South Pole's 2022 net zero report

south pole

Net Zero and Beyond

A deep-dive on climate leaders and what's driving them

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CEO Foreword

Net zero targets are on the rise but some companies are going green, then going dark

The way we talk about net zero is changing.

Long gone are the days when announcing a corporate net zero emissions target was exceptional. Today it is expected. Companies need to show, not just tell, how they are delivering on their critically important climate commitments. At the same time, we cannot afford to lose time in learning how to tackle the collective climate crisis. We must learn from the successes and failures of the leaders in this space and for this, we must have honest conversations about the challenges of reaching net zero emissions.

Analysing the corporate net zero landscape for the third consecutive year, South Pole's 2022 research reveals a surprising trend: so-called **"green-hushing".** In this year's edition, we took a closer look at over 1200 private companies who have a sustainability or CSR head and can thus be deemed a proxy for companies leading on climate action. We found a surprising trend: nearly a quarter of these surveyed global climate leaders will not be publicising their achievements and milestones beyond the bare minimum or as required by for example the Science Based Targets initiative. This is concerning: more than ever, we need those making headway on sustainability targets to inspire others to make a start, to help shift mindsets and then behaviours. Could the rise in misinformed media stories and NGO critique – along with the growing threat of lawsuits – be deterring companies who are voluntarily setting targets from being more open?

In parallel, the recent collision of crises – COVID, conflict, and the risk of a recession – seems to have triggered a new wave of climate action by companies, who have been exposed to the fragility of their supply chains and their reliance on fossil fuels. Oversight of supply chain vulnerabilities and building resilience to external shocks are now ranked among the top three drivers for setting net zero targets, after languishing in last place in 2020 and 2021. The supply chain story is one to follow, as businesses continue to tackle their tricky scope 3 emissions by collaborating with suppliers, investing in renewables and future climate innovations, and by working *with* nature instead of *against* it. When a big company moves, especially one with an extensive network of suppliers, a whole system of actors and value moves along with it.

Still, it's important to remember that shifting systems starts with shifting mindsets. To achieve true climate impact, we must "crowd in" the companies who are dramatically increasing the speed and scale of their climate action, and who feel comfortable talking about their net zero achievements in a science-based way, without exaggerating or misleading claims, to make net zero emissions desirable and acceptable among customers, media and legislators alike.

We know that the cost of climate inaction is rising every day, and 2022 may very well be the cheapest year to get started on net zero. We cannot afford to lose time. To move ahead, we need a future in which society has the ambition and ability – but also the confidence – to address climate change on the scale that is required.

This is impossible if progress happens in silence.

Renat Heuberger
CEO, South Pole

01 Executive summary

Now in its third year, South Pole's net zero survey includes insights from over 1,200 global sustainability executives to understand what drives their big climate commitments, what they see as risks, what solutions they are turning to, and how they are bringing their organisations along on a net zero journey.

In the 2022 South Pole net zero survey, three major trends stand out::

1. **Corporate sustainability leaders are setting the pace – and an example for others to follow:** among sustainability-minded organisations, more net zero targets are being set than ever before, with more science-based emission reduction targets (SBTs) to back them up, and they're being led by more ambitious timelines. Even the 67% of the climate-aware companies who themselves identify as heavy emitters are pushing ahead with bold targets, and 13% of all surveyed climate leaders have aggressive plans to meet net zero targets by or before 2024.

   While encouraging, this ambitious target date raises eyebrows and begs the question: do companies, even those leading the pack, fully appreciate the magnitude of reducing all emissions across their full value chains? Still, regardless of the gloomy economic outlook, nearly three-quarters of surveyed businesses (74%) are investing more – not less – to achieve their targets, despite many (29%) finding the delivery of their net zero strategy more difficult than initially expected. At the same time, it is important to recognise that with the cost of climate inaction growing by the day, 2022 is the cheapest year to get started on net zero.

2. **Despite more organisations working towards net zero, nearly a quarter (23%) are deciding not to publicise their progress.** While corporate greenwashing has been widely reported, this year's research reveals another emerging practice among companies: **"green-hushing"**. This is a concerning trend, as less public-facing communication makes targets harder to scrutinise and limits knowledge-sharing – which in turn could result in missed opportunities for sectors to work together to decarbonise. It could also give the impression that climate leaders are failing to lead, at least in the public eye.

3. **New business opportunities and the need to build resilience are driving companies to net zero.** Customer demand continues to top the list of reasons for companies to pursue ambitious climate targets, followed closely by the opportunity to build corporate brand leadership on net zero, which is a key driver for 43% of businesses.

For the first time since 2020, however, the need to manage external shocks was ranked by 37% companies as one of the top three net zero drivers. This is new, but unsurprising: COVID, coupled with extreme weather events, has made the link between supply security and business continuity unquestionable, and as inflation bites, companies are moving from firefighting immediate challenges to managing the more disruptive (climate) blaze on the horizon. What has also become abundantly clear this year is that, among surveyed businesses, investor pressure has yet to kick in.

In parallel with the net zero survey, our market insights team analysed South Pole's proprietary database of 68,000 companies – including the Global Fortune 500, major stock indices, and all CDP and GRI reporting companies. We compared the database analysis with the survey results, and here is what we found:

1. The database paints a dire picture of how serious companies are about net zero emissions. Of those 68,000 companies, just **7%** have set a net zero emissions target – a 90% drop compared to the surveyed sustainability-leaders. However, it is promising that the majority of these net zero targets among database companies (60%) were also underpinned by science-based emission reduction targets.
2. As for net zero target dates, 16% of the database companies have committed to achieving net zero by or before 2030. Around 25% have set a date between 2031 and 2040, and 59% are eyeing 2041–2050. This is a rather stark contrast to our surveyed companies, where nearly two-thirds of respondents are aiming to hit net zero targets on or before 2030.
3. When it comes to regional momentum for net zero, the database indicates that most net zero commitments come from companies in the UK, U.S, and DACH region. This differs from the survey results, where the UK, for example, was one of the regions with companies with the least net zero targets.

Given that our 2022 survey targeted large companies with dedicated sustainability leads, it is perhaps unsurprising that the database results depict a less rosy version of the corporate net zero landscape. One would assume that by virtue of their having designated sustainability teams, the surveyed companies have put climate action high(er) up on their agendas, compared to the database companies.

What's next? For corporate net zero targets to have the desired effect on mitigating global warming, they need to be underpinned by credible, science-based milestones that urgently drive down emissions across direct and indirect operations, support collective resilience, and incentivise investments in future climate innovation.

However, there also needs to be much greater climate action today. Despite 67% of surveyed organisations claiming to be on track to meet net zero targets, for most, carbon-free operations could still be years – even decades – away. This is particularly true for those with targets beyond 2030. With very few companies investing in immediate climate action beyond their direct value chains, how are businesses helping to drive down emissions today to avoid harrowing planetary tipping points tomorrow? Organisations big and small now need clear strategies to reduce and compensate for emissions in the near term, while they realise cost-effective carbon removal opportunities in the long term.

Setting the pace: net zero targets among surveyed sustainability leaders

87%
of climate-aware companies have set a net zero target (compared to just **7%** of major stock-listed companies analysed in the South Pole database)

40%
of surveyed climate leaders who don't have a net zero target yet plan to set one by the end of 2023

72%
of all respondents have set or committed to a science-based target (SBT) to reduce emissions

67%
of surveyed companies have **both** a net zero target **and** an SBT

23%
of companies do not plan to publicise their SBTs

2025-2030
is the most common target year range for corporate net zero targets, followed by **2031-2040**

Net zero drivers for climate leaders

44%
see pursuing net zero as an opportunity to respond to stakeholder demands for low-carbon products and services

34%
are pursuing net zero to build resilience against external shocks

23%
see net zero as a way to manage reputational risk

43%
believe net zero is a chance to lead and define the climate action space through positioning their brand

32%
see net zero as a way to keep up with competitors' climate targets

22%
believe that net zero targets would drive employee acquisition and retention

37%
feel that aiming for net zero would give them a better oversight of supply chain risks and vulnerabilities

31%
are setting net zero targets as a result of government regulation

17%
are under pressure from investors

29%
of companies found that delivering net zero targets was **more difficult** than expected

Net zero enablers for climate leaders

71%
are turning to renewable energy **or** energy efficiency solutions

and

27%
are focused on tackling scope 3 supply chain emissions to reach their net zero targets,

47%
of all respondents plan to use carbon removals in one form or another, either technological or nature-based solutions

74%
of businesses **increased their budget** for meeting their net zero target

Net zero leadership

78%
see the C-suite, including the Chief Sustainability Officer or CEO, as their day-to-day lead for delivering net zero targets

46%
say that multiple departments are involved in driving the organisation's shift to net zero

Beyond net zero

44%
of have an interest in managing **biodiversity** risks and benefits, alongside net zero targets

Just 36%
claimed to have a clear strategy in place for biodiversity

02 Research approach

In this year's report, South Pole zeroes in on over 1,200 large organisations across 12 regions with a dedicated sustainability or corporate social responsibility (CSR) lead to look at how proactive companies are moving towards net zero emissions and the challenges they face.

The 2022 report also provides an analysis, carried out in September 2022 of more than 68,000 companies who have made climate commitments. This sample comes from a database that includes CDP and GRI reporting companies and companies listed on the Global F500, FTSE 100 and DAX30 stock indices. Comparing the survey results with a comprehensive analysis of South Pole's vast database of companies with climate commitments offers a unique perspective on how serious companies are about achieving net zero emissions.

In 2022, South Pole expanded the scope of its net zero research. We engaged the leading market research consultancy **Sapio Research** to help conduct a survey of 1,220 organisations around the world that a strong focus on sustainability and more than 1,000 employees[1]. The survey, consisting of multiple choice questions on net zero targets, science-based targets (SBTs), and decarbonisation efforts that climate-aware organisations are undertaking or plan to undertake, was conducted in August 2022 via email invitation to an online survey. There is a high level of confidence in the results[2].

All respondents were corporate social responsibility (CSR) decision-makers within each organisation, which means that the organisations surveyed already have a relatively active orientation towards climate and sustainability issues. While this prevents us from using the survey results to make general conclusions about the market as a whole, the survey helps us to build a picture of what some of the world's sustainability leaders are doing for the climate, while shedding light on their most pressing challenges.

The fact that all survey respondents are CSR decision-makers also means that the survey's main takeaways may reflect more 'progressive' organisations than the average in that region or sector. However, the results and insights remain highly relevant for the target audience of this report, who are presumed to have a greater-than-average interest in CSR.

Most respondents held owner or C-suite level positions (40%), but the sample also included directors (22%) and senior managers (39%) across a number of different functions.

While 67% of organisations identified as working in a heavy-emitting industry[3], the surveyed professionals represented a broad range of sectors, including: industry and manufacturing; consumer goods and services; media and telecoms; IT; real estate; healthcare and pharmaceuticals; transportation (road, rail, shipping, aviation); finance and investment; environmental goods and services; energy (oil and gas); utilities; the public sector and government; and NGOs. Respondents were equally weighted across 12 globally representative regions: the US, Colombia, the UK, France, Belgium, Netherlands, the DACH region (German-speaking countries in Europe), Sweden, Spain, Australia, Singapore, and Japan.

