Enterprise impact:

How our investments contribute to sustainability

WHEB

WHEB's investments are made with the intention of delivering a positive social or environmental impact. For the past seven years we have sought to quantify the positive impact that is associated with each of our investments and with the strategy as a whole. In previous years we have collected this data ourselves and then had it reviewed by an independent consultant. This year we have instead chosen to source impact data through a third party.[15] Entirely independent of WHEB, this group collects and/or estimates the positive impact data associated with the products and services sold by companies held in WHEB's strategy. While data is broadly equivalent, we have nonetheless restated the impact figures for 2021 in Figure 11 to make them more directly comparable to this year's numbers.

Selection of impact metrics

The impact metrics reported on the next page have been selected based on the theory of change that we have identified for each investment and the relevant UN Sustainable Development Goal (SDG) that this is related to (see Figure 8). Each indicator is aligned with the relevant SDG as well as with other commonly used metrics such as IRIS+.[16]

In 2022, overall assets under management were down on the previous year which reduced the positive impact associated with the strategy as a whole. Figure 11 on the next page provides details on the year-on-year comparison of the total impact of the strategy from 2021 to 2022.

[15] https://www.netpurpose.com/
[16] IRIS+ is a set of indicator metrics developed by the Global Impact Investing Network (GIIN) (https://iris.thegiin.org/).

Figure 11: Impact associated with WHEB's investment strategy (2022)

Indicator	2021[17]	2022	Explanation
Assets under Management (AuM)	£1.6bn	£1.4bn	Lower AuM contributed to a decrease in impact figures across the strategy.
CO$_2$e avoided (tonnes)	331,000	271,000	Decrease also due to the sale of Wabtec (Sustainable Transport). CO$_2$e avoided per £1m invested fell from 231tCO$_2$e in 2021 to 201tCO$_2$e.
Renewable electricity generated (MWh)	431,000	424,000	AuM decline partially offset by new Cleaner Energy investments. MWh per £1m invested increased from 301MWh in 2021 to 314MWh in 2022.
Waste recycled (tonnes)[18]	17,000	25,000	Increased investment in Smurfit Kappa and the addition of Tomra to the portfolio boosted tonnes of waste recycled. Waste recycled per £1m invested increased from 12 to 19 tonnes.
Water treated (litres)	10.7bn	3.8bn	Substantial decline due to reduced sales by Xylem of water treatment equipment.
Water saved (litres)	0.8bn	1.5bn	Increased due to higher contribution from Xylem's smart meters. Per £1m invested, water saved increased from 550k litres in 2021 to 1.1m litres saved in 2022.
No. of people benefiting from improved healthcare	397,000	50,000	Sale of Cerner dramatically reduced numbers of people benefiting from healthcare. COVID tests no longer reported.
No. of people with improved well-being[19]	67,000	80,000	Increased due to inclusion of data from Sonova (hearing aids) and MSA Safety (equipment for workplace safety).
Education (no. of days)	266,000	104,000	Sale of Strategic Education reduced exposure to education.
US$ of R&D enabled[20]		$29,350,000	New metric covering money spent on R&D equipment and services supplied by WHEB portfolio companies to develop positive impact products and services.

The Impact Calculator

Figure 12: The positive impact associated with owning £1m in the strategy in 2022

In addition to the total impact associated with the strategy, we also report data on the positive impact that is associated with £1m invested in the strategy (see Figure 12). Figures associated with each of WHEB's investment funds is available on our website. This includes an interactive version of this calculator, which has been updated with 2022 data and is available in different currencies. **impact.whebgroup.com/impact-calculator/**

As we have previously stressed, these reported impacts cannot be equated with the personal impacts that we all have through our own daily activities. You cannot, for example, offset the negative impacts associated with an airline flight with an investment in WHEB's strategy. This is because the positive impact that is reported here is ultimately owned by the end user of the product or service in question, not by the investor in WHEB's strategy.

Even the companies we invest in do not themselves own this impact. Vestas, for example, does not 'own' the avoided carbon emissions associated with its wind turbines. Instead, the avoided emissions are correctly attributed to the end consumer of the renewable energy that is generated by the wind turbines. While the impact is not owned by the investor, by investing in Vestas, the WHEB strategy is clearly aligned with – and part of the supply chain that enables – this positive end impact. This is why we report this impact as 'associated' with the investment strategy.

