

CARBON IMPACT QUARTERLY



LA FRANÇAISE
INVESTING TOGETHER

An aerial photograph of a dense forest, likely a coniferous forest, with a narrow path or streambed running vertically through the center. The trees are lush green, and the overall scene is captured from a high angle, looking down. The text is centered over the image.

***CARBON
REDUCTION
TARGETS:
FROM AMBITION
TO IMPACT***

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Imprint

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KEY TAKEAWAYS

- ◆ Companies are increasingly committing to ambitious carbon reduction targets to reach Net Zero emissions at some point this century.
- ◆ Carbon offsetting is no substitute for carbon mitigation.
- ◆ A long-term carbon reduction target needs to be supported by interim targets starting with the next five years.
- ◆ Investors play a crucial role in monitoring and enforcing companies' reduction targets in the same way that they sanction earnings growth, cash flow and balance sheet ratios.
- ◆ The stakes are high in the zero-carbon transition: business models become obsolete, new businesses emerge, many companies need to adapt, and every company will have to disclose its specific response to climate change.
- ◆ The investor challenge is the integration of GHG (greenhouse gas) emissions and climate science into the investment analysis.
- ◆ Investors should support and apply standards for carbon reduction across all economic sectors to ensure that good intentions have the urgently desired real-world impact.



INTRODUCTION

The last twelve or so months have seen a flurry of corporate commitments and a huge ramp-up in ambition to reduce carbon emissions. It has been estimated that almost one quarter of global CO₂ emissions and more than half of global GDP were covered by Net Zero commitments by June 2020.⁽¹⁾ However, the gap between ambition and reality can often be very significant, for example, due to a lack of standards.⁽²⁾ In this report we address that ambiguity.

Global warming and the role of GHG emissions is a well-established fact.⁽³⁾ In response, carbon reduction efforts in the private sector have been made for decades. Such carbon reductions were reported, for instance, as part of energy efficiency programmes.⁽⁴⁾ The goalposts have shifted in recent years due to the urgency of the climate crisis. Global warming has gained worldwide attention not least due to the Paris Agreement in 2015. Countries are now strengthening their commitments through setting Net Zero targets. Six countries have enshrined Net Zero reduction in law, five countries and the EU have proposed legislation, fourteen countries have targets in policy documents, while many more are discussing Net Zero targets.⁽⁵⁾

In the private sector, carbon reduction has since become a strategic objective for many businesses and has evolved well beyond the isolated environmental targets of the past. Today, carbon reduction is a priority for many companies and their stakeholders – including shareholders and creditors. Yet, the voluntary nature of most efforts means that targets can be set through arbitrary parameters. What is needed to solve the climate crisis are commitments to reduce GHG emissions that are aligned with scientific global warming scenarios. A study of companies with science-based targets shows that these companies reduce emissions at far greater rates relative to emissions trends in the wider global economy.⁽⁶⁾

This report focuses predominantly on non-financial companies covering Scope 1, 2 and 3 GHG emissions. We also take the perspective of the finance sector, where financed emissions (Scope 3) are key. Banks, underwriters, and investors have an intrinsic motivation to manage climate risks in their portfolios. Looking ahead, we expect that a new set of Scope 3 reporting standards will allow the financial sector to catch up with the non-financial sector in setting carbon reduction targets. This will reinforce the pressure on the corporates held within portfolios to deliver real-world environmental impact through carbon reductions.

Chapter 1 introduces the common terminology relating to carbon reduction targets and the implications for investors. Chapter 2 examines the economic benefits for companies that reduce GHG emissions and illustrate the steps they need to take in setting a target. Chapter 3 discusses how investors can assess the different aspects of carbon reduction at the company level and the role of investors in holding companies accountable. Chapter 4 showcases examples from different sectors of companies and their ambition to make a real-world impact.

(1) These estimates include targets set by cities, regions, universities, investors and companies under the “Race to Zero Campaign”. See UN Framework Convention on Climate Change (2020). <https://unfccc.int/climate-action/race-to-zero-campaign#eq-3>

(2) Financial Times (2020). The problem with zero carbon pledges.

(3) William D. Nordhaus (1976). Economic Growth and Climate: The Carbon Dioxide Problem. Yale University.

(4) See, for instance, Unilever’s “Environmental Performance 2000” report which shows CO₂ reductions from 1995 due to energy saving measures.

(5) See Energy & Climate Intelligence Unit for a detailed breakdown of country Net Zero commitments: <https://eci.net/netzerotracker>

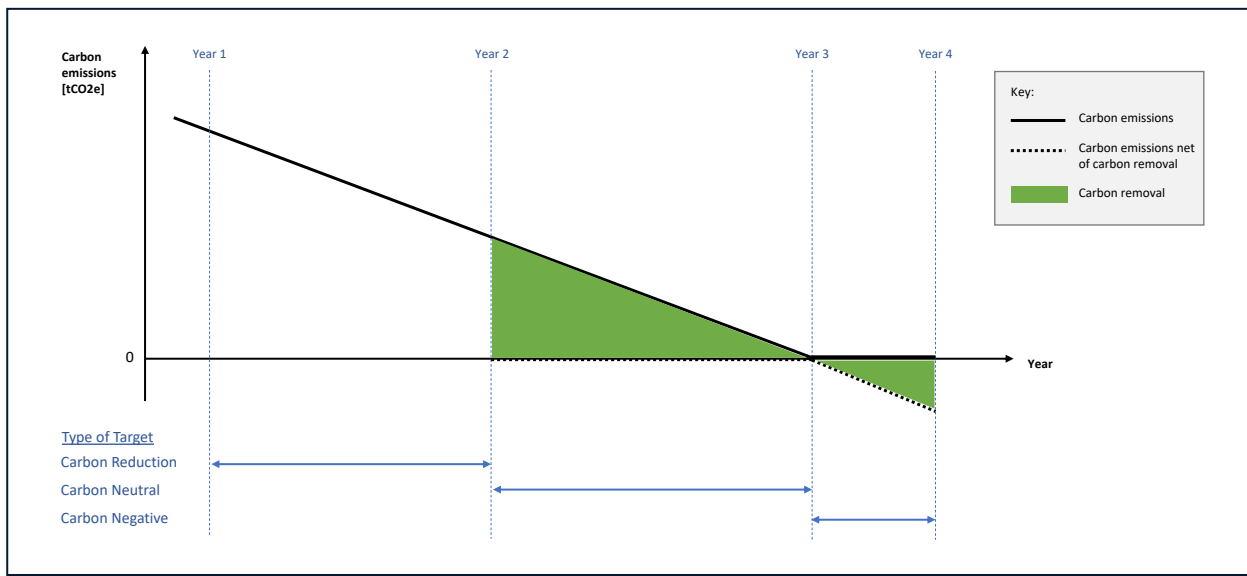
(6) See SBTi (2021). From Ambition to Impact: Science Based Targets Initiative Annual Progress Report 2020.

1 – THE BASICS

A – Terminology of Carbon Reduction Targets

There are different approaches to setting carbon reduction targets with an increasing level of ambition and scientific rigour. All currently coexist and overlap as companies advance their reduction strategies at different paces and in different directions.

FIGURE 1: Illustration of carbon reduction terminology



Source: La Francaise Sustainable Investment Research

Figure 1 provides an overview of the basic concepts.

- ◆ **Carbon reduction target:** A basic level of ambition to reduce the carbon footprint – either by an absolute or relative amount – usually by a given % relative to a base year and a target year.
- ◆ **Science-based carbon reduction target:** The level of ambition is enhanced if the target is science-based. This requires the integration of climate science into a carbon reduction target. For example, a target for “1.5°C alignment” is a pledge to reduce emissions at a rate that is consistent with the level of decarbonisation required to limit global warming to 1.5°C according to the reduction pathway specified by institutions like the IPCC (Intergovernmental Panel on Climate Change). Ideally such a target is externally verified, for example, by the Science-Based Target Initiative (SBTi), which focusses on abatement of emissions within the value-chain of the company.
- ◆ **Carbon neutral target:** A company intends to reduce its carbon emissions to zero

to achieve a neutral impact on climate change from a set target year. If carbon emissions cannot be reduced to zero, the remaining emissions must be removed from the atmosphere and sequestered for long periods of time to allow for a carbon neutral target (see below for more details about carbon offsetting). A carbon neutral target can also be referred to as a “Net Zero” target (see below) and a “climate neutral” target. The term “climate neutral” target could apply as a differentiator if all other GHG emissions are targeted in addition to carbon dioxide but usually the terms are used interchangeably.

- ◆ **Carbon removal** requires negative emissions technologies like afforestation, agricultural practices that sequester carbon in soils, bio-energy with carbon capture and storage, enhanced weathering, and direct air capture when combined with storage. To assess whether net negative emissions are achieved by a particular process, comprehensive life cycle analysis of the process must be performed. The IPCC’s analysis of climate change mitigation pathways that are

consistent with limiting global warming to 1.5°C found that all assessed pathways include the use of carbon removal to offset emissions.⁽⁷⁾ A 2019 consensus report by NASEM concluded that by using existing carbon removal methods at scales that can be safely and economically deployed, there is potential to remove and sequester up to 10 gigatons of carbon dioxide per year.⁽⁸⁾ This would offset greenhouse gas emissions at about a fifth of the rate at which they are being produced. Due to this constraint, carbon removal is not an alternative to carbon reduction.

- ◆ **Net Zero target:** A Net Zero target is equivalent to a carbon neutral target. However, it is usually used to differentiate if indirect value chain emissions (Scope 3) are targeted in addition to Scope 1 & 2. As with carbon reduction targets in general, Net Zero targets can be more ambitious if aligned with climate science. The SBTi, for example, is currently working on a standard for approving science-based Net Zero targets. The aim is to ensure that companies take the additional responsibility for emissions that have yet to be reduced in each year prior to the target year and for those that remain unfeasible to be eliminated.⁽⁹⁾ Companies can use a balance of reduction and removal but it is expected that they will decarbonise to the extent required to limit global warming to 1.5 degrees.

