Net zero business or business for net zero?

A report on corporate climate leadership practices on scope and offsetting

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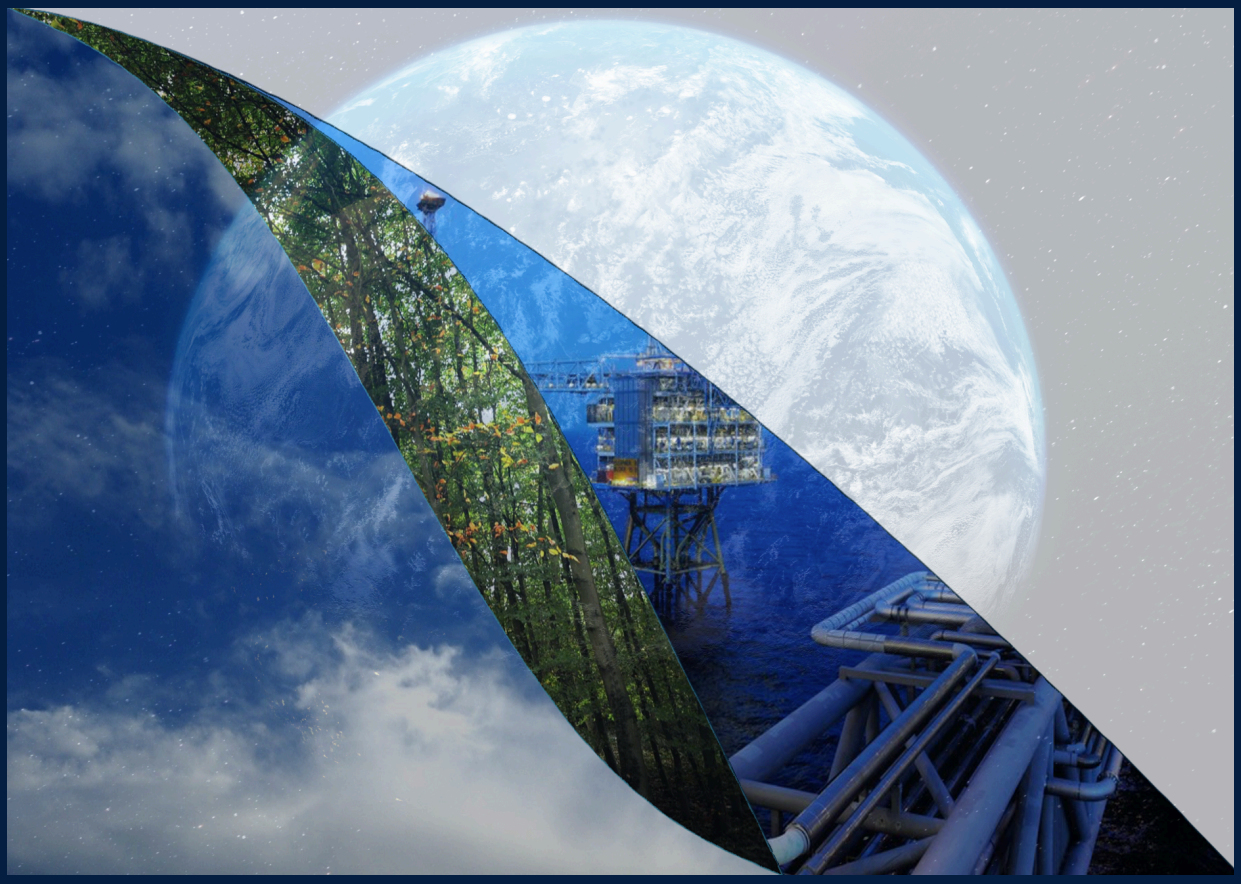

1. Oxford Net Zero
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1. Introduction

To keep temperatures to 1.5ºC, it is critical to achieve net-zero emissions across the entire economy. Corporations influence a large proportion of economic activity, up to 72 percent in the OECD[1]. Hence, corporations have a huge role to play in changing production and consumption patterns for a low-carbon future. In the race to net-zero, the largest companies are rushing to develop practices to decouple emissions from their growth and to reduce their net environmental impact.

A 2021 global stocktake found that over one in three of the world's largest companies on the Forbes 2000 list have set a net-zero or equivalent target – a figure that has jumped up from one in five in just a year. However, the same data demonstrates wide variation in the robustness of companies' net-zero definitions, strategies, and reporting[2]. Two key areas require more attention as companies define their net-zero strategies:

(1) Scope 3 emissions

(2) Offsetting

This report outlines how companies considered sustainability leaders, at the forefront of net-zero ambition, are defining and managing their Scope 3 emissions, and using credits, sinks, offsets, and insets to compensate emissions or complement their climate strategies through additional contributions. Our analysis is based on a database of the net-zero targets of the Forbes 2,000 largest companies, annual reports, and other public documents, and a set of 10 interviews with managers involved in different aspects of net-zero targets and strategy implementation in the food and tech/media sectors.

Key recommendations from this report suggest three main areas for additional guidance:

1. Pushing the frontiers of scope without delaying action by coordinating conversations about changes to business models.
2. Shaping a new generation of offsetting by investing in capacity to scale credible, quality projects and supporting companies to consider deeply and publish why and how they are offsetting in line with emerging standards.
3. Enabling holistic net-zero leadership by connecting to collective targets and moving towards an outcomes-based, 'business for net-zero' framework.

[1] Manyika, J., Birshan, M., Smit, S., Woetzel, J., Russell, K., Purcell, L. (2021). A new look at how corporations impact the economy and households. McKinsey Global Institute. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/a-new-look-at-how-corporations-impact-the-economy-and-households.
[2] Net Zero Tracker (2021). https://zerotracker.net/.

1. Net-zero corporate leadership – the current landscape

Net-zero targets are growing but the landscape of terms is diverse

As of 2020, 19% of companies on the Forbes 2000 list had a net-zero target and 27% companies had other climate and emissions reductions targets. 54% of companies in the Forbes 2000 had no target at all. Of the 389 companies with net-zero targets, 53 companies (3%) reported that they have achieved net-zero. Only 2 of those had externally validated their net-zero status. Of the rest, 14% of companies with net-zero targets had made it a pledge, and 26% had included it in their corporate strategy.

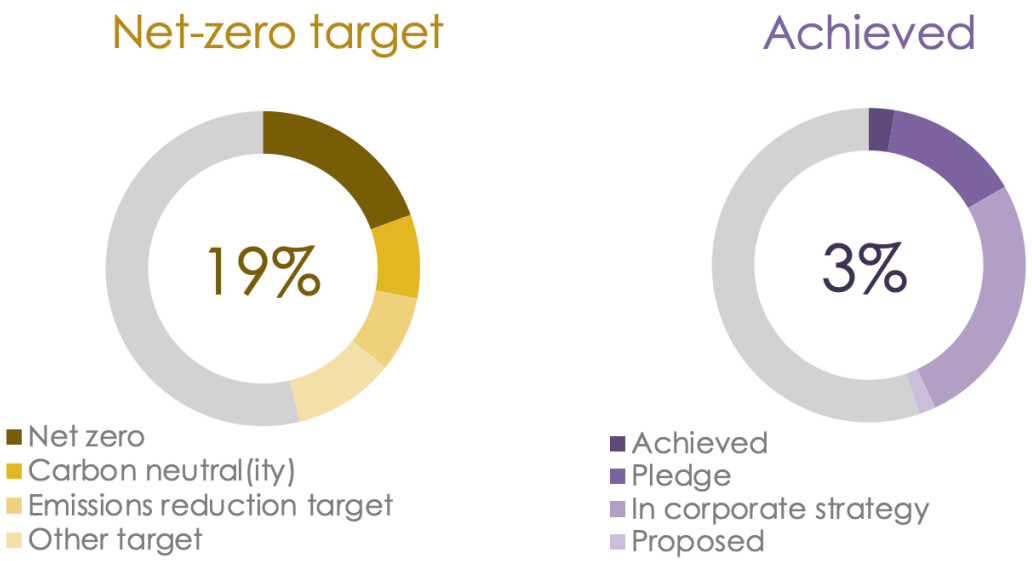

Fig. 1 Percentage of companies in the 2000 Forbes Global list with net-zero climate targets. Percentage of net-zero targets that are listed as achieved, and the status of the rest.