Compared to previous editions of South Pole's net zero report, the companies surveyed in 2022 are larger both in size (1,001 employees or more) and in revenue, with the majority (64%) reporting an annual revenue of above USD 101 million.

[1] With the exception of Singapore, where organisations with 250+ employees were also surveyed.

[2] At an overall level, results are accurate to ± 2.8% at 95% confidence limits, assuming a result of 50%.

[3] Respondents replied "yes" to the question "Do you work in a heavy-emitting industry? (i.e. do your organisation's industrial activities emit large amounts of carbon dioxide [CO_2], nitrous oxide, methane, or other greenhouse gas)". These sectors included the following: 88% of all surveyed companies from the utilities (gas & electricity) sector identified as heavy emitters, 87% of surveyed companies in energy (oil & gas), 78% of surveyed companies in industry (engineering, construction & building), 75% of surveyed companies in IT (software & hardware), 71% of surveyed companies from the consumer goods sector) and 70% of companies in the transport sector.

Database deep-dives

As with last year's report, our team has compared the relevant sections of the survey results with our market-leading, global climate commitment database of **over 68,000 companies**. This enabled us to put our findings into the broader context of the climate marketplace.

The database includes:

- all CDP reporting companies
- all GRI reporting companies
- major stock indices (Global F500, FTSE100, DAX30)
- top revenue/market cap companies in major regions

In this report, insights from South Pole's database are clearly distinguished from the results of the survey and draw on the most comprehensive screening of publicly disclosed net zero targets and SBTs. These include global pledges and initiatives such as the Climate Ambition Alliance, BCorp Net Zero, Business Ambition for 1.5 (part of the Science Based Targets initiative, or SBTi), and corporate net zero commitments (company websites/annual reports).

Overview of survey respondents

Country of residence

100 | 101 | 104 | 102 | 102 | 103 | 100 | 100 | 101 | 102 | 102 | 103

Role type

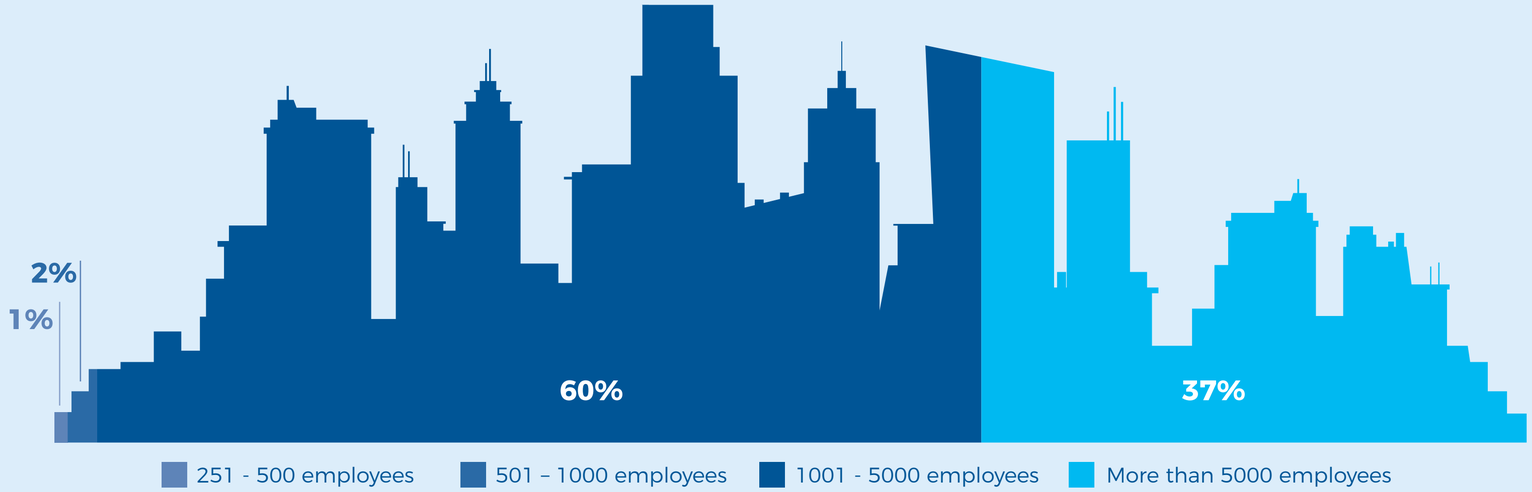
40% of respondents held Owner or C-suite level positions

22% of respondents held Director positions

39% of respondents held Senior Manager / Manager positions

Annual revenue of surveyed organisations

Size of surveyed organisations



Business sectors participating in the survey

IT - software, hardware **24%**

Financial industry - banks, insurance, asset/investment management **15%**

Industry - engineering, construction & building **10%**

Healthcare - pharmaceutical, healthcare services **8%**

Consumer goods - retail, fashion **7%**

Transport - road & rail, shipping, airlines, trucks **6%**

Government & Public Sector **5%**

Consumer goods - food & beverage, household products **5%**

Automobiles & components **4%**

Environmental goods & services (including renewable energy hardware and services) **3%**

Energy - oil & gas **3%**

Media & telecommunications **2%**

Utilities - gas & electricity **1%**

Materials - metals & mining **1%**

Real estate management & development **1%**

03 A snapshot of corporate net zero targets: Leaders are going green – but not always publicising their progress

Sustainability leaders are setting an example on net zero: more net zero targets are being set than ever before, with more SBTs to back them up, and they're being led by more ambitious timelines.

At the same time, while more organisations are going green, many are deciding – strangely – not to publicise their work, which makes targets harder to scrutinise and limits knowledge-sharing. This could lead to missed opportunities for sectors to decarbonise by working together. It could also give the impression that climate leaders are failing to lead, at least in the public eye.

> Corporate sustainability leaders are setting the pace: 87% work for a business that has a net zero target in place, and a surge of new commitments may be on the horizon: nearly 40% of sustainability-focused companies without net zero targets plan to set one by the end of 2023.

Net zero commitments are top of mind for sustainability-focused organisations

Among sustainability-minded organisations, the trajectory for net zero is positive: our results this year suggest that, within our sample of leaders, setting a net zero goal and a clear target date has become standard practice across all industries. An impressive 87% of this year's respondents say that they have a net zero target, with about 96% of them being able to confirm a target date. Among the organisations that have a net zero target, 67% have also aligned this target with science-based emission reduction milestones.

While the number of net zero targets is not directly comparable to our previous years' results because of our focus on sustainability-minded organisations in 2022, the difference is still telling. In 2020, only 50% of organisations had set net zero targets, and less than half of them had defined any milestones to reach them. This did not improve much in 2021, with 45% of organisations polled having a net zero target and 59% of them indicating that they had clear science-based milestones in place for achieving them.

Looking ahead, the 2022 survey also provides useful clues about the anticipated growth of net zero commitments and the main roadblocks that are putting companies off pursuing ambitious climate targets. Of the organisations that do **not yet** have a net zero target but plan to set one, nearly 40% want to have one in place by the end of 2023, indicating that a surge in new net zero commitments may be on the horizon.

Encouragingly, among 2022 respondents, only a fraction said that they **did not have** any plans to set a net zero target (~2%). Across all sectors, the main reasons for not setting or not having plans to set a target were lack of in-house capabilities (21%), the belief that a net zero target was not important to customers (21%), and resistance from senior leadership (21%). Interestingly, resistance from senior leadership was most common among the companies in our survey's highest revenue bracket of over USD 500 million (50%), hinting that these leaders may be reluctant to engage in radically overhauling the infrastructure and business practices that have served them well in the past.

> Nearly one quarter of all respondents indicated that they have set an SBT but do not plan to publicise it – implying that progress on corporate net zero is not being shared, or that companies are hesitant to over-promise publicly on what they can deliver.

“Green-hushing”: More sustainability-minded companies are pursuing more credible roadmaps – but not sharing progress

Looking back at our 2020 report, one of its most worrying findings was that only 11% of respondents had set an SBT, a central milestone on the way to net zero. This improved slightly in 2021, with 18%. This year, a staggering 72% of all respondents indicated that they had set SBTs, and an additional 18% plan to do so in the next 12 months. The sharp rise in SBTs is due to our focus on sustainability-minded organisations this year (those with a head of sustainability or corporate social responsibility) , but could also suggest that the overall market is slowly starting to mature and is increasingly aligning itself with best-practice climate action. .

It was also promising to see that 67% of surveyed organisations had **both** a net zero target **and** an SBT, suggesting that more climate-aware companies are pursuing credible net zero targets and understand the necessity of taking a science-based net zero approach.

What’s shocking, though, is that nearly one quarter (23%) of all respondents this year indicated that they have set an SBT but do not plan to publicise it. Doing so makes targets and achievements harder to scrutinise and limits knowledge-sharing, potentially leading to less ambitious targets being set and opportunities being missed for sectors to decarbonise by working together.

Publishing an SBT on sciencebasedtargets.org is a necessary part of setting such a target (along with the annual disclosure of emissions and progress), so why are so many organisations hesitant to draw attention to their SBTs in broader company communications?

Could it be that increased scrutiny from and critique by the media – alongside NGOs and consumer and market authorities – has made surveyed leaders wary of publicising their net zero ambitions? Are companies themselves unsure they have what it takes to meet their goals and so are loath to talk about them? Or could it be that many in leadership positions still lack the technical skills and confidence to talk about complex climate efforts?

