Back to the future:

The predictive power of science-based targets

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Astute use of evidence from the past and present to make informed predictions about future performance has always been the key to investment success. When it comes to sustainable investing in fixed income, the same rigorous approach needs to be employed in relation to outcomes such as addressing the climate crisis. A new study shows that a leading indicator of a company's success to decarbonise is whether or not they have set rigorous science-based targets for emissions reduction (SBTs).

Key findings

- Addressing climate change requires a portfolio of companies that includes credible 'brown to green' transition investments as a complement to leaders
- SBTs are a strong indicator of future performance on emissions reduction
- A recent SBT initiative study showed average emissions reductions of 25% over five years for aligned companies

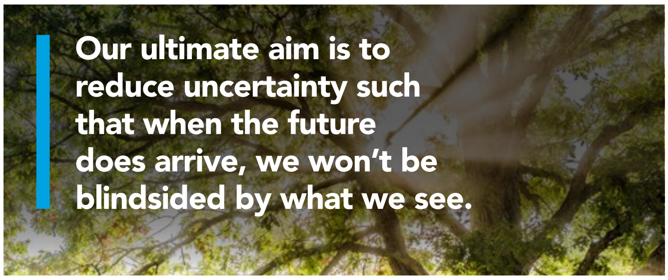
In the 2004 cult film *Primer*, two entrepreneurial engineers tinkering in their garage accidentally discover a way to travel in time. The pair soon put their homemade time machine to good use: checking the markets during their trips into the near future, they use their acquired knowledge to make profitable same-day stock trades.

Let's be honest. Who wouldn't like to have the same ability to 'see' the future of the markets and act accordingly. Unfortunately, time travel isn't likely to be an option for investors anytime soon, and neither are we clairvoyant. Instead, we have to gather evidence for likely future performance through more prosaic methods. At Federated Hermes, this is an activity we undertake with a heightened sense of responsibility. Our investment analysts spend countless hours analysing financial, operating and environmental, social and governance (ESG) factors in an attempt to project the future path of a company and, as an extension of this, the future path of their debt securities. Direct engagements with companies on their ESG behaviours through our stewardship arm – EOS at Federated Hermes ("EOS") – add even greater precision to that process. Our ultimate aim is to reduce uncertainty such that when the future does arrive, we won't be blindsided by what we see. In summary, we conduct rigorous, disciplined assessments and pricing of risks and opportunities through a proprietary investment process, day in and day out.

The importance of rigour in sustainable investing

We believe the same rigour, discipline and propriety should characterise investing with the dual-purpose of achieving a sustainability and a financial aim. In both cases, the challenge is identical: to reduce the uncertainty as much as possible when predicting how a company will evolve over time. To create a climate change impact portfolio, investment managers choose a collection of building blocks, the sum total of which will lead to the decarbonisation of the portfolio in aggregate, over time.

For example, in building a credit portfolio that aligns itself with the decarbonisation goals of the Paris Agreement[1], there are a number of approaches one can take. However, for that portfolio to have an actual impact on the decarbonisation of the economy at large, it needs to comprise so-called 'transition' companies as a complement to climate change leaders. These are companies that seek to adapt their operating processes and/or their products to eliminate or neutralise greenhouse gas (GHG) emissions. In other words, they seek to transition from 'brown' (high emitters) to 'green' (low emitters). Building a portfolio of credible 'brown-to-green' investment ideas, in combination with leaders, should ultimately lead to the overall portfolio acting as a driver for brown-to-green decarbonisation. That is the obvious part.



The need for credible transition investment ideas

While this sounds straightforward, the difficulties arise in finding *credible* transition stories. We seek to reduce uncertainty by looking at multiple inputs to assess the likelihood a company will deliver on a decarbonisation thesis. These include carbon disclosure rating (CDP) scores and data; raw data from Trucost[2]; scores from third-party vendors of ESG data; and our own proprietary ESG assessments, engagement input and other research. Above all, our investment process for climate change portfolio construction places great emphasis on a company's willingness to set ambitious science-based targets (SBTs), since our research shows this is the best leading indicator we have today for success in terms of decarbonisation in the future. Our proprietary Climate Change Impact (CCI) scores, which assess a company's decarbonisation plans, consequently place great weight on this aspect[3]. We are therefore greatly encouraged by the results of the recently published Science Based Targets initiative (SBTi) 2021 Annual Progress Report.