While much has been made of the net zero frame, there exist a wide proliferation of terms used by companies regarding their climate targets. The number of terms and the inconsistent use of terms can cause confusion for companies, consumers and those who aim to hold companies to account. That said, the emerging differences between terms and the patterns in their use may reveal something about the way that standards and practices are evolving.

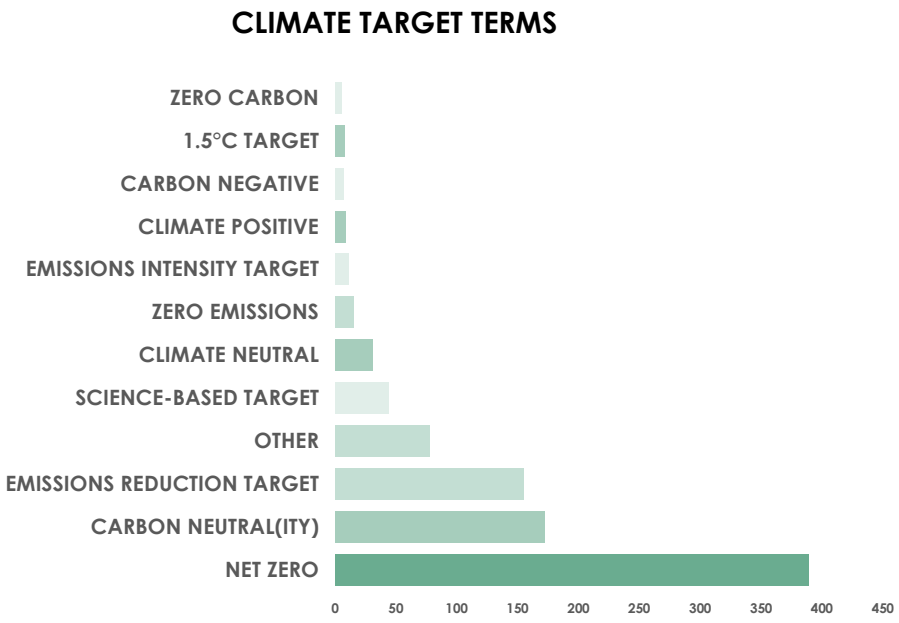

Fig. 2 Climate target terms used across the Forbes 2,000 list. 'Other' includes one Absolute emission and one GHG neutrality and 77 Other.

The use of terms across Forbes 2,000 companies varied between regions. European companies were more likely to call their targets 'net zero' and to join initiatives such as the Race to Zero Campaign and the Science Based Target initiative (SBTi). US companies exhibited the widest variation in use of terms. Chinese and Japanese companies were more likely to call their targets 'carbon neutral', and few joined the Race to Zero Campaign, though, almost half of Chinese companies included an SBTi target. Some companies are moving beyond carbon in their terminology. For example, Sony called their target a 'Zero Environmental Footprint', in a definition that goes beyond emissions and includes the recyclability of their materials. Many others, especially the major food, beverage and consumer goods companies, have set additional nature and bio-diversity targets demonstrating a growing recognition of the need to pair carbon efforts with ecological efforts, separately accounted for.

Understanding targets and terms is key

One key challenge is to unpack the differences between net-zero, net-zero carbon, carbon neutrality and climate positive. These terms are often used interchangeably by companies although in practice they mean different things. A fragmented and inconsistently applied set

of climate targets, such as ‘net-zero’, ‘carbon neutral’ and associated terms poses a challenge for corporate leadership on climate.

‘Net-zero targets’ have emerged as a focal point of new ambition since the Paris agreement, reflecting the need to balance anthropogenic emissions sources with emissions sinks. The shift to ‘net-zero’ as a frame for corporate leadership on climate reflects an overall acknowledgment of the need to account for not just emissions flows but also the total cumulative stock of global emissions to stabilize temperatures. Following from this, corporations have begun setting their own targets which reflect a cumulative balance of emissions, but these have largely been put forward without standardized definitions or methodologies. The sum of individual net-zero efforts by companies across the world is unlikely to amount to the global achievement of net-zero without standard definitions and shared agreement on best practices. To help alleviate confusion, the United Nations Framework Convention on Climate Change (UNFCCC) Race to Zero initiative has put forward a lexicon defining net-zero and related terms.

Race to Zero considers individual actors to have reached a state of **net zero** when: An actor reduces its emissions following science-based pathways, with any remaining GHG emissions attributable to that actor being fully neutralized by like for-like removals (e.g., permanent removals for fossil carbon emissions) exclusively claimed by that actor, either within the value chain or through purchase of valid offset credits.

Race to Zero considers individual actors to be **carbon neutral** when: CO2 emissions attributable to an actor are fully compensated by CO2 reductions or removals exclusively claimed by the actor, such that the actor's net contribution to global CO2 emissions is zero, irrespective of the time period or the relative magnitude of emissions and removals involved. Based on this lexicon, the difference between ‘net-zero’ and ‘carbon neutral’ is primarily that ‘net-zero’ accounts for all greenhouse gases while ‘carbon neutral’ deals only with carbon. In ‘carbon neutral’ claims, the time period over which a company maintains the net balance is not specified, but under ‘net-zero’ claims, this should be specified.

The term **carbon neutral** is also used by current standard-setting organisations. For example, the British Standards institute offers a carbon neutrality certification (PAS 2060), which currently does not meet the Race to Zero definition, as it does not require measurement of Scope 3 emissions or conditions on the use of offsets (e.g. that they should be removals only and that emissions should be reduced as a priority as far as possible). However, new net-zero carbon standards may be in development and are expected to have a higher degree of scrutiny than the carbon neutrality standard (see below).

	Carbon neutral	Net zero carbon	Climate positive
Defined by	*PAS 2060 Standard BSi*	*Developing Standard*	*Not yet developed as an audited standard but defined in the Race to Zero lexicon*
Measurement: Scope 1 and 2	Required	Required	Required (includes all GHG)
Measurement: Scope 3	Not required	Required	Required (includes all GHG)
Carbon reduction target: Scope 1 and 2	Reduction plan required	Zero (reduce as close to zero as possible)	Zero (reduce as close to zero as possible)
Carbon reduction target: Scope 3	Not required	Reduce as close to zero as possible	Reduce as close to zero as possible
Offsetting/GHGR	Buy offsets equivalent to total carbon footprint	Residual (Scope 3) emissions compensated by GHG removals	Residual emissions compensated by GHG removals and exceeding the amount of residual emissions

Fig. 3 Carbon neutral standards compared to net-zero carbon and climate positive standards. This original table has been developed for this report by authors monitoring discussions on development of emerging standards, which are themselves works-in-progress.

