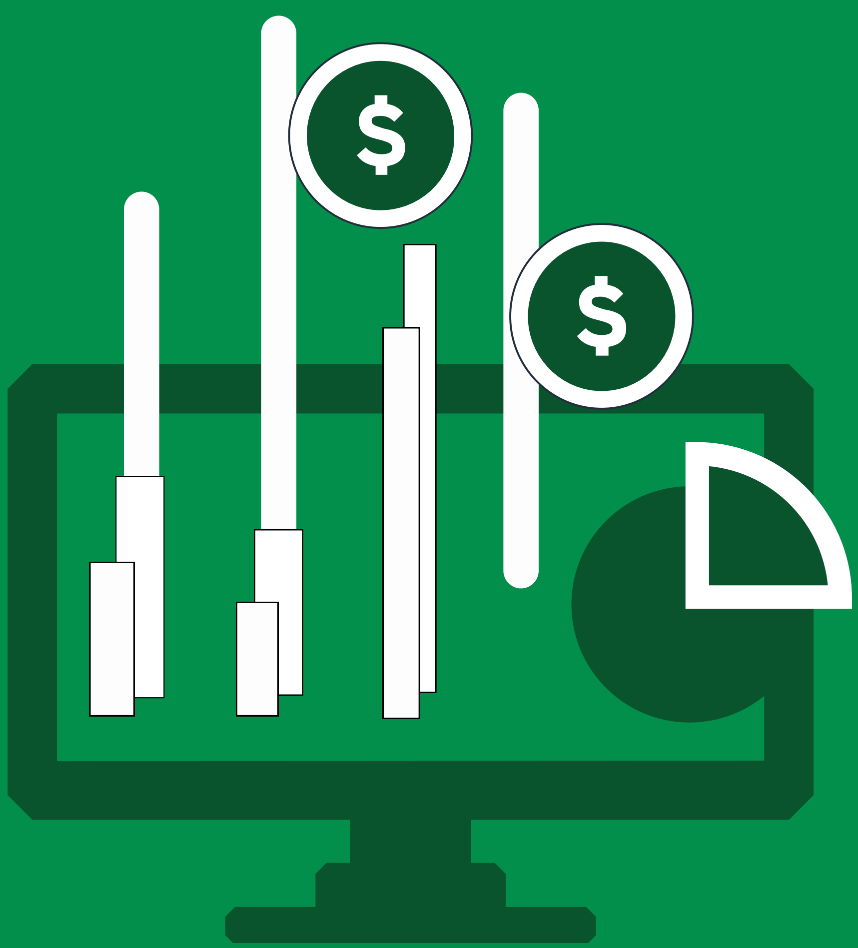
AlliedOffsets

2023 Corporate Buyers Report

Buyer and retirement behaviors and trends in 2023



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An Introduction from AlliedOffsets CEO

AlliedOffsets

As we embark on a new year, I want to take a moment to reflect on the past year, that has been nothing short of transformative. This year has been marked by a series of pivotal moments that have shaped the voluntary carbon market (VCM). From exposés in the press to the ramp-up of integrity initiatives, it was a year characterized by both challenges and triumphs as we review more on page 2 and 3 of this report.

In the spirit of transparency and reflection, we wanted to delve into the highs and lows of 2023 within the VCM. The year began with a series of exposes in the online press, triggering a series of consultations on integrity initiatives. Amidst the turbulence, the market witnessed significant developments, including the release of more guidelines for buyers, and extensive open consultations with CCPs.

With this report, we want to provide a comprehensive retrospective, and detailed analysis of the VCM based on data related to retirements, projects, and buyer behavior. So, in this edition of our Corporate Buyers Report, we are showcasing overarching numbers for comparison, bringing attention to key market trends.

For example, as we review on page 3 and 4, in 2023, we saw a total of over 200 million credits were retired—a noteworthy achievement. However, this is still a 10% decrease compared to the previous year.

Furthermore, as we review buyer behavior, we noticed a few standout trends emerge. Shell was without a doubt, the leading buyer in 2023, contributing to around 7% of all retirements with a substantial 15.6 million credits. Takeda, takes the spotlight for the highest average spending per credit, surpassing its 2022 retirements by more than fivefold. Yet, the aviation giant Delta, which dominated in 2022, has now slipped from the top 10 buyers—honoring its promise to step away from the market following criticism of the market in January.