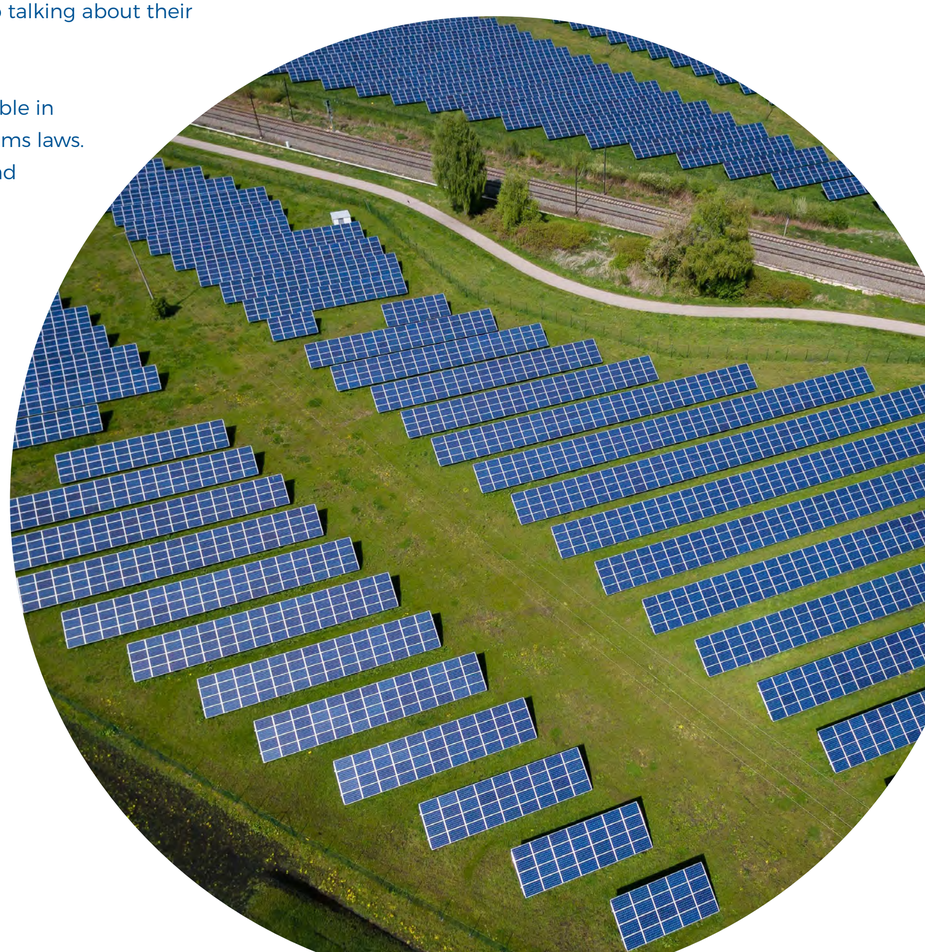
A possible alternative reading: is setting a SBT starting to become “business as usual” among climate leaders and not something to trumpet about, instead something that should be done by default? Are climate leaders taking the stance that they prefer to under promise and over deliver?

While the SBTi Progress Report 2021 identifies the UK and France as being two of the leading regions for organisations to set SBTs, our survey reveals that respondents from France were ironically among those less likely to publicise their SBTs. This is likely due to France being one of the few countries to have explicit regulation in place on corporate climate claims to avoid greenwashing. Companies may be unsure about how to comply with this legislation and are afraid of being sued: they therefore give up talking about their targets altogether.

However, this trend is not only visible in countries with strict corporate claims laws. More and more companies, beyond France, are “greenhushing”. The reasons could range from fear of critique to the fact that SBTs are increasingly expected rather than exceptional when it comes to climate action.

While the exact reasons for the surveyed sustainability-minded organisations holding back remain unclear, this tendency is contrary to South Pole’s own advice to clients, which is to transparently communicate targets and milestones and share lessons learned after making measurable progress on your decarbonisation effort.

Looking beyond the companies who are becoming more cautious about their climate communications, there are still far too many businesses using empty targets and claims to boost the public perception of their climate progress – effectively participating in greenwashing. This in turn deters honest conversations about how difficult it is to reach net zero, even among those who have made the most progress so far.



Science-based reduction measures are being prioritised – but not publicised

Surveyed businesses in Belgium and in the DACH region were most likely to **not** publicise their SBT (41% and 34% of organisations with SBTs, respectively), while Singapore-based companies were the most open to publicising their targets (16% of organisations in Singapore with SBTs).

Of the companies with an SBT, surveyed leaders working in media & telecomms were most likely to **not** publicise their targets (40%), followed by utilities (38%).

The global pulse: contrasting survey results with the South Pole database

South Pole's cutting-edge climate commitment database shows that, out of the 68,000 global companies analysed (including all major stock indices such as Global F500, FTSE100, DAX30), just **7%** (around 4,800) have set a net zero target. A majority of these targets are, however, backed by science-based emission reduction milestones: **60%** of companies with net zero targets also have SBTs in place. Despite these net zero targets being backed by science-based reduction milestones, the database provides a much more dire picture of the state of net zero among the majority of global companies.

When it comes to net zero target dates, **16%** of the database companies this year have committed to achieving net zero by or before 2030. Around **25%** have set a date between 2031 and 2040, and **59%** have a late target date of 2041–2050. This is a rather stark contrast to surveyed companies, where the majority (64%) of respondents are aiming to hit net zero targets on or before 2030.

At the same time, it is encouraging to see that more major stock-listed database companies are aligning their net zero targets with a science-based emission reduction pathway: in 2021, our analysis of the South Pole database indicated that just 28% of net zero-committed companies had SBTs in place – a figure that has more than doubled to 60% in the past year alone.

It’s fine to set net zero targets, but are they ambitious enough?

Setting a net zero target is an important commitment to decarbonisation, but this commitment is only meaningful if the target is time-bound, with the level of ambition being measured, in part, by the proximity of that date.

Among this year’s surveyed leaders, 2030 was the most common year for reaching net zero targets – a finding that mirrors our previous two reports. Of the organisations that had set a net zero target, more than half (51%) plan to meet it between 2025 and 2030, while 13% of respondents plan to meet theirs by 2024 or earlier. All in all, nearly two-thirds (64%) of organisations are committing to rapid action by 2030 at the latest, which indicates that organisations are coming to terms with the need for urgent decarbonisation and setting ambitious targets with this in mind.

Where are the companies with the most ambitious timelines located? Looking across the globe, our survey revealed that those businesses aiming to reach net zero by 2024 or sooner came from Colombia (25%) and the US (25%), followed by Singapore (23%) and France (22%). This is an incredibly aggressive agenda for reducing a company’s direct and indirect emissions (scope 1, 2, and 3) to net zero. Could it be that some organisations do not realise the magnitude and rigorous requirements of this ambition?

At the other end of the spectrum, the regions that tended to be the most cautious – i.e. setting their net zero targets between 2041 and 2050 – were Sweden (16% of all respondents from the region had a net zero target), the UK (13%), and Australia (10%). Trailing the pack, Sweden was the region where companies were most likely to set a net zero target date beyond 2051. Given the UN claim that emissions need to reach net zero by 2050 to meet the goals of the Paris Agreement, having target dates beyond that threshold begs the question of whether Swedish companies have really set a net zero target at all?

It is even more surprising, in light of the generally ambitious climate action by the Swedish government currently and historically.

In terms of sectors, the environmental goods and services had the most aggressive target dates, with 27% of respondents setting net zero targets for 2024 or earlier, followed by energy – oil & gas (24%). The companies that were most likely to push out their target dates to 2041-2050 came from the utilities sector (23%) and media & telecommunications (19%).

Overall, having a clear timeframe to reach net zero is important, but still not the most decisive factor for defining the ambition of a corporate climate target. It is equally (if not more!) critical for a company to have clear intermediate goals to slash emissions and a detailed, measurable strategy for achieving overall net zero emissions (both direct and indirect) across its operations. Early net zero targets of 2024 or sooner are encouraging, but also may also raise some eyebrows. Will we realistically have all the necessary solutions and cross-industry collaborations we need to reach such milestones within 24 months ? In particular, in the energy sector?

> 13% of surveyed organisations have aggressive plans to meet net zero targets by or before 2024. But do they fully appreciate the magnitude of reducing scope 1, 2, and 3 emissions?

Are heavy emitters racing to the top?

67% of all respondents themselves identified as working in a heavy-emitting industry[4], with the majority hailing from Australia (97%), Singapore (82%), the Netherlands (72%) and Belgium (71%). These heavy emitters were mainly from the utilities sector, where 88% identified as a heavy emitter, and energy oil & gas, where 87% of surveyed companies from this sector categorised themselves as a heavy emitter. These sectors were followed by industry – engineering, construction & building (78% of surveyed companies in this sector), IT – software & hardware (75% of surveyed companies in this sector), consumer goods (71% of companies in this sector) and transport (70% of companies in this sector).

The high percentage of companies hailing from Singapore is not surprising given the country's current position as Asia's top petroleum trading hub and that mining, for example, has long been a significant primary sector industry in Australia. Similarly, the Netherlands which is home to several big oil and gas companies is, together with Belgium, one of the largest agricultural producers in the EU. Agriculture makes up a significant chunk of both countries' emissions, which makes sense since more than a quarter of the world's GHG emissions come from agriculture, forestry, and land-use..

Of these heavy-emitters, **95% reported having net zero targets in place**. This is a marked difference compared to the rest of the companies surveyed and who do not belong to a heavy-emitting industry, where only 71% of respondents reported having net zero targets.

A total of 45% of heavy emitters have selected 2030 or earlier as their net zero target date, which was also the preferred date range among all survey respondents. Of the paltry 5% of heavy-emitting organisations who do not have a net zero target, the majority plan to set one.

Digging deeper into the group of self-identified heavy emitters[5] with net zero targets, 76% had also set an SBT. This is interesting to see given the SBTi's latest policy on refusing SBT commitments from most companies in the oil & gas sector, for example. **These results imply that surveyed companies who self-identify as heavy emitters – especially those from the energy (oil & gas sector) either fall under categories excluded by the SBTi, are using unvalidated SBTs, may not be fully aware of what setting an SBT entails, or think that such claims will improve their brand, no matter whether they are accurate or not.**

The research seems to say that, with the right incentives, heavy-emitting sectors can be just as ambitious about net zero timelines as other sectors. It is important to note, however, that the majority of these surveyed heavy emitters are based in developed countries (Australia, Singapore, The Netherlands, Belgium and France) where both public scrutiny and/or the risk of environmental litigation is high, which in turn makes the reporting of climate targets an important part of building reputation and credibility.

This is particularly true when compared to countries with less transparency and auditing around corporate climate action. It is estimated, for example, that around 20% of the world's emissions come from a group of companies that don't report their emissions, production, or even basic financial data: i.e. the unlisted national oil companies that dominate production from the Persian Gulf as well as parts of Asia, Africa and Latin America. A further 19% of global emissions come from a group of listed state-controlled behemoths from Russia and China which have historically barely accounted for their scope 3 emissions.

The reason for a "race to the top" amid heavy emitters in developed countries could be the anticipation of regulatory pressure, and consumer or shareholder pressure. No matter the reason, this trend is good news for the planet.

At the same time, even among these self-identified heavy emitters – three quarters of whom have science-aligned net zero targets – nearly a quarter have decided not to publicise their milestones. Anecdotally, South Pole staff hear that while such companies wish to market their goals and achievements, increasingly they are wary of critique related to greenwashing, including by media and NGOs, and fearful of litigation around false claims. This poses an interesting dilemma: while false or exaggerated climate claims should always be discouraged, it is problematic if reporting on climate performance is hushed and not transparently communicated by the most proactive heavy emitters. By climate leaders going 'dark', it is unlikely that big, unlisted polluters will be incentivized or pushed to participate in a 'race to the top'.

