IF NOT NOW, WHEN?

How are companies stepping up with the urgency required to deliver climate impact

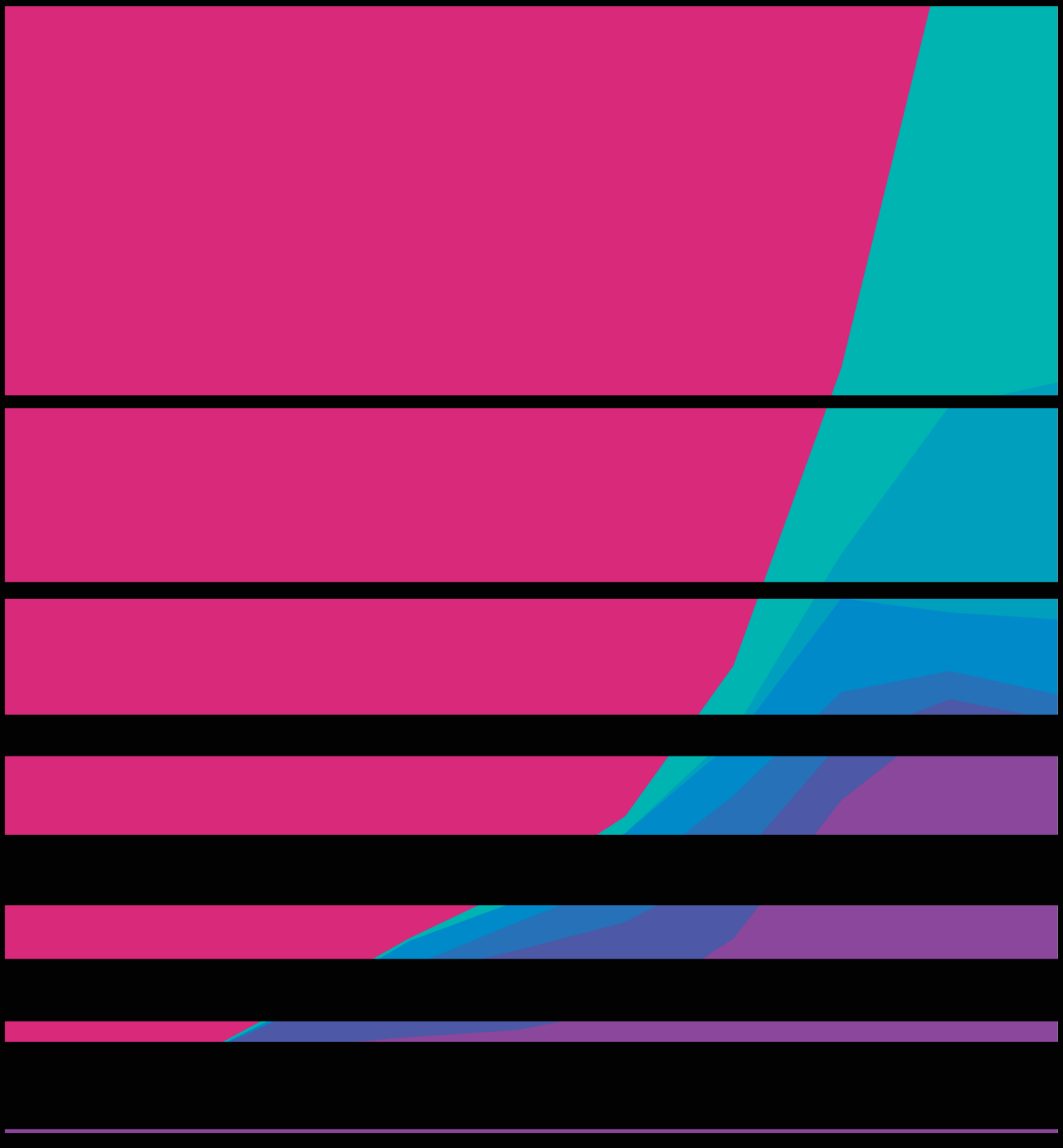
CLIMATE IMPACT PARTNERS

A merger of ClimateCare & Natural Capital Partners

with support from

Imperial College Business School

The fourth annual study to assess the climate actions and targets of the Fortune Global 500



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If not now, when? How are companies stepping up with the urgency required to deliver climate impact

In the last year, the landscape of corporate climate action has changed.

As the impacts of climate change became clearer and climate took center stage for the world at COP26, more companies than ever have made public commitments to take climate action. Net zero targets are fast becoming a business norm across boardrooms of G7-headquartered companies. And despite growing geopolitical and macroeconomic uncertainty driven by the war in Ukraine, continued supply chain disruptions post-COVID-19, and surging inflation, private sector climate commitments continue to grow.

"The question is no longer if companies should rise to the challenge of climate change, but how and, perhaps more crucially, when."

For the fourth year in a row, we've investigated how the world's largest companies, listed as the Fortune Global 500, are leaning into the collective effort of tackling climate change, and uncovered the following critical questions:

1. How do we increase the urgency of climate action to achieve scale and impact by the end of this decade?

2. How do we provide the means and incentives for all companies to be responsible - ensuring the 37% of companies with no commitment, and all the companies of all sizes within their orbit, step up?

3. How do we help companies deal with the complex, yet material, issue of their value chain (Scope 3) emissions, which will be critical to achieving global net zero?

This year has seen the highest annual growth rate in aggregate sales in the Fortune Global 500 history, reaching $37.8 trillion.

Our research indicates that while climate commitments continue to grow across the Fortune Global 500, in particular net zero and Science-Based Targets (SBTs), greater action is needed to improve the ambition and scope of these targets, and more action is needed today:

• While 42% of companies in the Fortune Global 500 have now delivered a significant climate milestone or are publicly committed to do so by 2030, up 11% (four percentage points) in the last year, a much larger group - 63% - have a target by mid-century, up 22% (12 percentage points) in the last year.

• 38% of companies now have a net zero target, up 50% (13 percentage points) from a year ago, but 31% of these targets exclude Scope 3, or value chain, emissions[1]. This is despite Scope 3 emissions making up 80% of a Fortune Global 500 company's footprint on average.

• Particularly in high-emitting sectors there is a big gap between the contribution of Scope 3 emissions to their overall footprint, and the inclusion of Scope 3 emissions in their net zero targets.

[1] *Under the Greenhouse Gas (GHG) Protocol, GHG emissions are categorized into three Scopes. Scope 1 covers direct GHG emissions that occur from sources owned or controlled by the company. Scope 2 covers electricity indirect GHG emissions that occur from the generation of purchased electricity by the company. Scope 3 covers all other indirect GHG emissions that occur from sources not owned or controlled by the company, including the extraction and production of purchased materials and fuels, and the use of sold products and services.*

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But as these climate targets proliferate, so too does scrutiny of those targets, coming from a range of stakeholders across civil society and the public sector, as well as from investors, suppliers, and consumers.

There is rapid growth in climate-related greenwashing litigation[2], as well as new or proposed requirements from market authorities[3], new claims guidance from organizations such as the Voluntary Carbon Market Integrity Initiative (VCMI)[4], and even a special taskforce on the net-zero emissions commitments of non-state entities organized by the UN Secretary General[5]. All of which underscores that companies that do not take clear, credible climate action today – and go beyond commitments, to delivering on targets in line with the goals of the Paris Agreement – risk having their corporate reputation hit. Encouragingly, the report confirms, once again, that those companies with carbon neutral and net zero commitments, are the companies most likely to commit to significant internal reductions: companies that have a carbon neutral or net zero target by 2030 are twice as likely to have a Science-Based Target (SBT) than those companies that do not and are two to four times more likely to have an SBT that is classified as "1.5°".

