Discredited?

A critical review of links between carbon credit use and corporate emissions performance

Commissioned by the Centre for Research on Multinational Corporations (SOMO)

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Data Desk (datadesk.eco) is an investigative consultancy that uses high-spec data and advanced computational techniques to shine a light on the industries at the heart of the climate crises.

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Executive summary

Two organisations with stakes in the success of the voluntary carbon market (VCM) have published data-driven reports concluding that companies that use carbon credits are likely to decarbonise their operations further and faster than those that do not. Analysing the data sets and methodologies used in the reports, this briefing explains the fundamental limitations of their analysis and concludes that the evidence presented in both cases is questionable at best.

For both reports, the key data source is the Carbon Disclosure Project (CDP). Despite this data set's important role as the largest extant source of self-reported emissions data, it has several limitations, particularly when used in place of a representative sample of companies. These limitations — as well as the authors' divergent strategies for mitigating them — seriously undermine the conclusions of both analyses.

Some of the key issues include:

- Disclosure via CDP is voluntary and rates of disclosure vary significantly by industry, region and other variables, leading to a fundamentally unrepresentative data set. Rates of emissions disclosure also differ between carbon credit users and non-users, the categories which form the basis of both analyses, complicating any conclusions drawn.

- The self-reported nature of the CDP data leads to quality issues. This is especially the case with CDP's data on carbon credit use, which raises questions as to whether the reports properly distinguish between voluntary and compliance credits.

- By excluding companies that have not reported to the CDP consistently in the timeframes used for their analysis, the reports' authors narrow their sample drastically, basing their ultimate conclusions on a relatively small number of companies.

- Other factors like changes to a company's structure as a result of mergers and acquisitions are largely unaddressed. This is particularly relevant for companies in oil and gas, mining and heavy industries, all of which are well-represented in the CDP sample.

- Neither report adequately addresses the issue of Scope 3 emissions, which are a major source of emissions for many companies. This fundamental lack of Scope 3 data represents the greatest source of uncertainty for both reports.

Overall, the availability of self-reported data on corporate emissions and carbon credit use is currently too limited to draw any firm conclusions about the relationship between the two.

Introduction

Carbon trading, a market-based climate policy, operates through compliance and voluntary markets. Compliance markets emerge in response to binding emissions reduction targets set by regional, national and international agreements, such as the Kyoto Protocol and the Paris Agreement or the EU Emissions Trading Scheme (ETS). The voluntary carbon market (VCM), on the other hand — which exists alongside compliance markets — enables companies, governments and individuals to purchase carbon credits in order to reach voluntary decarbonisation targets.

The VCM took inspiration from the United Nations (UN) Kyoto Protocol's flexible mechanisms, particularly the Clean Development Mechanism (CDM). Under this scheme, countries with binding emissions targets could purchase carbon credits from offset projects to reach them. Credits are tradable instruments generated by offset projects that claim to be avoiding, reducing or removing pollution; for example, by preventing deforestation in a specific area, or by providing cleaner sources of domestic energy to vulnerable populations.

Each carbon credit, sometimes called a 'carbon offset credit', is supposed to represent one metric tonne of carbon dioxide equivalent emissions (1 tCO2e). The idea underpinning carbon offsetting is that emissions in one place can be 'cancelled out' by projects established elsewhere. However, evidence has consistently shown that companies have bought carbon credits as a cheap way to offset large portions of their emissions, allowing them to claim to be 'net zero' without actually decarbonising their operations.

A number of high-profile academic studies and news reports have cast doubt on the quality of the projects that sit behind some of the largest corporate purchases of VCM credits, especially since the adoption of the Paris Agreement and a corresponding spike in the setting of 'net zero' corporate targets. In addition to highlighting human rights abuses linked to key VCM projects, experts have questioned the rigour of the methodologies and verification methods used by the main carbon credit registries in the VCM, effectively breaking the fundamental yet fragile equivalence between a carbon credit and 1 tCO2e of avoided or removed emissions.

These reports, together with an increasing number of legal cases against companies misleading consumers with 'net zero' advertising campaigns, have caused reputational damage to corporate carbon credit buyers and to services companies — registries, brokers, ratings providers — in the expanding VCM.[1]

In this context, some of the most credible proponents of VCMs have changed tack, presenting carbon credits as one of a range of strategies for corporate decarbonisation. Beginning in 2023, a number of organisations with stakes in the long-term success of the voluntary carbon market published data-driven reports arguing that corporate use of credits

[1] In a sign of the shift in attitudes towards the use of carbon credits among corporate sustainability professionals, a 2024 proposal by trustees of the Science Based Targets Initiative (SBTi) to allow carbon credits to offset companies' Scope 3 emissions was met by a staff mutiny and swiftly withdrawn.

is complementary to real emissions reductions. According to these reports, rather than using carbon credits as a substitute for emissions cuts, companies that use credits are likely to decarbonise their operations *further and faster* than those that do not.