Resource Efficiency

Avoiding

201 tonnes

of CO_2e emissions.

Equivalent to the energy use of 70 average European residential homes for one year and saving £7,950 in avoided carbon costs.[21]

Environmental Services

Recycling

19 tonnes

of waste materials.

Equivalent to the waste produced by 23 UK households per year, saving £1,873 in reduced landfill costs.[22]

Education

Students receiving

77 days

of tertiary and vocational education.

Cleaner Energy

Generating

314 MWh

of renewable energy.

Equivalent to the annual energy use of 21 European households.

Water Management

Treating

2.8 million

litres of wastewater.

Equivalent to the total annual wastewater generated by 27 European households.

Water Management

Saving

1.1million

litres of water.

Equivalent to the water used by 18,020 showers.

Healthcare

Providing

37 people

with improved healthcare treatment.

Well-being

Providing

60 people

with improved well-being.

R&D

$18million

spent on R&D equipment and services supplied by WHEB portfolio companies to develop positive impact products and services.

21. Based on a weighted average global carbon price of US$47.89 per tonne.
22. Based on a landfill tax of £98.60 per tonne of waste, which is equivalent to the UK's landfill tax in 2022.

Negative product impacts

The positive impact associated with the products and services of investee companies is a critical focus of our impact reporting. It is central to the investment case for each holding in the WHEB strategy and is the focus of our Impact Engine (see Section 2).

However, this is only a partial picture. Almost all products and services also have some negative impacts that need to be acknowledged and mitigated. As part of our impact analysis, we capture information on the key negative impacts associated with products and services supplied by investee companies. In many cases, these impacts are not routinely acknowledged by the companies themselves. Where they are acknowledged, they are typically described qualitatively. It is rare for companies to have developed clear management plans and targets on negative impacts associated with their products and services. The only exception is reporting of greenhouse gas (GHG) emissions associated with product use. There are two main types of negative impacts that we consider: product-in-use impacts and end-of-life impacts.

Product-in-use impacts

Across the portfolio there are a variety of negative impacts associated with the use of products and services provided by companies held in the strategy. These can include negative health or social impacts from faulty medical devices or the impact on employment from greater automation. One issue that we have focused on in 2022 has been the manufacture of hazardous chemicals by portfolio companies. We are working with these companies to encourage them to reduce the number of hazardous chemicals they use and the number of applications they are used in. According to the NGO ChemSec, the three companies that we own that manufacture hazardous chemicals are scored in the top half of their ChemScore analysis.[23] Two out of three have shown year-on-year improvements in their scores. We are engaging with all three to encourage further progress.

Over a third of the companies held in WHEB's strategy supply electrical equipment including automation equipment, components for electric vehicles, software tools, and heating, ventilation and air conditioning (HVAC) equipment. We invest in these businesses because their products and services avoid the emissions associated with less-efficient equipment. However, they still collectively use a lot of electricity, which in turn is linked with significant GHG emissions. As we report in our NZC report (see page 34), Scope 3 emissions (which include emissions from the use of products) increased dramatically this year, due to the inclusion of Trane Technologies and because of fuller reporting of Scope 3 emissions. Trane Technologies and Daikin Industries, both major HVAC manufacturers, together report Scope 3 emissions of over 600mtCO_2e. While emissions would otherwise have been even higher without Trane and Daikin's products, Scope 3 emissions are nonetheless increasing year-on-year and clearly represent a major challenge.

23. The three companies are DSM, Ecolab and Linde. Further details on the scores are available at https://chemscore.chemsec.org/reports/

End-of-life impacts

Given the focus on electrical equipment, a related challenge is the need to address electrical waste at the end of a product's life. This is a topic that we raise with portfolio companies and which represents an area of increasing focus for our engagement. Some companies are already well advanced in their response to this challenge. First Solar, for example, recycled 42,000t of solar modules that had reached the end of their lives, up from 36,000t in the previous year. Vestas also announced in early 2023 that they have developed a new solution that will enable them to recycle the materials used in their wind turbine blades and reuse these materials in new blades. Previously, wind turbine blades have had to be incinerated or landfilled.[24]

Other companies are reporting progress as well. For example, a key issue that we have engaged HelloFresh on has been the use of plastic packaging in their meal kits. In 2022 the company announced that they have reduced packaging weight by 12% and that plastic packaging per meal fell by 34%.[25]

Mitigating product impacts

These types of negative impacts, along with more systemic impacts, remain a key focus of our engagement activities. It is clear that individual companies are making progress on specific issues, but it is still difficult to access comprehensive data to provide a clear picture of overall trends. This is an area that we will continue to work on and we hope to provide clearer reporting in the future.