- ◆ **Carbon negative:** A carbon negative target represents the highest level of ambition. The goal is to reduce emissions by more than the combined amount emitted by the company and its value chain. The term carbon negative is equivalent to the term climate positive.

There are cases where reduction targets may differ in terms of which greenhouse gases are in focus. Due to the significance of carbon dioxide amongst all greenhouse gases we use the terms carbon emissions and GHG emissions interchangeably in this report.

B - The Double Materiality Perspective

Investors increasingly factor climate change into their decision-making due to the inherent risks and opportunities. There are many established approaches and they mainly differ by the direction of impact:

- ◆ **Financial Impact:** Investors focus on managing the material financial risk that climate change poses for asset values. To quantify this risk, investors use existing and new tools and methodologies, for example, they calculate the Climate Value-At-Risk of their portfolio.⁽¹⁰⁾
- ◆ **Real-world Impact:** Investors focussing on the impact of their investments should also consider how the activities of investee companies are affecting climate change. The assessment of companies' activities helps understand whether they are part of the problem, the solution or both.

The perspective that combines financial impact and real-world impact is referred to as "double materiality". For most investors, integrating climate change into decision-making is fundamentally about risk management. Investee companies that are on the wrong side of the low-carbon transition and those that do not transition fast enough carry greater investment risk.

There are several – non-mutually exclusive – ways that investors can manage climate risks with positive impact in mind:

- ◆ **Divesting from high-emitting activities.** Divestments are used by investors to manage their climate exposure. One of the main drawbacks of this approach is the fact that the real-world impacts are usually insufficient as the sold shares or bonds – by definition – are acquired by another investor and the corporate emissions remain unchanged. Only if divestments lead to a significant increase in the cost of capital could they become effective. For most investment solutions without a binding

(7) IPCC. Special Report 15: Chapter 2. <https://www.ipcc.ch/sr15/chapter/chapter-2/>

(8) National Academies of Sciences, Engineering, and Medicine (2019). Negative Emissions Technologies and Reliable Sequestration: A Research Agenda. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25259>.

(9) SBTi (2020). Foundations for Science-based Net-zero Target Setting in the Corporate Sector.

(10) See, for example, UNEP FI (2019), Changing Course.

divestment policy, it is an unsuitable method to manage climate risks.⁽¹¹⁾

- ◆ Investing in low-carbon activities, for example, Green Bonds or cleantech companies. This is a crucial step for investors to help decarbonise the economy by redirecting capital allocation, but the investment universe remains limited.
- ◆ Investing in the transition itself, which includes all companies that need to reduce their emissions and companies that offer product and services to enable the transition. This approach allows for investing in the whole economy and should be supported by engagement with companies that need to reduce their emissions most urgently.

Companies that successfully reduce their carbon emissions reduce risk from higher carbon prices or the introduction of carbon taxes. Targets set by companies function as a form of assurance that risks are being managed. Some companies – such as those in the fossil

fuel industry – will find that to meet a scientific reduction target they will have to completely transform their business model. Clearly, investors need to pay close attention.

Investors set their own targets for carbon reduction and increasingly want to align their portfolios with climate change scenarios. Yet, it remains a challenge to find a suitable approach across asset classes and to handle the many company-specific portfolio exposures. Progress requires standardisation to enhance data availability, consistency, and comparability, which can be led by policy makers and regulators or via self-regulation. Encouragingly, there are significant developments underway with several industry initiatives working actively to develop solutions. These include the CDP (Carbon Disclosure Project), the Partnership for Carbon Accounting Financials (PCAF), the Science-based Targets Initiative (SBTi), the Net Zero Asset Owner Alliance, and the Net Zero Asset Manager Alliance (see also Chapter 4).

(11) Braungardt, van den Bergh, and Dunlop (2019). Fossil fuel divestment and climate change: Reviewing contested arguments.

2 – CARBON REDUCTION AMBITION

A – What economic benefits can carbon reduction yield for companies?

The ambition to reduce GHG emissions implied by a carbon reduction target is supported by several positive drivers at the company level. This section introduces the key benefits for companies from setting a target and outlines the implementation steps.

An immediate benefit of committing to carbon reduction is reputational, i.e. a company signals a degree of strategic alignment with global sustainability efforts, namely, the Paris Agreement and the Sustainable Development Goals. Stakeholders increasingly expect companies to commit to climate action. This is confirmed by multiple investor initiatives, consumer studies and employee groups who mobilise to drive corporate climate action.⁽¹²⁾ However, the financial benefits largely materialise over time:

◆ **Revenues from innovation:** The transition to a low-carbon economy can be a source of innovation in the product portfolio. For example, the regulatory focus on energy efficiency in lighting sources forced the lighting industry to switch from incandescent bulbs to LEDs. A similar process is playing out in the auto industry with the shift away from internal combustion engines to battery-powered electric motors. All sectors of the economy need to adapt to varying degrees. The transition, and the requirements of associated new environmental laws, offer opportunities for new revenue streams. It makes economic sense to invest in R&D projects that focus on products with lower environmental impact. Products with better energy efficiency can provide a purchase incentive. For instance, around three-fourths of US households that purchased an Energy Star-certified product report that the label was influential in their purchasing decision.⁽¹³⁾

◆ **Improved profitability and competitiveness:** Carbon reduction programmes often equate to better operating efficiency. The ORION fleet optimisation programme of UPS saves 10,000 gallons of fuel annually. Unilever calculates that it has avoided costs of over €700m through energy efficiency programmes in its operations since 2008.⁽¹⁴⁾ The payback period for energy efficiency measures is influenced by several factors – regulation and energy prices in particular – but significant cost savings can be achieved by companies that implement successful strategies. In addition, manufacturers with Scope 3 carbon reduction targets are more likely to use suppliers with corresponding targets. Failure to do this can create a gap that may have to be filled with carbon offsets, which come at a cost. If businesses with similar targets coalesce around Net Zero ambitions, they have the potential to increase revenues, grow market share and expand margins by servicing one another.⁽¹⁵⁾

◆ **Lower regulatory costs or tax burden:** Climate change regulation is growing and becoming increasingly stringent. This trend will continue. A key regulatory objective is to establish markets for the pricing of carbon emissions. The European Emissions Trading System (EU ETS) was set up in 2005 as the world's first international emissions trading system. Under this system, the overall volume of GHG gases that can be emitted by companies in certain industries are limited by a "cap" on the number of emission allowances. The allocation of allowances is reduced over time, which poses an incentive to become more carbon efficient. The EU ETS carbon price reached an all-time high of €34 per tonne of CO₂e in January 2021. The number of similar emissions trading systems around the world is increasing with systems already operating or under development in Canada,

(12) See, for example, Climate Action 100+; <https://www.cdp.net/en/investor/engage-with-companies/cdp-science-based-targets-campaign>; <https://www.nielsen.com/eu/en/insights/article/2019/a-natural-rise-in-sustainability-around-the-world/>, Microsoft Workers 4 Good; @AMZNforClimate.

(13) https://www.energystar.gov/about/origins_mission/energy_star_numbers.

(14) <https://sustainability.ups.com/media/2019-progress-report.pdf>; Unilever CDP Report (2020).

(15) Citigroup (2020). Net Zero Club.

China, Japan, New Zealand, South Korea, Switzerland and the United States.⁽¹⁶⁾

Taxes are another approach whereby regulators directly put a cost on carbon. Sixteen European countries have so far implemented a carbon tax, though the respective carbon prices and the scope of the tax vary significantly. The European Commission is currently proposing a Carbon Border Tax that would be levied on goods and services from countries that do not put an equivalent price on carbon.

Aside from direct carbon pricing regulations, there are many sector-specific regulations aimed at reducing carbon such as the EU vehicles emissions standards and Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). In addition, companies that take stronger action on climate change are in a more legitimate position to influence policy makers.

There is empirical evidence that such operational and financial benefits are priced into market valuations. For example, Goldman Sachs found that low carbon intensive companies are trading at increasingly elevated premiums compared to sector peers with high carbon intensity.⁽¹⁷⁾ According to this analysis the average premium of the 12-month forward EV-EBITDA multiple (top versus bottom quintile) was 4.4% for the period 2010-15, 8.3% for 2015-19 and 14.6% for 2019-21.

B – How do companies set a carbon reduction target?

Companies are at different stages of their carbon reduction journey. Below are some of the key aspects of setting a carbon reduction target.

◆ **Understanding the organisational implications:** Companies need to understand the impact that setting and meeting a target will have on the organisation. An isolated Board decision to set a carbon reduction target risks failure. The decision should be based on knowledge of the material environmental impacts of the company and the impact on stakeholders. Setting and meeting a target will require buy-in from departments and leadership at all levels. A clear assessment

of the feasibility of carbon reduction is a crucial first step. This is even more so the case with Net Zero targets since they often involve a strategic change at the top of the organisation that would require changes in the product portfolio and how products are designed and manufactured.

◆ **Measuring the carbon footprint:** Measuring the company's carbon footprint is a prerequisite to its management. A first step might be to work with a consulting company to help evaluate energy consumption and GHG emissions attributable to specific products or operating sites. Companies may also need to establish internal controls and reporting processes to measure carbon data. The aggregation of this data can be a significant challenge for companies with multiple facilities and decentralised operations. The accurate measurement of Scope 3 data is another major challenge, especially when complex product portfolios need to be assessed.

◆ **Deciding the components of a target:** There are many elements that make up a carbon reduction target. Each needs careful consideration:

- Stated ambition, for example, basic reduction in carbon emissions or climate neutrality
- Scope, for example, limited to a number of products and sites or applicable across the full value chain
- Baseline year, which represents a starting point and the respective emissions level at the time against which performance will be judged
- Reduction measured in absolute terms or as an intensity, i.e. reduction relative to another value, for example, emissions per revenue unit, per employees or per production volume
- Time horizon including potential interim milestones
- Mitigation strategy with implementation steps to deliver the target

◆ **Monitoring and communication of progress:** Companies need to establish who in the organisation will be responsible for ensuring

(16) European Commission. International Carbon Market.