Does sufficient evidence exist to support these claims? In this briefing, we build on a December 2023 review by Gilles Dufrasne and Benja Faecks of Carbon Market Watch (CMW), examining two reports from Ecosystem Marketplace and MSCI Carbon Markets that purport to show a link between carbon credit use and corporate emissions reductions, and which have been widely disseminated by media and industry proponents in the service of expanding the VCM.

Where Dufrasne and Faecks address the fundamental question of correlation vs. causation, this briefing focuses on the state of the underlying data on which both reports rely. By diving deeper into the very different methodological decisions that the authors of each report have made, we consider their implications for the quality and reliability of currently available data on corporate emissions and carbon credit use.

Data-driven reports on the use of offset credits

Before introducing the two reports that are the focus of this briefing, it is worth acknowledging the existence of a third report that comes to similar conclusions but which, due to lack of supporting information on the analysis, it was impossible to analyse further for this briefing.

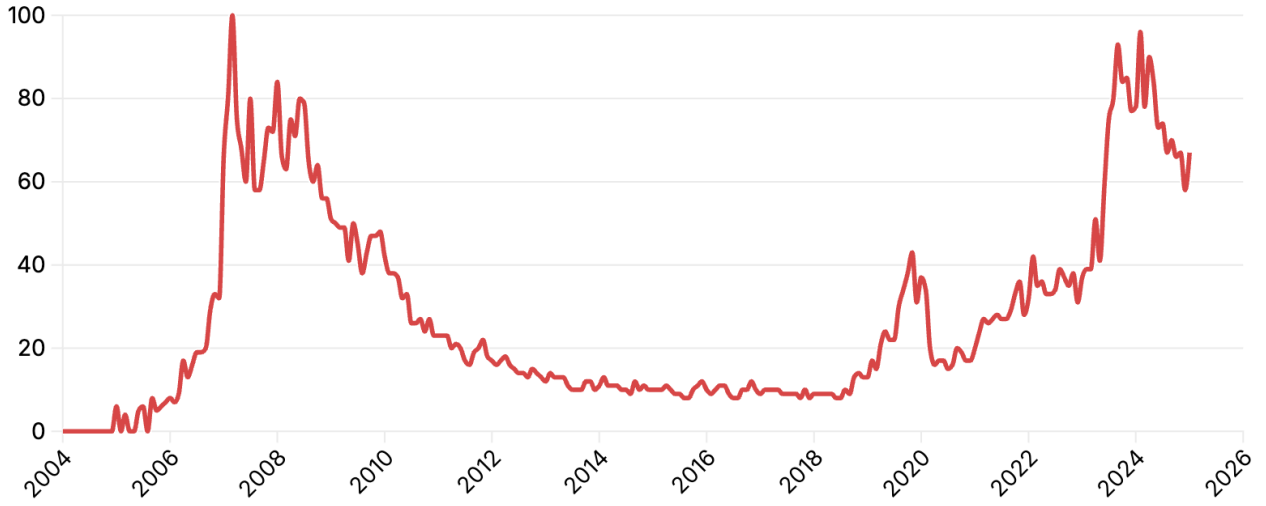
This third report was released in May 2023 by Sylvera, a British start-up which uses remote sensing data to provide quality ratings for VCM credits, and which has been very active in the public debate around the future of VCMs. In it, Sylvera analyses data on emissions and carbon credit use between 2013 and 2021 for a sample of around 100 major companies, concluding that firms that use credits have cut their emissions at about twice the rate of non-users.

As Dufrasne and Faecks point out in their own review, no detail is given on how the ~100 companies in the sample were selected, or on how their rates of emissions reduction are calculated. Acknowledging that a significant proportion of the emissions cuts analysed are attributable to airlines which curtailed their operations in the wake of the Covid-19 pandemic, the report admits that its headline finding no longer holds when these companies are removed from the analysis, but fails to provide a revised figure.

Prior to commissioning the present review, SOMO contacted Sylvera to request information on the analysis, but was informed that the company could not supply any further detail as the report's author had left the company. In the absence of further information, it is difficult to interrogate the Sylvera analysis in any detail.