Environmental, social and governance (ESG) performance

Alongside the impact delivered through the products and services supplied by companies in the WHEB strategy, we also report here on the ESG profile of portfolio companies. The ESG issues documented here relate primarily to issues associated with company operations.

We utilise our own research frameworks to analyse ESG performance and do not rely on any third-party ESG ratings provider.[26] Over the past four years we have taken an ESG 'snapshot' of the portfolio at the end of each year across 15 ESG factors. We use data supplied by Impact Cubed for this purpose which is based on actual outcome data rather than on an assessment of company policies or declarations. The chart in Figure 13 compares the strategy's profile against that of the MSCI World, the strategy's principal benchmark. Stronger performance is shown as the lines reach closer to the outside of the diagram.

With a five-to-seven-year holding period, the overall shape of the strategy does not typically change dramatically year-on-year. This remains the case this year (see Figures 13 and 14). The proportion of the strategy invested in companies creating environmental and social good, according to Impact Cubed's definitions, has marginally increased this year, although it is substantially below the levels we believe are exposed to these areas. According to our own more detailed assessment, we believe that 100% of the strategy is invested in companies that deliver positive social or environmental impact.[27] The strategy's exposure to companies creating social or environmental harm has been entirely stable over the four years when we have done the analysis, at 0% in each category.

Compared to the MSCI World, the strategy performs dramatically better than the index on the product and service-related measures in Impact Cubed's analysis. This is consistent with the objective of the strategy. In addition, we are pleased that the broader ESG profile is also ahead of the benchmark on 9 of the 11 other dimensions. Scope 3 GHG emissions are, as expected, behind the benchmark due to investments in Trane Technologies and Daikin Industries, as explained on the previous page. Gender diversity is also behind, although much improved year-on-year: from 22% of board and senior management positions filled by women in 2021 to 26% in 2022. Both of these dimensions reflect the strategy's sectoral biases towards industrial and technology focused businesses which typically employ fewer women.

24. https://www.vestas.com/en/media/company-news/2023/vestasunveils-circularity-solution-to-end-landfill-for-c3710818
25. https://ir.hellofreshgroup.com/download/companies/hellofresh/Annual%20Reports/ENG_HelloFresh_Non-Financial_Report_2022.pdf
26. We have been critical of the use of ESG ratings. For example see https://www.whebgroup.com/wheb-insights/esg-ratings-a-quickfix-or-a-bodged-job/
27. Impact Cubed's definition of positive impact products and services is necessarily high-level and based on a company's aggregate revenue streams. In contrast, WHEB's analysis is more granular and based on an analysis of a company's actual activities.

Figure 13: ESG profile of WHEB's investment strategy

Key

MSCI World — WHEB Strategy — Society — Environment — Governance — Products & Services

Figure 14: ESG performance

Absolute change (yoy) ↓
Proportion of data reported %

		Absolute change (yoy)	Proportion of data reported
WEIGHTED AVERAGE CARBON INTENSITY	71 tonnes CO_2e/\$1m of revenue	↓	82%
SCOPE 3 CARBON EFFICIENCY	1,515tCO_2e/\$1m of revenue	↑	62%
WASTE EFFICIENCY	9.57 tonnes/ \$1m of revenue	↑	60%
WATER EFFICIENCY	2,000m^3 of fresh water/\$1m of revenue	↑	53%
GENDER EQUALITY	26% of board and top management positions are occupied by women	↑	95%
EXECUTIVE PAY	66x ratio of executive-level pay to employee pay	↑	81%
BOARD INDEPENDENCE	79% of board members are independent	↑	97%
ENVIRONMENTAL GOOD	32% of portfolio invested in environmental solutions	↑	100%
SOCIAL GOOD	30% of portfolio allocated to help alleviate social issues	↑	100%
AVOIDING ENVIRONMENTAL HARM	0% of portfolio in environmentally destructive industries	=	100%
AVOIDING SOCIAL HARM	0% of portfolio in industries that aggravate social issues	=	100%
ECONOMIC DEVELOPMENT	\$45,000 - median income of portfolio-weighted geography of economic activity[28]	↓	100%
AVOIDING WATER SCARCITY	2.5 – Geographic water use[29]	=	100%
EMPLOYMENT	5.8% – Unemployment in portfolio-weighted area of economic activity	↓	100%
TAX GAP	3% - estimated % of tax avoided by corporate tax mitigation schemes	=	100%

[28] A lower figure demonstrates that the portfolio is more exposed to activities in lower income communities.
[29] Based on the World Resources Institute scale of 0-6 from most to least water scarce areas.