Additionally, among companies with a carbon neutral target, the percentage that cover value chain emissions has doubled, up from 13% to 27%.

The past year may go down as a landmark year in which the number of companies with a climate target grew despite significant headwinds of increased scrutiny and economic and geopolitical crises. But we are at the point where it's about walking, not talking – how do we ensure companies deliver on the commitments they've made, and that all companies step onto the path and take responsibility for their climate impact?

"42% of companies in the Fortune Global 500 have now delivered a significant climate milestone or are publicly committed to do so by 2030, up 11% (four percentage points) in the last year."

[2] *Setzer and Higham, 2022, Global trends in climate change litigation: 2022 snapshot, link*
[3] *in March 2022, the United States Securities and Exchange Commission (SEC) released proposed rule changes that would require enhanced climate-related disclosures by public companies in their SEC filings*
[4] *VCMI, 2022, Press Release: Global businesses invited to test world-first voluntary carbon credit Provisional Claims Code of Practice, link*
[5] *United Nations Secretary-General, 2022, Expert Group on the Net-Zero Emissions Commitments of Non-State Entities, link*

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COMMENTS FROM OUR FORTUNE GLOBAL 500 CLIENTS

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We asked some of our Fortune Global 500 clients for their reaction to the research

"Establishing clear actions and reporting progress toward long-term goals is a critical way to demonstrate commitment to the objectives of the Paris Agreement. The study is a valuable source of information for many audiences, highlighting the current landscape of corporate climate action and strategies."

Jon Richter,
Chief Sustainability Officer,
MetLife, Inc.

"Aggressive climate action is not determined solely by bold long-term goals, but whether companies are acting urgently to reduce absolute emissions during this defining decade. This research highlights the need to align corporate climate strategies to science-based targets and capitalize on near-term opportunities to drive down emissions so that together, the Fortune Global 500 can make meaningful reductions in the time we have left."

James McCall,
Chief Sustainability Officer,
HP Inc.

"We're encouraged to see more and more companies from this prestigious group put a stake in the ground and make climate commitments. There are some signals, however, that ambition and urgency might be waning. Much of the growth in commitments this year has been driven by targets set well beyond 2030, which we know is a critical decade for the planet. There are tools, including the use of carbon finance, every company can adopt now that can make an impact. We cannot wait to show progress, we must start investing in meaningful solutions today."

Saskia Feast, Managing Director,
Global Client Solutions,
Climate Impact Partners

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METHODOLOGY

METHODOLOGY

About the Fortune Global 500

We chose the Fortune Global 500 as a representative sample of the private sector. Fortune Global 500 companies are based across 33 countries and have combined annual revenues of $38 trillion[6]. (For reference, the total GDP of the U.S. is $23 trillion)[7]. They employ 70 million people around the world and in 2021 profits totalled were $3.1 trillion, an 88% annual increase.

We estimate that these companies also directly contribute to at least 15% of global CO^2 emissions annually (more than 5.6 billion tCO^2e). [8]

In addition to the importance of climate action within their own operations, Fortune Global 500 companies have significant influence on their suppliers, customers and the wider world of business and government.

This does not diminish the value of many other businesses – small, medium, and large – throughout the world, who have also realized the urgency of our climate situation and are reducing their carbon emissions. Rather, the efforts taken by the companies highlighted in this report can provide a benchmark for broader changes in the private sector sustainability landscape, as smaller companies both engage with and learn from the Fortune Global 500.

[6] Taking out financial companies, for which revenue can sometimes be a misleading metric, the total revenue of the Fortune Global 500 is $29 trillion
[7] World Bank, 2022, GDP (current US$)
[8] Based on self-reported Scope 1 and 2 emissions of 377 companies in the Fortune Global 500 companies in their most recent reporting year. and emissions data taken from the International Energy Agency (IEA, 2022, Global CO2 emissions rebounded to their highest level in history in 2021). Scope 3 emissions were not included in this calculation due to the risk of double counting across companies' value chain emissions, and because 70% of companies did not report their Scope 3 emissions fully (for example, only including business travel or not including use of sold products).

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About the research

The research looked at the following four publicly available climate commitments or achievements of the Fortune Global 500 companies.

Climate action	Definition	About the definition	How we sourced the data
Carbon Neutral	"GHG emissions or other activities with warming effects attributable to an actor are fully compensated by GHG reductions or removals, or other activities with cooling effects, exclusively claimed by the actor, such that the actor's net contribution is zero, irrespective of the time period or the relative magnitude of emissions and removals involved".	Race to Zero (UNFCCC) definition[9] [10]. Carbon neutrality differs from net zero because it does not require an actor to reduce its emissions following science-based pathways, nor that emissions attributable to an actor are fully neutralized by like for-like removals of emissions. However, emissions abatement targets are often a pre-requisite for carbon neutral claims under global certification frameworks, and actors pursuing carbon neutrality often use carbon removal in conjunction with carbon avoidance credits.	Desk-based research conducted in July 2022 using press releases, company filings, and sustainability reports. Key search terms included "carbon neutral", "climate neutral", "CO2 neutral", "100% offset", "100% compensated", and "greenhouse gas neutral". Where companies used the terms net zero and carbon neutral interchangeably, the target was classified based on the phrase used in the original press release. See **Appendix** for more on our methodology.
Net zero	"An actor reduces its emissions following science-based pathways, with any remaining GHG emissions attributable to that actor being fullyneutralized by like for-like removals (e.g., permanent removals for fossil carbon emissions) exclusively claimed by that actor, either within the value chain or through purchase of valid offset credits."	Race to Zero (UNFCCC) definition[12].	Desk-based research conducted in July 2022 using press releases, company filings, and sustainability reports. Key search terms included "net zero", "net zero carbon emissions", and "net zero greenhouse gas emissions". Where companies used the terms net zero and carbon neutral interchangeably, the target was classified based on the phrase used in the original press release. Where we report on net zero targets without qualification, we include targets that don't include value chain as well as those that do. See **The scope and dates of net zero targets** for more. See **Appendix** for more on our methodology.
RE100	"RE100 companies make a public commitment to secure 100% of their electricity from renewable sources. For the purpose of the RE100 campaign, for a company to be considered '100% renewable' it must procure or self-produce 100% of its electricity from renewable sources.	RE100 Technical Criteria[13]. The RE100 was created in 2014 by T he Climate Group and CDP.	Publicly available data from the RE100 website and annual report.
Science-Based Targets	"Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C."	Race to Zero (UNFCCC) definition[14]. The Science-Based Targets Initiative (SBTi) was created in 2015 by CDP, UN Global Compact, World Resources Institute (WRI) and WWF.	Publicly available data from the SBTi website. We counted companies that either had a "Target Set" or who were "Committed" to set a target.