Figure 1. Twin peaks

Google Search interest in the topic "Carbon offsets and credits" peaked in 2007, the year that forest credits were introduced during UN climate negotiations in Bali, and again in 2023–24



Source: Google Trends

‘All in on Climate: The Role of Carbon Credits in Corporate Climate Strategies’ (Ecosystem Marketplace, October 2023) [link]

This report was authored by Ecosystem Marketplace (EM), an initiative of Forest Trends, a non-profit organisation which advocates for market-based solutions to deforestation and other environmental harms in the forestry sector. It is presented as a comprehensive analysis supported by appendices and data, and was sponsored by the Skoll Foundation, the Voluntary Carbon Markets Integrity Initiative, the High Tide Foundation, the We Mean Business Coalition and Conservation International.

The report’s key conclusion is that, between 2020 and 2021, 59% of corporate voluntary carbon credit buyers had reduced their emissions, relative to 33% of other companies. EM also concludes that the former group leads the latter on other metrics, such as disclosure of emissions and setting transparent long-term targets for decarbonisation. The report relies primarily on data from the Carbon Disclosure Project (CDP), with EM also incorporating its own proprietary data.

‘Corporate Emissions Performance and the Use of Carbon Credits’ (MSCI Carbon Markets, October 2024) [link]

This report updates a publication by Trove Research, an independent UK VCM analytics firm which was acquired by MSCI — a US financial data company — in November 2023. While neglecting to disclose some key supporting data, as discussed below, MSCI’s analysis is the most comprehensive and sophisticated of the two.

Again using CDP data, MSCI compares companies’ reported emissions performance to their purchases of carbon credits, finding that — on average — firms that used a significant quantity of credits reduced their emissions faster than non-users between 2017 and 2022. The report’s authors also present a number of secondary findings around target-setting and disclosure.

Key conclusion in both reports

The key conclusion of both Ecosystem Marketplace and MSCI is that companies which use carbon credits are reducing their total emissions further and faster than those which do not.

EM bases this finding on just two years of emissions data (2020–21) and reports the percentage of companies reducing emissions in each category: 59% of voluntary carbon credit buyers vs. 33% of other companies.

MSCI uses emissions data for six years (2017–22) and calculates the median year-on-year reduction in percentage terms for each company across the period, revealing an average 3.4% reduction for users of carbon credits vs. 1.5% for non-users.

Data quality

The authors of the EM and MSCI reports use nearly identical datasets, but make very different decisions about how to deal with their limitations. In this section, we consider the current state of corporate reporting of emissions and carbon credit use in general terms, before examining the specific decisions made by EM and MSCI and their implications for the resulting analyses. These decisions and their implications are also summarised as a table in **Appendix I**.

For both reports, the key data source is the Carbon Disclosure Project (CDP). CDP is an international non-profit organisation that aims to help companies, cities, states and regions manage their environmental impacts. As part of this work, CDP issues an annual questionnaire to participating companies, allowing them to report key environmental metrics, including emissions under scopes 1, 2 and 3 of the Greenhouse Gas (GHG) Protocol and information on their use of 'project-based' carbon credits.

The data resulting from CDP questionnaires is considered to be the largest and most credible available source of self-reported corporate environmental metrics. Limited sections of the data are free to consult via the CDP website, while the core dataset is available for purchase and incorporated into several data products from other providers. The primary data used by EM and MSCI comes from two different parts of the CDP questionnaire, covering emissions (section 6.1) and carbon credit use (section 11.2) respectively.[2]

1. Unrepresentative due to low disclosure rate

Despite its importance, the CDP dataset has several limitations, particularly when used in place of a representative sample of companies. Its crucial weakness is that disclosure via CDP is entirely voluntary. As such, companies that do not report — almost 2,000 of which have been identified by CDP itself as environmentally high-impact — cannot be included in any analysis. Conclusions drawn from the CDP data must therefore be considered in the broader context of corporate self-reported metrics and voluntary decision-making around sustainability, taking into account any factors that might (dis)incentivise a company's management to join the initiative.

This limitation affects both reports, but in different ways. For Ecosystem Marketplace, it raises important questions about the report's headline conclusion. The sample of 7,352 companies analysed by EM consists only of those that have reported emissions data via CDP in both 2020 and 2021. As such, it may be biased towards companies with a relatively strong commitment to sustainability and climate action; or, as Dufrasne and Faecks suggest, towards those with the financial resources to engage in an onerous voluntary disclosure programme.

[2] References to CDP question numbers in this briefing refer to the questionnaire layout used in 2023, the most recent year for which data is available. For this briefing, we have consulted CDP data via a subscription to the London Stock Exchange Group (LSEG)'s Workspace product.