Net zero carbon (NZC) report

What is it?

NZC means cutting all GHG emissions to as close to zero as possible, with any remaining emissions reabsorbed from the atmosphere, by oceans and forests for instance.[30]

Why does it matter?

In order to avoid the worst impacts of climate change and maintain a liveable planet, global temperature increase needs to be limited to 1.5°C above pre-industrial levels. The earth's atmosphere is already about 1.1°C warmer than it was in the late 1800s, and emissions continue to rise.

Investing in solutions to climate change

How does WHEB's strategy contribute to NZC?

Five of WHEB's investment themes are focused on companies that sell products or services that enable other parts of the economy to reduce GHG emissions and/or adapt to inevitable climate change. This includes companies that manufacture renewable energy equipment, components for battery electric vehicles, heat pumps and other technologies that improve energy efficiency and reduce resource use.

Figure 15: WHEB's investment themes that are focused on reducing GHG emissions

Cleaner Energy	Sustainable Transport	Resource Efficiency	Environmental Services	Water Management
– Solar power – Wind power – Cleaner energy infrastructure	– Bus, rail & bicycles – EV – EV infrastructure	– Energy-efficient products – Efficient buildings – Efficient manufacturing	– Environmental consulting & monitoring – Sustainable materials – Pollution control – Circular economy	– Efficient water use – Wastewater treatment & water provision

Together these companies help avoid GHG emissions. We aggregate the annual positive impact of these products and services, and in 2022, owning £1m in WHEB's investment strategy was associated with:[31]

Cleaner Energy

Generating

314 MWh

of renewable energy.

Equivalent to the annual energy use of 21 European households.

Resource Efficiency

Avoiding

201 tonnes

of CO_2e emissions.

Equivalent to the energy use of 70 average European residential homes for one year and saving £7,950 in avoided carbon costs.

[30] Net zero carbon is different to carbon neutral for example because carbon neutral can cover a defined part of business operations and typically accounts only for CO_2 emissions, but not other greenhouse gases. Net zero on the other hand means that a company reduces all greenhouse gas emissions across its whole supply chain.

[31] Further detail on these figures is available in section 3. Investors in WHEB's strategy are aligned with these impacts by investing in companies that form part of the crucial supply chains that manufacture these products and provide these services. WHEB's investments contribute to the attainment of the impact, however, they are not solely responsible. The impact is therefore referred to as "associated".

Portfolio greenhouse gas (GHG) metrics

Approximately 60% of WHEB's investments provide solutions to climate change. At the same time, all the investments in the strategy generate GHG emissions in their day-to-day operations. We work with the management of our investee companies to encourage them to set demanding NZC targets and then to assess these targets and monitor the absolute CO_2e reductions across the portfolio on an annual basis.

Many of WHEB's portfolio companies have announced commitments to achieving NZC emissions. Over 90% of portfolio companies with targets have already had these approved – or are committed to having them approved – by the Science Based Targets initiative (SBTi). We plan to further scrutinize the credibility of these targets in 2023.

Furthermore, the thematic structure of our strategy means that since the inception of the current investment strategy in 2012 we have been entirely absent from parts of the economy such as fossil fuel exploration and production that are most at risk from a transition to a NZC economy.

The data over the past three years across Scopes 1-3 for the FP WHEB Sustainability Fund is reported in Figure 16 below.