2. Scope

Key to questions of whether companies will fulfil their net zero journey is the question of where they set boundaries around the scope of emissions for which they take responsibility.

The coverage of scopes varies by sector. The sectors with most coverage of scope 3 emissions are food sector, retail and personal products, and tech/media. On scope coverage, banking has the largest number of companies committed to net-zero across all three scopes, followed by tech, media, and IT. This is not surprising given the relatively low operational emissions in these information-based sectors.

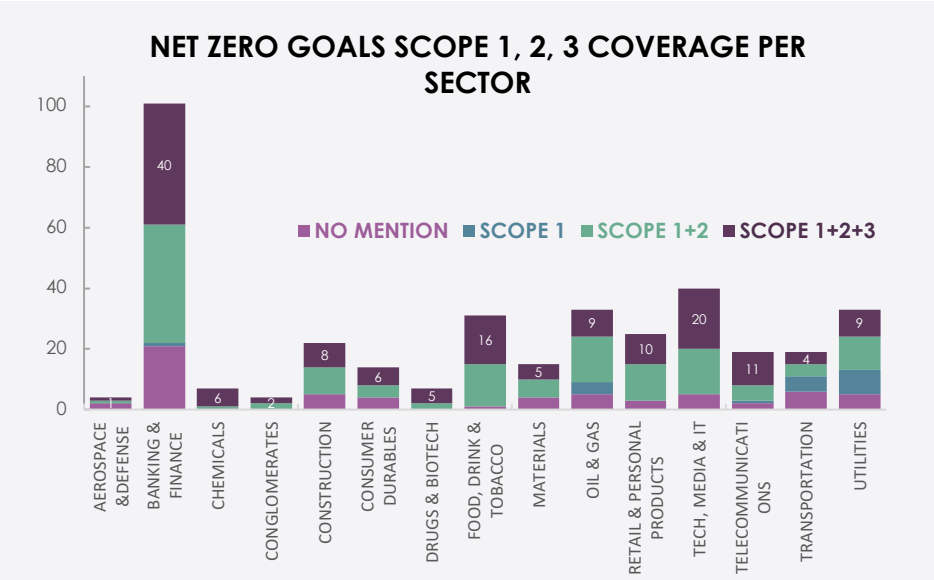

Fig. 4 Net-zero scope ambition by sector

Coverage also varies by target type. Just over 40 percent of companies in the dataset with a stated 'net-zero' target covered scope 3, and a third of companies with a 'carbon neutral' target included scope 3, underscoring the point that net-zero targets are by and large moving towards more stringency than carbon neutral claims. Just over half of companies with a Science-Based target covered scope 3 (see appendix).

Our interviews with leading companies that have set scope 3 emissions targets revealed two key carbon management questions that present ongoing challenges for companies: first, is the choice as to which emissions sources companies will take responsibility for within their scope 3 emissions, a question which involved judgement calls beyond the best practice guidance of initiatives like the Greenhouse Gas Protocol. Second, is how to manage scope 3 emissions and engage actors outside of a company's direct operations and ownership. We found that new practice is evolving to address both challenges.

What to include in scope 3 emissions targets?

The Greenhouse Gas Protocol (GHG Protocol) defines Scope 3 emissions as "all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions."[3] Scope 3 emissions, also referred to as value chain emissions, often dwarf scope 1 and 2 emissions. The GHG Protocol's Scope

[3] Greenhouse Gas Protocol (n.d.). FAQ. https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf.

3 Standard divides value chain emissions into 15 categories, both downstream and upstream of the company's operations.

Among the companies interviewed, most were clear about taking responsibility for upstream emissions. A major food company described specifically upstream emissions when asked about scope 3:

> "For scope 3, everything which happens between farm and [company's] door, we went through material by material and calculated carbon intensity." (F1.2)

However, several of the companies interviewed were undergoing internal debate about where to draw the line on downstream consumer emissions. While the Greenhouse Gas Protocol has guidance to support companies on this, one sustainability professional shared that in some cases, public expectation has already outgrown this guidance:

> "Qualitatively we took responsibility for emissions beyond the requirements of the GHG protocol. [...] Our executive was thinking from the perspective of the consumer. What the consumer sees ultimately prevailed." (T2.1)

In the instance of this company, the services which they offered were associated with increased computer and internet use, creating increased energy demand. While the company itself had no immediate levers within its own operations or franchises to improve the energy efficiency of personal device-use, the growing popular awareness about emissions associated with internet use from their product created public pressure, driving the company to act beyond the technical definition of scope 3 emissions. Quantitatively, the company was not required to count these emissions in their scope 3 target. Qualitatively, the company took action by engaging a coalition of IT companies about device efficiency to help reduce emissions publicly associated with the enjoyment of their product.

As scope 3 emissions are often closest to the experience of consumers, public perception of corporate action may be driving a wider definition of scope 3, or at least a changing definition, which requires more action beyond that of addressing scope 3 emissions as they have been traditionally defined. Another sustainability leader shared that while it was surprisingly uncontroversial within their company to include franchises in their scope 3 target, consumer emissions were more difficult to include. With reference to franchise emissions, they commented:

> "You'd think, the way they run their business is the way they run their business, but we decided to include these." (F4.1)

Additional emissions estimated from the use of their products were not so easy for the company to take on:

> "It felt like the right thing to do to help customers reduce, and to potentially offset, but when we saw the size [of those emissions] it became more difficult. Everything else within scope 3 we set to working with consultants, and it was all fairly standard. The likelihood is that they are out in terms of net zero, but [the issue of how to deal with these out-of-scope consumer emissions] has been raised. It's in our minds more than it ever has been, on how we produce and what the impact is on customers." (F4.1)

Again, leading companies are considering whether their climate impact and responsibility extends beyond a strict definition of scope 3. Several of the companies we interviewed shared the need to play a wider role through the design and use of their products and investments. This approach to net-zero leadership was also evidenced by public statements from two major companies this year (one food and one tech, respectively):

> "[Company] is implementing innovative business processes that enable GHG emissions mitigation, such as its "Sustainable from the Start" program, which puts environmental impact decision-making at the heart of product design." (F2.1)

> "We are also launching an initiative to use [company] technology to help our suppliers and customers around the world reduce their own carbon footprints and a new $1 billion climate innovation fund to accelerate the global development of carbon reduction, capture, and removal technologies." (T3.1)

How to manage scope 3 emissions targets and where to start?

A first and important step for companies managing scope 3 emissions is the development of a public roadmap which sends a signal to public consumers and suppliers that the commitment is credible. The first food and beverages company to create a detailed public net-zero roadmap to include scope 3 emissions shared that doing so added legitimacy to their target.

> "When we first announced our net-zero target, I attended an event and it seemed like people didn't believe us. […] We didn't have an answer on how to manage our scope 3 emissions until we came out with our roadmap. I think it is now seen as a legitimate and achievable target." (F1.1)

The next step is capacity building to realize the vision. Capacity was identified as the greatest challenge in managing scope 3 emissions.