In an apparent attempt to mitigate this issue, MSCI starts with a more representative sample — namely, the constituents of its own ACWI Investable Market Index, which covers 8,844 companies, "approximately 99% of the global equity investment opportunity set." However, the report's use of six years of emissions data for each company quickly introduces an even more severe restriction than for the EM report, leaving just 2,936 companies for which CDP data is available across the entire period (p. 9) — a group whose distribution is, again, likely to be skewed.

One way to demonstrate this distribution issue is to summarise CDP submissions by industry. **Figure 2** shows submissions made to CDP in 2021 by companies making at least US$10 billion in annual revenue, filtered to the top 25 industries and compared to a database of all public companies published by data provider LSEG. Similar variation is evident when the data is summarised by other variables, such as country of incorporation.

2. "Many irregularities" with carbon credit data

The self-reported nature of the CDP data affects more than its distribution: it also leads to quality issues with the data itself. This is especially the case with CDP's data on carbon credit use, which EM itself notes contains "many irregularities [...] likely due to confusion around types of credit schemes, project methodologies, and distinctions between credit purchases and origination" (p. 24).

CDP's questionnaire asks: "Has your organization canceled any project-based carbon credits within the reporting year?"[3] When details of cancelled credits are entered, the questionnaire allows users to specify the purpose of the cancellation — "Compliance", "Voluntary Offsetting" or "Not Applicable" — as well as the certification scheme under which the credits were generated, a list which includes all the major voluntary registries as well as the UN CDM.

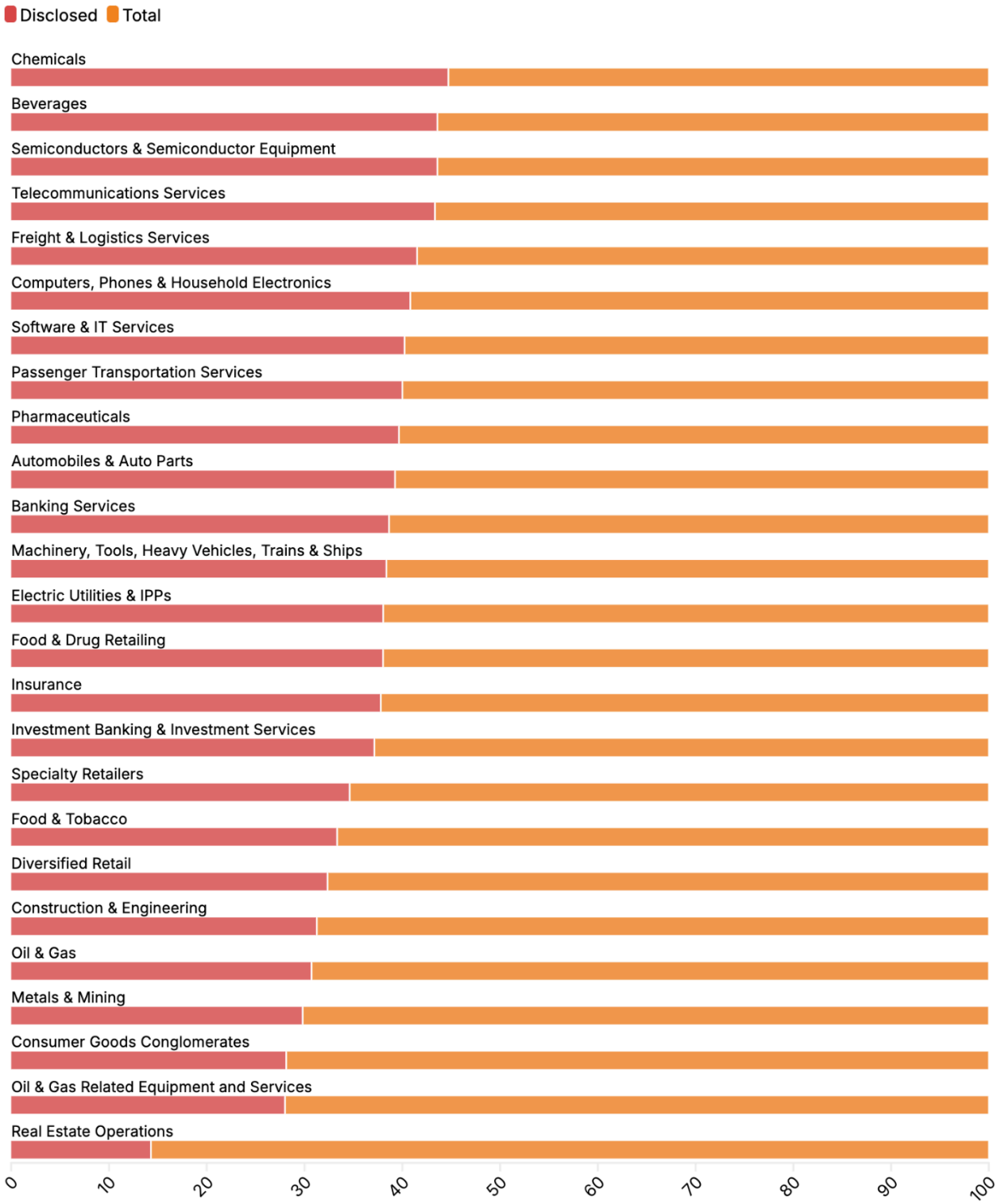
The authors of the EM report note that at least 21 companies "misclassified RECs [Renewable Energy Certificates], RINs [Renewable Identification Numbers], and ETS [Emissions Trading Scheme] participation as project-based carbon credit purchase or origination" (p. 9). These three programmes are compliance mechanisms in the US and EU, and should not be considered voluntary climate action. In order to ensure that their analysis only covers users of voluntary credits, EM undertakes a process of manual correction and verification of the CDP data.