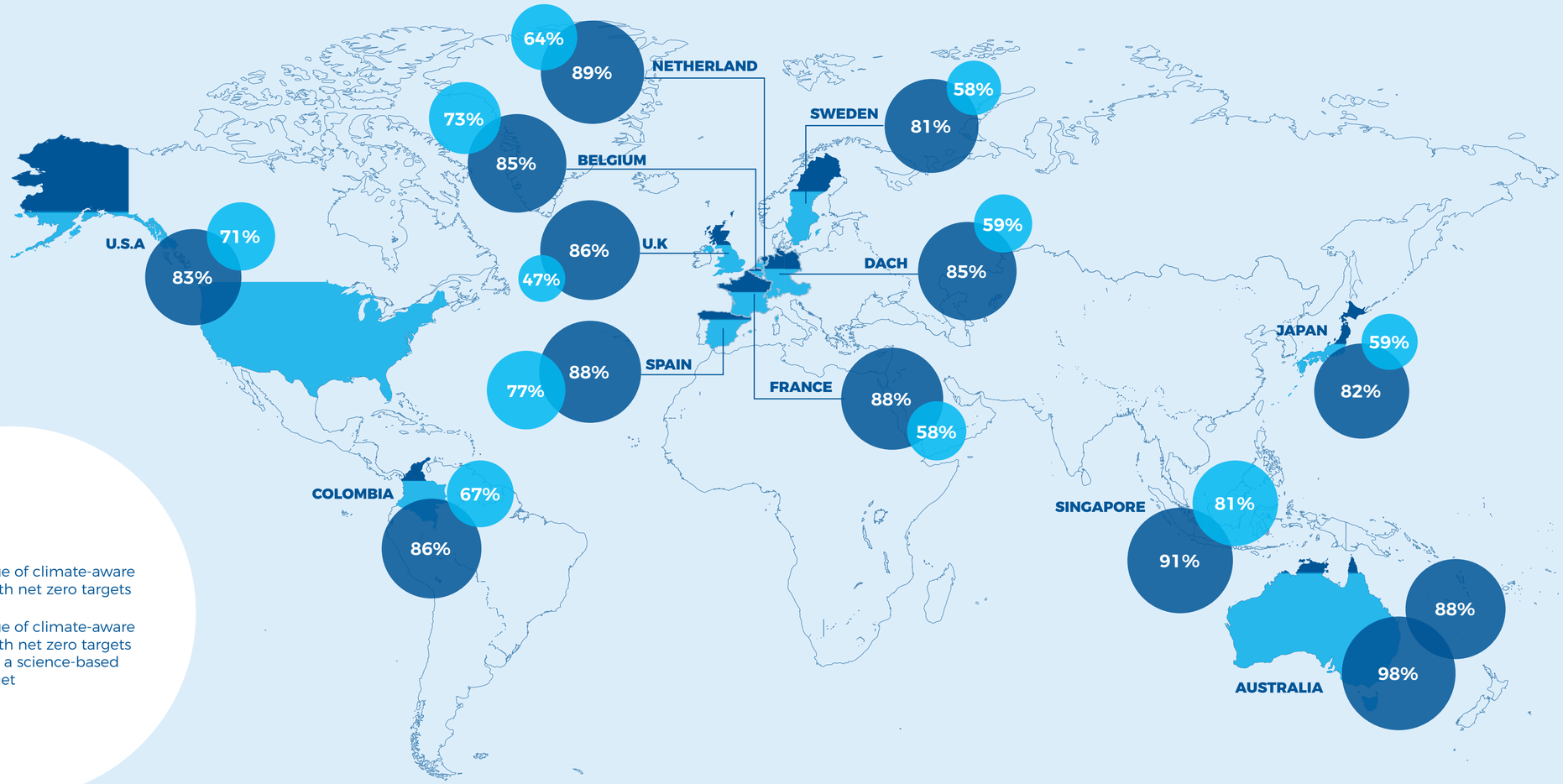
Despite climate policy ranking low among companies as an overall driver for setting a net zero target, regulation usually tends to target heavy emitters, who are under scrutiny from various stakeholders and have the biggest obligation to act. For many outside these emission-intensive sectors, net zero is still more a proactive way to build business resilience, promote your brand and show leadership, rather than a response to mandatory requirements – and, in worst cases, fines – for failing to comply.

[4] These respondents replied "yes" to the question "Do you work in a heavy-emitting industry? (i.e. do your organisation's industrial activities emit large amounts of carbon dioxide [CO_2], nitrous oxide, methane, or other greenhouse gas)"

[5] Companies self-identifying as heavy emitters were mainly from utilities –gas & electricity (88%), energy –oil & gas (87%), industry – engineering, construction & building (78%), IT –software & hardware (75%), consumer goods (71%) and transport (70%)

Overview of the net zero and science-based targets of surveyed sustainability leaders

Looking into the targets of the more climate-aware companies surveyed in 2022, sustainability decision-makers in Australia (98%) and Singapore (91%) are more likely to have net zero targets in place, compared to leaders in Japan (82%) and Sweden (81%), which were the regions with the least number of net zero commitments in 2022. Organisations based in Sweden were also more likely to push delivery of their net zero targets to 2041-2050.



Among surveyed companies, which sectors are leading the pack on net zero targets?

The largest proportion of organisations with net zero targets came from

94% financial industry

93% IT

92% industry – engineering, construction & building

These sectors were closely followed by

88% environmental goods & services

and

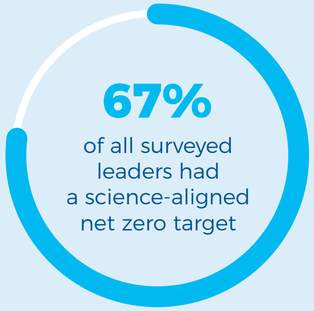
85% consumer goods transport

79% healthcare & pharmaceuticals

and

75% real estate management & development

Which sectors are aligning net zero targets with science?



Industries with a net zero target and an SBT*

83% Environmental goods & services
80% Financial industry
78% IT
64% Materials – metals & mining
63% Industry
61% Transportation
60% Media & telecommunications
56% Healthcare
56% Utilities
52% Consumer goods

The real-estate sector (25%) had the least science-aligned net zero targets.

*Percentages are based on the number of respondents within their industry sector who indicated having both a net zero target and an SBT. The SBTi's latest policy does not accept SBT commitments from most companies in the oil & gas sector, which implies that surveyed companies in oil & gas either fall under excluded categories, are using unvalidated SBTs, or may not be fully aware of what setting an SBT entails.

The global pulse: contrasting survey results with the South Pole database

The climate commitment database reveals that the regions with the most companies with net zero targets came from the UK (24%), the U.S (17%), the DACH region (6%), and Australia (~4%). This is a marked difference to the surveyed organisations, where UK-based businesses were among the ones with the least net zero commitments, compared to the global average of surveyed companies.

In terms of sectors, it was interesting to see **82%** of survey respondents from the energy – oil&gas sector claimed to have SBTs to back up their net zero targets, despite SBTi's latest policy on refusing SBT commitments from most companies in the oil & gas sector.

In contrast, net zero-committed oil & gas companies in South Pole's database comprised a paltry **6%**. These results imply that both database businesses and surveyed companies in oil & gas fall under excluded categories, are using unvalidated SBTs, may not be fully aware of what setting an SBT entails, or think that such claims will improve their brand, no matter whether they are accurate or not.

04 The economics of tackling climate change: Net zero budgets are growing, but so are the long-term benefits of investing in climate action

While COVID, conflict, and recession have cast a dark cloud over corporate climate action efforts this year, a surprising number of surveyed businesses are investing more – not less – in reaching their net zero targets. This is likely because many have moved from strategy to implementation. As demands for climate action rise, over 60% of companies are investing in internal skills and nearly a third of companies found the delivery of their net strategy more challenging than expected, which is being reflected in budgets. Nonetheless: with the cost of inaction growing by the day, 2022 is still the cheapest year to get started on net zero.

The price of tackling the climate crisis is increasing – but so are the benefits

Recent scientific research has found that the economic damage of climate change could be six times higher by the end of this century than previously estimated. In the words of co-author Paul Waidelich from ETH Zürich, "it is still cheaper to reduce greenhouse gas emissions than it is to deal with climate change impacts." Under the current trajectory, rising temperatures could reduce global GDP by as much as 14% (USD 23 trillion) by 2050 compared to a world without climate change. The recent example of Hurricane Ian in the U.S., where the recovery is expected to cost insurers nearly USD 50 billion, is a stark reminder of how quickly the costs can rise.

So, while the cost of highly technical climate solutions may be on the increase, companies that only focus on the immediate cost of climate mitigation as part of a net zero strategy will miss out on experiencing the measurable benefits of their investment. In the UK alone, the net zero transition for all sectors of the economy – estimated to cost a maximum of 2% of UK GDP – is expected to have a net benefit of 4% of GDP.

Unfortunately, current global conditions are not conducive to aggressive climate action: economies are still recovering from the effects of COVID, the ongoing war in Ukraine is continuing to put pressure on food and energy costs and cause ongoing supply chain disruptions, and inflation and recessions are knocking at most countries' doors. In this context, one might expect organisations to have trouble recognising the longer-term benefits of investing in net zero strategies today.

But, against this picture of economic uncertainty, are we seeing organisations pull back their spending on net zero?

The answer is no. Encouragingly, the overall amount of cash being expended on net zero strategies is actually increasing. A staggering 74% of respondents said their net zero budgets have increased since December 2021, with this being the clear trend regardless of the revenue bracket the organisation falls in.

Unsurprisingly, the sooner the deadline for an organisation's net zero target, the more likely it is to have increased its planned net zero budget in the past year. For those organisations planning to reach their goals by 2024 or earlier, 84% have needed to increase their budgets. This may be explained by the fact that implementation cycles at mid-sized companies tend to take a few years, so it is likely that net zero targets set in 2020 are being implemented in 2022, with budgets being mobilised and increased to meet the needs of ongoing projects.

> Are companies starting to see their efforts to tackle the climate crisis as an investment in future resilience and business success, rather than just a cost?

While this finding may indicate that increased ambition is synonymous with increased expenditure, our survey also suggests that meeting net zero goals – especially ambitious ones – is not only more expensive, but also more difficult than most organisations anticipated.

Nearly a third (29%) of polled companies said that they found the delivery of their net zero strategy to be more challenging than they expected. Only 17% thought that carrying out their net zero plan was easier than they originally anticipated, while 48% felt that implementing their strategy was just as difficult as they had predicted – suggesting that those leading from the front had accurately assessed what it takes to meet big climate targets.

In parallel, the companies that were **not** on track to meet their net zero targets said that they were preparing to invest more in upskilling teams (66%) or in additional internal resources (59%) – which would likely increase overall budgets for net zero.

The fact that organisations across the board are increasing their net zero budgets also means that a clear majority of companies are deciding to spend more – not less – on reaching their net zero goals, despite the increasingly gloomy global economic outlook. Could this mean that efforts to tackle the climate crisis are starting to be seen as an investment in future resilience and business success, rather than just a cost?