> "It's always a balance between internal resources and external expectation". (F1.1)

Particularly, companies are identifying a skills-gap within their value chain:

> "If you aren't in a senior level or sustainability team [you may not] have access to a good understanding of issues like climate justice, etc. These terms are appearing much more in day-to-day activities and news cycles. Our task is to reach out to people within the organisation and supply chain." (F3.1)

Another manager shared that part of the challenge in mobilizing their supply chain was rooted in the regional imbalance of accessibility to training on carbon management and regenerative practices:

> "In order to realize reduction and removals within your value chain you have to invest in projects in certain areas of the world and in those areas there's a lack of capacity of people coming forward with project ideas who have expertise on this and understand some of the techniques involved, including say, training on regenerative agriculture to hundreds and thousands of farmers, who aren't used to these levels of engagement." (F1.1)

The companies we interviewed within the same sector chose different starting places. While one major food and consumer goods company chose to roll out an open Request for Proposals for decarbonization projects to all suppliers, another strategically selected parts of their supply chain with the highest emissions:

> "We are trying to reach out all suppliers attached to 80 percent of our footprint. We selected our top 300 largest suppliers to engage first, according to majority of emissions" (F3.1)

> "We've sent out communications to our suppliers about our net-zero ambition, and we are trying to get hundreds of projects started, which we are investing in. One of the challenges is actually finding capacity. If you think that every major food company is trying to do this, there isn't the technological capability out there to pick from." (F1.1)

In one case, a large consumer goods company created a climate fund to support projects in its supply chain, opening a Request for Proposals to all suppliers with good carbon removal or reduction projects. But even casting a wide net, leaders expressed difficulty in finding

quality projects to fund due to carbon management skills gaps in their supply chain. A different large consumer goods company took a more engagement-based approach, working to help their larger suppliers set out decarbonization strategies:

> "We are launching an initiative incentivizing and encouraging our suppliers in our value chain to set their own net-zero targets and create their own transition plans and we will support them some way, and through that promise ultimately what we are doing is emissions reductions within the value chain." (F3.1)

This more targeted approach, working first with larger corporations in their supply chain, was also a strategic response to the carbon management skills gaps across the sector, though the company still struggles with consistent reporting on KPIs from suppliers. With either approach, rapid scaling of capacity and consistent reporting frameworks will be key to the delivery of a net-zero supply chain.

Supply chain data visibility poses one of the greatest challenges to scope 3 decarbonization. Suppliers may be hesitant to share product level data as they may see this information as proprietary or worry about liability. Businesses which primarily serve other businesses may have less agency and be under less pressure to set out public climate strategies than large consumer facing companies. That said, when asks are made by these larger companies of suppliers with whom they hold significant business, these are usually taken seriously. Such influence is limited when purchasers only represent a small portion of business. Limited leverage may partly explain why companies we interviewed have taken an 'encouraging / incentivising' approach over a strict 'accountability' approach:

> "We decided not to name and shame others, decided to applaud the leaders." (T2.1)

Shared leverage in supply chains, and the costs of supporting multiple suppliers in their climate journey, underscore the need for large companies to work together on supply chain engagement and decarbonization and to convene on common frameworks and best practices. The recently announced initiative led by WRAP for UK food and drink businesses to develop a consistent measure for scope 3 emissions, for example, is a step in the right direction[4].

[4] Waste & Resources Action Programme (2022) A consistent measure for scope 3 emissions for the food and drink industry is coming. Politics.co.uk. https://www.politics.co.uk/opinion-former/press-release/2022/02/11/a-consistent-measure-for-scope-3-emissions-for-the-food-and-drink-industry-is-coming/.

3. Offsetting

Offsetting and conditions

As with deciding on what is in scope, leading companies are also tasked with evaluating what to offset (if anything). This involves a process of defining which emissions are residual and appropriate to be offset. The second challenge is how to choose and support the development of high-quality offsetting projects.

The use and role of offsetting also varies by sector. Most companies (75%) do not specify any conditions and only a small number (11%) set such conditions. Conditions for offsetting are important because the role that offsetting plays in a net-zero strategy should be limited to residual emissions and the way that offsetting is done can have unintended consequences if investments are not sound and quality assured. For example, conditions might include internal rules about how companies define residual emissions.

Conditions on the type and quality of offsets that companies invest in are also important. These might include conditions on the environmental integrity of offsets, the monitoring and reporting process associated with verifying offsets, and the social governance of offset projects, among many others.

Years of challenges and correction in the voluntary carbon market have led to wide concern about the integrity of offsets and credits. However, standards on how to select offsets are still emerging and very few of the largest companies have published conditions or guardrails they are setting to ensure the integrity of their investments in credits or offsets.

The chart below demonstrates trends in published conditions set on the use of offsets as part of net-zero strategies across sectors.

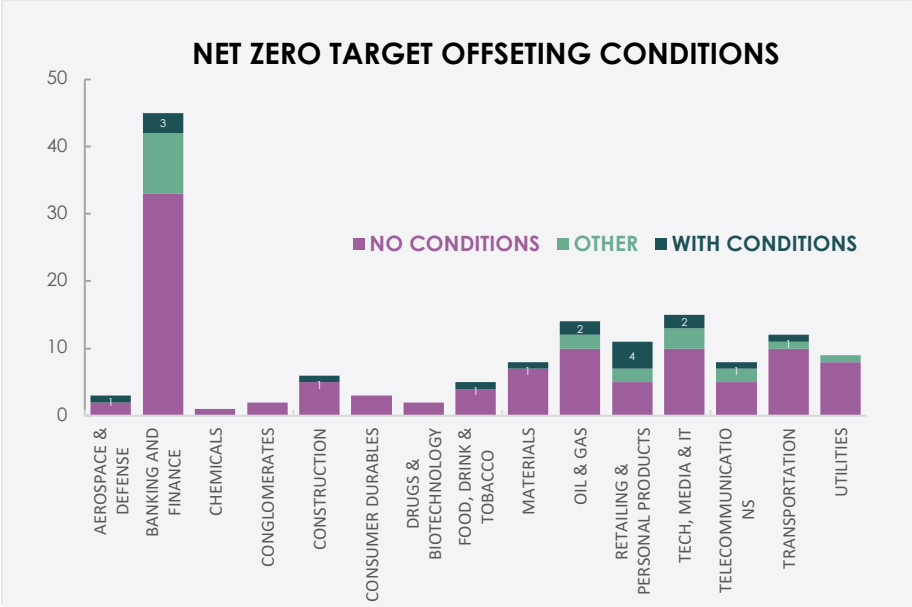

Fig. 5 Net-zero offsetting specifications per sector.

The practice of offsetting is more prevalent among companies that include scope 3 in their net-zero targets, which may reflect the wider decarbonization challenge that scope 3 coverage introduces

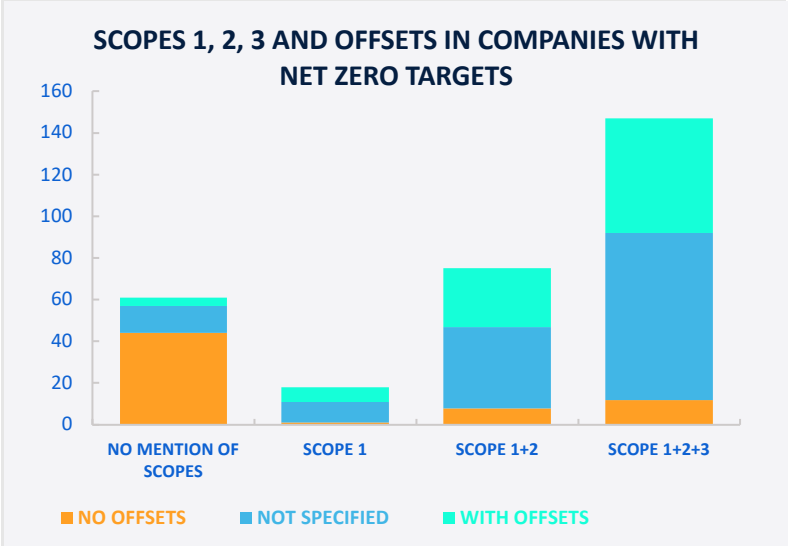

Fig. 6 Use of offsets by scope coverage among net-zero targets.