Project-wise, Katingan takes the lead this year with 9 million credits retired, followed closely by Cordillera Azul REDD, with approximately 5 million credits sold. And in terms of sectors, renewable energy and forestry and land use stand out.

This has also been a particularly busy year for AlliedOffsets. Throughout the year, we matched 58% of all retirements and over 90% of non anonymous ones. In this report, we aim to analyze the latest market trends, providing valuable insights into the latest buyer trends in the VCM in 2023. Our goal with this report is to equip you with the overview and data needed to make data-driven investment decisions.

We hope you enjoy the report.

Lars Kroijer, CEO, AlliedOffsets

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2023 Overview & Sector Analysis

Overall Market Performance

In 2023, the carbon credit market saw a small shift in retirement numbers, with a total of 201 million credits retired, indicating a 10.8% decrease compared to the previous year (225 million in 2022).

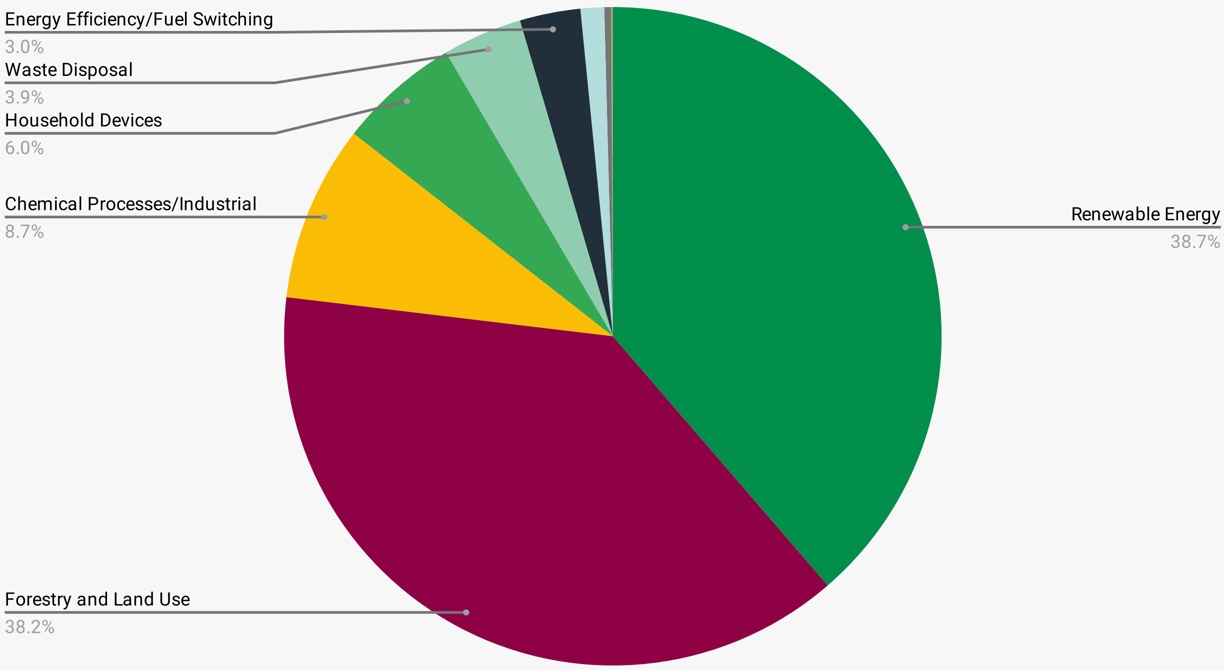
Buyer Matching

In 2023 we matched 58% of all retirements, and almost 91% of all non anonymous retirements. This means that we matched over 115,000,000 credits retirements to buyers in the year.

Corporate Buyer Highlights

Shell emerged as the predominant buyer, retiring 15.6 million credits: approximately 7% of all retirements in the year. Notably, Shell maintained an average vintage from 2022, reflecting a commitment to new credits projects. Takeda led in average spending per credit, surpassing its 2022 retirements by more than five times. In contrast, Delta, the top buyer in 2022, dropped down from the top 10.

Return to nature(based): Retirements by Sector, 2023



Sector Analysis

As shown in the chart above, renewable energy and forestry and land use emerged as the most popular sectors, with 77,757,353 and 76,896,184 credits retired, respectively. Forestry and land use outperformed in both pricing and average vintage, presenting a compelling narrative for investors.