It's not getting easier: how surveyed companies perceive the delivery of net zero

48% Same level of difficulty as expected in January 2021

29% More difficult than expected

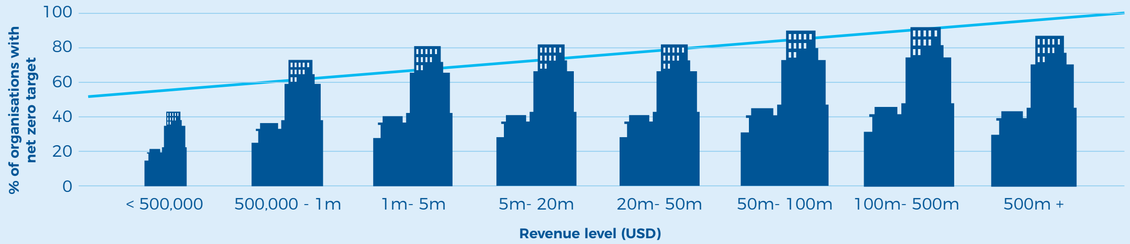
17% Less difficult than expected

5% We did not have a plan in place in January 2021

Most companies are doubling down on net zero

83% of US-based companies reported an increase in their budgets, compared to **65%** of businesses in the DACH region

More money – more targets?



Our research shows that net zero targets seem to grow in almost a linear fashion when looking at surveyed companies' revenue levels. Is this because higher revenue is, in many cases, likely to translate into more capital being available to pursue net zero investments? Overall, big earners seem to be spending more on climate action – but the real question is whether they are spending *enough* on climate action, relative to their revenue, to reach their net zero goals.

05

Net zero drivers: Brand and operational resilience is top of mind for net zero leaders

Customer demand continues to top the list of reasons for surveyed companies to pursue ambitious climate targets, followed closely by the opportunity to build corporate brand leadership on net zero.

Operational risk and the management of external shocks is also weighing heavily on businesses. Could it be that post-COVID globalisation is all about supply chain resilience? Or, at the end of the day, is it all about how organisations are perceived by their customers, and stack up to others? What has become abundantly clear this year is that, among surveyed businesses, investor pressure has yet to kick in.

New business opportunities and the need to build resilience are driving companies to net zero

There was a tight race between the top two drivers for net zero among organisations who have or plan to have a net zero target in place. First was customer demand for low- or zero-carbon products and services (44%), and in close second was the opportunity to show corporate leadership on climate action (43%). Both clearly relate to how companies interact with their primary stakeholders, customers and clients, by building a strong brand and attractive product line.

We also see that operational risk is rising higher up the corporate agenda as a reason for companies to move towards net zero: the demand for better, more granular oversight of and data about supply chain risks (37%) and the need to build resilience against external shocks (34%) were among the other top drivers. This is noteworthy, as gaining an oversight of supply chain vulnerabilities was ranked as the least important driver in 2020 and 2021.

The reprioritisation of drivers seems to align with the ongoing transformation of global supply chains following the COVID pandemic and the war in Ukraine: decision-makers are keen to ensure that supply chains are robust and reliable, not just efficient, and are decreasing their reliance on jurisdictions where they are exposed to risk. Stalled manufacturing due to missing raw materials or parts hits the bottom line immediately and can make or break a company.

One example of this is the American company Intel, the world's largest semiconductor chip manufacturer, who earlier this year announced a USD 20 billion investment to build new chip factories in Phoenix, USA, instead of in China or Taiwan. In the words of CEO Pat Gelsinger, "we want to have more resilience to the supply chain".

While supply disruption is not new, more extreme and frequent weather events – from dried up rivers raising the cost of shipping to crops being inundated by flooding – have made the link between supply security and business continuity unquestionable. Better insights into supply chains will facilitate the procurement of more sustainable products and materials, and support better risk management. By collecting climate change data from suppliers, for example, businesses can use these insights to improve their procurement processes and identify risks faster – all while building more climate-resistant supply chains.

Could it be that the new kind of globalisation post-COVID is more about supply chain resilience than efficiency gains? And could this trend serve as a proxy for how climate adaptation efforts will increasingly be prioritised? It is clear that companies need to take much greater care when selecting their suppliers, especially in developing countries, and ensure that they can withstand climate catastrophes.

Another marked change in companies' selection of drivers was the ranking of investor pressure (17%) which has, for the first time in three years, dropped to an all-time low among survey respondents. One might wonder whether investors are on a brief hiatus, still working out their own targets, before engaging with portfolio companies – a calm before the storm, so to speak? Could the coming year see a new wave of big investor demands on net zero and science-aligned reduction strategies?

One might also ask if current climate policies (31%) are not ambitious enough and hence not sending the right signals to the market – signals that would push companies and investors alike to up their game? Or are ever-developing policies confusing, and investors reluctant to look closely at their investments because they are not sure what to look for or how demanding they should be?

Taken together, these findings seem to indicate that this year's sustainability-minded organisations are reacting to more diverse drivers and are thinking more holistically about the additional risks that could be mitigated by pursuing a net zero strategy. Corporate leaders are still very much being driven by their brand and reputational risks, but also, increasingly, by their business operations and physical, transition, and liability risks.

> "While supply disruption is not new, more extreme and frequent weather events have made the link between supply security and business continuity unquestionable."

Policy is a bigger consideration for heavy emitters, compared to others

Our survey also uncovered some interesting sectoral trends in terms of the factors compelling organisations to stay on track to meet their targets. IT occupy the top spot – which may not be surprising since they don't have enormous emissions but are very keen to protect their brand and operations, especially their supply chains.

More surprising was that the materials/metals & mining and the energy (oil & gas) sectors came in second and third place for the sectors most likely to be pushed to set net zero targets. This trend is likely propelled by the need to keep up with competitors' climate commitments and prepare for government legislation. It suggests that a "race to the top" may be possible for these heavy-emissions sectors that are in the public eye more than others, as long as companies are held accountable for their goals and claims.

> A 'race to the top' may be possible for heavy-emissions sectors, as long as companies are held accountable for their goals and claims.

As momentum to embrace a more sustainable world increases, the materials sector must help to meet the increasing demand for minerals, which are needed to manufacture electric vehicles (EVs) and scale up battery storage, among other processes. This competition to become the preferred supplier of EV manufacturers could explain the ranking of drivers for this sector.

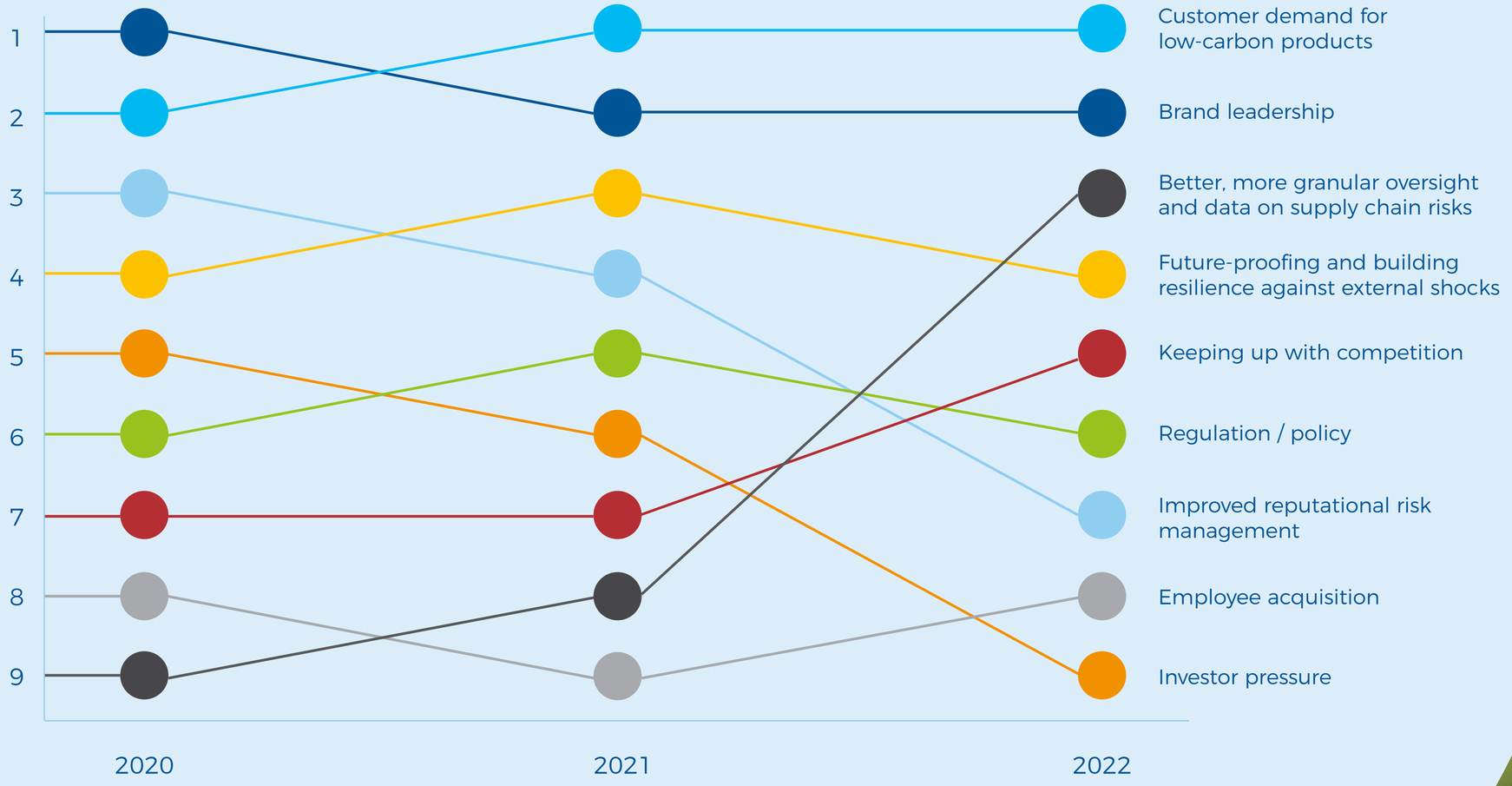
Meanwhile, the most likely sectors, beyond government, to cite regulation and policy as an important motivator were energy (oil & gas), transport (road, rail, shipping, airlines, trucks), and consumer goods. All of these sectors ranked climate policy above the 31% average. This may imply that in sectors where there are strong policy signals, such as zero-emission vehicle (ZEV) mandates in Europe or coal phase-outs, regulation and policy can indeed be an important driver.

The energy sector was also one of the least likely to see futureproofing and building resilience against external shocks as a driver, with only 16% from that industry indicating they thought this was the case. This may indicate that the oil and gas industry either does not see a role for itself in the long term, or that it doesn't believe the status quo will change. Does the industry expect the reliance on oil and gas to continue to dominate, with few threats to the industry? It is hard to say, and the sector is not known for being very transparent about their business strategies on climate change.

What is driving companies to net zero?

Driver	Ranked highest by companies in
44% Customer demand for low-carbon products and services	
43% Brand leadership and positioning on climate action	
37% Better, more granular oversight and data on supply chain risks and vulnerabilities	
34% Future-proofing and building resilience against external shocks	
32% Keeping up with competitors' climate targets	
31% Regulation / climate policy	
23% Improved reputational risk management	
22% Employee acquisition and retention	
17% Investor pressure	

The shifting drivers of net zero*



*Based on South Pole's 2020, 2021, and 2022 net zero surveys

06 Net zero leadership: The climate transition still mainly sits on shoulders of the C-suite – but efforts to upskill teams are growing

The majority of surveyed leaders are planning to upskill their own sustainability teams or invest in internal resources to deliver their net zero strategy. The C-suite remains at the head of the net zero transition, but awareness and broader engagement across departments to reach big climate targets seems to be growing.