[9] UNFCCC, Race to Zero Lexicon, 2021, link
[10] This is Race to Zero's definition of "climate neutral." We use it here to define carbon neutrality given that most corporate standards for carbon neutrality (for example, The CarbonNeutral Protocol and PAS 2060) require companies to cover all greenhouse gases (GHGs) and not just carbon dioxide. Furthermore, corporates often use the term "carbon neutral" in their targets – even when covering all GHGs and/or including non-GHG radiative forcing effects – because it is much more widely used than "climate neutrality" (see Analysis of Google Trends data in Climate Impact Partners, 2021, CarbonNeutral product white paper, page 18). Nonetheless, "climate neutral" is no doubt a more accurate definition because carbon dioxide is only one of the GHGs that are calculated as part of achieving carbon neutrality.
[11] Like for like is defined as "when a source of emissions and an emissions sink correspond in terms of their warming impact, and in terms of the timescale and durability of carbon storage. For example, fossil carbon is stable in the lithosphere over millennia if it is not extracted and burned, therefore mitigating measures (e.g., offsets) that aim to neutralize the effect of these emissions must persist for a comparable, geological timescale. Although all CO2 once emitted… persists in the active carbon cycle for centuries to millennia, it may be appropriate to balance shorter-duration carbon released from biogenic carbon stocks (e.g., forests and soils) with comparably temporary storage in like stocks."
[12] UNFCCC, ibid
[13] RE100, RE100 Technical Criteria, 2020, link
[14] UNFCCC, ibid

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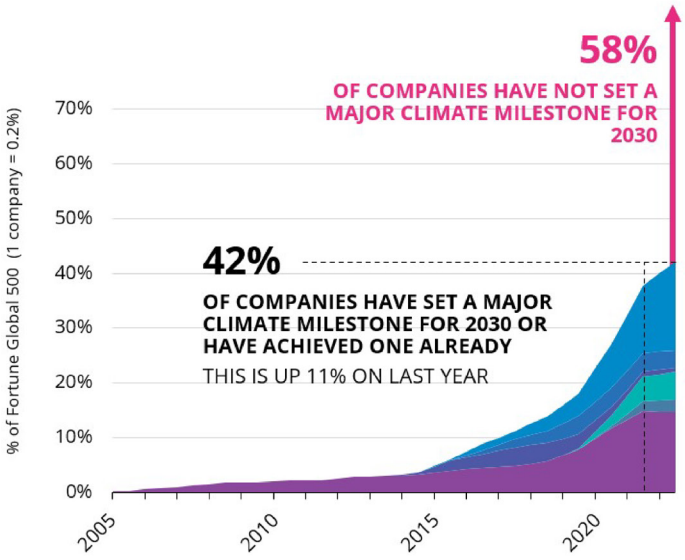
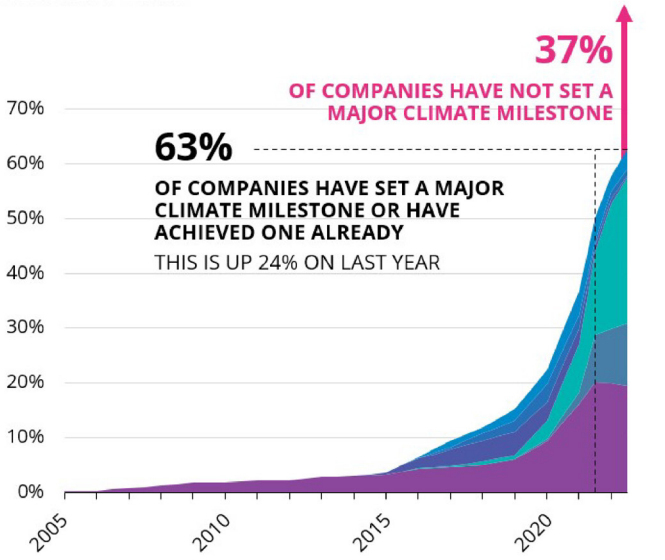
Corporate climate action and commitments continue to grow, but more action is needed this decade

Percentage of companies that have achieved a significant climate milestone or have a 2030 target to achieve one



Percentage of companies that have achieved a significant climate milestone or have a target to achieve one



Despite growing uncertainty around claims, worsening macroeconomic conditions and rising geopolitical tensions, this year has seen a further increase in the number of companies setting climate commitments. But much of this growth was driven by targets set to land well beyond 2030, the critical decade for action to meet the IPCC's warming target of 1.5 degrees Celsius.

42% of companies in the Fortune Global 500 have now delivered a significant climate milestone or are publicly committed to do so by 2030, up 11% from last year. In comparison, 63% of Fortune Global 500 companies have a target by mid-century, up 24% in the last year.

Much of this has been driven by an increase in net zero targets and Science-Based Targets (SBTs). In the last twelve months, the number of Fortune Global 500 companies with a net zero target rose from 25% to 38% (a 52% increase), and the number of companies with a Science-Based Target rose from 27% to 34% (a 26% increase).

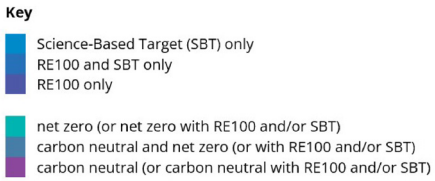


Figure 1 (Left): When Fortune Global 500 companies have made a public commitment that they are, or will be by 2030: carbon neutral, meeting an RE100, SBT or net zero target
Figure 2: (Right): When Fortune Global 500 companies have made a public commitment that they are, or will be by 2050: carbon neutral, meeting an RE100, SBT or net zero target.

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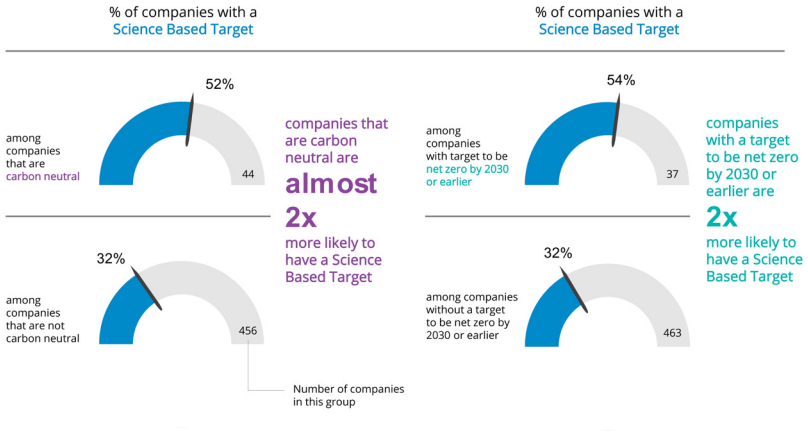
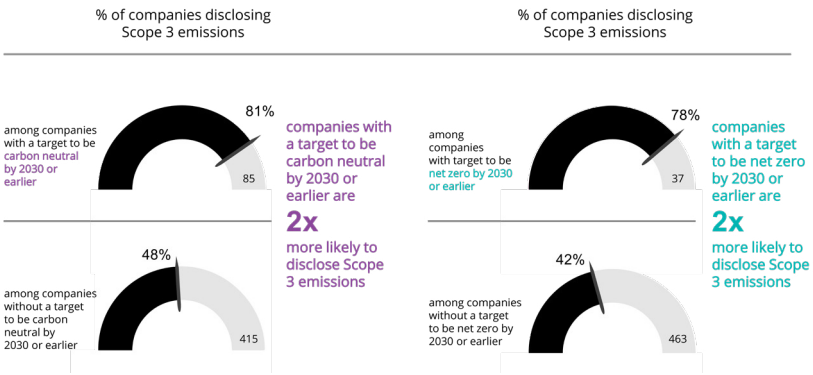
Despite concerns of greenwashing, having a carbon neutral or net zero target continues to be strongly correlated with the setting of a Science-Based Target (SBT)

Comparison between SBT commitments among Fortune 500 Global companies with and without carbon neutral and net zero targets



Comparison of Scope 3 discolure among Fortune 500 Global companies with and without carbon neutral and net zero targets



Companies taking responsibility for residual emissions today – or in the near future – through high-quality carbon credits are more likely to have a Science-Based Target (SBT), and even more likely to have a 1.5°C-aligned SBT, than those companies that do not.