[1] The Paris Agreement is the commonly used term to refer to a legally binding international treaty on climate change adopted by 196 Parties at the 21st United Nations Conference of Parties (COP21) in December 2015. It came into force on 4 November 2016 and aims to limit global warming to below two degrees celsius compared to pre-industrial levels.

[2] Trucost, part of S&P Global, assesses risks relating to climate change, natural resource restraints and broader ESG factors.

[3] See Appendix for more information on CCI scores.

SBTs: A promise made is a promise kept

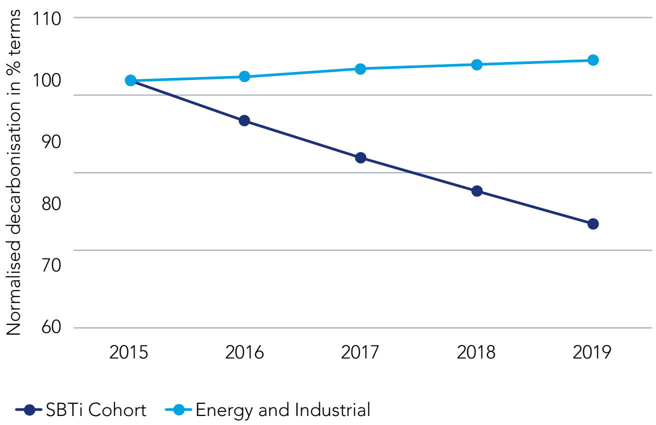
The Science Based Targets initiative (SBTi) is a partnership between the Carbon Disclosure Project (CDP), the United Nations Global Compact (UNGC), the World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). Its self-described purpose is to drive "ambitious climate action in the private sector by enabling companies to set greenhouse gas emissions reduction targets aligned with what climate science shows is required to prevent catastrophic climate change".[4] In January, the SBTi published its 35-page Annual Progress Report[5], which includes the results of a study it conducted on a cohort of 338 companies that had set science-based targets, covering the period 2015 to 2019. The purpose of the study was to understand to what extent companies that set SBTs actually reduce their greenhouse gas emissions (GHG).

The study presents striking evidence that setting ambitious SBTs for the reduction of GHG emissions leads to measurable real-world impact in the space of just five years. These include:

- A reduction of Scope 1[6] and Scope 2[7] emissions at a linear rate of 6.4% – ahead of the 4.2% rate annual rate that the SBTi required to meet a 1.5 degree target
- Emissions *reductions* of 25% versus an *increase* in emissions of 3.4% from energy and industrial firms globally over the period covered by the study
- Emissions reduced by 302 million tonnes – the equivalent of 78 coal-fired power plants

Figure 1, below, shows the rate of decarbonisation of SBT companies versus energy and industrial firms globally. It acts as a stark illustration of how setting SBTs leads to real-world change and corroborates our engagement activities on climate change, which encourage the establishment of SBTs.

Figure 1: Rate of decarbonisation of SBT companies versus energy and industrial firms globally



Source: Re-based to 100 at published annual linear rates of -6.4% for SBT companies and +0.85% for Energy and Industrial companies, as published in the SBTi 2020 Progress Report and based on a cohort of 338 companies.

A promise kept is decarbonisation made

For an investment process with a climate change theme, the evidence from the study serves a very important purpose. Because the establishment of SBTs is clearly followed by decarbonisation at an average linear rate of 6.4% per year, it is one of the best leading indicators we have that a company will succeed in its decarbonisation plans. Rates of change for individual companies will depend on many factors, of course, including to what temperature (e.g. 1.5°C versus 2°C) a company aligns its goals. However, the validity of assigning considerable weight to the setting of SBTs, given their power to predict a company's *ex-ante* potential for success in decarbonisation, is clear. Moreover, the study supports our approach to predicting the decarbonisation performance of a portfolio, which is based on analysis of the decarbonisation impact a fixed cohort of SBT companies had on a broader portfolio.