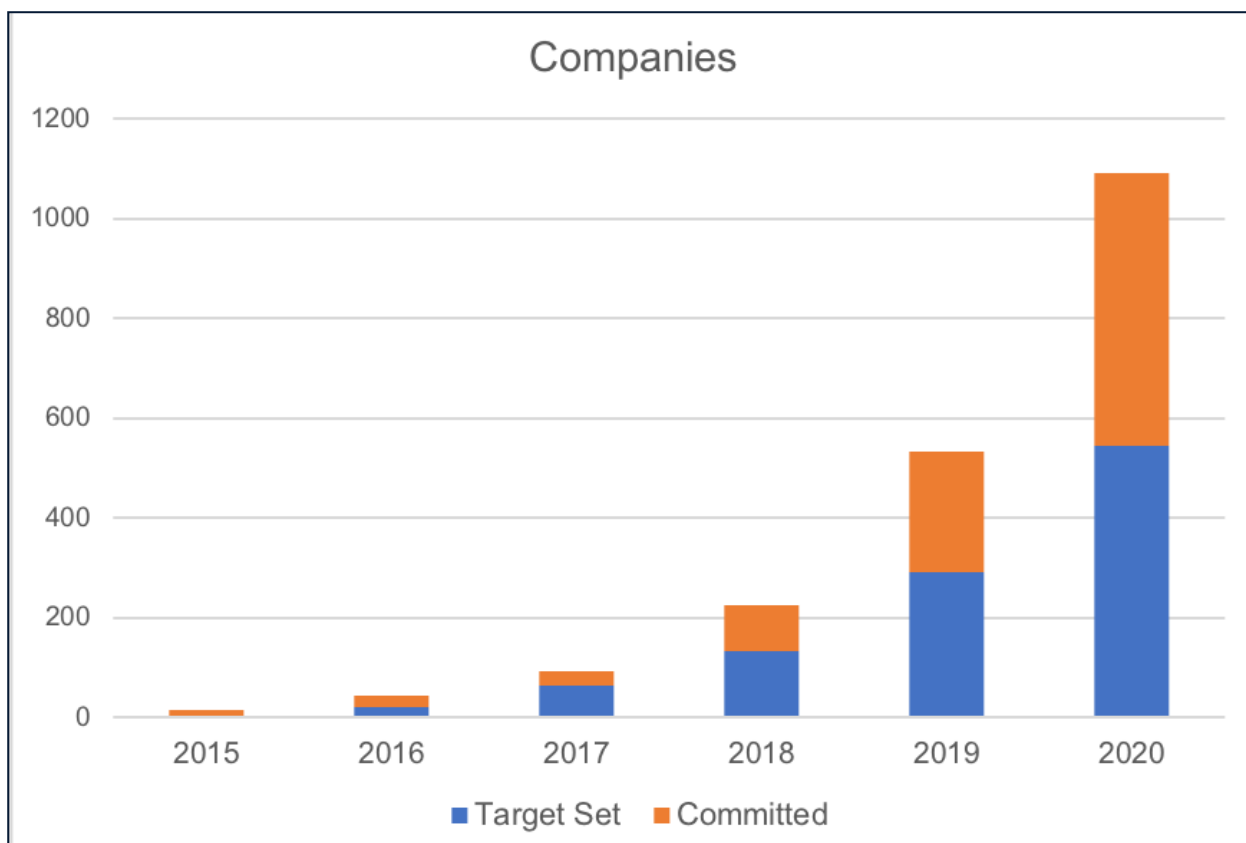
(17) Goldman Sachs Equity Research. Carbon emissions are increasingly becoming priced in equity multiples, 21st January 2021.

that the company is on track to meet its target. There needs to be clear procedures and lines of accountability for monitoring progress and effective communication to relevant stakeholders. Companies can provide updates via press releases, through their annual reporting and via the CDP. It is also important to consider whether independent verification of carbon data will be sought and to factor this into the reporting schedule.

◆ **Obtaining approval through the Science-based Targets Initiative (SBTi):** The SBTi is evolving as a global standard for carbon reduction targets. The SBTi recently announced that over 1000 companies – across 60 countries and nearly 50 sectors and with a combined market capitalisation

of over \$15.4 trillion – have committed to get their target approved.⁽¹⁸⁾ Figure 2 shows the exponential growth in SBTi commitments in 2020. In practice, companies publicly commit to have their targets approved by signing a Commitment Letter. The commitment will be registered on the SBTi website. The company then has two years to develop and submit its target for approval. About 90 companies that made a commitment prior to 2019 have yet to submit targets. Once submitted, the company’s target will be assessed by the SBTi. If approved, it will be displayed on the SBTi and partner websites We Mean Business Coalition and CDP.⁽¹⁹⁾ Companies must set a SBT that addresses their Scope 1 and 2 emissions, and Scope 3 if these emissions constitute 40% of their carbon footprint.

FIGURE 2: SBTi – Companies Taking Action



Source: SBTi and LF SIR

(18) <https://sciencebasedtargets.org/2020/10/08/the-new-normal-1000-companies-are-now-setting-science-based-climate-targets/>

(19) <https://sciencebasedtargets.org/faq/>

3 – THE ROLE OF INVESTORS

The difference between ambition and reality can often be significant. More ambitious targets also require bolder action. This section assesses the types of action needed by companies to transform their ambition into success. Before examining individual cases in Chapter 4, we outline the key considerations for investors when analysing carbon reduction targets and progress toward meeting them.

The huge variety of carbon reduction approaches is a major analytical challenge for investors. No two carbon reduction targets are the same and the quality of targets varies greatly. The Net Zero landscape alone has been referred to as resembling “the Wild West”.⁽²⁰⁾ Some companies set targets that require deep emission reductions across their value chains and transformation of business models compatible with a Net Zero economy; others have set targets that only require limited emission reductions and that rely heavily on offsetting practices. Language is one key obstacle (see Glossary) and this makes the comparison of targets difficult. The lack of standardisation about goals creates a further challenge.

A – How investors can assess corporate ambition

Investors can overcome this complexity through bottom-up analysis of the components of the carbon reduction targets. Below are some key questions that investors need to ask. Peer comparison is also necessary to judge the level of ambition and credibility.

◆ **Target year:** Has the company set a near-term target? Many companies have issued targets for 2050. Yet, accountability for 2035 targets and beyond will not be feasible for at least another decade. Therefore, it is imperative to add near-term targets to chart the decarbonisation pathway. For example, the SBTi has determined that science-based reduction targets are short to mid-term (5 to 15 years). But only 8% of companies accompany their Net Zero target with such interim reduction targets.⁽²¹⁾

◆ **Mitigation strategy**

- How ambitious is the target relative to competitors?
- How ambitious is the target relative to climate science?
- How clear and robust is the strategy to prevent, eliminate and reduce sources of GHG emissions in the value chain?
- Are the reported initiatives sufficient to meet the target? How does the strategy compare to peers?
- To what extent is the company relying on carbon offsetting?

◆ **Scope of GHG measurement**

- Does the commitment cover the whole value chain of Scope 1, 2 and 3 emissions?
- What is the coverage within each Scope?

◆ **Capex:** It is crucial to assess whether sufficient investment is being made at present to meet short, medium and long-term targets.

◆ **M&A:**

- Is recent or planned M&A consistent with climate goals?
- Does the company plan to execute M&A to achieve goals?

◆ **Technology assumptions:**

- What innovations by the company or industry are needed to meet the target?
- To what extent will carbon reduction depend on the role of other technologies being developed or commercialised? For example, clean hydrogen is an emerging technology that is considered necessary to support decarbonisation in hard-to-abate sectors.⁽²²⁾
- The role of carbon dioxide removal (CDR) is still a debated topic. The long-term success of these technologies is far from certain, yet most decarbonisation pathways assume they will be available at scale. However, even at scale they do not replace the need for the abatement of carbon emissions.

(20) BNEF (2020). Corporate Net Zero Targets Primer: Jump on the Bandwagon.

(21) New Climate Institute & Data-Driven EnviroLab (2020). Navigating the nuances of Net Zero targets.

(22) Citigroup (2020). No Going Back.

◆ **Past target performance and emissions trend:** Management with a proven track record in meeting carbon targets gives confidence in the delivery of future targets. If a company has not met past targets it is important that a reasonable explanation is given and that lessons have been learned. It is important to note that past emissions trends will not necessarily continue in a linear fashion. Previous reductions may have been achieved through grabbing low-

hanging fruit. Therefore, it is important to assess how historical carbon reductions were made to make a judgement about the potential of further reduction.

◆ **Growth objectives:**

- Are financial targets consisted with carbon reduction targets?
- Does management articulate a strategy to decouple revenue growth from the growth in carbon emissions?



CARBON OFFSETTING: NO SUBSTITUTE FOR ACTION

A carbon offset is a mechanism used to compensate for GHG emissions within the value chain by funding equivalent GHG savings elsewhere. There are significant concerns about the credibility and efficacy of carbon offsetting practices – especially those in the voluntary carbon market. Offsets are essentially used as an accounting mechanism, but they can result in insufficient carbon reduction depending on the performance of the applied offset. Difficulties include proving additionality, measuring performance, ensuring enforceability and accounting for any unintended consequences. They differ from carbon dioxide removal, which is necessary to completely eradicate “hard-to-abate” emissions and is needed for companies to meet their Net Zero ambitions.

The use of offsets to meet carbon reduction targets was historically prohibited by the SBTi. However, with the launch of “Net Zero” SBTs, carbon offsets are allowed as long as they do not replace the reduction of value chain emissions in line with science. There are also clear restrictions on the type of offsets that are allowed. The SBTi will accept credits from projects that remove carbon from the atmosphere (e.g. forestry). Credits that use avoided emissions as an offset will not count toward meeting the target (e.g. those from clean energy projects). This rules out around 60% of commissioned capacity within the voluntary carbon market.⁽²³⁾

For capacity to meet demand, the voluntary carbon market will need to be significantly scaled up, while at the same time addressing structural issues that have hampered it to date. Companies will need to actively support this if they wish to translate their climate ambition into real-world impact. Important to note is the Taskforce on Scaling Voluntary Carbon Markets, which was set up by Mark Carney and others in September 2020 to mirror the success of the TCFD. It is currently consulting on recommendations for the use of carbon offsets and calls for cross-industry collaboration.