No such process is discussed in the MSCI report, despite considerable detail being provided about the methodology, raising questions as to whether the analysis properly distinguishes between voluntary and compliance credits.

[3] In carbon markets, 'cancellation' or 'retirement' of a credit refers to it being taken off the market and used by its owner, generally for emissions offsetting.

Figure 2. CDP disclosure rate by industry

Looking at public companies with at least US$10 billion in revenue across the 25 biggest industries, CDP disclosure rates vary significantly, ranging from more than 40% for chemicals companies to less than 30% in oilfield services and less than 15% in real estate operations



Source: LSEG Workspace

3. Incomplete coverage of buyers

In addition to the data quality issues described above, questions on carbon credit use appear to suffer from low rates of disclosure via CDP, even for those companies submitting a filing. This is discussed by EM via a comparison with the organisation's own proprietary data on carbon credit buyers, which reveals that "36 percent of CDP respondents that are using carbon credits do not disclose their purchase or origination of credits" (p. 8). It may be the case that some companies view the carbon credit section of the questionnaire as less important than the core emissions reporting for which it is primarily known; alternatively, the litany of scandals relating to large-scale VCM initiatives in recent years may be discouraging companies from disclosing links to these projects.

The implications of this finding for both the EM and MSCI analyses are significant. If more than a third of carbon credit buyers don't report their use to CDP, then the "non-buyers" category analysed by both reports is likely to include a substantial number of these companies, calling the validity of the metrics generated using the two categories into question.

4. Different rates of emissions disclosure

A related issue is highlighted by the EM report. According to this report's authors, looking only at companies that made a submission to CDP in the relevant period, rates of disclosure of emissions data are higher among carbon credit users than non-users. This particularly affects emissions under Scope 3, where 98% of voluntary credit users reported a non-zero figure vs. just 49.5% of non-users.

Under the GHG Protocol, emissions are categorised based on their place in a company's value chain. Scope 1 emissions are direct emissions from owned or controlled sources; Scope 2 emissions are indirect emissions from the generation of purchased energy; and Scope 3 emissions are all other indirect emissions that occur in a company's value chain, including from the use and disposal of its products.[4]

In the context of the EM report, differential rates of disclosure to CDP — both between carbon credit users and non-users and across the different GHG Protocol emissions scopes — threaten to undermine the entire analysis, including EM's headline conclusion. They raise particular questions about the real proportion of non-users reducing their Scope 3 emissions, which given the missing data could differ substantially from the figure used in the report.

To address this issue, MSCI reports its analyses of Scopes 1 and 2 emissions separately from Scope 3 emissions. The conclusions of the analysis of Scope 3 data will be discussed further in the following section.

[4] It should be noted that the GHG Protocol is itself subject to lobbying and other influence from major carbon credit users, including US technology companies.

5. Emissions data distorted by mergers

Stepping back from the problems identified with the CDP data specifically, there is a broader issue affecting any analysis of corporate emissions data over time: changes to company structure as a result of mergers and acquisitions (M&A).

Unlike countries, companies are relatively dynamic, changing their size and structure regularly, and therefore transferring large volumes of operational emissions between each other from year to year. For example, when a large, publicly listed, vertically integrated oil company divests from upstream productive assets by selling them on to a private company, the substantial process emissions associated with those assets become the responsibility of the buyer.