REDD Resilience

Despite the criticism of REDD+ projects at the start of the year, more REDD+ credits were retired in 2023 than in 2022. In fact, over 40 million were retired in 2023, compared to around 25 million in 2022. That may reflect the fact that the prices for these credits fell significantly from around $11 per ton in 2022 to under $5 per ton by end of 2023, incentivizing buyers to pick up the credits on the cheap.

For more information on our corporate ratings, **please get in touch.**

2023 Highlights: Issuances & Retirements

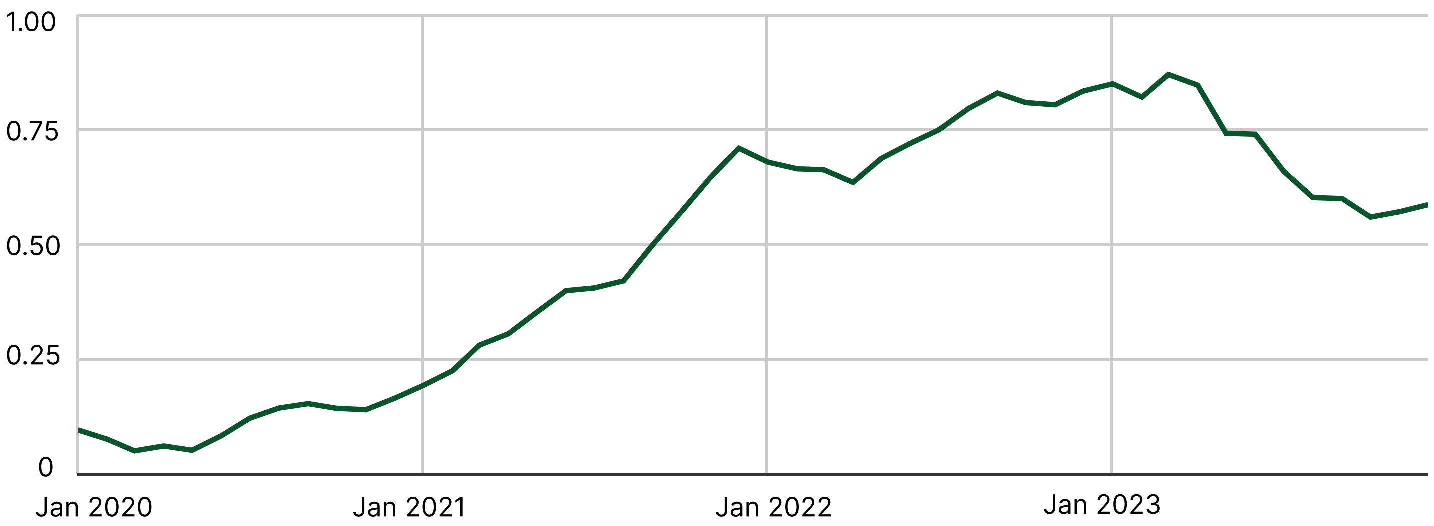
Country Trends

Indian and Chinese projects dominated the market, contributing 37 million and 21 million credits, respectively. The top 10 projects showcased a diverse mix between Asia and the Americas, with Asia exhibiting lower credit prices, compared to other regions.

Issuances and Market Sentiment

Issuances in 2023 totalled 403 million, marking a decrease compared to 2022 (where issuances totalled 516 million). This decline, the first since 2018, could be an indicative of shifting market sentiments seen in the beginning of 2023.

VCM Market Sentiment, 2023



Market Trends 2022-2023

A comparison with 2022 reveals a relatively stable trend in the number of retirements YoY, with only a slight decrease between 2022 and 2023.

In 2023, forestry showcased an increasing importance in the market, and renewable energy maintained its consistent popularity amongst buyers. Despite market downturns, renewable energy proved to be a price-conscious option for a lot of consumers.