Figure 16: Portfolio carbon emissions 2020-2022

Indicator	2020	2021	2022	Explanation
Scope 1[32]+2[33] carbon total emissions (tCO_2e) Total amount of carbon that is associated with WHEB's investments in portfolio companies.	169,532	38,038	40,680	Small increase in financed emissions due to selling lower-emitting companies in 2022 and investing in more energy-intensive companies. Of companies held over 2021 and 2022 we saw an average increase in Scope 1+2 emissions of 4.7%.
Carbon footprint (tCO_2e/£1m invested) Total carbon emissions for a portfolio normalised by the market value of the portfolio.	161	24	30	Slight increase due to increase in scope 1 and 2 financed emissions, and small decrease in assets under management.
Carbon intensity (tCO_2e/£1m sales) Measure of average carbon intensity of investee company operations.	380	95	65	Because sales increased faster than emissions we saw an average decrease in carbon intensity at company level of 4.45tCO_2e.
Weighted average carbon intensity (tCO_2e/£1m sales) Measure of a portfolio's exposure to carbon-intensive companies by including the portfolio weighting in carbon-intensive companies.	202	87	71	Companies which showed the greatest improvement in carbon intensity were DSM, Silicon Laboratories and ICON.
Scope 3[34] carbon emissions (tCO_2e/£1m sales) Measure of the carbon intensity of the whole value chain (incl. product) emissions.	983	991	1,515	Our investment in Trane Technologies was the main cause of the year on year increase, contributing to 50% of WHEB's financed scope 3 emissions. The remainder of the increase comes from more companies reporting more categories for scope 3.

[32] Scope 1 emissions covers emissions from sources that an organisation owns or controls directly.

[33] Scope 2 emissions includes emissions that a company causes indirectly (i.e. buying electricity).

[34] Scope 3 emissions are emissions that are not produced by the company itself, and not the result of assets owned or controlled by them. Scope 3 emissions include all sources not within scope 1 and 2 including emissions from all products still in use.

Figure 17: Top five emitting companies within WHEB's strategy (financed emissions)

TOP 5 EMITTERS	% OF SCOPE 1+2 FINANCED EMISSIONS[35]	NZC TARGET DATE	SBTI[36]
Linde	28.10%	Net zero by 2050	Yes
Smurfit Kappa	27.39%	Net zero by 2050	Yes
J.B. Hunt Transport Services	9.23%	No target set	N/A
First Solar	4.36%	Net zero by 2050	Yes
Advanced Drainage Systems	3.84%	N/A	Yes[37]

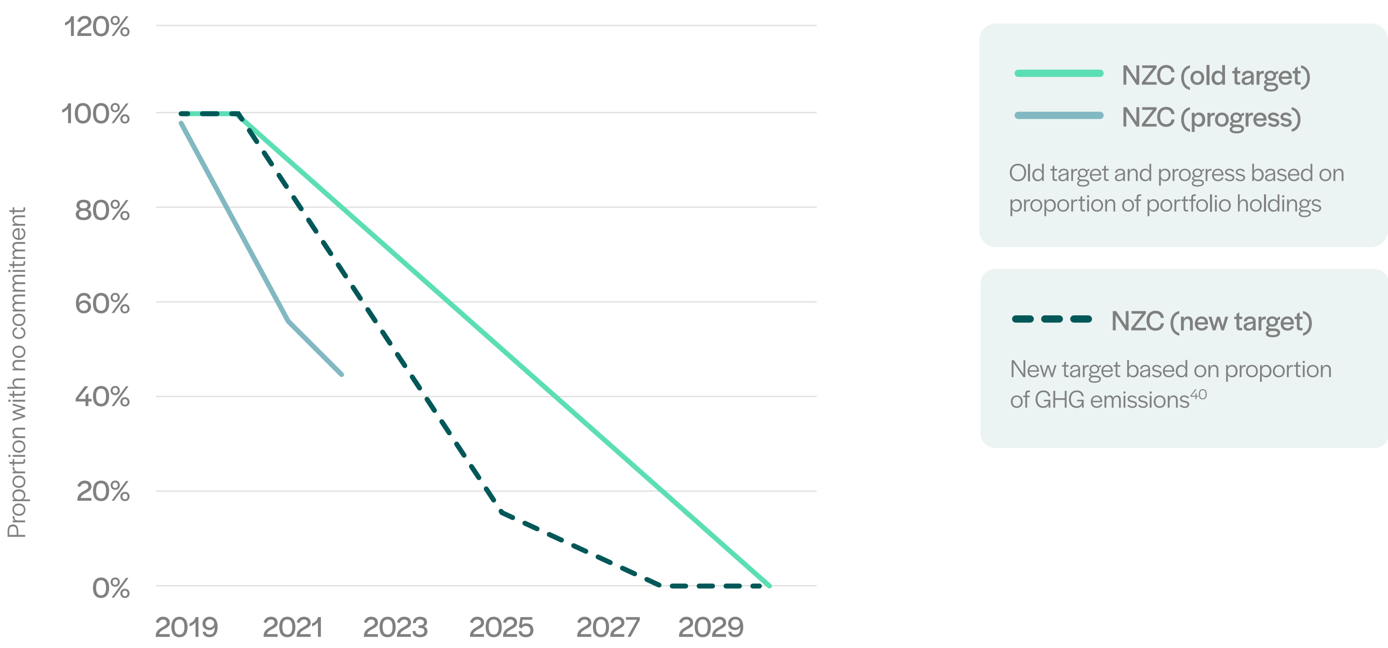
Portfolio Scope 1 and 2 emission targets and reductions[38]