This means that a company's reported emissions in one year may be significantly higher or lower than in the previous year, even if its underlying business model and production processes remain unchanged. These distortions are likely to be particularly severe for companies in sectors with high levels of M&A activity, such as oil and gas, mining and heavy industry, all of which are well-represented in the CDP sample.

The EM report takes no steps to address this issue, while MSCI applies the blunt instrument of excluding companies whose median year-on-year emissions change over the period is greater than ±30%. In conjunction with the requirement for six full years of emissions data, this reduces the sample size for MSCI's main analysis to just 2,665 companies.

6. Unresolved questions around emissions data

The final data quality issue identified in this review only affects the EM report.

In the appendices to the report, the authors provide a number of tables giving some of the data used in the analysis. Among these is a table listing the "top 50 non-buyers of carbon credits, by GHG [greenhouse gas] emissions" (pp. 28–29), i.e. the most polluting companies which do not use carbon credits.

Comparing this table to emissions data submitted to CDP and reported in company sustainability reports shows that many of the figures match published Scope 1+2+3 emissions totals. For example, EM attributes 1.58 billion tonnes of emissions to Mitsubishi Heavy Industries, matching the figures published for 2021 in its 2022 ESG databook (pp. 58–59).

However, a number of the company figures provided by EM are wholly implausible. According to the EM list, the company responsible for the highest emissions in the non-credit users category is Şişecam, a Turkish glass manufacturer, which EM reports as being responsible for more than 3 billion tCO2e of emissions in 2021 — almost twice the total for Mitsubishi Heavy Industries.

By contrast, Şişecam's 2024 CDP submission estimates its total emissions for that year — including Scope 3 — at 11.7 million tCO2e, a figure more than 250 times smaller. A similar situation applies to several other companies in the list, including Kongsberg Automotive,

which is claimed to be emitting at levels far exceeding those reported in published sustainability materials.

Before commissioning this review, SOMO contacted Ecosystem Marketplace to seek further clarity on the emissions figures for non-buyers presented in the report, but received no response. In the absence of an explanation from the report's authors, the most likely reason for the discrepancy is the use of a flawed model for estimating companies' Scope 3 emissions.

Estimating companies' Scope 3 emissions accurately is a profoundly difficult problem. Existing approaches largely rely on the development of carbon intensity values (e.g. tCO2e per US$1m in revenue) for whole industrial sectors and regions, then applying these to companies with missing data using their financial reporting. Where the categories used are insufficiently granular, and particularly in periods of significant volatility in company earnings, this type of estimation can yield very significant over- and underestimates.

Regardless of their exact provenance, EM's reporting of emissions figures that clearly bear no relation to reality raises questions about both the data used in the central analysis and the rigour with which the report as a whole has been put together.

Analysis and interpretation

While the quality of the underlying CDP data is a major concern, it is not the only issue affecting the two reports. This section will discuss specific issues that impact the reports' analysis and the interpretation of their findings, independent of the data source's limitations. These issues include the use of unreliable market-based emissions reporting for some companies, discrepancies in the analysis between industries and a blind spot in relation to Scope 3 emissions.

Market-based emissions

Scope 2 of the GHG Protocol covers the emissions associated with the generation of electricity, steam, heat and cooling purchased by a company in the course of its operations. Emissions in this category may be calculated and reported on either a location or a market basis.

Location-based emissions are calculated using the average emissions intensity of the power grid where the company operates. This reflects the emissions associated with the electricity generation in that specific location. By contrast, market-based emissions reflect the contractual arrangements a company has made to purchase energy, such as through power purchase agreements (PPAs). They are calculated using the emissions intensity of the company's contracted electricity supply, even when this is only delivered virtually via a national or regional grid. Emissions may be further reduced through the use of renewable energy certificates (RECs), which can be purchased from renewable energy project developers and used to 'offset' emissions from more carbon intensive generation sources.

Market-based emissions estimates have been widely criticised for allowing companies to report lower Scope 2 emissions without necessarily decreasing their consumption of fossil fuel-generated electricity; as a carbon accounting method, they fail to account for the true costs of renewable power in different locations. A recent analysis by the *Financial Times* showed how major US tech companies use RECs to substantially lower their reported emissions.

Both EM and MSCI use market-based emissions estimates for at least some of the companies included in their analyses. In MSCI's case, location-based estimates are preferred, but market-based estimates are used in "a small number of cases" (p. 23) where the former are unavailable. Responding to questions from SOMO posed during initial research for this briefing, a spokesperson for MSCI said that "[t]he significant majority of scope 2 emissions are location based" but did not provide any clarification on the cases where market-based emissions were used.