The C-suite is still expected to lead on net zero – but accountability for delivering targets is slowly shifting to all departments

Over 9 in 10 organisations in our survey have staff who are personally responsible for the delivery of their organisation's net zero strategy and sustainability efforts. The staff most likely to be in the lead for the day-to-day delivery of net zero strategies are the C-suite (31%), the Chief Sustainability Officer (26%), and CEOs (21%), which hasn't changed much from our previous net zero reports and suggests that this trend is here to stay, even among sustainability-minded organisations.

There is clearly a great deal riding on C-level executives' abilities to chart the transition to net zero. How committed and prepared are they? What we know today is that delivering on the net zero agenda and becoming a resilience champion will demand both long-term vision and credible near-term action and milestones. Cynics point to the average lifecycle of a CEO being only five years, saying that many will not be held accountable for what does – or does not – happen once they're gone. Today, the average age of S&P 500 CEOs is nearly 60, meaning that most of the current corporate leaders at the largest US companies will have stepped down by the time the 2030, 2040, and 2050 climate deadlines arrive. How are we to hold leadership teams accountable in 30 years for the pledges they do (or do not) make today?

One way to enact a critical shift in long-term accountability is to ensure that net zero commitments are "whole organisation" initiatives – all teams, across functions, must be responsible for delivering the strategy.

While organisations tend to rely on a specific role or person leading their day-to-day efforts towards net zero, nearly half of surveyed businesses (46%) also indicated that multiple departments are involved in driving this shift. A quarter (26%) responded that every department of their organisation is involved in driving the transition to net zero. This may imply that **regardless of who is *leading* net zero efforts, businesses are starting to take a pan-organisation approach that embraces multiple departments in order to reach their target**s. This is a positive sign, as sustainability efforts that are truly embedded within an organisation should engage all departments. They are also more likely to be successful from an operational point of view.

> Colombia was the region with the greatest share of respondents (38%) indicating that every department is involved in driving the shift to net zero

The finish line is often the starting line: Employee awareness on net zero strategies is high among most companies

If a net zero target is set but no one is aware of it, is it real?

The truth is that once a corporate net zero target has been established, the adoption and delivery work has only just begun. Leaders must make a banded effort to sell the new vision internally – not just by re-reporting the news to employees, but by effectively contextualising it and what it means for the business.

It is promising to see that nearly two-thirds (62%) of surveyed leaders with net zero targets believe that ***all employees*** are aware of their climate strategy and how the organisation is delivering on it. Around one-third (32%) of net zero-committed organisations said that ***only mostly senior employees*** are aware.

While employee acquisition and retention ranked rather low as a driver of net zero ambition this year, it seems that organisations are making efforts to adequately inform their workforce about their own net zero goals and progress. This is encouraging, as employee engagement and awareness is indispensable in pushing a company to achieve ambitious goals, such as net zero, which might otherwise be out of reach.

More importantly, by taking employees into account, a company can avoid creating messages and claims around its net zero strategy that don't resonate with staff or, even worse, that build resentment or disloyalty. At the same time, while internal and external messages on net zero strategies must be aligned, companies should keep external promises half a step ahead of internal realities to provide incentives for employees and give them something to strive for.

> Leaders must make a banded effort to sell a net zero vision internally – not just by re-reporting the target to employees, but by effectively contextualising it and what it means for the business.

Those not on track to deliver net zero are upskilling rather than outsourcing

In the previous sections, we revealed that nearly a quarter of surveyed organisations are increasing their net zero budgets. What could this budget be going towards?

Of the organisations that are currently **not** on track to meet their net zero targets (33%), the majority (66%) are planning to upskill their sustainability teams, while nearly two-thirds (59%) are investing in more internal resources in order to meet their commitments.

While internal investment was preferred to outsourcing work on net zero, third-party support was not discounted, with many organisations willing to hire experts for high-level strategy and advice (45%) or third-party resources for the direct implementation of net zero-oriented actions (41%).

Overall, companies may be realising the importance of having dedicated staff to deliver on commitments, and have started viewing net zero as a long-term rather than short-term investment by beefing up their own capabilities to meet and future-proof sustainability efforts. Some businesses may also be realising that they lack the basic internal capacity to engage with or follow up on recommendations from external experts.

While our survey does not provide a conclusive answer as to why companies are ratcheting up investments in internal skills and staff, it is telling that only 7% of organisations without a net zero target indicated that they "do not know how to set a net zero target", suggesting that most companies have at least minimum internal capacity to kick off a net zero journey.

Who is expected to lead the delivery of a corporate net zero strategy?

The C-Suite

31%

The Chief Sustainability Officer

26%

The Chief Executive Officer

21%

The Board

13%

Everyone

6%

Investors

3%

Where is the CSO?

- In Australia, there is a clear preference for the C-suite to take the lead on net zero (45%) and little appetite for a Chief Sustainability Officer to do so (9%)[6]
- This is countered by the US, where nearly half of respondents[7] (47%) identified the Chief Sustainability Officer as the lead on delivering a net zero target.

[6] Among respondents from these countries who indicated they have dedicated staff for their net zero/sustainability strategy

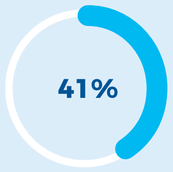
[7] Among US respondents that reported that they have staff who are personally responsible for the delivery of their organisation's net zero strategy/sustainability

How are companies getting back on track in reaching net zero targets*

Upskilling our current sustainability team

Investing in more internal resource

Hiring third party expertise



Hiring third party resources

* This sample only includes organisations that are currently **not** on track to meet their net zero target

Has internal awareness on net zero targets moved beyond the C-suite?**

All employees are aware

62%

Mostly senior employees are aware

32%

Only the most senior employees and/or the board are aware

5%

Few or no employees are aware

1%

**This sample only includes companies with a net zero target (1,059)

Higher headcount, higher net zero awareness?

75%

of organisations with the highest employee count (>5,000 employees) claimed that all employees are aware of their net zero strategy and progress. Could this be down to more established internal communications procedures?

07

Net zero enablers: Companies are increasingly turning to new technologies alongside solutions for decarbonisation

> Net zero efforts must be underpinned by credible, science-based milestones that drive down emissions across direct and indirect operations, support collective resilience, and channel finance towards climate innovations.

Decarbonisation is a top priority among surveyed businesses, but an increasing number of companies are betting on future technological innovations that will help them cross the finish line to net zero. Despite 67% of organisations claiming to be on track to meet net zero targets, for many, carbon-free operations could still be years – even decades – away. Also, most companies still don't have a clear strategy for managing the material risks that biodiversity loss poses to their business, both now and in the future.

Decarbonisation today is key, but companies are exploring multiple avenues to reach net zero

Over two-thirds of organisations (67%) with a net zero target or with plans to set one are on track to meet their goals. 29% are not on track but plan to scale up efforts significantly this year.

To achieve their net zero plans, companies are exploring all the tools in the climate toolbox, with a clear preference for solutions that can achieve direct decarbonisation. This comes as no surprise as net zero efforts must be underpinned by credible, science-based milestones that drive down emissions across direct and indirect operations, support collective resilience (within and beyond value chains), and channel finance towards climate innovations.

Today, greening operations and finding efficiency gains along corporate supply chains are seen as the go-to methods for achieving net zero – perhaps as a result of strong campaigning from corporate reporting standards such as CDP and the SBTi: renewable energy (39%) was identified as the preferred solution for working towards net zero targets, followed by energy and resource efficiency (32%), and addressing scope 3 emissions (27%).

However, many companies will not meet their net zero targets without technological innovation swooping in to save the day: many companies are setting their sights on new climate technologies and future fuels to lower emissions. Green or low-carbon hydrogen (26%) was ranked as the fourth most preferred solution to advance net zero strategies, and carbon removals – both nature-based (24%) and technological ones (23%) – have risen higher up on companies' lists of top net zero enablers. With new project methodologies and serious initiatives underway, could 2023 be the breakthrough year for technological carbon removals?

In terms of reducing emissions using technological means, about 19% of all respondents believed that carbon capture and utilisation (CCU) would have the greatest impact, and 17% saw carbon capture and storage (CCS) as their solution of choice for reaching net zero.

> With time not on our side and emissions-free operations still a far-off prospect, science says that companies must also invest in decarbonisation activities beyond their direct value chains.

As CCS captures emissions from fossil fuels, rather than directly from the atmosphere, it is generally considered a technological carbon ***reduction*** solution that can help address emissions in sectors with hard-to-abate emissions. Similarly, as CCU focuses on the applications and uses of the captured carbon dioxide – meaning that the carbon dioxide is not permanently stored – CCU is also not considered a pure carbon removal technology, but rather a high-tech means to reduce and avoid emissions. CCU plays a key role in the circular economy by allowing companies to work with raw materials that they already have, rather than extracting more.

It is worth noting that the surveyed experts who felt that reaching their net zero target was "just as difficult as they expected" (48%) were more likely to turn to future green fuels (54%) and CCU solutions (55%) than renewable energy (48%). This is likely due to more advanced companies having already addressed renewable energy use across their direct – and perhaps even along some of their indirect – operations, and are now exploring ways to address more complex emissions hotspots.

Interestingly, while customer demand for low-carbon products and services was the number one driver for companies to pursue net zero targets, revamping service or product delivery models (21%), investing in materials innovation (17%) and using software to facilitate climate action (16%) were ranked as some of the least preferable solutions among companies. In today's world of material scarcity and stretched planetary boundaries, how long can we afford to wait to innovate the way we use raw and recycled materials and deliver services? The transition to a circular, net zero emissions economy will require businesses to reduce their – and, by extension, their customers' – dependency on raw materials and to urgently design toxic and low-performing materials ***out*** of products.

The appetite for voluntary carbon offsets to achieve net zero goals was low, with just 18% of respondents selecting this as an option. While carbon offsetting does not count towards an organisation's net zero target, companies should go even further and invest in reducing emissions outside their value chains today in order to contribute to reaching societal net zero.

To paraphrase the SBTi, the world's leading framework for setting science-aligned corporate net zero targets: absolute emission reductions, for example through changing operations and supply chains, must be prioritised – but companies also need to invest in mitigation activities today beyond their value chains to set the global economy on a path to net zero. Time is not on our side and emissions-free operations are a far-off prospect: with this in mind, could businesses be missing a decisive and quick way to achieve true climate impact by neglecting carbon offsets?

Overall, the fact that no solution was overwhelmingly preferred may indicate that there is a growing understanding that achieving net zero is challenging and highly complex, and that organisations must make use of multiple solutions to reach their goals.

Is it too hard to act on climate change?

Most surveyed companies are on track to meet their net zero targets, but one-third have fallen behind plans.