(23) BNEF (2020). Corporate Net Zero Target Primer; Citigroup (2020) Ready, Offset, Go.

B - Investors need to hold companies accountable

Institutional investors will play a pivotal role in tracking progress. At present, there is no formal enforcement mechanism to ensure that companies deliver on carbon reduction. Target setting and reporting of carbon data is largely voluntary. There is no sanction for a lack of success.

Given the short-termism inherent in financial markets, investors should proceed carefully when assessing companies' long-term climate goals. CEO turnover reached a record high in 2018, with less than 1-in-5 CEOs remaining in their position for 10 or more years.⁽²⁴⁾ Put differently, four out of five CEOs are not likely to be at their company long-enough to see through their carbon targets to 2030, let alone 2050. This issue is compounded by the lack of verification and accuracy in reported carbon data. Investors need to assess carbon reduction targets with at least the same care and rigour that they do financial targets.

Therefore, investors should play an active role in ensuring that companies set and deliver carbon reduction targets. Investors are well-equipped to perform this task. For example, carbon reduction requires capex and questions about capex are typical of meetings with corporate management. Investors increasingly have expertise in integrating environmental data within their investment process. Additional guidance for companies on progress reporting is expected to be released in 2021 by SBTi and CDP. The SBTi is currently working on a process to track companies' progress on their targets. These are positive developments that can help investors overcome some of the challenges of carbon reporting. However, as with financial targets, investors will still need to frequently monitor progress. Carbon footprinting is not sufficient as headline emissions numbers will only give a partial view on what is going on and does not capture the corporate planning for reaching the next milestone. The latter requires ongoing assessment of material developments as well as a clear understanding of the business model.

Many asset management firms maintain close interaction and engagement with company management. Engagement can also take the form of collaborations like Climate Action 100+. Engagement action could comprise the proposal or support of shareholder resolutions, for example, requesting major oil companies to take the first step and set more stringent targets considering all emission scopes in order to reach Net Zero by 2050. Investors that engage with company management act as enforcement agents in the delivery of carbon reduction.

(24) PriceWaterhouseCoopers (2019). CEO Turnover at record high. <https://www.pwc.com/gx/en/news-room/press-releases/2019/ceo-turnover-record-high.html#:~:text=The%20study%2C%20which%20analyzed%20CEO,over%20the%20time%20period%20analyzed>

4 - CASE STUDIES

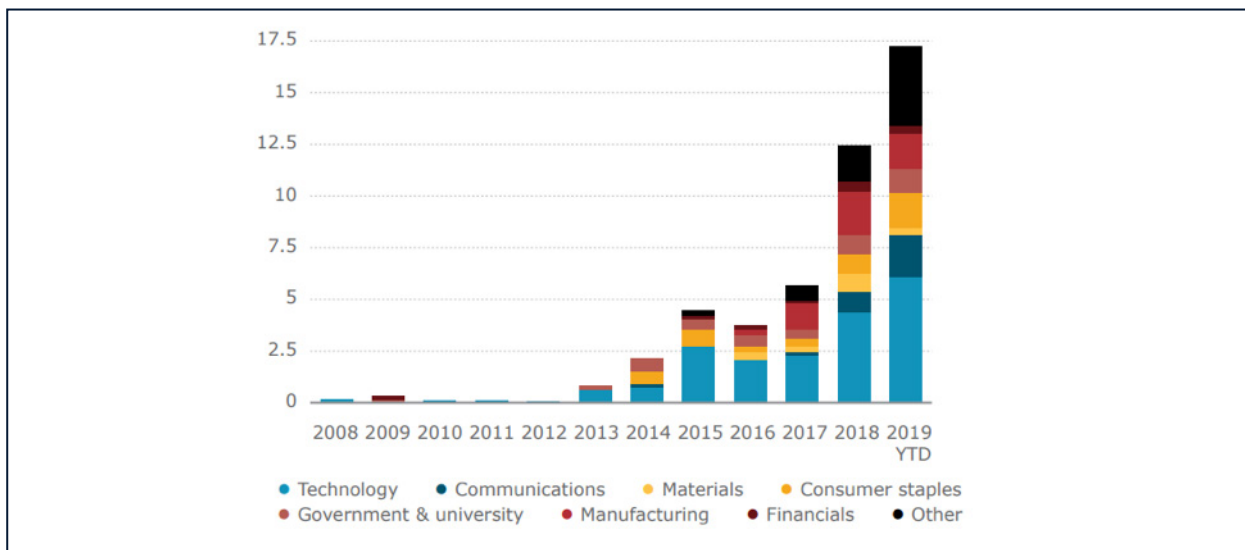
A - Microsoft

Ambition

The tech sector is one of the most ambitious sectors in terms of carbon reduction and the largest tech companies are also the largest purchasers of renewable energy (see Figure 3).

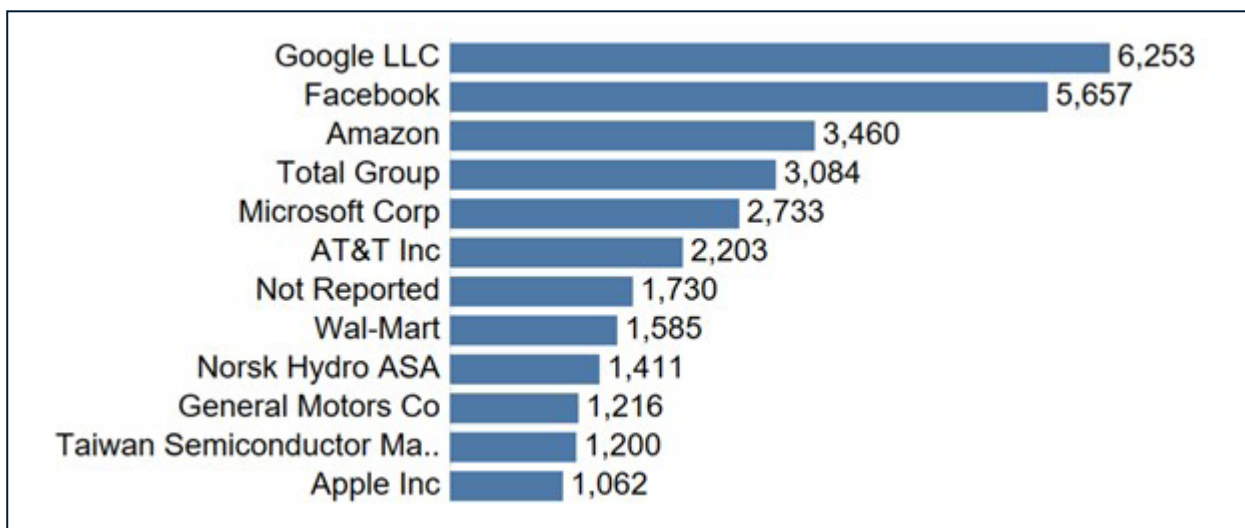
This is important because the share of digital energy consumption relative to total global energy consumption is significant and is expected to continue growing. ⁽²⁵⁾

FIGURE 3A: Global Power Purchase Agreements (PPA) Volume in GW by Sector, 2009-2019



Source: IEA (2019) ⁽²⁶⁾

FIGURE 3B: Top Direct Purchasers of Renewable Energy by Capacity (MW) Globally



Source: BNEF (2020), total cumulative capacity (MW)

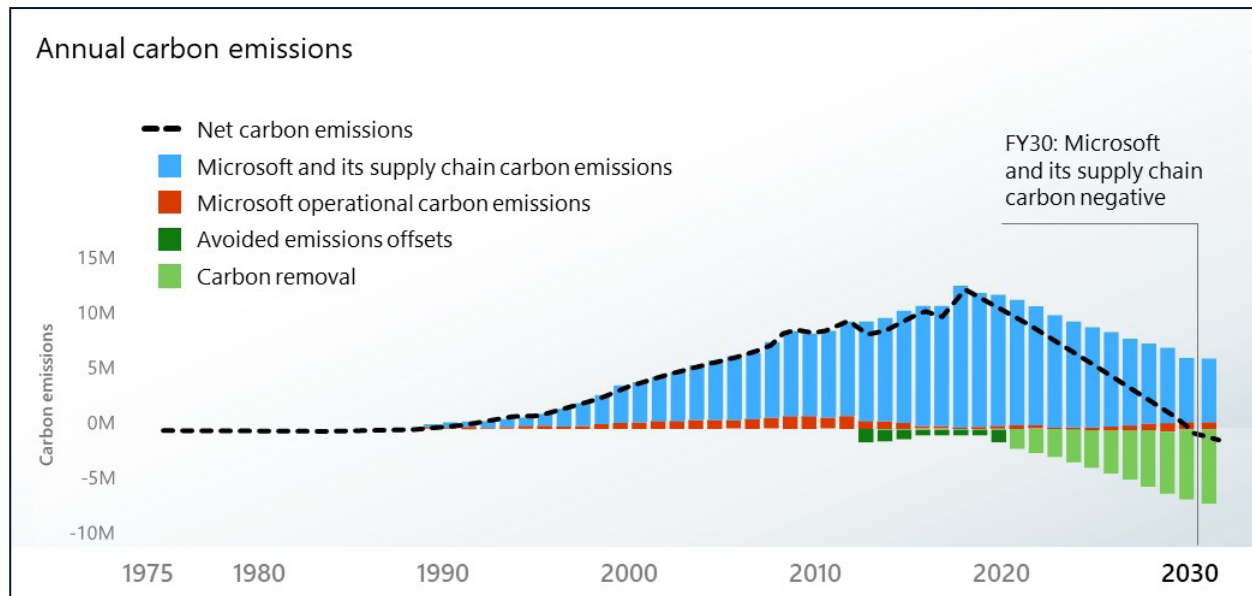
(25) The Shift Project (2019). Lean ICT: Towards Digital Sobriety

(26) See <https://www.iea.org/data-and-statistics/charts/global-ppa-volumes-by-sector-2009-2019>

The tech sector is spearheading various approaches to Net Zero targets. Microsoft is a good example as it is at the forefront of this development with its ambition to be carbon negative by 2030. This target covers the whole value chain. The company also plans to remove

all the carbon it has ever emitted, either directly or by electricity consumption since it was founded in 1975 until 2030 (at which point it is planning to be carbon neutral) by 2050. Microsoft has illustrated how it intends to reach its 2030 goal (Figure 4).