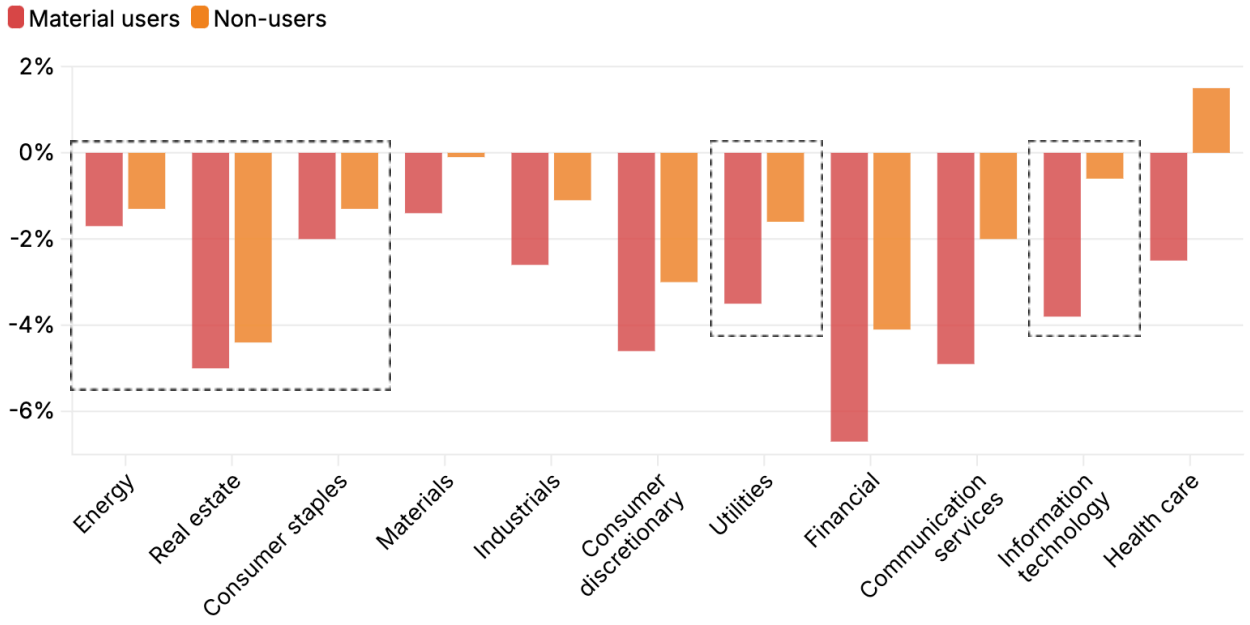
In much of the EM report, metrics for the two categories are reported separately, but the headline analysis of rates of decarbonisation explicitly includes purchases of RECs:

> [C]ompanies who voluntarily buy carbon credits are decarbonizing faster than companies who do not by investing in emissions reduction activities for their business and operations, including renewable energy consumption and the purchase of Renewable Energy Certificates (p. 20).

The authors of the EM report make clear that at least some companies included in the analysis reported “zero Scope 2 emissions through purchases of clean energy or RECs” (p. 25).

Figure 3. MSCI analysis broken down by industry

For some of the most polluting industries — including energy, real estate and consumer staples — MSCI's analysis shows a statistically insignificant difference in Scope 1 and 2 emissions reductions between large-scale carbon credit users and non-users



Source: MSCI Carbon Markets

Sectoral discrepancies

To the authors’ credit, the MSCI report presents a number of its findings broken down by industry, including its headline analysis of Scope 1 and 2 emissions reductions, allowing us to interrogate the findings further. This breakdown makes clear that the analysis only holds for certain sectors.

Among financial firms that are significant users of carbon credits, for example, the analysis finds a median emissions reduction of -6.7%, compared to -4.2% for non-users, a statistically significant difference. For communication services companies, similarly, the equivalent figures are -4.9% and -2%. However, when we turn to sectors of the economy with a more substantial material footprint, these gaps appear to shrink.

Figure 3 shows the full MSCI Scope 1 and 2 analysis, with industries ordered by the difference between carbon credit users and non-users. For companies in the energy, real estate, consumer staples, utilities and information technology sectors (annotated with dotted lines), which make up one third (874) of the sample of 2,665 total firms, the difference between credit users and non-users is statistically insignificant, as stated by MSCI.