Companies using high-quality carbon credits to take responsibility for residual emissions today and be carbon neutral, are almost twice as likely to have a Science Based Target than those companies that do not: among companies that are carbon neutral 52% have a Science Based Target, companied to 32% having a Science Based Target among those that are not carbon neutral.

Companies that are carbon neutral or have a target to be so by 2030 are **twice** as likely to have a Science-Based Target (60%) than companies that don't **(28%)**, and companies that are net zero or have a target to be so by 2030 are **almost twice** as likely to have a Science-Based Target (54%) than companies that don't have a net zero target (32%).

This number is even higher when looking at 1.5°C aligned SBTs. Companies with a carbon neutral target (19%) are **more than twice** as likely to have a near-term SBT, classified as 1.5°C above pre-industrial levels, than companies that don't (8%), and companies with a net zero target (23%) are **four times** more likely to have a near-term SBT, classified as 1.5°C above pre-industrial levels, than companies that don't have a net zero target (5%).

And, perhaps unsurprisingly, companies that set ambitious targets are also more transparent about their emissions, than those that don't:

- Companies that are carbon neutral or have a target to be so by 2030 are **almost twice** as likely to disclose annual Scope 3 emissions **(81%)** than companies that don't have a 2030 carbon neutral target (48%).
- Companies that are net zero or have a target to be so by 2030 are **almost twice** as likely to disclose annual Scope 3 emissions (78%) than companies that don't have a 2030 net zero target **(42%)**.

Figure 3: Comparison between SBT commitments among Fortune 500 Global companies with and without carbon neutral and net zero targets
Figure 4: Comparison of Scope 3 disclosure among Fortune 500 Global companies with and without carbon neutral and net zero targets

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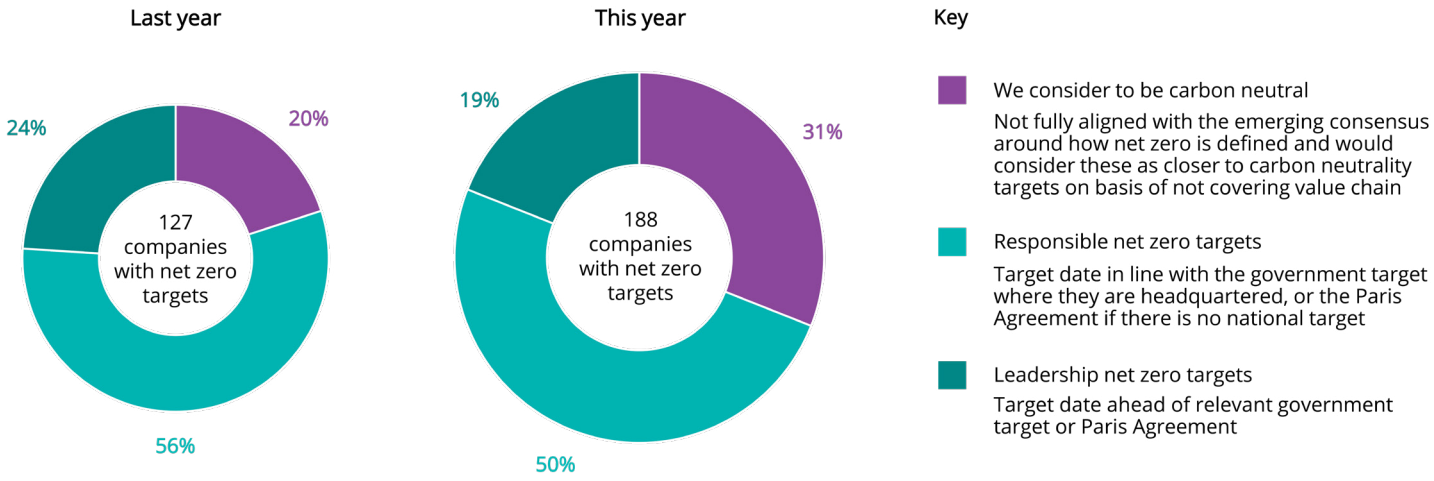
The scope and dates of net zero targets vary widely, which will lead to confusion

Net zero targets breakdown: what we consider carbon neutrality targets; responsible; and leadership net zero targets



In the last year, the percentage of net zero targets covering value chain emissions has decreased. 69% (129/188) of Fortune Global 500 companies that have a net zero target include value chain emissions (Scopes 1, 2 and 3) in those targets, down 11 percentage points from last year. This is despite these emission sources making up 80%, on average, of a Fortune Global 500 company's carbon footprint.

Additionally, fewer companies now have target dates that accelerate ahead of government legislation than last year. 19% of companies now have a leadership net zero target, defined as one that accelerates ahead of the government target in the country where that company is located, or the Paris Agreement (where there is no national target), down from 24% last year.

Interestingly, the companies that have committed to a more ambitious decarbonization timeline are more likely to set value chain targets. One might have expected the inverse: that those taking action sooner would be more likely to reduce the scope in order to increase the chance of success. But when looking at companies that have a net zero target for 2030 or earlier, the number of companies whose target covers Scope 3 emissions jumps to 84% of companies (31/37), compared to 65% (98/151) among those with net zero targets beyond 2030. This is despite the fact that net zero is currently quite hard to achieve, with most low carbon and carbon removal technologies still high in price and limited in scale.

Figure 4: Net zero targets breakdown: what we consider carbon neutrality targets; responsible; and leadership net zero targets

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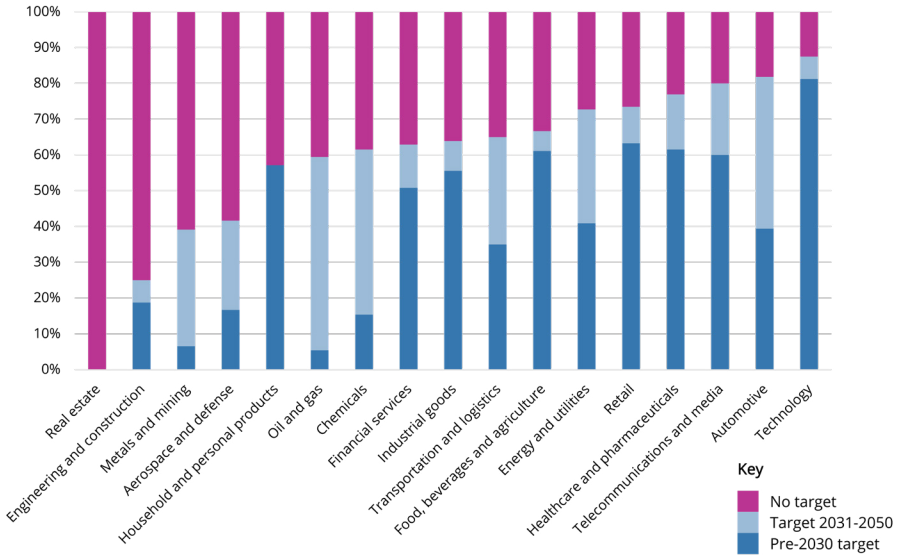
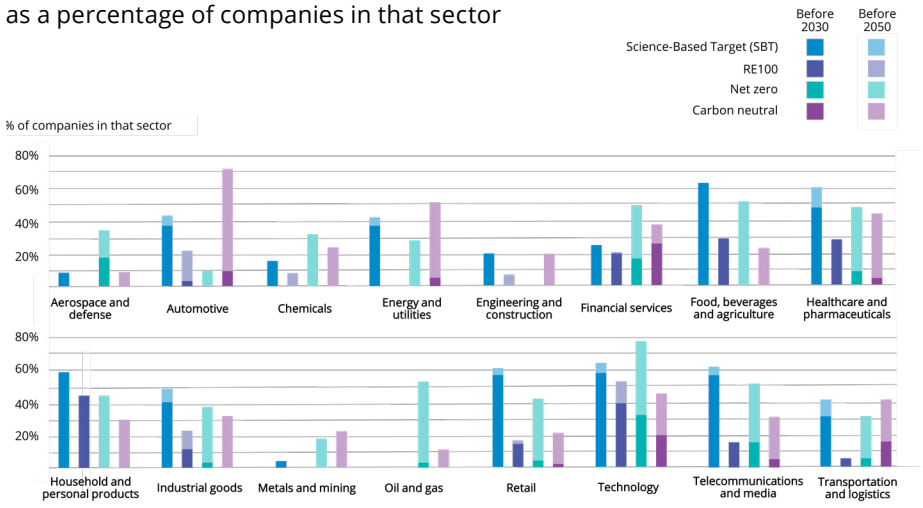
Looking by sector, targets see large variation both in target dates, with harder-to-abate sectors continuing to favor long-term targets