Our organisations is currently on track to meet our net zero target

67%

Our organisations is not currently on track but plans to scale up efforts significantly this year in order to meet our net zero target

29%

Our organisations is not currently on track but plans to scale up efforts moderately this year in order to meet our net zero target

4%

79%
Of surveyed companies from Colombia believed they were on track to reach net zero targets

43%
Nearly half of surveyed Australian businesses said they were not on track to meet net zero targets, but had plans to scale up efforts *significantly* in the coming year

Technical carbon removals are here to stay, but companies need more assurance of their environmental integrity

What goes up must now come down – especially when it comes to humanity's carbon emissions. It is clearer than ever that we need a range of solutions to address the climate crisis and achieve net zero. While emission reductions and nature-based removals still need to be ramped up, we will fail to meet the targets of the Paris Agreement without developing scalable solutions and methodologies for removing and storing carbon at a pace and scale never seen before.

Nature-based removal solutions rely on things like trees, wetlands, or aquatic plants to remove carbon from the atmosphere and store it away. However, nature-based solutions alone will not be able to get us to net zero globally by 2050[8], which is why technological carbon removals are an important part of our planet's decarbonisation pathway. Technological carbon removals include a variety of innovative solutions that use cutting-edge technology to remove carbon from the atmosphere and store it in a durable manner – such as Direct Air Capture and Storage (DACS), Biomass Carbon Removal and Storage (BiCRS), and enhanced weathering.

Corporate support for these types of technological removal solutions jumped from one of the least preferred solutions in 2020 and 2021, to the sixth (out of 13) most preferred solution in this year's survey. While many of these solutions are still significantly more costly than removing carbon through nature-based solutions, new purchasing vehicles that are aggregating demand – for example the NextGen CDR Facility (powered by South Pole) and the Frontier Fund – may help to accelerate interest in supporting these technologies as additional climate solutions.

Technological carbon removals are related to processes requiring technological intervention via carbon capture and storage (CCS) to ***remove*** carbon from atmospheric or biogenic sources or ensure the long-term storage of CO_2, including select carbon capture and utilisation (CCU) cases where carbon can be durably stored (i.e. mineralisation in cement). All technological carbon removals can essentially be described as CCS, as opposed to most CCU solutions which only ***reduce*** carbon from emitting sources, like from the flue gas of a cement plant or from recycling the gas into a less permanent application, such as synthetic aviation fuel or plastics, which can then be burned and the CO_2 re-emitted.

CCS and CCU ranked relatively low (12th and 9th out of 13 specific solutions) in the list of preferred methods for contributing to organisations' net zero targets.

[8] According to the IPCC Special Report "Global Warming of 1.5 °C" (SR15) there is an urgent need to scale up efforts to remove CO_2 from the atmosphere in order to achieve the 100-1'000 Gt of CO_2 removals by 2050 required to keep global warming within 1.5°C. If we are to reach net-zero GHG emissions by 2050, we will require both nature-based and technological solutions in addition to steep decarbonisation and emissions avoidance efforts (such as forest conservation for example).

> Science tells us that the need for cost-effective technological carbon removal solutions has never been more urgent, and that they should be a part of any serious corporate net zero ambition.

Barriers persist in scaling up demand for technological carbon removals

According to the IPCC, the carbon removal process involves removing carbon dioxide (CO_2) from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in certain products. To be able to refer to 'net carbon removals', however, the physical removal of CO_2 from the atmosphere must take place – as opposed to carbon captured from industrial processes – and this removed carbon must be durably stored.

The key roadblocks for organisations using or planning to use technological carbon removals were the technological (im)maturity of the solutions (47%), followed by the lack of quality assurance for ensuring **verified** carbon removals (44%) – in other words, a lack of methodologies and standards for ensuring that one tonne of carbon removed with technological solutions can be credibly accounted for and verified, and that it is an additional and permanent removal. These methodologies will be critical in creating confidence in the market and more demand among corporate buyers, which will allow climate-saving companies to generate the revenues they need to finance more projects and benefit communities around the world.

With growing scrutiny across the board of companies' sustainability strategies, organisations are right to demand robust quality assurances so that their investments in technological emission reductions or removals are indeed derived from activities that achieve a measurable and verifiable climate impact. Yet work is underway, led by organisations such as the CCS+ initiative, to develop the very methodologies needed to ensure the environmental integrity of technological reductions and removals.

It is also important to note that, in this new technical removals market, what may also be holding some companies back is the ***perception*** of the technological maturity of technologies, which may not align with the actual technological maturity of removals solutions. The fact that there are few policies or regulations that acknowledge the maturity of different types of technological removal solutions may exacerbate the perception of technological infancy. With recent developments in the US, however, such as the Inflation Reduction Act of 2022 which promotes CCS, this view could begin to change. Similarly, the cost of removals generated through these solutions remains significantly higher than prices for VERs, which does to some extent reveal the issues in scaling existing technologies sufficiently to bring costs down to comparable levels.

The lack of clear guidance on how to use technological carbon removal solutions as part of a corporate net zero journey (42%) was also ranked as a major deterrent by surveyed businesses. This challenge does not come as a surprise, given that there are no conclusive definitions of technological carbon removals (versus reductions, for example), and that the guidance on how to integrate carbon removals into long-term corporate climate action planning is still evolving.

Ultimately, the credible use of carbon removals as part of a company's net zero strategy must be science-based. The UN IPCC has identified three rules for the use of carbon removals: they should be applied in the near term to accelerate climate change mitigation, in the medium term to achieve net zero emissions, and in the long term to achieve net negative emissions.

Science tells us that the need for cost-effective technological carbon removal solutions has never been more urgent, and that they should be a part of any serious corporate net zero ambition. Greater clarity around the advantages of different technological removals, better incentives and policy signals, and clearer guidance on the use of technological solutions and their certification standard on the journey to net zero and beyond, will undoubtedly lead to more demand among leading companies.

Most popular net zero enablers among surveyed climate leaders

Use of renewable energy	**39%**
Energy and resource efficiency	**32%**
Greening supply chains by addressing scope 3 emissions	**27%**
Future green fuels, such as green hydrogen	**26%**
Nature-based carbon removal solutions (e.g. tree planting or reforestation, soil sequestration)	**24%**
Technological carbon removal solutions (e.g. Direct Air Capture and Storage)	**23%**
New product or service delivery models	**21%**
Nature-based solutions (e.g. forest or ecosystem protection)	**21%**
Carbon Capture and Utilisation (CCU)	**19%**
Voluntary carbon offsets	**18%**
Materials innovation	**17%**
Carbon Capture and Storage (CCS)	**17%**
Software for climate action	**16%**

Solutions on a net zero journey: different preferences across regions

50% Businesses in Belgium selected renewable energy as their top net zero enabler, followed by **49%** of companies in the DACH region

35% of Colombian companies and **33%** of UK businesses ranked greening supply chains as key to reaching net zero

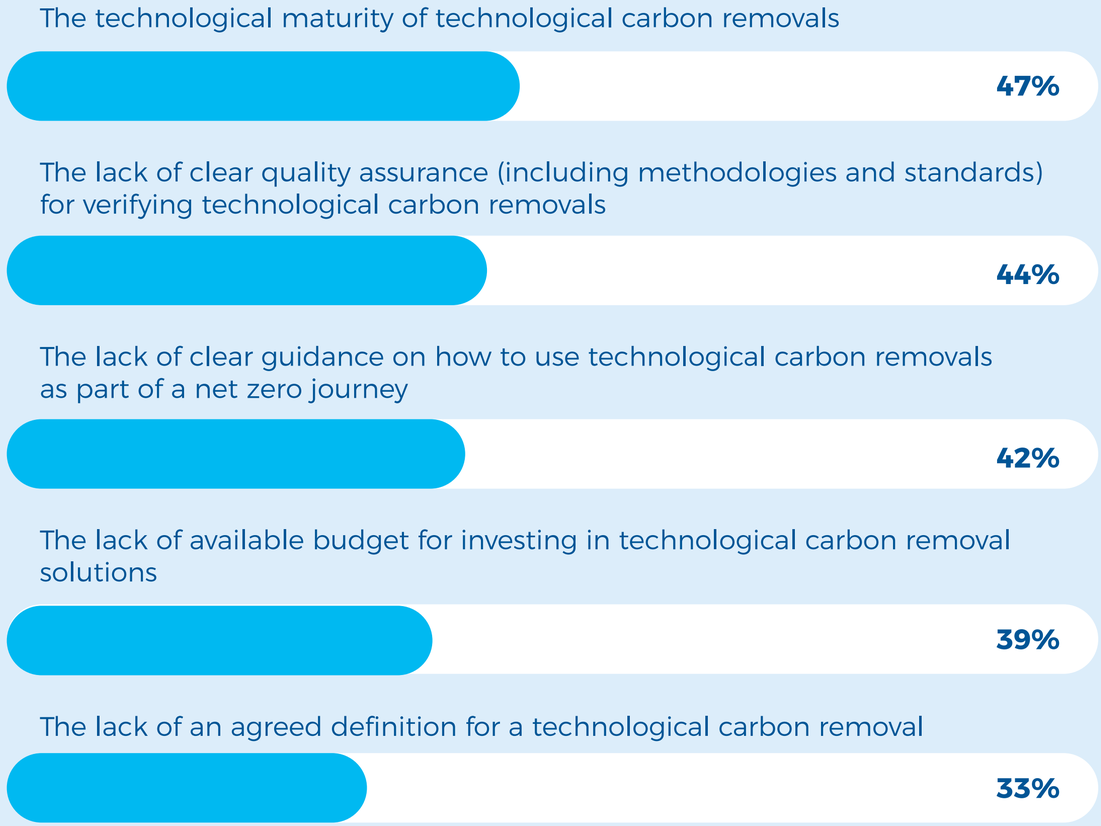
33% of both Spanish and Swedish businesses considered future fuels, such as low-carbon hydrogen, playing an important role in delivering net zero commitments

Singaporean businesses **(28%)** were most likely to select technological carbon removals as a central enabler to helping them achieve their targets

28% of Australian companies will turn to carbon capture and storage, which is considerably above the global average (17%).

30% of Japanese companies are leveraging voluntary carbon offsets on their corporate net zero journey

What is holding back demand for technological carbon removals?



Nature can provide solutions for supply chain resilience and corporate net zero – but it needs a helping hand

The business momentum for combining carbon and biodiversity efforts is growing. Climate change continues to gain prominence as the main threat to humanity's wellbeing, and its negative knock-on effect on corporate bottom lines is firmly established. Environmental trends and their commercial consequences, however, suggest that biodiversity will become of equal – if not greater – importance very soon.

Today, over half of global GDP is dependent on nature. If nature is disturbed by fire, agriculture, or commercial development, we risk unleashing over 300 Gigatonnes of "irrecoverable carbon" locked away in peatlands, wetlands, soils, and the ocean.

Despite this, many companies have still not woken up to the other material risks that biodiversity loss poses to their business, now and in the future, with just over one-third of surveyed organisations (36%) saying that they have set clear targets for biodiversity.