The Scope 1 and 2 emissions associated with WHEB's investments (known as financed emissions) can change in two ways. First, investing in and divesting from companies will change the total tonnes of CO_2e associated with the strategy. For example, in 2021 we sold China Everbright Environment Group, which dramatically reduced our financed emissions. The second way is through actual real-world changes in annual emissions from portfolio companies. Our reporting is intended to reveal both of these dynamics, as shown in Figure 19.

In 2022 financed emissions remains well ahead of target. Actual emissions, however, ticked up 4.7% year-on-year.

Figure 18 also shows the extent to which portfolio companies have set and published NZC targets and/or absolute emission reduction targets. In 2022, three years earlier than originally expected, we achieved our original target of having more than 50% of portfolio companies committed to NZC by 2050. Consequently, we have set a new target to have 85% of portfolio emissions covered by a NZC target by 2025 and 100% by 2028.

Figure 18: WHEB portfolio NZC targets[39]



[35] 'Financed emissions' refer to the emissions associated with WHEB's specific level of investment in the investee company.
[36] Science-Based Targets Initiative: https://sciencebasedtargets.org/
[37] Advanced Drainage Systems have committed to having a near-term target approved by SBTi.
[38] We have not yet set a scope 3 emission target as the data is still too incomplete. We plan to keep this under review with a plan to set a target once data is more complete.
[39] The chart purely relates to the commitments companies have made, not actual GHG reductions.
[40] The new target is focused on the actual carbon emissions from the strategy (financed emissions) rather than the proportion of investments covered. This target will be more volatile as it depends on the enterprise value of the portfolio company, as well as the value of WHEB's investment in the company, both of which are constantly changing. Consequently, we use a rolling 12-month average of the financed emissions data point to provide a clearer trend.

Figure 19: WHEB portfolio emission targets & reductions[41]