Most Active Projects, Buyers

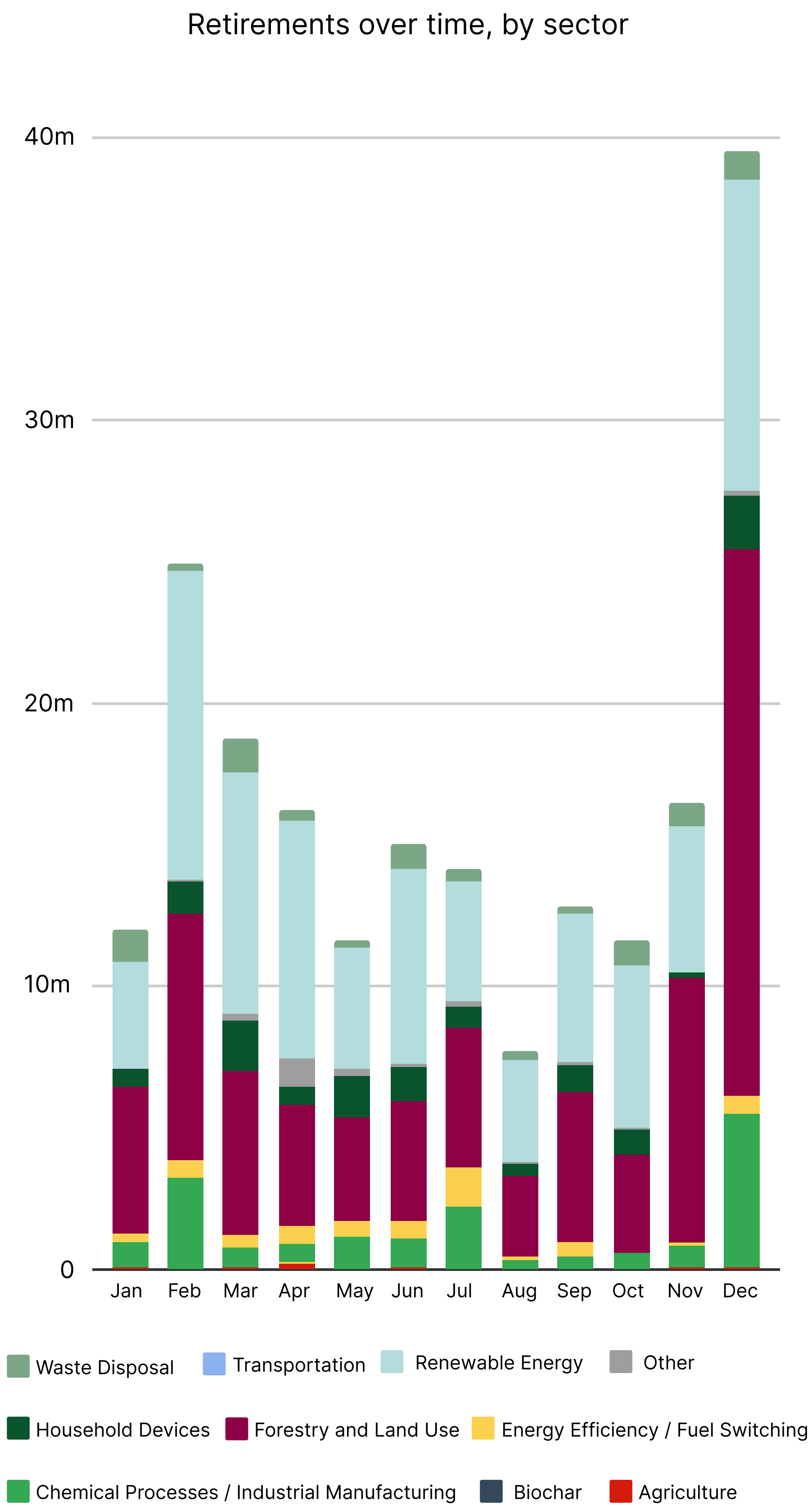
Heavy emitting industries, followed by cars, services, and tech, dominated the most active projects and buyers. The absence of Delta, last year's top buyer, from the top 10 retirees suggests a notable change in the sector mix among the leading buyers.

Top Projects

Katingan, with 4 million credits retired in December alone, and Cordillera emerged as favored projects, consistently leading in total retirements throughout 2023. In 2022, however, Kariba was topping the charts, whilst Katingan was also in the top five most active projects. Yet in 2022, Cordillera only ranked 12th amongst the top projects based on retirements, meaning retirements have almost doubled from the previous period.