Climate actions and commitments of Fortune Global 500 companies by sector, as a percentage of companies in that sector, for 2030 and 2050



Climate actions and commitments of Fortune Global 500 companies for 2030 and 2050 by sector, as a percentage of companies in that sector



In the last year, the number of commitments set for 2030 or before has grown across all sectors. But in sectors that see harder routes to net-zero, longer-term targets still outweigh those set for this decade.

In the last year there has been a marked growth in 2030 or earlier commitments from companies in the aerospace and defense (117% growth), chemicals (100%), retail (35%) and metals and mining (27%) sectors.

But in many of these same sectors, longer-term targets still outweigh those already achieved or set for this decade. In the aerospace and defense sector, for example, 42% of companies have set targets for beyond 2030, compared to 17% for this decade. Similarly, in the chemicals sector, 62% of companies have set targets for beyond 2030, compared to 15% this decade.

The sectors with the highest number of targets overall (both short- and long-term) seem to be concentrated in more consumer facing industries, where pressure to decarbonize is greater: 88% of companies in the technology sector now have some significant climate commitment for mid-century, as do 82% of companies in the automotive sector, 80% of companies in the telecommunications and media sector, and 77% in the healthcare and pharmaceuticals sector.

Figure 5: Climate actions and commitments of Fortune Global 500 companies by sector, as a percentage of companies in that sector, for 2030 and 2050
Figure 6: Climate actions and commitments of Fortune Global 500 companies for 2030 and 2050 by sector, as a percentage of companies in that sector: RE100, Science-Based Targets, net zero and carbon neutral targets

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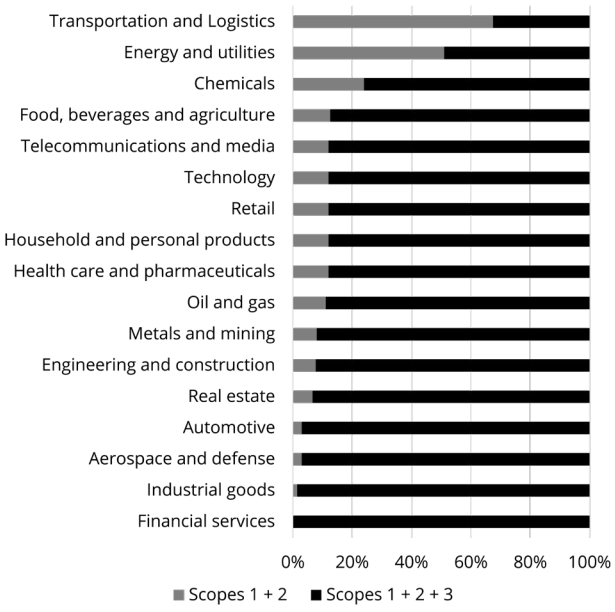
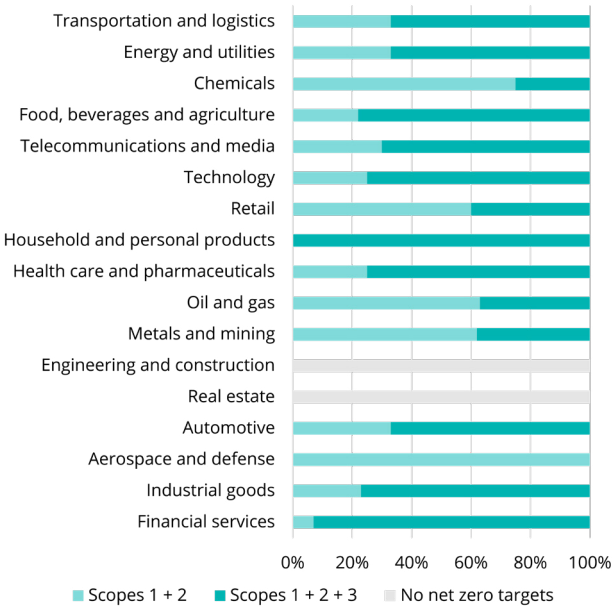
Sectors also see large discrepancies between the contribution of Scope 3 emissions to their overall footprint and the inclusion of those emissions in their net zero targets

Sector average of carbon emissions per scope



Percentage of companies with targets covering those emission scopes



Net zero targets are not limited to companies in lower-emitting sectors, but those that cover value chain emissions tend to be concentrated in sectors with easier decarbonization pathways.

When looking across all net zero targets – including those that only cover direct emissions as well as those that cover value chain emissions – the technology (75%), oil and gas (51%), food, beverage, and agriculture (50%), and telecommunications and media (50%) sectors, have the highest percentage of companies with a net zero target.

But when looking only at targets that cover value chain emissions (Scopes 1, 2 and 3), there is a gap between the contribution of Scope 3 emissions to their overall footprint and the inclusion of Scope 3 emissions in their net zero targets.

In the aerospace and defense sector, for example, where Scope 3 emissions make up 97% of companies' overall carbon emissions on average , 100% of net zero targets cover only Scope 1 and 2 emissions.

Similarly, in the oil and gas and metal and mining sectors, where Scope 3 emissions make up 92% and 89% of a companies' overall carbon emissions, respectively, 63% net zero targets only cover Scope 1 and 2 emissions, compared to 37% that cover all three scopes.

Interestingly, the food, beverages and agriculture sector, where Scope 3 emissions make up a large percentage of overall emissions due to upstream land use change emissions from agricultural production, had one of the highest number of companies with value chain targets compared to all other sectors (78%). Other sectors with a high percentage of value chain targets include household and personal products (100%), industrial goods (77%), technology (75%), healthcare and pharmaceuticals (75%), and telecommunications and media (70%).