In conjunction with the differential rates of CDP disclosure by industry discussed in the previous section, this finding suggests that we should be cautious when interpreting the headline figures, as they are likely to be affected by the composition of the sample — in other words, they do not reflect a like for like comparison.

Scope 3: in or out of scope?

As discussed above, among companies submitting to CDP, rates of disclosure under the different GHG Protocol emissions scopes differ significantly, with many companies not submitting any Scope 3 data. According to MSCI, 80% of companies in their sample did not disclose any Scope 3 emissions in 2017, falling to 59% in 2022 (Exhibit 8, p. 14). Furthermore, according to EM, carbon credit users were approximately twice as likely to report Scope 3 data than non-users (p. 25).

Further issues are apparent when looking at the individual categories that make up Scope 3. In 2022, 35% of companies in the MSCI sample had disclosed emissions related to business travel (Category 6), but just 17% had disclosed emissions related to the transportation and distribution of their products (Category 9) or to their ultimate use and disposal (Category 11). This latter category is extremely important for some companies, notably in the oil and gas industry, where the use of their products (e.g. combustion of diesel in vehicle engines) represents the major part of their total emissions.

This fundamental lack of Scope 3 data represents the greatest source of uncertainty for both the EM and the MSCI reports. For EM, which includes Scope 3 in its headline analysis, the fact that carbon credit users are almost twice as likely to report their emissions than non-users potentially affords them greater room to subsequently 'decarbonise'. For example, a financial institution which reported significant Scope 3 emissions from investments (Category 15) in 2020 but subsequently divested these assets would be counted by EM as decarbonising, whereas a company performing exactly the same actions without reporting its Scope 3 emissions would not.[5]

For MSCI, the decision to separate the analysis of Scope 3 emissions from Scopes 1 and 2 helps to avoid undermining their specific conclusions about direct emissions. As the report itself states, no statistically significant difference in emissions reductions between material carbon credit users and non-users is observable in any of the Scope 3 emissions categories except business travel (Exhibit 9, p. 23). However, treating Scope 1 and 2 emissions separately from Scope 3 threatens to detract from the significance of the headline finding: for a company like Shell, whose disclosed Scope 3 emissions in 2022 were more than 20 times larger than its combined Scope 1 and 2 emissions, any analysis that excludes these volumes is practically meaningless.

[5] It may also be the case that companies' Scope 3 emissions estimates are affected by a higher degree of uncertainty than their Scope 1 and 2 estimates, which are generally based directly on internal company data, leaving greater leeway for emissions reductions due to changes in methodology.

Conclusion

In summary, both the Ecosystem Marketplace and MSCI reports suffer from the limitations of the underlying CDP data. This data is biased due to low disclosure rates and suffers from quality issues, especially in relation to carbon credit use. The reports address these issues in different ways, but neither can fully overcome the fundamental limitations of the data.

While both reports claim to show that companies that use carbon credits reduce their emissions faster than those that do not, the evidence presented in both cases is questionable at best. The Ecosystem Marketplace analysis is based on a very small sample of data and does not adequately address the issue of emissions reporting by industry. The MSCI report is more comprehensive, but its headline finding is not statistically significant across all industry sectors, including important categories like energy and consumer staples. Neither report adequately addresses the issue of Scope 3 emissions, which are a major source of emissions for many companies.

Overall, the data landscape for corporate emissions and carbon credit use is currently too limited to draw any firm conclusions about the relationship between the two. More research is needed, using better data, to determine whether there is a link between companies' carbon credit use and their reduction of emissions.

Appendix I: Key data quality issues and mitigations

#	Issue description	Ecosystem Marketplace mitigation	MSCI mitigation
1	CDP emissions and carbon credit data is not a representative sample of companies due to voluntary disclosure	*None*	*None*
2	Self-reported carbon credit use data miscategorises compliance credit schemes, Renewable Energy Certificates, etc. as VCM credits	Manually correct and recategorise CDP data to ensure coverage of voluntary credits only	*None*
3	Self-reported carbon credit use data covers a very limited proportion of known corporate carbon credit buyers	*None*	*None*
4	Rate of disclosure of emissions is higher among carbon credit users than non-users, particularly for Scope 3	Restrict sample to companies that have reported both Scope 1 and Scope 3 emissions data	Produce separate analyses for Scopes 1+2 and Scope 3
5	Changes in reported emissions may be driven by factors other than sustainability plans, e.g. company mergers and acquisitions	*None*	Measure median emissions change over a period of several years; remove outliers with greater than +/-30% change
6	Data used by Ecosystem Marketplace appears to greatly overestimate emissions of certain companies	*None*	Not relevant to MSCI analysis