> **However, the validity of assigning considerable weight to the setting of SBTI-approved SBTs, given their power to predict a company's *ex-ante* potential for success in decarbonisation, is clear.**

Connecting the dots: predicting the decarbonisation path of portfolios

But while approved SBTs are a highly useful indicator of the decarbonisation potential of individual companies, predicting the future decarbonisation path of a portfolio is fraught with challenges. (For the moment we will avoid the debate on what base year and which KPIs are deployed to measure change so that we can focus on the process of picking future leaders in decarbonisation.) For one, a portfolio is dynamic: when managing on a total return basis to deliver a financial objective, issuers come in and go out of the portfolio based on relative value over time. In addition, we could see the same rotation in a decarbonisation-focused portfolio based on the progress that company is making in its transition from brown to green. Unless one is dealing with a static portfolio over a fixed period of time (which is likely to limit ability to outperform a financial target) measuring decarbonisation is difficult.

Despite this, knowing credible SBTs are a leading indicator of decarbonisation means we have confidence that a portfolio is on a clear decarbonisation path. If we populate a portfolio with companies possessing both attractive financials and credible decarbonisation theses, we give ourselves the best possible chance to deliver financial and environmental returns to our clients.

[4] https://sciencebasedtargets.org/

[5] https://sciencebasedtargets.org/resources/files/SBTiProgressReport2020.pdf

[6] Under the Greenhouse Gas (GHG) Protocol, Scope 1 emissions are direct emissions released to the atmosphere as a result of the activities of a company.

[7] Under the GHG Protocol, Scope 2 emissions are those caused by the generation of electricity used in a company's activities.

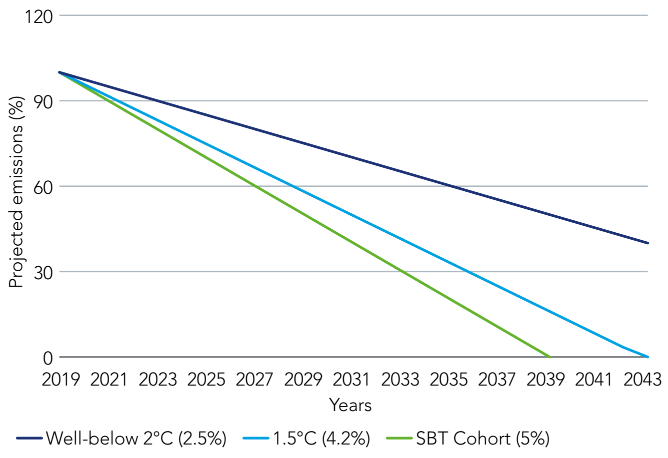
Calculating the decarbonisation impact of a sample of SBT companies

With the aim of predicting the decarbonisation performance of a climate-focused portfolio, we identified the companies within a portfolio that have commitments approved by SBTi. Although many of the holdings had recently established SBTi-endorsed targets, a number of issuers were unable to be assessed due to a lack of emissions disclosed or targets published. Others had disclosed *intensity targets*, which compare emissions to economic output, rather than *absolute reduction* targets. This left about 18% weighting of the portfolio with absolute targets aligned to 1.5°C or 2°C who disclosed their Scope 1 & 2 emissions.

For these companies ('the SBT cohort') we employed SBTi data, which uses a company's base year emissions and target year emissions to work out the year-on-year percentage reduction a company would need to hit their target. It was then possible to normalise the data across all the names in the sample for the period from 2020 to 2050[8]. We plotted the SBT cohort's trajectory of year-on-year emissions from 2020 to 2050, the deadline year for the world to achieve net-zero emissions, with the aim of limiting temperatures to 1.5°C above pre-industrial levels, according to the Intergovernmental Panel on Climate Change (IPCC).

From the data gathered, a linear reduction rate shows the emissions reduction pathways of this cohort from 2020 to 2050, assuming they achieve their respective targets. A percentage reduction graph is used to best represent the comparative reduction between achieving the 'well-below 2°C' and 1.5°C climate scenarios outlined by the IPCC and SBTi, and the SBT cohort's emissions reduction pathway. The results are shown in Figure 2.