FIGURE 4: Microsoft's Pathway to be Carbon Negative by 2030



Source: Microsoft (2020)

Mitigation strategy

Microsoft's approach aims to phase out the use of carbon offsetting, a practice it has partially relied on to-date to justify its carbon neutral claims. The company seeks to reduce operational emissions and supply chain emissions, and to deploy direct carbon removal through the following initiatives:

- ◆ Source 100% renewable energy by 2025 through Power Purchase Agreements to cover all consumed electricity, including data centres, buildings, and campuses. This relates to the red bars in the chart above. As shown above, Microsoft is one of the biggest direct purchasers of renewable energy globally and has a proven record in developing its renewable capacity.
- ◆ Reduce Scope 3 emissions by more than half by 2030 through: (1) Rolling out its current internal carbon tax to cover Scope 3 emissions. This will incentivise business divisions to reduce emissions. (2) Implementing new processes and tools to motivate suppliers to reduce their Scope 1, 2, and 3 emissions. A focus will be on consistent and accurate reporting and measures to encourage progress against scientifically based targets.
- ◆ Investing in Carbon Removal and Reduction Technology. Microsoft launched a Climate Innovation Fund and committed to invest \$1 billion over the next four years into new technologies; for example, Microsoft recently invested in Carbon Cure, a company that injects re-captured CO₂ into cement.
- ◆ Microsoft is a founding member of "Transform to Net Zero", an initiative which aims to develop and deliver research, guidance, and roadmaps to enable all businesses to achieve Net Zero emissions (see Glossary).⁽²⁷⁾

(27) <https://news.microsoft.com/2020/07/20/nine-leading-businesses-launch-new-initiative-to-accelerate-progress-to-a-Net-Zero-future/>

B - RWE

RWE is one of Europe’s biggest carbon emitters in the private sector. The company was responsible for 2% of European emissions in 2019. RWE has recently started to transition towards renewables. Banks are increasingly highlighting the German utility as a “green” investment idea. We welcome the ambition of RWE; however, we believe the company needs to accelerate its energy transition programme. In this case study we explain how we approach transition analysis.

Transition assessments vary depending on the boundaries, metrics and complexity of the analysis. It is therefore unsurprising that the views differ among market participants in an extreme case like RWE. Our approach is driven by an in-depth analysis of the company’s strategy including investments, initiatives, and targets. We identify the main levers that could impact the future carbon performance of the company. For RWE, we estimate the future electricity generation mix to derive the carbon trajectory. We assess the company’s trajectory over the whole period running from 2019 to 2030 instead of a point-in-time analysis (2030). We do not look further than 10 years ahead because of the heightened uncertainty in later years and our objective to assess real carbon reduction as opposed to corporate ambition.

RWE’s Carbon Targets

RWE set two absolute targets in 2019:

- ◆ Decrease absolute Scope 1 emissions by 75% to 2030 with a 2012 base year.
- ◆ Achieve carbon neutrality by 2040 (only Scope 1 included according to CDP disclosure).

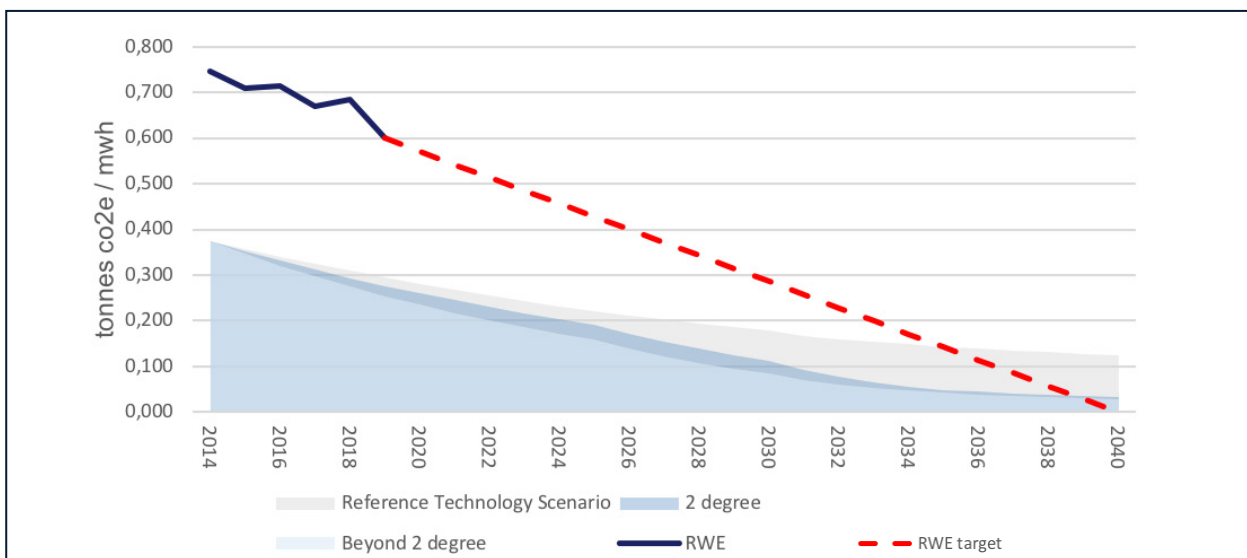
In December 2020, RWE published a revised Scope 1 target and introduced targets for Scope 2 and Scope 3.

- ◆ Reduce Scope 1 and 2 GHG emissions 50% per kWh by 2030 from a 2019 base year.
- ◆ Aim to reduce Scope 3 emissions by 30% by 2030.

According to the SBTi the Scope 1 and 2 targets are consistent with reductions required to keep warming well-below 2°C. The Scope 3 target and the 2040 carbon neutral target have not been included in the SBTi assessment.

In our assessment of the 2040 target RWE is only in line with the Paris Agreement and the beyond 2-degree scenario if we consider only the end point in 2040 (compare Figure 5).⁽²⁸⁾ However, other interpretations exist. For example, the Transition Pathway Initiative (TPI) using a different climate benchmark concluded in August 2020 that the 2040 target is aligned with the beyond 2-degree scenario.⁽²⁹⁾

FIGURE 5: RWE’s 2040 Carbon Neutral Target vs IEA scenarios



Source: IEA, RWE, La Francaise Sustainable Investment Research

(28) The Beyond 2-Degree scenario explores how far deployment of technologies that are already available or in the innovation pipeline could allow carbon reduction beyond the 2DS. This “technology push” approach results in cumulative emissions from the energy sector of around 750 GtCO₂ between 2015 and 2100, which is consistent with a 50% chance of limiting average future temperature increases to 1.75°C.

(29) See Management Quality and Carbon Performance of Energy Companies available at <https://www.transitionpathwayinitiative.org/companies/rwe>

There are several points to consider when determining if RWE is aligned with the beyond 2-degree scenario:

- ◆ Most significantly, the temperature benchmarks, which for each sector represent the average intensity of energy generation necessary to reach certain temperatures, are not tailored to the company's geographic exposure. This is the case for the assessment by the TPI and SBTi which use global benchmarks. We decided to tailor each temperature pathway using the generation split by geography. The main reason is that power plants cannot be moved and competition remains regional. In the case of RWE, our benchmarks are almost entirely derived from the European Union and are harder to meet given the progress the EU has already made compared to countries like the US or China. Thus, we compare RWE's trajectory against the most appropriate geographic benchmarks. To put it differently, RWE is an outlier in Europe but compares well against coal utilities, say, in India or China.
- ◆ Focusing on only the slope and the end point of the trajectory does not automatically consider the absolute carbon emissions over the period. In the case of RWE, the company is consistently above the required levels for the European utility sector to be compliant with the Paris Agreement from 2014 to 2038. We put emphasis on the amount of over- or undershooting against the different climate pathways during the entire period from 2019 to 2030. For example, in 2019, RWE produced energy at double the carbon intensity compared to the beyond 2-degree requirement for European electric utilities (c0.6 tCO₂/MWh versus c0.3 tCO₂/MWh).
- ◆ Long-term targets are welcome, but they are also hard to assess. There is no immediate need for RWE to act because 2040 is so far away. RWE, in December 2020, released interim targets as demanded by the SBTi including the 2030 intensity tar-

get (Scope 1 & 2), which we welcome.

- ◆ Absolute targets in the utility sector are not as useful as intensity of generation targets, though, emissions targets can be converted to intensity targets relatively easily. Nonetheless, absolute targets do not imply better carbon efficiency. Absolute targets could be met via asset sales without causing a decrease in global emissions. We welcome that RWE has included an intensity target to accompany its absolute carbon reduction ambitions.
- ◆ Focusing only on targets to identify the forecasted RWE trajectory is too limited. Targets are easy to set, even more so with long-term targets. However, too often we see targets being set without the real commitment to reach that target. To overcome this limitation, not only do we use the emissions reduction targets in our analysis, but we apply an in-depth carbon analysis focusing heavily on RWE's strategy.

Low Carbon Trajectory analysis

As can be seen in Figure 5, RWE's carbon neutral target is very aggressive, and the respective trajectory implies that it would reach beyond the 2-degree levels by 2039. However, the company's strategy remains blurry with regards to renewables growth post 2022. Based on current information the company could reach its 2040 carbon neutral target in our optimistic scenario. In our pessimistic scenario, the company will not reach carbon neutrality even by 2060. Given the very long-term horizon involved our analysis remains focused on 2030.