What and whether to offset?

There are varying reasons as to why companies choose to offset, and there is an emerging debate about whether companies should offset at all. Arguments in favour of offsetting tend to centre on the idea that offsetting can help stimulate funding into environmental and climate mitigation projects that would have trouble sourcing funding on their own. However, in the decades since offsetting became a primary carbon management tool, the market has experienced a tumultuous learning curve, through trial, error, critique, and (in some cases) correction. Research institutions and INGOs have documented the pitfalls of individual offsetting projects, leaving some leading companies to decide that they will reach net-zero without offsetting. Only 7% of companies with net-zero targets specify that they are not using any offsetting.

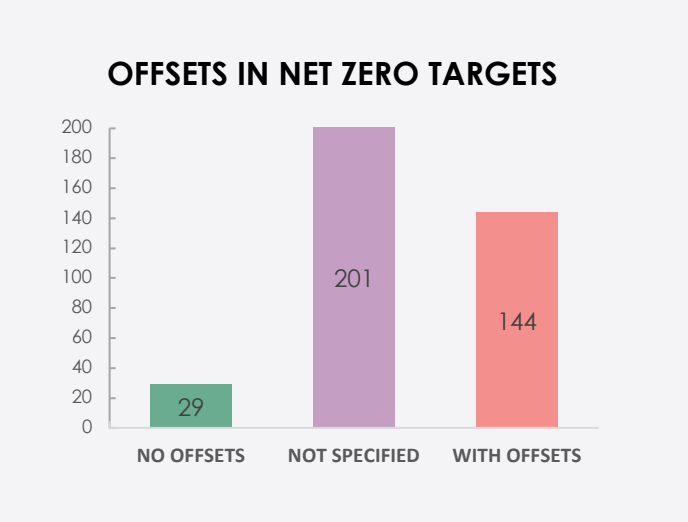

Fig. 7 Number of companies with net-zero target per offsetting specifications.

Problematically, most companies in our data set with net-zero targets fail to specify their offsetting plans, while many continue to offset without conditions. We found, however, that among the sustainability professionals at the leading companies we interviewed, the choice to offset is not taken lightly, and that views differ between the consumer goods and tech sectors about the role and type of offsetting that would be seen as acceptable. As one sustainability manager shared:

"There's a sense that if we offset we've failed. Because we should be able to change the way we work across all of the tiers and all of the scopes to be able to run a net-zero business. We should be able to choose the suppliers and distribution networks. Within 5 years, my sense is that everything that we need to be net-zero will be available. Today maybe not. If we haven't been able to change the business enough by that point, that's on us. You're paying yourself for failure." (F4.1)

The conversation about what to offset is developing with emerging standards. The new SBTi corporate standard emphasises that as part of long-term science-based targets, "most companies will reduce emissions by at least 90%". Their definition of residual emissions relates to what is left once long-term targets have been reached.[5]

Residual emissions were defined by one of our interviewees as "all the emissions we are not able to reduce" (T2.1). But the process for defining *what* emissions a company is not able to reduce is not necessarily agreed or straightforward. Some companies use a marginal abatement cost threshold to define what specific emissions sources they would consider hard-to-abate and therefore would consider offsetting. Others are avoiding making projections by waiting to the 2030s to find out what they will struggle to decarbonize before investing in compensation credits.

We set a net-zero target, so at some point we will be in the market for carbon removal credits, but we have no plan yet. That's too far away. Business doesn't plan more than 3 years out and that's a 2039 problem." (F3.2)

The choice to invest in offsets later is also motivated by a feeling that there may be clarity on quality offsetting and on how much they have been able to reduce emissions in house. But this approach does not resolve the need to spend now to facilitate the transition to a net-zero world and close gaps in climate finance. Sensitive to critiques about the way that offsets transfer the decarbonization challenge to someone else, some companies prefer investing their climate funds closer to home rather than offsetting externally. As such, the practice of 'insetting' has emerged as a way to accelerate quick decarbonization wins in the supply chain and efficiently spend down corporate climate funds.

Insetting is a practice by which a company offsets its emissions through investments in projects within its own value chain (or in some cases, in practice, geographically quite close

[5] Science Based Targets (2021). SBTi Corporate Net-Zero Standard, Version 1.0., October 2021. https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf.

to its value chain). It is especially pertinent among companies in the consumer goods and food sector, as these supply chains are rife with decarbonization opportunities, particularly related to land-use and nature.

While the Race to Zero lexicon states that insetting can be carried out across an actor's scope 1, 2 or 3 emissions, two companies we interviewed were careful not to mix emissions accounting for insets across scopes.[6]

In one case we observed, the company invests in projects in their supply chain, but does not count the associated emissions reductions or removals towards its scope 1 and 2 decarbonization efforts. Rather, these reductions and removal 'insets' in the supply chain were only counted towards the effort to decarbonize supply chain emissions. This interpretation of an inset suggests a relationship between the practice of insetting with supply chain decarbonization to meet scope 3 targets. The underlying principle in this interpretation of an inset is that larger companies have a responsibility to invest to stimulate decarbonization among their suppliers who might not otherwise be able to afford mitigation efforts on their own. This mirrors some of the earlier justifications for offsetting but draws a more direct line from the project provider to the parent company that exists in the broader carbon market.

In a slightly different approach, another major food company shared that they are not comfortable with insetting for agriculture but are developing insetting approaches for transport and cooling, in collaboration with others.[7] For agriculture, they argue for a focus on food systems as a whole and refer to the SBTi corporate standard with its focus on the overall aim of 90% reductions.

One strategy for insetting is to put out a Request for Proposals across a supply chain and invest in carbon reduction or removal projects which bid for the money. Existing relationships and contracts with suppliers allow companies to kick-start carbon reduction or removal projects quickly in the locations where the company already operates. However, this relationship-based approach does raise questions about the long-term sustainability of projects once the parent company ends contracts with those suppliers. One company

[6] Race to Zero defines Insetting as 'reducing GHG emissions (including through avoided emissions), or increasing GHG removals through an actor's scope 1, 2, or 3 emissions, in order to compensate for GHG emissions, such that an actor's net contribution to global emissions is reduced. Insetting claims are only valid under a rigorous set of conditions, including that the reductions/removals involved are additional, not overestimated, and exclusively claimed. Furthermore, insetting can only be used to claim net zero status to the extent it is "like for like" with any residual emissions.' https://racetozero.unfccc.int/wp-content/uploads/2021/04/Race-to-Zero-Lexicon.pdf

[7] See, for example the insetting for road freight consortium led by the World Economic Forum. WEF (2022). Road Freight Zero. https://www.weforum.org/projects/decarbonizing-road-freight-initiative.

described how, given the changing nature of their business environment, they do a lot of mergers and acquisitions and reassess their contracts every few years, which makes it difficult to commit to long-term projects (F1.2). The time-bound nature of business cycles (3-5 years) conflicts with the intended long-term timeframe of carbon management projects (which require long-term storage for removal-based projects). It also raises questions around the changing definition of an 'inset':

"From an accounting perspective, if you leave a supplier, it moves from insetting to offsetting." (F1.2)

Companies considering a supplier-based insetting approach will need to outline how they will manage relationship transitions and ensure the sustainable financing and longevity of the new project once they move outside of the supply chain and become offsets.

