDD+.

Projecting Average Carbon Credit Prices to 2040
With this in mind, we are able to forecast the market average price, based on supply and demand projections; we then use the average to understand how much buyers are willing to pay for credits. The chart on the right shows the average prices we expect to see in the market, which we see as hitting $30 by 2040.

Sectors of the future



Our forecasting model allows users to understand how granular movements in corporate demand affect not just the overall prices in the market, but also the relative position of sectors within the VCM.

The chart on the left shows how the supply in the market would look, if demand and price projections presented on the previous page were met. **We expect renewable energy and REDD+ projects to fall to under 20% of the market by 2040**, while NBS removals projects (biochar and ARR) to get more attention from buyers in the future.

Conclusion

The VCM, rightly, has focused on quality since early 2023: numerous initiatives, registries, and companies have launched to guide buyers to sound credits. These efforts are slowly starting to change the shape of the market. It's focusing more on removals (which are easier to verify than avoidance credits), and retirements are coming from a more diverse group of credits.

Yet the previous failings of the market continue to haunt it: credits that have been issued to projects that wouldn't make the grade today are still available to buyers. In the meantime, economic and political headwinds will not make it easier for projects to sell their credits.

This all combines to form an uncertain year ahead for the carbon market. While developers, standards, and VCM evangelists point to new projects and sectors to lead the market into the future, questions continue to arise about the quality of old credits that make up the vast majority of the market.

Still, projects in the VCM are, in some cases, uniquely positioned to channel large amounts of capital to parts of the world that would otherwise not see much investment activity. And even with fiscal belt-tightening across much of the rich world, there remains appetite to fund projects that both alleviate poverty, and help to decarbonize the planet. The long-awaited passage of Article 6 will stimulate more financial flows to emerging markets.

In short, there's a lot to like about how the market is positioned coming into 2025; and yet, there are persistent and bothersome hurdles that it must overcome. Whether the cup is half full or half empty is in the eye of the beholder.

Sources

AlliedOffsets analyzed the following sources of data for this report:

- Australian Carbon Credit Units
- Acorn
- ACR (American Carbon Registry)
- Architecture for REDD Plus Transactions
- BioCarbon Standard
- British Columbia Carbon Registry
- Cercarbono (listed on EcoRegistry)
- City Forest Credits
- Clean Development Mechanism
- Climate Action Reserve
- COLCX
- Global Carbon Council
- Gold Standard
- International Carbon Registry
- Isometric
- Joint Crediting Mechanism
- Label Bas-Carbone
- Nori
- Peatland Code
- Plan Vivo
- Puro.earth
- Universal Carbon Registry
- Unregistered CDR projects
- Verra
- Woodland Carbon Code

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hello@alliedoffsets.com

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