Top Spenders in 2023

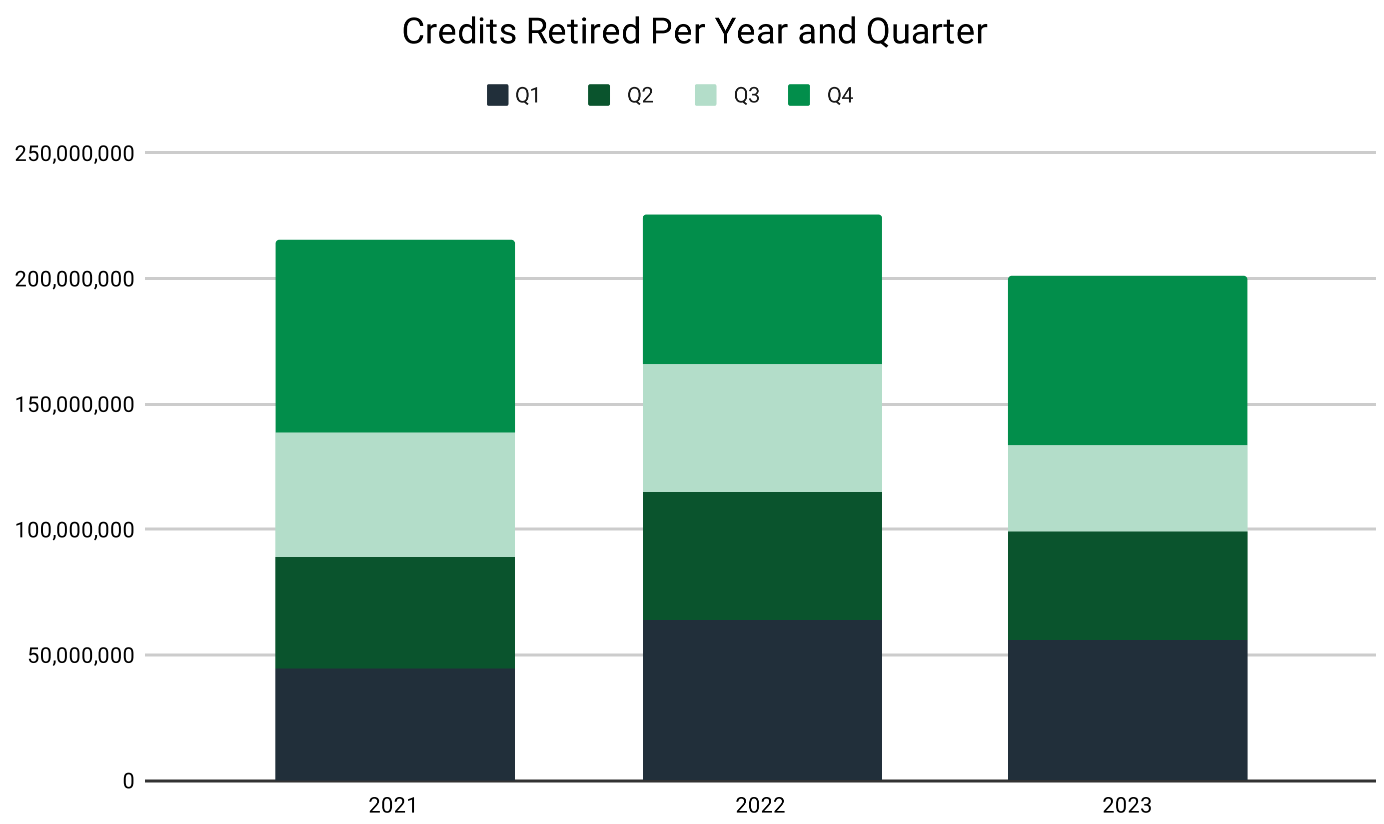
Notably, three of the top five retirements by size were attributed to Shell, all occurring in Q4. Pricing estimates suggest that Shell and Takeda were the leading spenders in the market in 2023.



Market Activity: Quarterly Analysis

An examination of market activity per quarter, including retirements, prices, and sector-specific dynamics, offers valuable insights into market trends and buyer behavior throughout the year. Comparative analysis over the years can uncover patterns and fluctuations, contributing to a better understanding of market behavior.

Quarterly retirement trends revealed a challenging Q3, with only 36 million credits retired in total. Q4, however, demonstrated a big improvement compared to the beginning of the year. This was mainly due to the increase in retirements seen in December, with nearly 40 million credits retired in the month alone.



Q4 2023: December Highlights

December proved to be busy month for the VCM, as retirement volume exceeded expectations. Though, this should not be too surprising as many companies use this time to retire already purchased credits. Interestingly, the volume retired in December was higher than all of the combined retirements in Q3 of 2023.

In fact, December 2023 had the highest monthly retirements ever recorded of over 39 million credits in the month. If we look back at the last five years, December has consistently been the month where companies have retired the most credits in the year.