We run a two-step analysis:

1 - Fundamental carbon assessment

Our carbon assessment is closely aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We focus on a set of metrics, which we believe are material to the company, and more widely to the sector.

FIGURE 6: Carbon Impact Assessment of RWE

GOVERNANCE	STRATEGY
<ul style="list-style-type: none"> • Executive board members remuneration packages include monetary rewards (bonus) based on the achievement of environmental and social goals. • No TCFD support. 	<ul style="list-style-type: none"> • RWE aims to reach carbon neutrality by 2040 (scope 1 only according to CDP disclosure). • Science-based carbon reduction targets for scope 1, 2 (2030). • By German law they must phase out coal by 2038. • By 2030 reach 65% renewables in Germany and exit coal in the Netherlands. • RWE aims to add 2-3GW of renewables capacity annually with a 20GW pipeline of projects. Hence no real appetite for further acquisitions.
RISK MANAGEMENT	METRICS AND TARGETS
<ul style="list-style-type: none"> • Climate risk management is not as strong as we would like. Although they identify the energy transition as the number one threat to their business. • They mention integrating all types of publicly available scenarios in their business strategy, but they do not provide enough details. • Assets swap with E.ON: this makes RWE the third largest renewable electricity producer in Europe reaching around 9.5GW capacity. 	<ul style="list-style-type: none"> • Electricity specific emissions decreased by 23.9% from 2011 to 2019. • Coal and lignite accounts for 41% of the electricity produced in 2019. • 2040 Net Zero target is very ambitious given the starting point. Their current generation leans heavily towards fossil fuel (Figure 7).

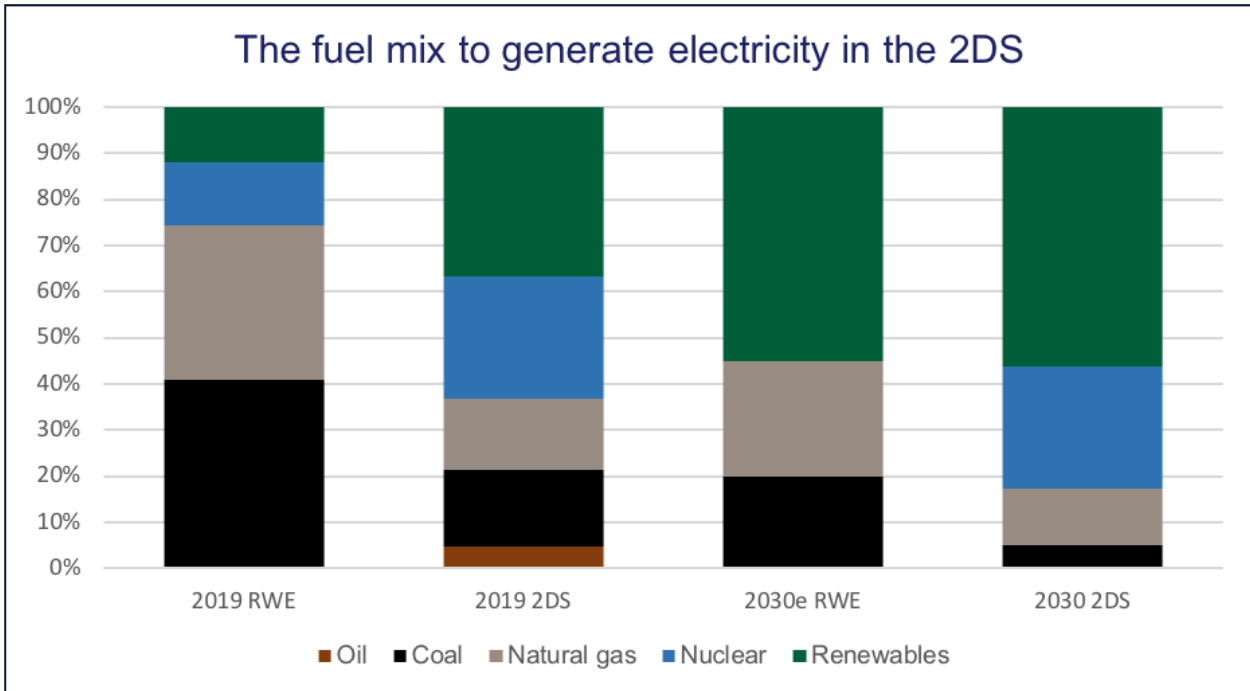
Source: RWE data, La Francaise Sustainable Investment Research

2 - Low carbon trajectory calculation

By our calculations, and unless RWE decides to generate much less electricity, we do not think RWE will manage to align its energy mix with the requirements of the 2-degree sce-

nario by 2030. Even if the company manages to reach 65% of renewables in the generation mix (as opposed to generation capacity) the company will still lag (Figure 7).

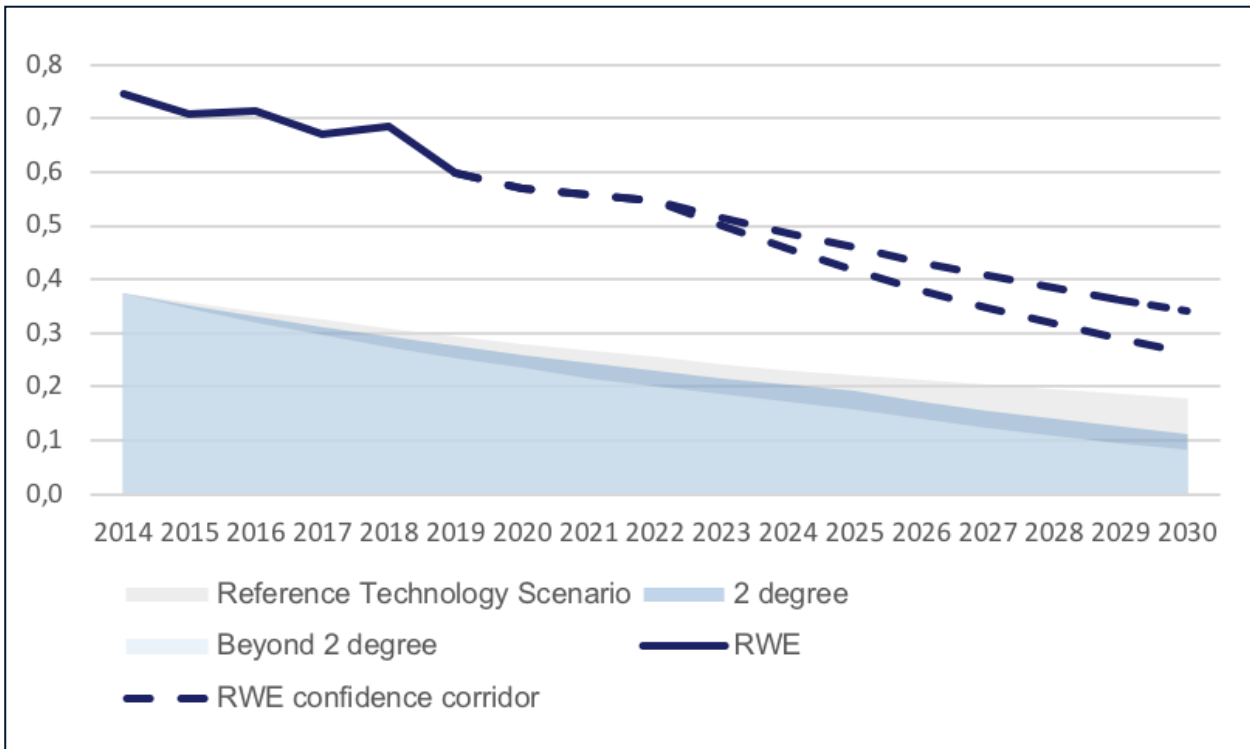
FIGURE 7: RWE’s Generation mix



Source: IEA, RWE data, La Francaise Sustainable Investment Research

Based on these projections, we believe that RWE will not even reach the RTS – Reference Technology Scenario (2.7°C) target by 2030 (Figure 8). The decrease in emissions is too slow and we cannot consider the company to be 2-degree aligned. This explains why we maintain a negative carbon impact view regarding RWE, despite the recent transition efforts.

FIGURE 8: Low Carbon Trajectory for RWE



Source: IEA, RWE data, La Francaise Sustainable Investment Research

C - Nestle

At the end of 2020, Nestle published a detailed roadmap outlining the actions that will be taken to reach its 2050 Net Zero carbon target. Here we unpack the strategy and discuss some of the key components. The lev-

el of disclosure supporting the target is exceptional and includes a breakdown of plans within, and across, each area of the value chain under the scope of the target. The plan seems credible and is supported by a significant investment pledge and multiple other initiatives (see Figure 10).

FIGURE 9: Carbon Reduction Projections based on Nestle’s Roadmap

Nestle's Carbon Footprint	Carbon Footprint (MMtco2e 2018)	2030 Projected Carbon Footprint	2030 Target	Carbon Reduction vs 2018 (MMtco2e)	Carbon Reduction vs 2030 Estimates (MMtco2e)
Ingredient Sourcing	65,6	87,6	43,3	-22,3	-44,3
Packaging	11,0	16,2	10,1	-0,9	-6,1
Manufacturing	7,0	9,7	3,8	-3,2	-5,9
Logistics	7,5	10,0	6,5	-1,0	-3,5
Travel / Employee Commuting	0,8	0,8	0,8	0,0	0,0
Sub Total (MMtco2e):	91,9	124,3	64,5	-27,4	-59,8
Consumer use of product*	12,7	17,5	17,5	4,8	0,0
Purchased services, leased assets, capital goods, investments*	8,6	11,9	11,9	3,3	0,0
Total (MMtco2e):	113,2	153,7	93,9	-19,3	-59,8

* Not in scope of net zero target. 2030 estimate calculated by LF SIR using Nestle's average growth rate for other segments.