A separate concern about the use of insetting (as with offsetting) was raised by one of our interviewees, who suggested that it might "take the focus away from reducing" emissions. They referred to the recent release of the SBTi corporate standard for net-zero in justifying this approach of prioritising the reduction of emissions within the value chain. As one sustainability manger from a consumer goods company shared:

"We don't use the word insetting – we don't think that's helpful because it's either a reduction or it's an offset. Inset is a bit of a marketing spin with offsets generated with a physical link to your value chain. This discussion becomes very interesting in the discussion on soil carbon sequestration and bio agroforestry and where you draw soil." (F3.2)

This company is waiting to offset until it has done its best to reduce emissions across the supply chain first. However, this company *is* investing in nature-based credits as part of a coalition to end deforestation. These credits are not being used as an offset towards a carbon target but towards a separate aim:

"That was about a strategic lever to scale up jurisdictional financing to end deforestation to support a goal we have to end deforestation in supply chains." (F3.2)

The move to buy credits as claims towards a separate nature target rather than an offset represents a novel way to think about carbon credits, as a form of contribution to the outcome of the offset rather than as a form of compensation. The move demonstrates commitment to a wider set of sustainability aims than just carbon emissions. However, such a framing draws a wider, and slightly less clear line around what companies can be expected to contribute, and many companies are still at the start of their journeys, simply calculating their carbon footprint and considering options:

"We also said that we anticipated that some brands may want to make carbon neutral claims. We support them with LCA carbon foot printing and credits." (F4.2)

However, other brands had followed in the company's footsteps by making "some nature-based investments without claims," demonstrating how large firms set trends in emergent leadership practices within their value chain.

Leadership in offsetting requires clarity on timing, quality of credits, and the connection of credits to specific activities within and beyond a company's value chain. Companies are now expected to include scope 3 emissions in their net-zero targets. When it comes to offsetting, being clear on where these offsets are happening and how they connect to a company's value chain emissions over time is critical. Guidance from the SBTi and others allows companies to start with emissions reductions in their value chain. The practice of insetting is a reflection of this expectation that investments should be kept close to the company's own activities to improve accountability and responsibility.

Leaders in the offsetting space are pushing for clarity on how offsetting fits in to their overall strategy, including the importance of prioritising value chain emissions reductions first. They are, however, aware of the need to go beyond the value chain, as is expected in the latest SBTi guidance. And this is where it is imperative to do this together.

"Ultimately, the matter comes down to whether this is "net zero for my business or my business for net zero" (T2.1).

How to offset?

Once companies understand the role of offsetting in their climate strategy, the next step is to decide how to offset. We found three key challenges related to this decision: 1. balancing conditions; 2. building capacity; and 3. sharing best practice.

First, consensus is growing among the standard-setting community and leading companies that offsetting should at least come with conditions to ensure offsets are high quality. However, only 26% of companies that use offsetting in their net-zero targets include any conditions.

Additionality,[8] permanence,[9] and environmental co-benefits were the conditions mentioned most often by the purchasers of offsets that we interviewed. Choosing offsets often requires trade-offs to be made between these conditions. For example, one company felt that additionality and verifiability were most important for them in selecting offsets. As a result, they chose to invest in offsets which they could most easily quantify over offsets which might offer environmental co-benefits or removals.

“We procure landfill gas projects because the gas collection system is very straightforward to add a meter to the landfill gas collection, so we can quantify the emissions avoided from that action. It is straightforward to ensure that this action is additional.” (T1.1)

This same company also used third party verification in addition to in-house experts to verify projects.

“We only procure offsets that have been issued on third party public registries.” (T1.1)

However, ensuring additionality through investment in avoided emissions comes at the expense of investment in other types of offsets such as removals which would more accurately reflect a net-zero balance of sinks and sources. Furthermore, the use of avoided gas to offset ongoing carbon emissions (e.g., from business travel) may not create a like-for-like balance of emissions sinks and sources on the same timeline, as methane associated with natural gas has a shorter lifespan than carbon in the atmosphere. The company interviewed acknowledged this trade-off and suggested that diversity in the portfolio was important to them, mixing some offsets from avoided emissions which they could be sure of, with those based on quality nature-based removals (which they felt less sure of). This company was sceptical of technological removals.

Overall, we found that companies were more comfortable investing in credits or offsets which were most close the values and processes core to their business model: Tech companies were more likely to invest in offsets or credits with the best verifiable data, whilst food, beverage and consumer goods companies referred mostly to nature and land-use based projects close to their supply chains.

[8] Additionality is a defining concept of carbon-offset projects. To qualify as a genuine carbon offset, the reductions achieved by a project need to be 'additional' to what would have happened if the project had not been carried out (e.g., continued as business-as-usual). Gold Standard (2020). What does “additionality” mean and why is it important? https://goldstandardhelp.freshdesk.com/support/solutions/articles/44001989691-what-does-additionality-mean-and-why-is-it-important-.

[9] “Permanence refers to how long a greenhouse gas stays out of the atmosphere … In the case of physically storing carbon in a reservoir (e.g. a forest, or a geological sink), the risk of reversal of that carbon back into the atmosphere must be acknowledged and accounted for in the offsetting plan.” Smith School of Enterprise and the Environment (2020). The Oxford Principles for Net Zero Aligned Carbon Offsetting. https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf.

It is rational that companies would make decisions within their comfort zones and core competencies within an ecosystem which lacks sufficient central governance and guidance. However, this does have implications for the overall functioning of the market. If decisions are guided by path dependence rather than an outcomes-based assessment of what investments are needed in the wider system, this raises questions as to how and whether the voluntary carbon market truly fills gaps in climate finance.

That said, some companies we interviewed *were* influenced by analysis of gaps in the voluntary carbon market. For example, one company – which does not claim offsets but still buys high-integrity nature-based credits – described their approach as "working through a few partnerships to create high integrity demand side signals." (F2.1). This company bought strategic credits aimed at stemming deforestation. In another example, a recent report by Carbon Direct highlighted one especially large gap, finding that 41% of credits across major registries lacked any storage capacity at all, let along long-term storage.[10] This has worrying implications for the net-zero balance assumed by these credits.[11] In response to this gap, several companies have set out to invest specifically in removal technologies with long-term storage (100+ years) to help drive these innovations down the experience curve.[12] These investments tend to be significantly more expensive than most credits on the market, but early investment can have an important impact by demonstrating demand. Such collaborative, market signal initiatives represent an important emergent leadership practice by purchasers in the credit market and a possible shift towards outcomes-based analysis (over cost-benefit analysis) in portfolio design.

After settling the question of what type of credits to invest in, companies are also challenged by the need to verify and monitor those investments. There is a close tie between the quality of credits, offsets or insets and the capacity of companies to help develop and monitor robust projects. There are additional costs associated with building capacity within companies and in the wider market. At the same time, decision-makers have limited budgets for offsetting and insetting and are under pressure to apply an impact frame of dollars-to-tonnes of carbon avoided or removed.