Figure 2: Comparative projected emissions of SBT cohort versus 'well-below 2°C' and 1.5°C climate scenarios



Source: Federated Hermes

The results from the SBT cohort's trajectory showed an average year-on-year linear decarbonisation rate of 5%, thus achieving a 1.5°C climate scenario when projected to 2050. Interestingly, we note that the 5% forecast for the rate of decarbonisation over the test period is behind the 6.4% linear rate of change that the SBTi reported in its historical study discussed above. This suggests that the 5% forecast may even underestimate the potential for decarbonisation, given we now have evidence that SBTi-aligned companies have gone beyond this figure.

Keep 'em honest

Of course, it would be wrong to simply assume the same level of commitment and progress will be achieved by the rest of the portfolio. However, through direct engagement with companies, we seek real change. To fulfil our joint fiduciary and environmental responsibility, we encourage holdings to produce stronger decarbonisation theses that are verified by the SBTi. Ultimately, not only does the mitigation of risks relating to climate change contribute to the decarbonisation of the global economy, it also helps to safeguard value.

To measure the success of this approach we require three elements:

- Verification that the commitments made by holdings within a portfolio are scientifically feasible
- Verification that these commitments are aligned to the Paris Agreement
- The ability to track the progress of emissions reduction

The SBTi provides each of these elements in an independent and respected approach: by using SBTi data we can track the progress of companies signed up to the initiative and more confidently predict the decarbonisation trajectory of a climate-focused portfolio.

A linear rate of 6.4% annual decline in GHG emissions for companies who set science-based targets justifies our decision to place relatively more weight on the SBT factor when 'screening-in' companies for climate change impact portfolios.

SBTs lead among indicators for success in decarbonisation

As we said at the beginning, in designing, building and managing climate change portfolios we have a clear objective: to minimise uncertainty and maximise the potential for success, both in terms of financial returns and contribution to global decarbonisation. To achieve this, we aim to employ the most reliable tools possible to enhance the precision of the investment process. Sustainable investing is growing rapidly and, with the data, tools, and methods to support it developing just as quickly, our approach is always evolving. To deliver on a financial objective we combine traditional analysis with emerging methods such as our pioneering ESG pricing model. Meanwhile, to deliver on a climate-change objective we take great comfort in the results of the SBTi study: that a linear rate of 6.4% annual decline in GHG emissions for companies who set science-based targets justifies our decision to place relatively more weight on the SBT factor when 'screening-in' companies

[8] The assumption was made that companies will continue the same decarbonisation pathway they have committed to should they hit their targets prior to 2050.

for climate change impact portfolios. As noted above, that 6.4% figure aligns well with the 5% rate of decarbonisation forecast for the SBT cohort we analysed. Accordingly, among the many factors we consider when assessing names for sustainably-themed portfolios – from *ex-post* data to the *ex-ante* ratings based on inputs from analysts and engagement managers – the establishment and delivery SBTs will remain meaningful in our CCI scores, and thus, investment decisions.

Appendix: Our proprietary Climate Change Impact scores (CCIs)

Creating a credit portfolio with elevated potential to positively impact climate change requires the ability to assess the contributions of individual holdings towards decarbonising the global economy. Any credible investment process supporting this objective must be proprietary, independent and forward-looking.

Federated Hermes' Climate Change Impact (CCI) scores grade companies on a simple scale of one to five, with each score assigned at the confluence of two dimensions:

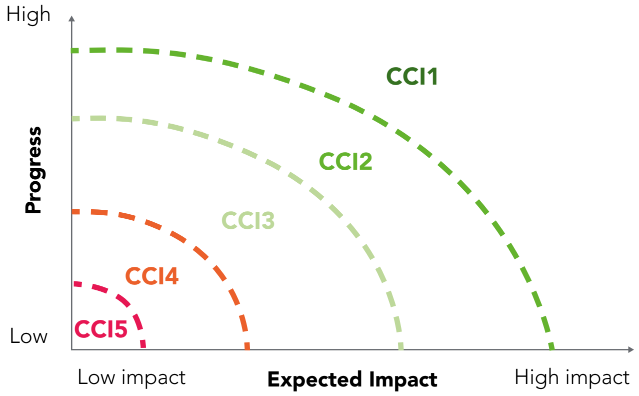
1 The **Progress** of a company's decarbonisation plans