Source: Nestle, La Francaise Sustainable Investment Research

Key points of our assessment:

- ◆ Nestle’s Net Zero by 2050 target has been made more tangible by setting a reduction target of 20% by 2025 and 50% by 2030. However, the interim 2030 target is based on projected emissions levels in 2030 and not current emissions levels. When considering Nestle’s whole carbon footprint, we estimate that actual reduction from 2018 levels would be around 17% by 2030, based on targets. This can easily be overlooked since base year targets are usually in the past. The 2030 projected base emissions figure is subject to growth assumptions and could easily lead to a situation where Nestle achieves a 50% reduction without reducing carbon by the expected amount.
- ◆ The Net Zero target only covers ~80% of the total carbon footprint. Nestle has left the hard-to-manage areas out of the target – mainly emissions from consumers when using the products. Changing consumer habits is extremely difficult to achieve, as evidenced by Unilever’s respective challenges.
- ◆ Nestle outlines the expected emissions reduction from transforming its product portfolio separately since changes to the basket of products impact all other ar-

eas of the carbon footprint. This target is therefore not reflected in the numbers in Figure 9. The company has committed to 6 million metric tCO2e (MMtco2e) reduction by 2030 through transitioning its product portfolio. Details of the commitments and initiatives under this part of the strategy are vague relative to other areas of the roadmap. However, we consider this as an additional lever for Nestle in meeting its 2030 ambition and hope to see more details on how this will be deployed.

- ◆ The majority of targeted carbon reduction will take place in the agricultural supply chain. Programmes that should result in the biggest carbon reduction seem achievable and are really about better sourcing, engagement and support at the farm level (training, herd management, combatting deforestation etc).
- ◆ There is some reliance on regenerative agriculture and its potential to act as a carbon sink. This is within the scope of reasonable expectations.

While some of these points are criticisms, this should not detract from the fact that Nestle has raised the bar for its sector – and other sectors – when determining how climate ambition can be translated into climate action through a detailed roadmap.

Reducing Emissions from Agriculture

Nestle states that “removing carbon through agroforestry and regenerative agriculture are key to reaching Net Zero.” The term “regenerative agriculture” is gaining traction in the sustainability strategies disclosed by food, beverage and retail companies. Regenerative practices have clear benefits for biodiversity. However, not everyone agrees about the efficacy of these methods to reduce carbon. According to the “2019 Creating Sustainable Food Future” report, issued by the World Resources Institute (WRI) jointly with the UN and the World Bank, large estimates of the climate change mitigation potential of regenerative agriculture are “unrealistic”. It

questions the benefits in sequestering additional carbon and the ways in which carbon is accounted for. Importantly, the focus on regenerative practices should not mask the need for other actions that mitigate climate change, such as shifting diets and reducing food waste.⁽³⁰⁾ There are also questions about the scalability of regenerative agriculture to meet food demand. Regenerative and conservative practices are often associated with lower crop yields and can match conventional ones only under specific growing conditions and management practices.⁽³¹⁾ Given the uncertainties around regenerative agriculture, we expect further information from Nestle about how the agricultural methods it plans to support will reduce carbon.

FIGURE 10: Highlights of Nestle’s Net Zero 2050 Strategy

NET ZERO STRATEGY	BREAKDOWN OF TARGETS
<ul style="list-style-type: none"> • Clear commitment and action plan to be among sector leaders on decarbonisation • Reduce absolute emissions across value chain: 20% by 2025, 50% by 2030, Net Zero by 2050 • Nestle’s 2020 and 2030 reduction targets were approved by SBTi in November 2020 and are aligned with 1.5°C • Signatory to the UN “Business Ambition for 1.5°C” pledge • Exceptionally detailed and phased road-map to chart progress toward commitments - annual updates will be provided • A detailed emissions target breakdown is given for each area of the value chain where carbon reduction is planned 	<ul style="list-style-type: none"> • Baseline year (2018) emissions: 92 MMtco2e (see Figure 9 for details) • 81% of total emissions are covered by the target. Note: scope of target does not include Consumer use of product (12.7 MMtco2e) & Purchased services, leased assets, capital goods, investments (8.6 MMtco2e) • Source 50% of key ingredients from regenerative agriculture by 2030, 25% by 2025. • Deforestation free for key commodities by 2022 • 100% packaging recyclable or reusable by 2025 (87% currently) • Cut virgin plastic in packaging by a third by 2025 • 100% Renewable Energy by 2025 (35% in 2018) • Planting 20 million trees annually for over 10 years

(30) <https://www.wri.org/blog/2020/05/regenerative-agriculture-climate-change>; <https://www.wri.org/blog/2020/08/insider-further-explanation-potential-contribution-soil-carbon-sequestration-working>

(31) Pittelkow CM, Liang X, Linnquist BA, van Groenigen KJ, Lee J, Lundy ME, van Gestel N, Six J, Venterea RT, van Kessel C. (2015). Productivity limits and potentials of the principles of conservation agriculture. *Nature*; Tomek de Ponti, Bert Rijk, Martin K. van Ittersum (2012). The crop yield gap between organic and conventional agriculture. *Agricultural Systems*, Volume 108, Pages 1-9.

FIGURE 10: Highlights of Nestle's Net Zero 2050 Strategy (continued)

KEY INITIATIVES	
<p>Capital Committed</p> <ul style="list-style-type: none"> • Total investment: CHF 3.2 billion by 2025 • Investing CHF 1.2 billion to help spark regenerative agriculture across supply chain • These investments will be financed primarily through structural efficiencies and operational leverage to limit the impact on earnings. As a consequence, Nestle does not expect underlying trading operating profit margin to be negatively impacted by such investments (c.f. Berenberg). <p>Dairy and Livestock</p> <ul style="list-style-type: none"> • Majority of emissions reduction through farm training and better herd management in developing countries • Partnership with the Sustainability in Business Lab at ETH Zurich, developed a simulation tool to evaluate actions and costs for dairy • Supporting innovation in rumen modification that reduces emissions from dairy (enteric fermentation) mainly through the inclusion of feed additives and dietary supplements • Sustainable feed for livestock • Improve grassland management to act as carbon sink: better paddock management and silvopasture - the practice of integrating trees into areas where livestock forage - and switching to organic fertilizers • Supporting farms to innovate and trail new technologies to be Net Zero 	<p>Product Portfolio</p> <ul style="list-style-type: none"> • Reduce emissions by 6 MMtco_{2e} through transitioning the production portfolio toward more sustainable brands and ingredients (e.g. plant-based foods) • Increase the number of "carbon neutral" brands it offers and is continuously expanding its offering of plant-based food and beverages and reformulating products to make them more environmentally friendly • Integrating GHG impact data into the decision-making of product developers - aligning methodologies across brands • Garden Gourmet plant-based food as well as Garden of Life supplements will achieve carbon neutrality by 2022 • Sweet Earth plant-based food, among other brands, will do the same by 2025 • This in addition to Nespresso, S.Pellegrino, Perrier and Acqua Panna's commitment to carbon neutrality by 2022, with the rest of the Nestlé Waters category achieving the same by 2025 <p>Soil & Forests</p> <ul style="list-style-type: none"> • Majority of emissions reduction through preventing deforestation in supply chain • A range of regenerative agriculture techniques expected to deliver the rest (see below) <p>Other main areas and key initiatives</p> <ul style="list-style-type: none"> • Manufacturing: increase renewable electricity and renewable thermal energy • Packaging: recycling more packaging & switching to low carbon energy for plastic production • Logistics: electric trucks

D - Finance sector

When it comes to carbon reduction targets, not all sectors are equal, and the financial services sector in particular lags behind others.

Finance may be a low-emitting sector operationally, but it is exposed to climate risk and can have a significant positive impact through its lending, insurance and investing

activities. Through these activities, the exposure of a bank, insurer or asset manager to climate change runs far deeper than their own operations. Within the different categories of Scope 3 emissions, we estimate that "investments" (Category 15) account for most of the overall carbon footprint of financial in-

stitutions. Until very recently this was largely unmeasured, and therefore unmanaged.

Several big banks have made headlines over the last 12 months with long-term pledges to cut their financed emissions (Scope 3); JP Morgan, HSBC and Barclays are among those committed to aligning portfolios with the Paris Agreement. This supplements often well-established operational emissions reduction targets (Scope 1&2).

Whilst we welcome these commitments, in most cases we are yet to see defined roadmaps or concrete interim targets to demonstrate how ambitions will be met.