"We want to specifically pick the ones where cost versus impact is highest." (F1.2)

[10] Mitchell-Larson, E., Bushman, T. (2021). Carbon Direct Commentary: Release of the Voluntary Registry Offsets Database. Carbon Direct. https://carbon-direct.com/wp-content/uploads/2021/04/CD-Commentary-on-Voluntary-Registry-Offsets-Database_April-2021.pdf.
[11] See Smith School of Enterprise and the Environment (2020). The Oxford Principles for Net Zero Aligned Carbon Offsetting. https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf.
[12] Höglund, R. (2022). List of known CDR purchases. https://docs.google.com/spreadsheets/d/1BH_B_Df_7e2l6AH8_8a0aK70nlAJXfCTwfyCgxkL5C8/edit#gid=0. Contains a list of publicly communicated purchases of durable (100+ years) carbon removal with storage.

However, as higher integrity projects often come with higher costs, cost-benefit analysis alone may lead to poorer quality assurance and verifiability. Verification and selection of high-quality offsets/insets is a cost that leading companies recognize as necessary to ensure quality. As in-house skills on carbon project verification may be limited, many companies rely on external consultants to support their selection process. To supplement data requested through the RFP process, leading companies send teams of offsetting experts to personally interview project developers, to ensure claims and documents align with reality on the ground.

One company shared that they had to “resource [themselves] with offset experts” (T2.1). A second company shared that they “worked directly with project developers and have done [their] own vetting, which is pretty unique and time intensive” (T1.1).

A major consumer goods company in the practice of insetting along their supply chain explained that “local capacity is one of [their] greatest challenges in scaling projects.” They also shared that the limited local capacity for developing quality insetting projects is a competitive market, with other interested buyers, suggesting a critical bottleneck in the market.

Carbon management represents a significant skills gap in local markets which will require development to meet the insetting and offsetting demand. More human resource is needed to increase development of new high integrity carbon removal projects and to increase monitoring reporting and verification (MRV) capacity.

Finally, once a company has invested in offsets, market evolution and collaboration require reporting on and sharing of best practice. However, given the well-worn history of failed carbon credits and scandals in the market, leaders are concerned about being too transparent. For one thing, companies that have traditionally relied on standard-setting bodies and third-party verifiers are less comfortable doing so, as offset projects certified by international standards have not always been fool-proof. The rapid popularization of ‘net-zero’ as a frame for corporate targets over the last two years has also increased scrutiny on the use of offsets. Additionally, the finalization of AR6 of the Paris Agreement in November of 2021 has important implications for the relationship between the purchase of carbon credits by the private sector, and credits used to meet nationally determined contributions. All of this suggests that 2021 may be an inflection point in the carbon market timeline, from which new standards will emerge. Corporations are cautious about making bold public moves on offsetting before new standards are published, particularly in terms of announcing specific projects. While some would like to invest in offsets now, they are awaiting new guidance.

“We’re hopeful that the VCMI [the Voluntary Carbon Markets Integrity initiative] will establish a position on compensation [...] Our communications team is shy about getting mud flung by NGOs and removals advocates. It’s like a circular firing squad of your friends.” (T2.1)

While not ideal from a governance perspective, some hesitance about publicizing individual offsetting or insetting investments at the project-level is rational from a public relations perspective, at least as the standards landscape emerges in the short-term. At a minimum, however, companies are encouraged by the UNFCC Race to Zero Leadership Practices to publish the ‘*conditions and process’* they use in selecting projects. This is not yet widely practised. Currently, less than one third of companies in the Forbes 2000 list publishes conditions on their use of offsets as part of their net-zero strategy, but the leading companies in the space are convening and collaborating to develop and publish best practice.

For example, one of the tech/media companies we interviewed published the high-level steps they use to vet offset projects with its net-zero target, a tool which they have collaborated with other companies to develop. Other companies are still largely doing this alone, especially when it comes to insets within their supply chain, which may fall under a more independent process than a project developed for a standard in the wider voluntary carbon market.

“Our first key learning was the need to standardize [our selection process]. We developed our own template that allowed us to compare different proposals.”

As companies develop their own templates for newer practices like insetting, there is a need for greater collaboration and learning to improve these practices and ensure they take on the key learnings of past failures in the offsetting market.

Even if companies don’t publicize every individual project, they may benefit from publishing and comparing their processes with one another. At a minimum, to improve transparency on insetting/offsetting practices, companies can share the Request for Proposals (RFPs) used to source and evaluate projects, in order to iterate on this process while carbon management practices improve through ongoing research and development. Companies interviewed for this report were comfortable sharing RFPs with us to support this research. The RFPs we reviewed offer a diverse picture, with companies using different, sometimes incomparable or unsatisfactory metrics to evaluate the credibility, environmental integrity, and net-zero alignment of carbon sequestration/ emissions reductions projects. Best practice on RFP design is still emerging and improvements in ‘project selection criteria’ are important tools that might be developed in collaboration with other companies and with independent experts to improve the process of selecting quality offsets.

4. Recommendations for net-zero leadership

Beneath the surface of net-zero targets, we identify three key challenges facing companies on the road to translating targets into action.

1. *Pushing the frontiers of "scope" without delaying action*

Increasingly, companies are setting targets that include scope 3 emissions, in line with best practice guidance. Scope 3 emissions cover a company's entire value chain including upstream and downstream emissions. There is now considerable expertise regarding what to include and how to manage scope 3 emissions.

Leading companies, however, are starting to go beyond the company's existing value chain to include, for example, the emissions that might be avoided through the use of a product or service.

This raises both an opportunity and a challenge. Going beyond a static focus on scope holds the potential for companies to engage in innovative ways with customers and focus on changing entire business models and value chains. At the same time, the challenge is to ensure that this does not lead to delays in reducing emissions in the short-term.

To address upstream emissions, companies use a variety of incentives, financing, and engagement approaches to drive decarbonization across their supply chains. Limits in leverage and reporting burdens, as suggested by multiple requests from multiple supply chain leaders, require large companies within the same sector to collaborate more closely on supplier engagement and reporting framework alignment.

We recommend a dual focus in the development of the next stages of guidance for companies setting out scope 3 strategies in different industries:

- Downstream: Coordinate with other companies within and across sectors to set common standards and new accounting mechanisms for innovative ways to drive climate action beyond scope 3.
- Upstream: Combine support and clear standardized reporting requirements when engaging with supply chains. Provide common resources for suppliers in measuring emissions and identifying decarbonization levers.

2. *Shaping a new generation of offsetting/insetting*

A new generation of offsetting is starting to emerge. For this new generation to contribute to net-zero goals, there is a need for action within companies and in the wider offsetting ecosystem. Firstly, companies need to ask themselves (and answer for others) a set of key questions about offsetting:

- Am I keeping offsetting for the residual? How do I calculate this residual? And how might this residual change over time?
- Am I offsetting on the road to net-zero? And why? (Investing in capacity? Filling gaps in climate finance? Sending a market signal?)

The answers to these questions can form a set of clear conditions for corporate approaches to offsetting. These should be published alongside processes, policies, and mechanisms to ensure the environmental integrity, verifiability, and durability of offsets/credits in the company's portfolio. Developing the answer to these questions will require training in evaluating and co-developing credible offsetting/insetting/credit projects within companies and supply chains. While training requires up-front investment, this will pay dividends later and offers companies a tangible way to address multiple sustainable development goals while delivering their climate targets.

Secondly, there is a danger that relying on cost-benefit analysis for offsetting projects alone may drive the market in the wrong direction. In the absence of global governance and clear guidance, companies are likely to lean on their core competencies when selecting offsets, which may not lead to a diverse market capable of contributing to net-zero goals. As such, a few emerging leadership practices include:

- Collaboration between companies to consider the VCM as a whole system, and the position of their organization within it: in other words, "My company for net-zero rather than net-zero for my company". This will rely on research and data on carbon market trends and may result in increasing joint initiatives and co-development of process.
- A shift to an outcomes-based approach to the purchase of credits, one which evaluates the overall contribution of an investment and its role in directing the flow of the market to net zero or nature positive aims. This approach replaces or augments traditional cost-benefit analysis on the compensation potential of the investment. This also means that some credits may be bought/ projects invested in for other purposes than a traditional 'offset' (e.g., to satisfy a separate nature target or scale removal technology).