December was also relatively good compared to other months in terms of transparency: 94% of non-anonymous retirements were matched, showing a better commitment of buyers to report their purchases, which may have been the result of various integrity initiatives releasing guidance last year.

Similarly to its overall 2023 performance, Shell was also the biggest buyer in December with 5.9 million credits retired, showing a tendency of firms to retire credits in bulk towards the end of the year.

Top 10 Buyers in 2023

AlliedOffsets

Below is a table highlighting the top buyers in 2023, featuring major corporations like Shell, Volkswagen, and Terpel. The table provides a breakdown of their total retired credits, the estimated value of credits, and their highest and lowest AlliedOffsets (AO) ratings throughout the year.

While Shell leads in credit retirements for 2023, Audi stands out with the highest average AO rating that consistently remained above A throughout the entire year. In contrast, Shell's lowest rating in 2023 was a B.

Additionally, it is intriguing to observe the average credit retirement dates for these buyers. For instance, Shell exhibited an average vintage year of 2022, while other buyers like ALT Holdings and Registry Cancellation had an average vintage year of 2014.

One of the most interesting findings in our analysis is the difference seen in credits retired between the top buyer (Shell) and the second top buyer (Volkswagen), where Shell has retired a over 3 times as many credits as Volkswagen in the year.

Shell (currently the top spender in 2023) made an impressive impact by retiring almost 16 million carbon credits. Their total retirement amounted to 11 million more credits than the second-ranked buyer, Volkswagen. This disparity underscores the huge differences seen in the market even among the leading corporations.

Takeda takes the spotlight for the highest average spending per credit; it also surpassed its 2022 retirements by more than fivefold.

A noteworthy entrant to the market is Yamato Transport as a new buyer in October. This marked the first time the company participated in carbon credit transactions, making its entry into the VCM quite noticeable. In that month alone, Yamato Transport contributed significantly to the total retirement volume by retiring 2.5 million carbon credits.

Buyer	Highest AO Rating	Lowest AO Rating	Credits Retired	Estimated Price per Credit	Estimated Value of Credits Retired	Average Vintage
Shell	B+	B	15,761,105	$5.65	$89,050,243	2022
Volkswagen	A+	A-	4,137,747	$4.21	$17,419,915	2018
Terpel	A	A-	2,946,659	$5.62	$16,560,224	2020
Takeda	A	A-	2,866,323	$12.75	$36,545,618	2019
AUDI	A+	A	2,816,461	$4.33	$12,195,276	2018
ALT Holdings	N/A	N/A	2,749,060	$4.24	$11,656,014	2014
Yamato Transport	B+	B+	2,464,448	$1.64	$4,041,695	2018
Primax	N/A	N/A	2,254,709	$6.76	$15,241,833	2021
Chevron	A-	A-	2,078,470	$5.15	$10,704,121	2021
Registry Cancellation	N/A	N/A	1,804,658	$2.49	$4,493,598	2014

Buyer Spotlights

Microsoft, AlliedOffsets rating: A+

Microsoft has acquired the highest consistent rating throughout 2023, and has demonstrated a steadfast dedication to offsetting carbon emissions. Having retired a remarkable 860,000+ credits over time, their substantial contribution has gained them a consistent high AO rating.

In terms of financial commitment, Microsoft has displayed an average price per credit of $11.53. With an average credit value of $9.9 million, their consistent investment underscores a strong financial backing for sustainable investments, offsetting and carbon removal.

The majority of credits acquired by Microsoft originate from sectors such as forestry and land use, as well as the agriculture sector. However, Microsoft also stands out as the leading Carbon Dioxide Removal (CDR) spender, and makes up over 40% of the global CDR market. In fact, Microsoft has retired over 3 million CDR credits, specifically BECCS credits.

Apple, AlliedOffsets rating: A-

Apple has retired a substantial 1,060,000 credits between 2021 and 2023. The company has retired credits from five distinct projects in the forestry and land use sector, with an average price per credit standing at $5.15, and a total value of the retired credits amounts to an impressive $5.7 million.

Yet, Apple's approach to carbon neutrality has not been without its share of public attention. In September, the company made headlines by claiming carbon neutrality for its products. This claim was particularly notable in the case of Apple Watch, as the company opted to offset the 7-12kg of greenhouse gas emissions associated with each new device using carbon credits. This decision drew sharp reactions from consumer groups, especially in the context of the European Union's intensified efforts to combat "greenwashing." So whilst Apple's A- rating and robust carbon offsetting practices showcase a positive trajectory, ongoing scrutiny from both consumers and regulatory bodies emphasizes the need for transparency and genuine sustainability efforts in the tech industry.