Figure 7: Sector average of carbon emissions per scope [15] CDP, 2022, CDP Technical Note: Relevance of Scope 3 Categories by Sector, link
Figure 8: Percentage of companies with targets covering those emission scopes [15] CDP, 2022, CDP Technical Note: Relevance of Scope 3 Categories by Sector, link

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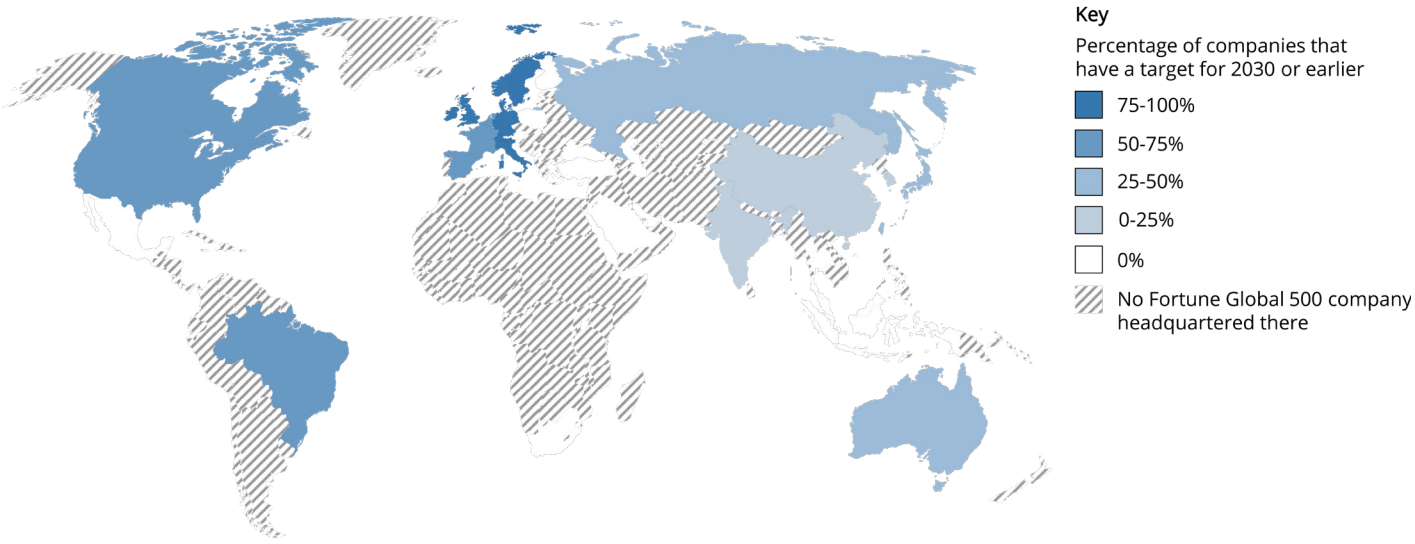
Looking by region, companies headquartered in countries where there is a legally binding net zero target are more likely to have a climate commitment for this decade, or a net-zero target by mid-century

Percentage of Fortune Global 500 companies headquartered in different countries that have delivered a significant climate milestone or are publicly committed to do so by 2030



On average, 62% of companies headquartered in a country where a net zero target is **legally-binding** have a climate milestone set for 2030 or earlier[15], compared to 30% in countries where a net zero target is in a policy document, and 23% in countries where there is either no target, one is in discussion, or there has been a net zero pledge by government but no policy laid out.

Similarly, for net zero targets by 2050, 67% of companies headquartered in countries where a net zero target is **legally-binding** have set one, compared to 47% in countries where a net zero target is in a policy document, and 40% in countries where there is either no target, one is in discussion, or there has been a net zero pledge.

Looking more closely, 78% of Fortune Global 500 companies based in the Europe (including the UK) (101/129) have delivered a significant climate milestone or are publicly committed to do so by 2030, up by up by 7 percentage points from last year.

That's in the context of the EU creating an emissions trading scheme in 2003, setting an emission reduction target of 20% by 2020 back in 2008, the European Climate Law that entered into force in July 2021 set a legally binding target of net zero greenhouse gas emissions by 2050, requiring EU Member States to take "[the] necessary measures at EU and national level to meet the target." The bloc has also taken several measures to address greenwashing, including a proposal to ban practices that mislead consumers about the "durability" of a product[16].

Figure 8: Percentage of Fortune Global 500 companies headquartered in different countries that have delivered a significant climate milestone or are publicly committed to do so by 2030

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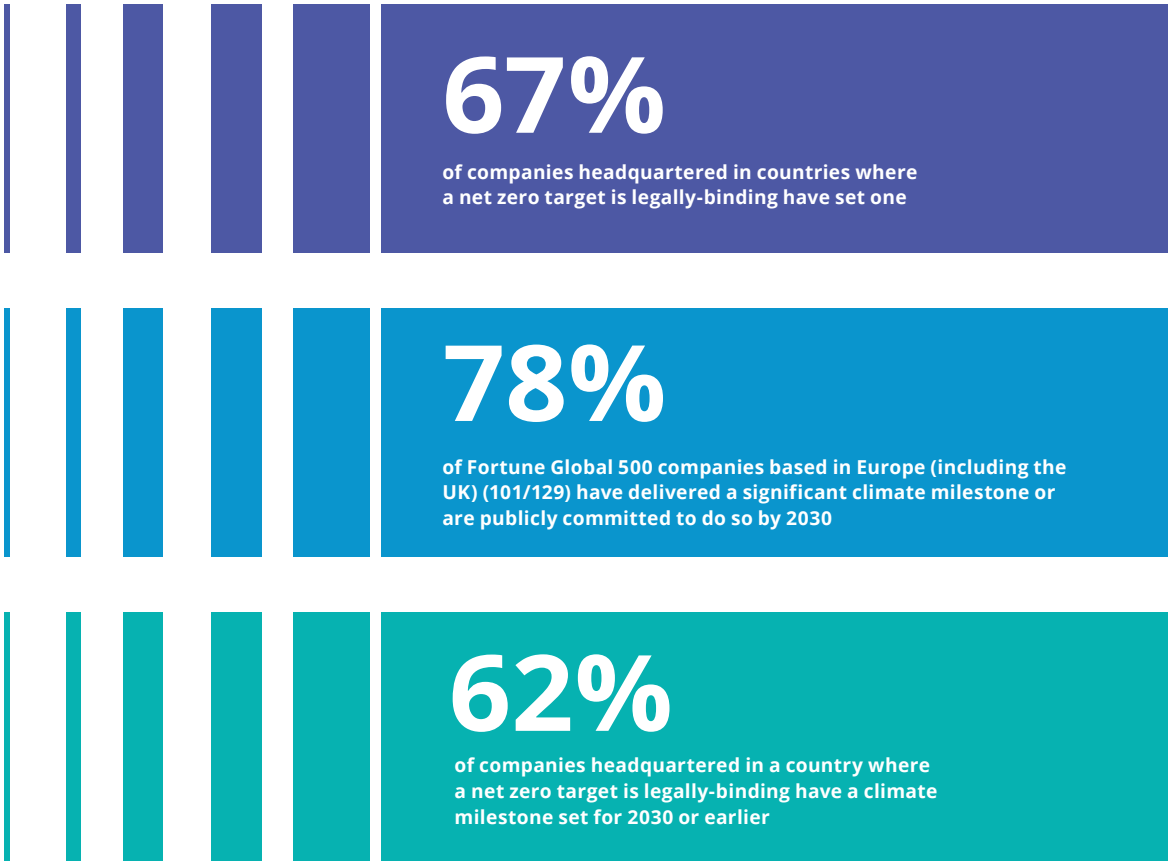
Similarly, in the UK, the Government is required to set legally binding carbon budgets under the Climate Change Act of 2008, and in 2019 setting a net zero target for 2050.