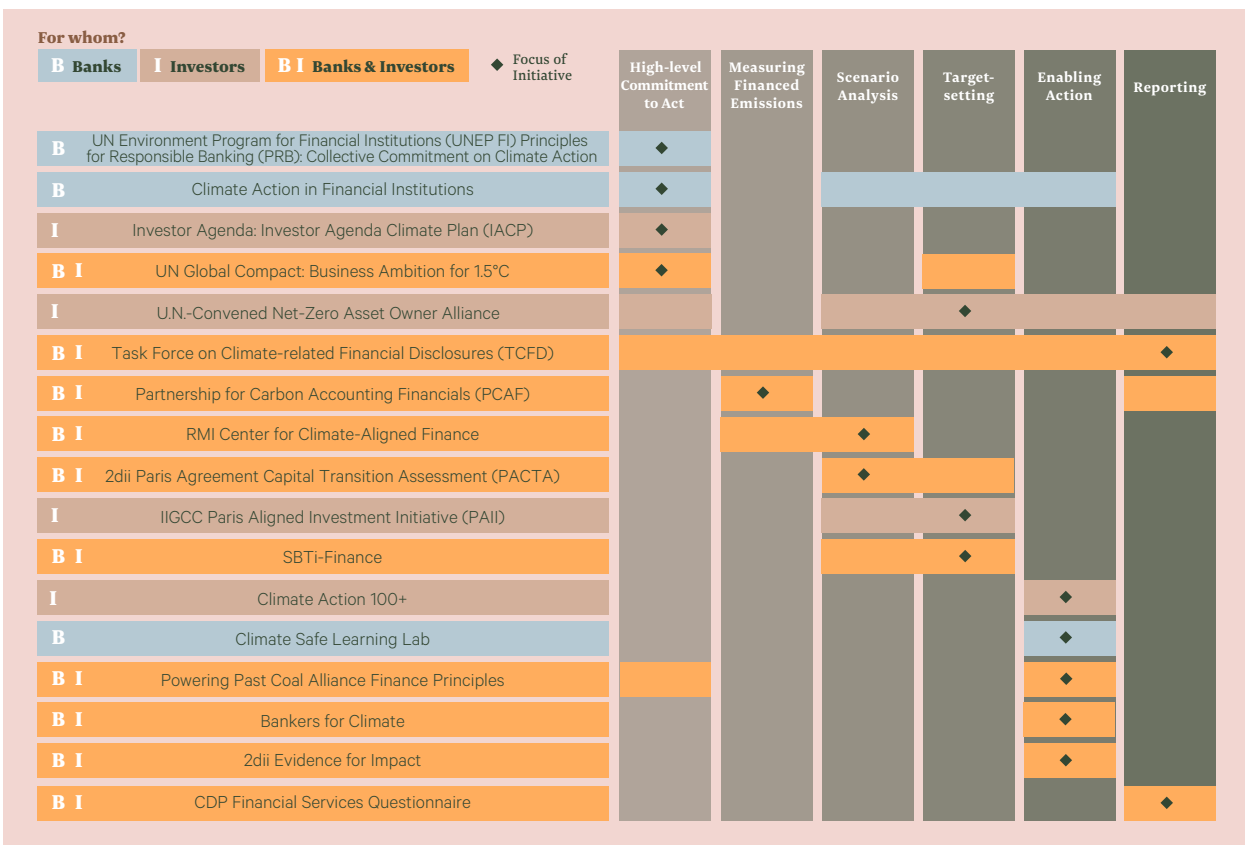
As we have discussed already, measuring a company’s carbon footprint is a prerequisite to effectively managing the associated impact. Without a clear understanding of the

emissions linked to loan books, underwriting and investment portfolios as they currently stand, a financial institution cannot set a meaningful target to reduce them.

Calculating financed emissions is a crucial first step to informative climate risk disclosures, target-setting and ultimately assessing alignment with the Paris Agreement. Lack of verification and accuracy in reported carbon data, and divergence over how best to attribute emissions of different types of financing remain a common obstacle hindering target setting across the financial services industry.

Industry collaboration is, however, fuelling progress and gives us reason to believe that there will be significant collective advancement in this area over the next 12 months (see Figure 11).

FIGURE 11: Existing Climate Initiatives Supporting Financial Institutions on Climate Actions



Source: PCAF (2020). The Global GHG Accounting and Reporting: Standard for the Financial Industry. First edition.

The Partnership for Carbon Accounting (PCAF) is a coalition over 90 financial institutions working to create a standardised methodology for calculating financed emissions. A pilot version

of the standard was published at the end of November 2020 providing an innovative and consistent way to report emissions financed by loans and investments at a given point in time.

This consistency is key to facilitating comparability between different institutions, portfolios and time periods. It will hopefully enable investors to understand the exposure that different banks have to climate-related risks and opportunities across their various business activities –from residential mortgage portfolios, to corporate clients, project finance, and everything in between.

We believe that this work will in turn spur action in other areas, including emissions reduction targets. In October 2020, the SBTi launched its first framework for financial institutions, providing guidance for setting targets pertaining to real estate portfolios, mortgage books, electricity generation project finance and general corporate instruments (equity, bonds, loans). As with other

companies, financial institutions have two years after committing to the initiative for their targets to be validated and approved.

These are just two of a number of industry initiatives focussed on tackling the challenge of how financial institutions can best measure, manage and report financed emissions. In terms of implementation, it is important to note the role that banks and other financial institutions can and must play in the achievement of carbon reduction targets. They are uniquely placed to support clients in their respective transitions through innovative financing solutions and advisory services, to help companies meet their carbon reduction targets, and in turn, their own. We believe that the next 12-24 months will be critical for distinguishing the leaders from the laggards.

CONCLUSION

In this report we discuss the role of companies and investors in targeting the reduction of GHG emissions. There has been significant progress in recent years in the measurement of GHG emissions. Corporate disclosure is catching up fast. Now the focus is shifting towards the future with companies increasingly committing to ambitious carbon reduction targets.

The carbon footprint provides the starting point for the necessary steps to reach a science-based target of zero emissions at some point this century. Where zero emissions are not an achievable target, carbon removal must become part of the reduction plan to offset any remaining emissions but carbon offsetting is no substitute for mitigation. Having a plan and a target is a good start as it sends a signal to stakeholders about the intention to contribute to the climate solution. Yet, the implementation period is unusually long-term as it stretches several decades. The transformation of the global economy does not happen overnight.

Companies can be rule takers which could jeopardise their competitiveness. The better option is to consider carbon reduction as a strategic objective that can be translated into a competitive advantage. The TCFD framework provides sector-specific guidance. With most businesses having a planning cycle that spans one to five years, the real-world challenge is the delivery of those truly long-term targets. Therefore, a long-term target needs to be supported by interim targets starting with the next five years.

The finance sector is well positioned to assess companies' climate strategies and to monitor short- and medium-term progress against carbon reduction targets. Targets that are set two or three decades in the future face high levels of uncertainty; for example, they are often based on technological innovations that are not yet scalable or cost effective. That is where investors play a crucial role in monitoring companies reduction targets in the same way that they sanction earnings growth, cash flow and balance sheet ratios.

Companies' long-term decisions like capital allocation and M&A need to be scrutinised against the respective climate strategy. The stakes are high: business models become obsolete, new businesses emerge, many companies need to adapt, and every company will have to disclose its specific response to climate change.

Successful enforcement of carbon reduction targets by investors will reduce uncertainty and allow the construction of efficient portfolios that are aligned with the Paris Agreement. The investor challenge is the integration of new types of data and methodologies, in this case GHG emissions and climate science, into the investment analysis.

The cases presented in this report demonstrate that there is no one-size-fits-all approach to setting and assessing carbon reduction targets. They illustrate that carbon reduction is not just a topic for a few sectors exposed to fossil fuels and ESG-thematic investors. Climate risk management and the measurement of real-world carbon impact is fast becoming mainstream, for corporates and investors. This capacity building is necessary if we are to forge the most effective path to a zero-carbon economy. The diversity of approaches to carbon reduction is unavoidable and welcomed, but this does not preclude the need for standardisation. Companies and investors should support and apply standards for carbon reduction to ensure that good intentions have the appropriate impact.

GLOSSARY

TERMS	DEFINITION/MEANING
1.5 Degree pathway	The course of action that a company needs to follow to aim to limit global warming to 1.5 °C. This implies Net Zero carbon by 2050.
Carbon Negative	A carbon negative target represents the highest level of ambition. The goal is to reduce emissions by more than the combined amount emitted by the company and its value chain. The term carbon negative is equivalent to the term climate positive.
Carbon neutral target	A company intends to reduce its carbon emissions to zero to achieve a neutral impact on climate change from a set target year. If carbon emissions cannot be reduced to zero, the remaining emissions have to be removed from the atmosphere and sequestered for long periods of time to allow for a carbon neutral target (see below for more details about carbon offsetting). A carbon neutral target is equivalent to the terms "Net Zero" target (see below) and "climate neutral" target.
Carbon offsetting	A carbon offset is a mechanism used to compensate for GHG emissions by funding an equivalent GHG saving elsewhere.
Carbon reduction target	A basic level of ambition to reduce the carbon footprint – either by an absolute or relative amount – usually by a given % relative to a base year and a target year.
Carbon removal	Carbon removal comprises negative emissions technologies like afforestation, agricultural practices that sequester carbon in soils, bio-energy with carbon capture and storage, enhanced weathering, and direct air capture when combined with storage.
CDP (Carbon Disclosure Project)	A not-for-profit institution that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.
Greenhouse Gas emissions	As defined by the GHG protocol: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride.
IPCC	The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. Its goal is to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.
Net Zero target	A Net Zero target is equivalent to a carbon neutral target. However, it is usually used if indirect value chain emissions (Scope 3) are targeted in addition to Scope 1 & 2. As with carbon reduction targets in general, Net Zero targets can be more ambitious if aligned with climate science.
Paris Agreement	We refer to the agreement resulting from the COP21 in 2015. To this date 187 parties have ratified.

TERMS	DEFINITION/MEANING
PCAF (Partnership for Carbon Accounting Financials)	A global partnership of financial institutions that work together to develop and implement a harmonised approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments.
Race to Zero	A global campaign to rally leadership and support from businesses, cities, regions, investors for a healthy, resilient, zero carbon recovery that prevents future threats, creates decent jobs, and unlocks inclusive, sustainable growth. It mobilises a coalition of leading net zero initiatives, representing 454 cities, 23 regions, 1,397 businesses, 74 of the biggest investors, and 569 universities.
Science-based carbon reduction target	It requires the integration of climate science into a carbon reduction target. For example, a target for “1.5°Celsius alignment” is a pledge to reduce emissions by a sufficient amount to satisfy the respective 1.5-degree Celsius reduction pathway as specified by institutions like the IPCC.
SBTi (Science-Based Targets Initiative)	A partnership of several NGOs: Carbon Disclosure Project (CDP), World Wildlife Fund (WWF), UN Global Compact and the World Resources Institute. The SBTi defines and promotes best practice in science-based target setting. It independently assesses and approves companies’ targets in line with its criteria.
Scope 1	Direct emissions from owned or controlled sources.
Scope 2	Indirect emissions from the generation of purchased energy.
Scope 3	All other indirect emissions, which occur in the value chain (upstream and downstream).
TCFD (Task Force on Climate-related Financial Disclosures)	An organisation established in 2015 to develop recommendations for disclosures of financial climate-related metrics.
TPI (Transition Pathway Initiative)	A global, asset-owner led initiative which assesses companies’ preparedness for the transition to a low carbon economy.
WRI (World Resources Institute)	A non-profit global research organisation focussed on seven critical issues at the intersection of environment and development: climate, energy, food, forests, water, cities and the ocean.

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