One-fifth of companies had no plan at all or said that they were not prioritising ways to address biodiversity loss in their value chain. This is a cause for concern: ultimately, future supply chain resilience will very much centre on adapting to external shocks – and some of the most critical elements to consider in such an endeavour are water resilience and biodiversity protection. Industries such as agriculture, fashion, and food and beverages could be significantly disrupted as the ecosystem services they rely on – healthy soils, clean water, pollinators, and climate regulation – become less available and less reliable. Many companies are already feeling the financial impacts of water risks, and inaction on corporate water stewardship is proving to be billions of dollars more expensive than action. With an expected 40% global water shortfall by 2030, water security is yet another critical issue on which companies simply cannot afford to delay.

Nevertheless, it is reassuring to note that 44% of leaders are exploring a corporate strategy to address biodiversity loss. Companies from Colombia are leading the pack, with 52% of respondents having a clear biodiversity strategy in place, followed by US-based businesses (50%). For Colombia, this result could be directly tied to the recent launch of the country's "2030 Green Growth Roadmap", which aims to promote a new economic growth model based on the efficient use and protection of Colombia's unique natural capital, and includes key milestones such as increasing the number of bioeconomy startups. The Colombian private sector may also have been propelled to act by the government's mandatory guidelines that require planned development projects – such as mining infrastructure, and railroad, maritime, and seaport or airport projects – to offset residual biodiversity impacts. Companies can choose between the conservation or restoration of an ecosystem "equivalent" to the one their operations have affected. While the guidelines are still being improved, Colombia has set a precedent in Latin America by being the first to implement rules and regulations specifically designed to support biodiversity.

The surge of corporate action on biodiversity in the US might be attributed to the new executive order announced by President Biden – the "30x30 pledge" – which commits to protecting 30% of US land and 30% of US oceans by 2030. It is also likely to have been encouraged by the development of new nature-related financial disclosures, driven by the Task Force on Nature-related Financial Disclosures (TNFD), which aims to encourage investors to quantify and disclose the relationship between investee companies and nature. Last but not least, public sentiment in the US today is overwhelmingly in favour of protecting the nation's natural heritage, with four out of five Americans favouring the new plan to protect America's land, ocean areas, and inland waters by 2030 because they understand it will be good for their wellbeing and the environment.

It is clear that investing in our natural world today will safeguard businesses' financial security tomorrow. With more and more corporate funds for biodiversity and adaptation being launched or supported by big brands such as Kering and Chanel, supply chain-driven corporate investments in nature are expected to increase significantly over the coming decade. Best practice guidance on developing clear biodiversity strategies is also underway, led by the science-based targets for nature (SBTN), which proposes a five-step action framework for the most ambitious businesses to **avoid** future damage, **reduce** current footprints, **regenerate** ecosystems, and **transform** the systems in which the company operates.

Therefore, alongside climate action, companies need to invest in biodiversity as a way to future-proof their supply chains, reputation, and social licence to operate – but also, importantly, to remain relevant. Those who can understand and effectively work with nature instead of against it will know how to manage risk, seize opportunities, and expand as the world around us transforms.

> Alongside climate action, companies need to invest in keeping ecosystems intact in order to future-proof their supply chains, reputation, and social licence to operate – but also, importantly, to remain relevant.

Strong interest in safeguarding biodiversity, but uncertainty about how to do so

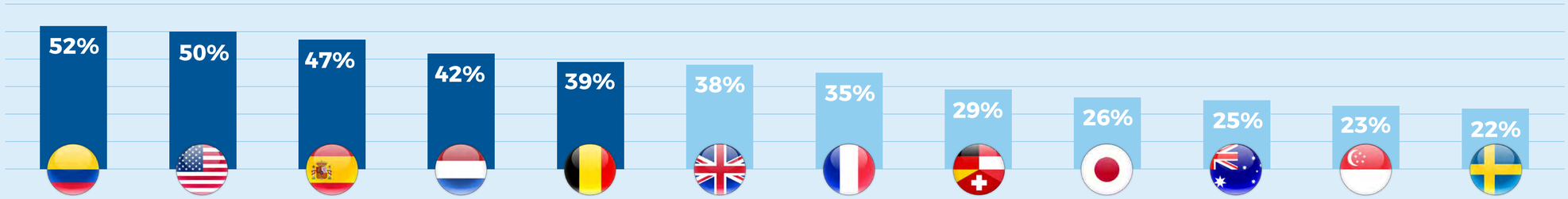
Most surveyed organisations are still exploring ways to address biodiversity as part of their overall net zero strategies

- Have a clear strategy and/or targets for biodiversity
- Are in the process of exploring a corporate strategy for biodiversity
- Do not have a clear plan for addressing biodiversity loss in their value chain
- Are not prioritising initiatives around biodiversity right now

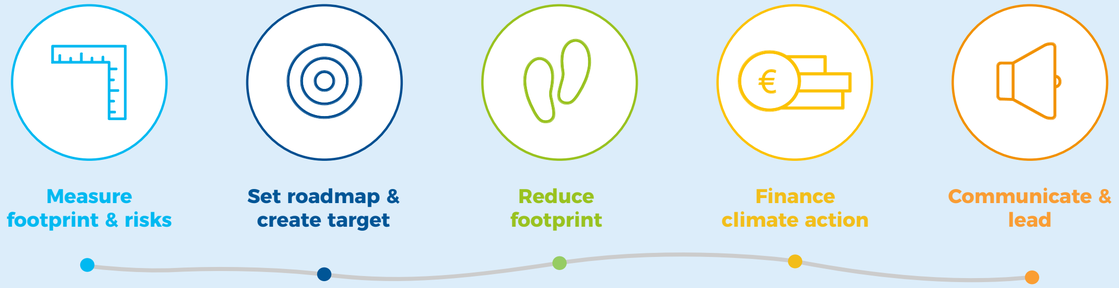
Biodiversity is complex – and understanding local context is key

Not all regions are equally affected when it comes to biodiversity loss or water stress, and companies will need to adapt their approach to local contexts. Here is how surveyed businesses across regions are prioritising the protection and restoration of ecosystems:

The number of surveyed organisations with a clear strategy and/or targets for biodiversity



08 Conclusion: What does best-in-class net zero look like today?



Every step of an organisation's Climate Journey offers opportunities to reduce, avoid and remove emissions and to communicate transparently about progress. Ultimately, to cement net zero aspirations with accountable and transparent milestones

With more frequent and extreme climate-related weather events causing massive power outages, flash floods, and burning forests, the scramble to apply innovation, ambition, and vision to the challenge of climate change has never been more urgent – and many businesses are stepping up to set bold climate targets, implement climate change solutions, and green their operations.

However, are the actions happening soon enough and at the scale needed?

Our research finds that still too few companies worldwide are setting credible and science-based climate targets, and those who are seem to be worried about communicating their climate actions, fearing that this may cause a backlash among key stakeholders, including customers, media and NGOs.

Despite the global uncertainty that continues to dominate the climate action landscape, key steps can already be taken to successfully embed a net zero target within an organisation's climate strategy. A clear climate journey – which should align with the requirements of the SBTi – will give the C-suite the direction they need to lead the way and help engage all departments in the delivery of a net zero target.

These steps are:

- **Reduce**: plan a trajectory to reduce emissions across the entire value chain. Set a net zero target based on science,[9] with interim milestones on how to get there, all consistent with a 1.5°C mitigation pathway.
- **Compensate**: become climate neutral by financing projects to further avoid and remove emissions.
- **Neutralise**: once emissions have reduced to close to zero levels, eradicate unavoidable residual emissions with carbon removals to achieve net zero.

The central step on a company's climate journey is to make the most of the critical levers and solutions currently at its disposal in order to decarbonise, whilst proactively planning for the future by financing and adopting new innovations, such as technological carbon removals and sustainable fuels. Ambitiously decarbonising direct and indirect operations will require a whole host of activities that help shift outdated systems and mindsets. Today, more than ever, we need more companies to increase the speed and scale of their climate action, and to make net zero emissions desirable and acceptable among customers, supply chain partners, the media, and legislators alike. This is a tall order. But by working closely with suppliers, for example, companies can help educate their partners and co-create solutions and approaches that prioritise emission reductions.

The cost of tackling climate change increases every year we delay, and organisations can make this cost more tangible in their business by putting a clear price on carbon. This ideally drives further emission reductions. Purchasing carbon credits to compensate for emissions, for example, not only allows a company to take immediate climate action (by funnelling financing into a project that reduces emissions today), but also makes visible the actual cost of their emissions, a fact that can be used to encourage teams to reduce emissions across the value chain and to factor the cost of emissions – and, importantly, the expected price hike in future carbon credits – into their long-term investment decisions. The higher the carbon credit price, the more incentive there is to reduce the organisation's own emissions.

[8] The Science-based Targets Initiative defines the net zero state has been achieved when emissions have reduced by an average minimum of 90% to the base year, with residual emissions being neutralised through removals activities.

Science tells us that time is not on our side, and emissions-free operations can be years or even decades away for some. This is why, alongside efforts to reduce emissions, companies must also invest in climate mitigation activities beyond their value chains to set the global economy on a path to net zero. One way to do that is by investing in high-quality carbon credits. By using these credits, companies can take responsibility for their emissions today and on the way to net zero.

Getting to net zero: we must act now to achieve true climate impact

The first movers to pursue corporate net zero targets will be the leaders and advocates for improving and innovating the way we do business. They are the ones who can help bring about positive societal tipping points. And the business benefits of pursuing a net zero strategy are many, as highlighted by this report: from effectively responding to customer and investor demands and managing risk, to enhancing reputation and building a future-proof business model.

However, to be successful, all functions of an organisation must be accountable for delivering net zero. In the coming years, great leadership will be expected from the C-suite as well as from middle management and all other staff to ensure that net zero is driven from the "inside out" – and that it permeates every function and level. To do this, leaders must steer departments to understand the relevance of net zero to their own interests and break the climate journey down into clear, actionable milestones that focus the efforts of every department.

While there are still many unknowns: how will each company get to net zero? What route will they take? Every journey starts with a first step. At its core, net zero is an opportunity to reset the ambition of organisations, to unify them under a single initiative, and to define the journey for entire industries and sectors in this coming decade of climate action.

It is abundantly clear that, in the next ten years, the near-term SBTs aligned with a 1.5˚C warming scenario need to be **achieved** by the majority of companies – especially big emitters – if emissions are to be drastically reduced. While many climate innovations are still being developed, several of these reduction opportunities are accessible and achievable today. Along the journey to decarbonising 90% of our emissions by 2050, we must use the solutions that are already available and develop the necessary technological solutions to reach that last 10% – this will take us over the finish line.

Authors
Lead author: Nadia Kähkönen
Co-authors: Elliott Bourgeault, Isabel Hagbrink

Expert contributors
Parth Vaidya, Bence Cerna, Linda Kannenberg, Christiaan Gevers Deynoot, Adam Sipthorpe, Philip Moss, Karine Basso, Christina Mallin, Liliana Martinez Sarmiento, Santiago Martínez Vivero, Richard Knight, Mireia Vilaplana, Naomi Swickard, Erick Ratajczak, Kata Bors, Jess Payn, Indra Fachru

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