2 The **Materiality of Expected Impact** of those decarbonisation plans

The Progress dimension determines how effectively a company is delivering on its decarbonisation plans. To elaborate, factors we consider when evaluating a company's progress include the timeframe and detail of targets set, whether these targets are aligned to a 2°C or 1.5°C scenario, and if they are verified by an independent third-party such as the Science Based Target initiative (SBTi). This evidence is combined with feedback received from engagement with the company to provide a strong indication of commitment, giving investors an informed picture of the likelihood of a stated decarbonisation thesis being carried through.

The second dimension, Materiality of Expected Impact, is essential in order to differentiate between companies which demonstrate similar levels of Progress but possess varying abilities to contribute to global decarbonisation. It achieves this by rewarding companies with operations and decarbonisation strategies that will remove greater amounts of emissions from global economies and hence have greater impact.

Figure 3: Combining Progress on decarbonisation with Materiality of Impact to create CCI scores

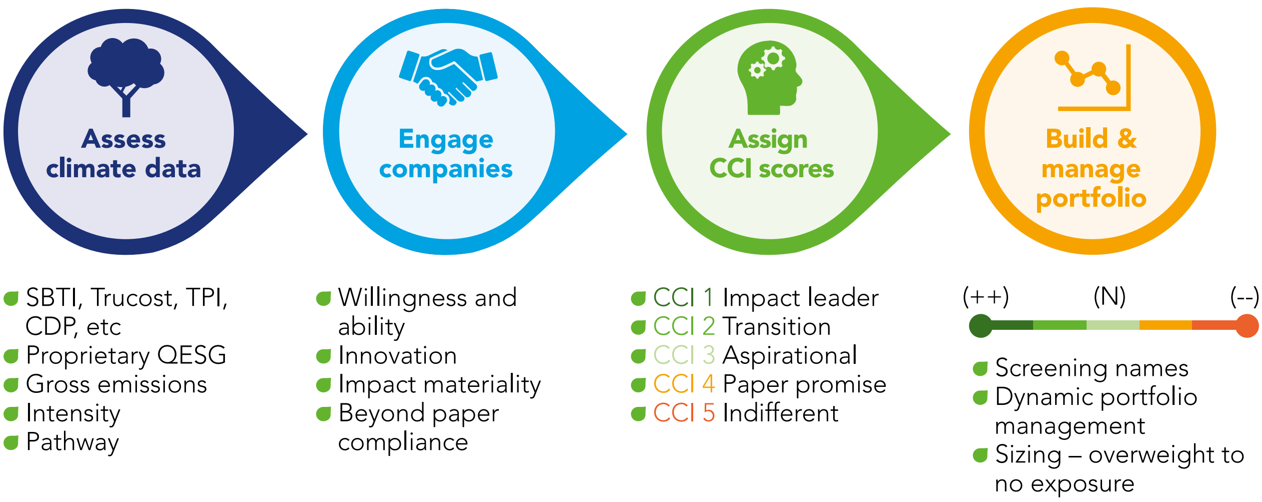


Source: Federated Hermes. For illustrative purposes only.

Determining a company's expected impact is a complex task. The gross amount of emissions expected to be saved from a company's decarbonisation strategy is quantifiable and often provided by third parties such as CDP[9]. Less quantifiable, but equally important, is the impact of climate change innovations and carbon-friendly operations that will shape best practice for industries. For example, renewable energy firms are unlikely to disclose detailed decarbonisation plans, but their technology is undeniably the future of a carbon-free energy sector. Their impact will therefore be significant.

Ultimately, a high CCI score will recognise companies at the vanguard of both policy and innovation. The result of applying this score in the construction and management of both mainstream and climate-themed portfolios will be one that offers greater exposure to companies who are leaders in the transition to a future of clean and efficient economies.

Figure 4: The investment decision process for climate impact



Source: Federated Hermes

[9] CDP is a not-for-profit that runs a global disclosure system to manage environmental impacts: https://www.cdp.net/en

The value of investments and income from them may go down as well as up, and you may not get back the original amount invested. Past performance is not a reliable indicator of future results.

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