In the US, 53% of companies (66/125) have delivered a significant climate milestone or are publicly committed to do so by 2030 (up by 6 percentage points from last year). That's in the context of no federal climate change law, and where mandatory climate disclosures are currently under discussion, but not yet required.

In China, where in 2020 the country committed to carbon neutrality by 2060, 5% of companies (6/127) in the Fortune Global 500 have delivered a significant climate milestone or are publicly committed to do so by 2030 (up by 3 percentage points from last year).



[16] *Countries in the EU that don't have a target are classified as having a target "in law" category following the formal adoption of the European Climate Law on 29 July 2021.*
[17] *EU Commission, 2022, Circular Economy: Commission proposes new consumer rights and a ban on greenwashing, link*

04

APPENDIX

APPENDIX

Methodology

The research looked at the following five publicly available climate action measures of the Fortune Global 500 companies:

Carbon Neutrality

We defined carbon neutrality as "GHG emissions or other activities with warming effects attributable to an actor are fully compensated by GHG reductions or removals, or other activities with cooling effects, exclusively claimed by the actor, such that the actor's net contribution is zero, irrespective of the time period or the relative magnitude of emissions and removals involved."

For this research, we accepted companies' self-identification as "carbon neutral", "climate neutral", "fully offset", "CO2 neutral", "compensated emissions", "net carbon neutral" or "greenhouse gas neutral" across either: all GHG Scopes (1, 2 and 3), all Scope 1 and Scope 2 emissions; "company"; or "operations".

Where a company had a subsidiary with a carbon neutral target, we only counted it towards the parent company if it made up more than 25% of their annual revenue. Where companies had multiple carbon neutral targets that grew in scope over time (e.g., Apple), we used the earlier target date and associated scope for our analysis. Companies that referred to their target as both carbon neutral and net zero were listed as carbon neutral if the original press release exclusively used the term carbon neutrality and if the target only covered operational emissions (e.g., Kuehne+Nagel).

Data was collected from desk-based research conducted in July 2022 into Fortune Global 500 companies. Data was mostly taken from English and French language sustainability reports, webpages, press releases and news articles. For the approximately 100 companies publishing sustainability information in languages other than English and French, webpages were translated using Google Translate or the translation for "carbon neutral" was used as a search term, but it is possible that these commitments may have been under reported.

Net zero

Definitions of net zero still vary. The Paris Agreement alludes to the concept of net zero as "When anthropogenic emissions of greenhouse gases (GHGs) to the atmosphere are balanced by anthropogenic removals over a specified period". The UNFCCC Race to Zero defines net zero as "An actor reduces its emissions following science-based pathways, with any remaining GHG emissions attributable to that actor being fully neutralized by like for-like removals (e.g., permanent removals for fossil carbon emissions) exclusively claimed by that actor, either within the value chain or through purchase of valid offset credits."

For this research, we defined net zero as those companies that self-identified as "net zero", "zero net emissions", "zero CO2 emissions", "zero carbon", "net zero carbon" or "neutralized residual emissions".

Where a company had a subsidiary with a net zero target, we only counted it towards the parent company if it made up more than 25% of their annual revenue (e.g. SGRE counted towards Siemens Energy). For those companies with net zero commitments of subsidiaries but no group commitments (e.g.m DZ Bank, and Hanwha Solutions), it was impossible to tell whether their net zero commitments covered their value chain. We marked these as "Sx" in the data appendix because they did not present evidence that they covered the entire group's operational or value chain emissions, and so therefore did not include them when reporting our analysis of net zero targets.

**This is not a simple addition of the "already achieved" and "now-2030" of each of the different actions because many companies have numerous of these commitments*
***For the 2019 report, "now to 2030" was defined as 2020-2030. For the 2020 report, "now to 2030" was defined as 2021-2030. For the 2021 report, "now to 2030" is defined as 2022-2030. For the 2022 report, "now to 2030" is defined as 2023-2030.*

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Where companies had multiple net zero targets that grew in scope over time (e.g., AstraZeneca), we used the earlier target date in our analysis. When looking at whether net zero targets should be considered as closer to carbon neutral commitments, for companies not covering value chain emissions in their first target, we did consider their fuller scope targets.

Other companies (e.g. ENI and Maersk) had targets that were described as both carbon neutral and net zero. These were counted as net zero if that was the term that was featured on their sustainability page (e.g., Umicore), or if they used the term more frequently than carbon neutrality (e.g., ArcelorMittal).

When calculating which net zero targets we considered to be "company" (closer to carbon neutral) and "value chain" targets, , we considered companies with net zero targets that covered Scope 1 and 2 emissions, "operations", "operational" or "company" emissions as company targets (closer to carbon neutral targets) (listed in our dataset as "C" (e.g. Walmart). We considered net zero targets to be value chain targets if they covered Scope 1, 2 and 3 emissions, "supply chain," or "value chain" emissions. We also counted a company as having a value chain target if they had committed to set a net-zero target through the Science-Based Targets Initiative (SBTi).

To investigate whether net-zero targets were supported science-informed abatement targets, we used data from the SBTi and from desk-based research into sustainability reports. The SBTi is developing a new methodology for companies in the oil and gas sector to set science-based targets and is currently unable to accept commitments or validate targets for companies in the oil and gas or fossil fuels sectors.

For carbon credits and removals, there is no standardized way that companies report on their plans to use carbon removal as part of a net zero strategy, so we counted all net zero targets regardless of whether removals was mentioned, on the grounds that we may not have found them.

Data was taken from desk-based research conducted in July 2022 into Fortune Global 500 companies. Data was mostly taken from English language sustainability reports, webpages, press releases and news articles. Like for carbon neutral targets, sustainability information in languages other than English was translated where possible, but some of these commitments may have been under reported.

Net zero initiatives	When that was published	% of companies that follow the definition	Number of companies
Science-Based Targets initiative (SBTi)'s Corporate Net Zero Standard	2021	1%	3
SBTi's Business Ambition for 1.5	2015	15%	73

It remains to be seen whether the SBTi's Corporate Net Zero Standard will gain as much traction as its reduction targets program. The standard was only launched in October 2021.

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RE100

RE100 targets are commitments for companies to supply 100% of their electricity from renewable sources. RE100 is a corporate leadership initiative led by The Climate Group and CDP, launched in September 2014. Data taken from the RE100 2021 Progress and Insights Annual Report and the RE100 Members site page, accessed on 15 August 2022.

Science-Based Targets

Science-Based Targets are from The Science-Based Target Initiative (SBTi), an initiative set up by the UN Global Compact, World Resources Institute (WRI), CDP and WWF to establish a robust and measurable approach for companies to establish reduction targets in line with keeping global temperature rise to below 2 or 1.5 degrees Celsius. Unless specified otherwise, we included all "Target Qualifications" (1.5ºC, Well-below 2ºC, 2ºC) and "Statuses" (both "Targets Set" and "Committed" to set a target). For the purposes of our analysis, companies "Committed" to set a target were classified as having a target by 2030. Data was taken from Science-Based Target Initiative, 2021, Current Companies Taking Action, accessed on 10 July 2022.

Carbon Negative

We studied carbon negative achievements and targets, but only 1% of companies had them, so they were not included in the analysis.

Definitions of being carbon negative still vary. The UN's Race to Zero considers an actor to be carbon negative when its carbon removals, internal and external, exceed emissions, and any removals are "like for like."

For this research, we defined carbon negative as those companies that self-identified as "carbon negative", "climate negative", "climate positive" or "net positive carbon emissions" across all GHG scopes. Data was taken from desk-based research conducted in July 2022 into Fortune Global 500 companies.