3. *Enabling holistic net-zero leadership*

The pursuit of net-zero challenges companies to reconsider their role in society. Ultimately, leading companies identify the connections between scope and offsetting, and do not approach the process of setting a net-zero target as a box-ticking exercise. Instead, they see it as an opportunity to connect with their core strategy, and with key questions about their responsibility to their customers, their employees, and society at large.

But net-zero as a goal requires companies to collaborate, both within their own industries and with government and civil society. Leading companies are struggling to do this in ways that enable systemic action.

We recommend an increased focus amongst researchers, governments, and NGOs to understand the conditions for companies to:

- Collaborate with competitors in ways that can support the transformation and resilience of supply chains.
- Collaborate with governments and civil society in ways that connect net-zero company targets with collective targets for net-zero.

Appendix A: Methodology and Case Selection

To assess net-zero leadership practices in major companies, this report reviewed the net-zero targets of the top 2,000 publicly traded companies by sales.[13] We then focused on companies in consumer-facing sectors, which are most likely to receive public pressure to set robust net-zero strategies. We then reviewed the largest companies in the technology, data, and media sector and the food and beverages sector with net-zero or equivalent targets.

To analyse net-zero leadership practices and to establish their relevance in terms of climate action, we selected companies in these sectors that are:

- Tied to high-emission supply chains,
- Associated with rapid innovation,
- Active as global leaders in climate change.[14]

Key Differences between the two sectors allowed us to assess drivers of variation in the development of net-zero leadership practices.

- The technology/media sector's focus on developing offsetting practices and advancing financial decarbonisation techniques (offsets).
- The food and beverage sector's relation with their supply chain for decarbonisation (scope 3).

In order to select leading companies in each sector for further analysis, we reviewed companies' annual reports, sustainability reports, websites, and climate goals, as well as other public documents and policies, to identify their net-zero or climate change goals, their baseline, target year, offsetting, and scope. We selected cases with a contribution to the Science Based Targets Initiative, and participation in other net-zero standard-setting initiatives such as the Race To Zero Campaign, and renewable energy pledges such as RE 100.

[13] From the Forbes 2000 largest companies list.
[14] This selection criteria excluded prominent emitters sectors such as oil and gas, cement, mining, and warfare and defence, which are more tied to lobbying practices and to defining politics, and less focused in advancing their climate leadership and climate goals. As well as purely financial sectors such as banks, whose role and leadership in climate action is intermediary as they do not hold direct scope 1 and 2 emissions.

From this initial analysis, we selected a small pool of companies whose pledges and initiatives put them at the front edge of current net-zero commitments.

We conducted 10 interviews with top managers in charge of net-zero and sustainability goals within their companies. The length of the interviews ranged from 30 to 50 minutes, and they were conducted online and in person. All interviews were anonymised to ensure confidentiality and to gain deeper insights into the challenges the company is facing as well as the strategies to resolve them. The interviews with top managers were transcribed and later analysed to identify common leadership practices and to define unique practices and tensions in approaches to offsetting, scope and supplier engagement.

Appendix B: Scope coverage in chosen sectors

One reason we chose to focus on the sectors covered by this report is that these sectors are leading on consideration of how to address scope 3. The food sector and tech/media sector are the two sectors with the largest proportion of scope 3 coverage in the Forbes 2,000 list, that is 52% and 50% respectively:

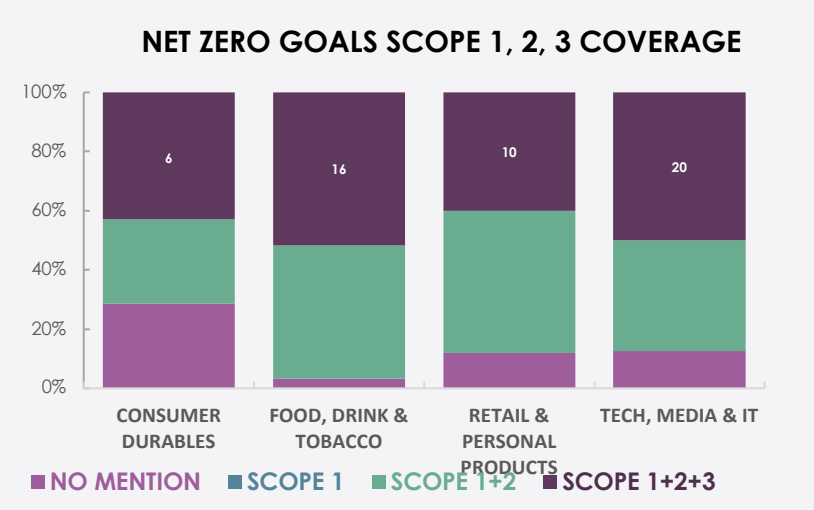

Fig. 9 Percentage of companies covering scope 1+2+3. Consumer durables includes the car industry companies. Food and Drink includes Food Markets and Food retail. Retail and Personal Products includes Fashion companies, beauty, and home products.

Appendix C: Offsetting conditions in chosen sectors:

Most companies which plan to offset have still set no conditions. The technology, media and IT sector is more likely than the food, consumer goods and retail sectors to use offsets and is less likely to set conditions on offsetting. Within the consumer goods sector, retail and personal product companies set conditions on offsetting than any other sub-sector we evaluated: 36% of companies in the retail and personal products sector have some form of offsetting policy.

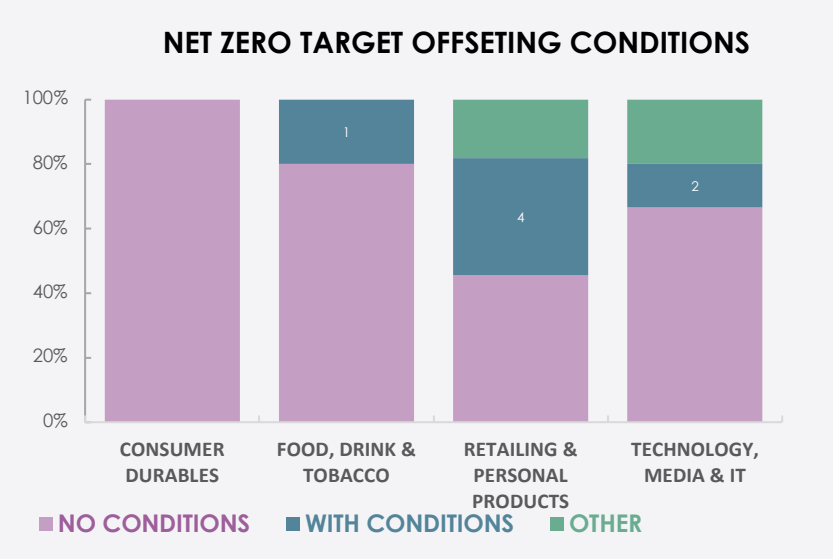

Fig. 11 Percentage of companies per offsetting specifications. Consumer durables includes the car industry companies. Food and Drink includes Food Markets and Food retail. Retail and Personal Products includes Fashion companies, beauty, and home products.