Achmea, AlliedOffsets Rating: D

Achmea has an AlliedOffsets rating of D and has retired a total of just under 100,000 credits since 2016.

They have exclusively focused on retiring credits from the renewable energy sector and the credits they have retired have an average value today or $1.16, suggesting a relatively modest financial commitment to carbon offsetting. The total value of the retired credits amounts to $121,000.

Its also worth noting that Achmea has not made any retirements since 2018, suggesting a lack of recent activity in carbon offsetting initiatives, hence one of the reasons behind their consistently low AO rating.

AO Ratings Methodology

AlliedOffsets Buyer Rating is, in short, a review of corporate and non-corporate retirers' activity in the voluntary carbon market. By doing this, AlliedOffsets wants to shed light on entities who continuously contribute to providing carbon finance using more recent credits and paying more per ton. Ratings also help establish the transparency of firms in terms of traceability of their offsetting efforts – while many companies claim to be carbon neutral through offsetting, not all credit retirements can be attributed to the companies due to missing information.

Variables and Weights

The rating considers two key things about a buyer: the profile of carbon credits it has retired and its Scope 1 and 2 emissions*. These are:

- Weighted average price per credit retired (10%): current estimated price per credit retired all time.
- Weighted average price per credit retired within the last 2 years (20%): average estimated price per credit retired within the last two years.
- Average vintage year of retired credits (10%): average vintage of the credits retired by the buyer over the number of credits they retired.
- Difference between vintage year and year of retirement (30%): difference between weighted vintage year of buyer's retired credits and the weighted retirement year of these credits. In other words, a company retiring 2018 credits in 2023 would be retiring 5 year old credits.
- Annual scope 1 and 2 emissions per retirements over the last 3 years (20%): the percentage of emissions that a company is offsetting with carbon credits.
- Responsiveness (10%): how responsive a company is to questions or to providing additional information on offsetting activities.

All attributes listed above may also apply to off-registry CDR credits, though those typically are pre-purchases for future delivery and may not list vintage.

The overall rating score is calculated based on the variables listed above. Then, the buyer's grade depends on the position it has among other entities listed.

Grade	% of Companies	Description of Grade
A+	7.4%	Consistently offsetting their GHG emissions over the last 3 years, overall score equal to or above 93rd percentile.
A	15.5%	Have retired credits in the last 3 years, score between 73rd and 92nd percentile.
A-	28.3%	Have retired credits in the last 3 years, score between 33rd and 72nd percentile.
B+	10.4%	Have retired credits in the last 3 years, score between 18th and 32nd percentile.
B	4.6%	Have retired credits in the last 3 years, score between 11th and 18th percentile.
B-	7%	Have retired credits in the last 3 years, score between 3nd and 10th percentile.
C+	1.2%	Have retired credits in the last 3 years, score equal to or below 2nd percentile.
C	1.6%	Have not retired in last 3 years, but had before that; score above 50th percentile within group.
C-	8.6%	Have not retired in last 3 years, but had before that; score below 50th percentile within group.
D	15.3%	Have retired credits in the past, but not in the last 5 years.

Grades

Firstly, component scores for each variable are calculated, and put into percentiles for each element (e.g. percentile ranking for price paid per credit). Each element percentile score is then weighted and all elements are added together to form a single buyer score. Then, we take the percentile of the buyer scores, which translate directly to the ratings and the distribution shown below.

Companies are graded on a scale from A+ (best) to D (worst) with the distribution of grades based on Moody's and S&P grade spread. Grades from A+ to C+ include companies that have retired carbon credits in the last 3 years and the grades here are calculated based on the distribution within this group.

*Scope 3 is not included as of now due to the discrepancies in Scope 3 reporting by entities considered.

AlliedOffsets

AlliedOffsets is the world's largest data source for the voluntary carbon market. We have aggregated data from the world's leading carbon offsetting registries and our AI and advanced analytics layer allows us to identify unique insights into project pricing, quality, and much more. Our data is used by leading sustainability and carbon consultants, financial institutions, offsetting corporations, project developers, buyers, and academics.

AlliedOffsets, 78-79 Pall Mall, SW1Y 5ES, London, England