Microsoft has committed to becoming carbon negative by 2030, and by 2050, to "remove from the environment all the carbon the company has emitted either directly or by electrical consumption since it was founded in 1975".

IKEA has announced it will become climate positive by 2030 "by reducing more greenhouse gas emissions than the IKEA value chain emits" and "removing and storing carbon from the atmosphere".

Assicurazioni Generali has set a goal of becoming carbon negative in its operations by 2040, with an intermediate target of climate neutrality by 2023, by "reducing to zero its net carbon emissions through the financing of quantifiable, real, permanent and socially beneficial carbon removal projects".

AstraZeneca has launched a strategy to be carbon negative across its entire value chain by 2030, by identifying "carbon removal options that will lead to more carbon dioxide (CO2) removed from the atmosphere than added to it".

Woolworths Group aims to reach net positive emissions in their operations no later than 2050 through emissions reductions, 100% renewable energy procurement and agriculture practices that improve soil health.

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	July 2019	July 2020	July 2021	July 2022
One of the four below actions	24%*	33%*	51%*	63%*
One of the four below actions by 2030	23%*	30%*	38%*	42%*
One of the four below actions already achieved	4%*	8%*	10%*	12%*
Carbon neutral	10%	17%	30%	32%
Already achieved	4%	6%	8%	9%
Now** - 2030	3%	5%	9%	8%
2031-2050	3%	6%	13%	15%
Net Zero	Did not measure	8%	25%	38%
Already achieved	Did not measure	3%	1%	1%
Now** - 2030	Did not measure	1%	3%	7%
2031-2050	Did not measure	6%	22%	31%
With more immediate SBT	Did not measure	3%	13%	20%
With more immediate carbon neutral achievement or target	Did not measure	2%	8%	11%
Science-Based Target	16%	21%	27%	34%
Already achieved	0%	0%	0%	1%
Now** - 2030	16%	21%	26%	31%
2031-2050	0%	0%	1%	2%

Data summary

All statistics shown are a percentage of the entire Fortune Global 500 and have been rounded to the nearest percentage point.

**This is not a simple addition of the "already achieved" and "now-2030" of each of the different actions because many companies have numerous of these commitments*

***For the 2019 report, "now to 2030" was defined as 2020-2030. For the 2020 report, "now to 2030" was defined as 2021-2030. For the 2021 report, "now to 2030" is defined as 2022-2030. For the 2022 report, "now to 2030" is defined as 2023-2030.*

The data on which our findings rely is available in our data spreadsheet

ABOUT US

A merger of ClimateCare
& Natural Capital Partners

About Impact Climate Partners

Climate Impact Partners delivers solutions for action on climate. Together with the world's leading companies and quality project partners we will reduce 1 billion metric tons of CO2 by 2030 to transform the global economy, improve health and livelihoods and restore a thriving planet.

Climate Impact Partners builds on the expertise, integrity, and innovation of two companies that have led the voluntary carbon market – Natural Capital Partners and ClimateCare. Fueled by a relentless drive for rapid action and results, our global team continues to pioneer the market's development, and set the standards for quality that will maximize its impact.

A team of six Imperial College Business School students undertook the research into climate actions and targets under direction of Climate Impact Partners. We are grateful to Harry Barret-Cotter, Juan Angel Saldivar, Mimi Ye, Ole Jørgen Halvorsen, Sarah Koopman and Stephanie London for their work. All six have recently completed the Economics & Strategy for Business MSc.

About Imperial College Business School

As part of Imperial College London, a global leader in science and technology, Imperial College Business School drives global business and social transformation through the fusion of business, technology and an entrepreneurial mindset.

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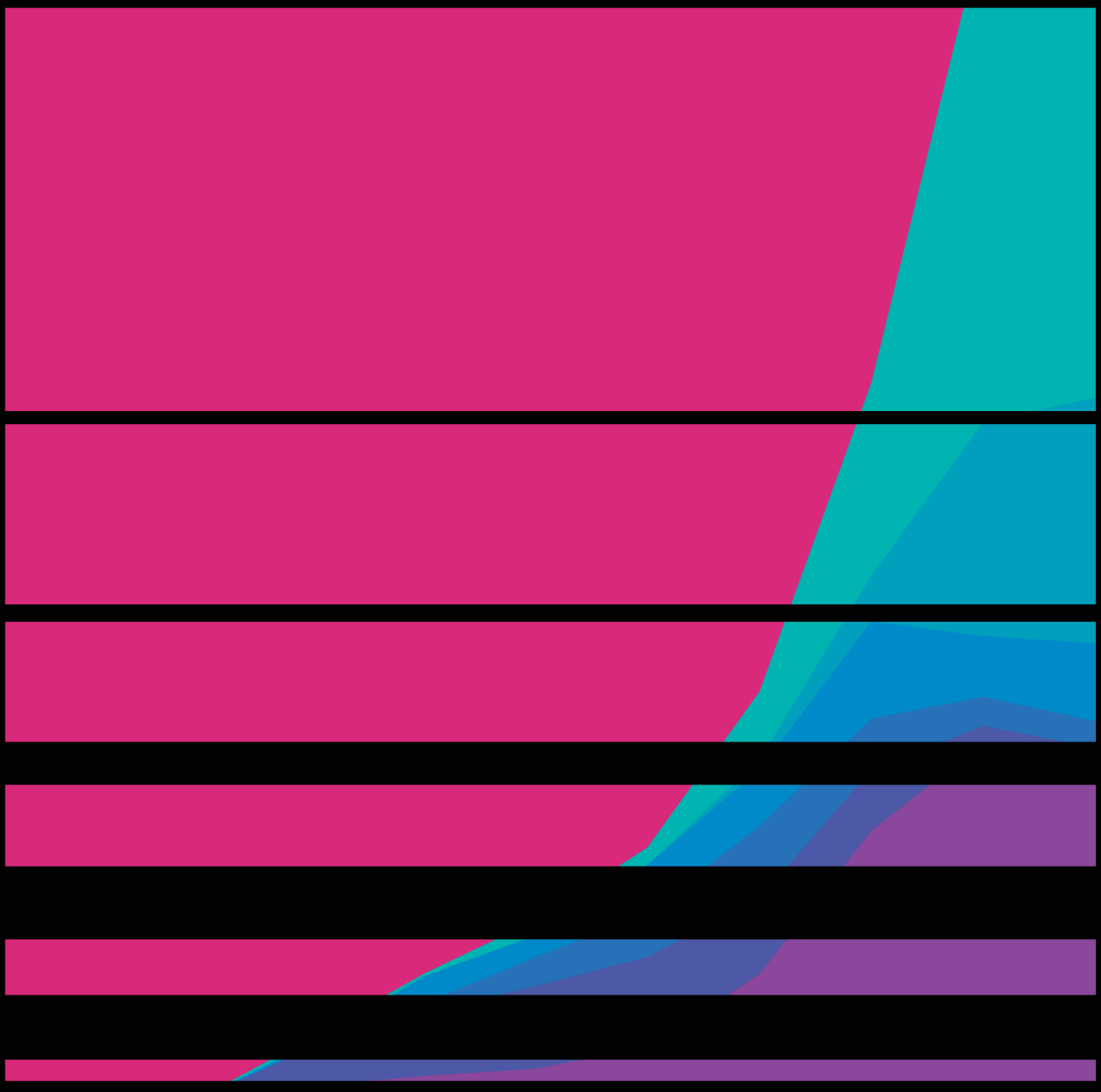

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