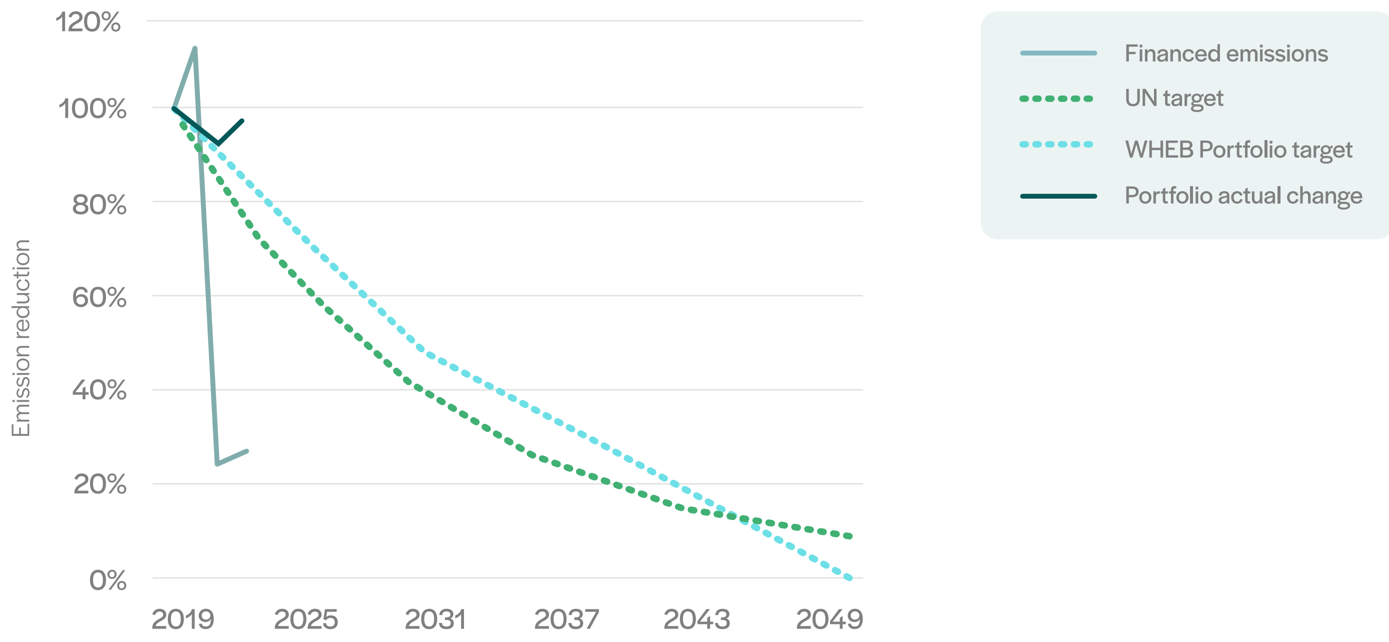


Figure 20: WHEB's portfolio carbon reduction targets

TARGET	TARGET YEAR
85% of financed Scope 1+2 emissions covered by a NZC target of 2050 or sooner	2025
100% of financed Scope 1+2 emissions covered by a NZC target of 2050 or sooner	2028
15% reduction in absolute portfolio emissions (compared to a 2019 baseline)	2025
7.6% portfolio company level absolute reductions year-on-year[42]	2030
50% reduction in portfolio carbon emissions (compared to a 2019 baseline)[43]	2030
100% reduction in portfolio carbon emissions (compared to a 2019 baseline)	2050

Fourteen companies in the strategy have not yet set a NZC target or an absolute emission reduction target. 13 of these together account for less than 4% of the strategy's total Scope 1 and 2 carbon emissions. The fourteenth is J.B. Hunt which accounts for just under 10% of total emissions. The company remains a key target for further engagement on this topic.

Memberships and affiliations

WHEB works with several investor coalitions to collaboratively engage companies, policymakers and standard setters to accelerate progress on decarbonisation. For example, WHEB was a founder member of the Net Zero Asset Managers initiative and has been a long-term supporter of the Institutional Investors Group on Climate Change.

IIGCC Institutional Investors Group on Climate Change

Climate Action 100+

net zero carbon

The Net Zero Asset Managers initiative

[41] The reduction seen in 2021 is due to the sale of China Everbright Environment Group which contributed 75% of the portfolio's total emissions.
[42] According to the UN the economy as a whole has to decarbonise by 7.6% per year to 2030 (https://www.unep.org/news-andstories/press-release/cutglobal-emissions-76-percent-every-yearnext-decade-meet-15degc)
[43] It is important to note that this does not mean that all companies across the portfolio will necessarily have achieved the target reduction in carbon emissions. It is, however, a commitment that, taking into account sectoral and geographical biases inherent in our investment strategies, emission reductions across the portfolio will be consistent with the global reduction target.

Guest interview: Avoided emissions - smoke and mirrors or the next frontier?

The concept of 'avoided GHG emissions' is central to the proposition behind the products and services of many of WHEB's portfolio companies. However, the measurement of avoided emissions is complex and contested. We spoke to Stephen Russell, Director, Climate Practice North America, at Anthesis, a global sustainability consulting firm. Stephen helps advise clients on climate strategy and was previously at the World Resources Institute (WRI), a global NGO. At the WRI Stephen was the author of a seminal paper on avoided emissions.

Stephen Russell
Director, Anthesis

Stephen, what are avoided emissions and why was it important to produce the guidance at WRI?

Avoided emissions represent the emissions benefit of a product, calculated relative to the use of an alternative product. For example, an appliance might avoid emissions if it has lower emissions across its life cycle, from raw-material extraction to product disposal, compared to some competing product that would otherwise have been used by a customer.

Unfortunately, there are no global standards for estimating and reporting avoided emissions. This has caused a lot of uncertainty about best practices, potentially exposing companies that claim to generate avoided emissions to reputational risk.

You wrote the paper in 2019; how have things developed since then?

We have obviously seen pretty dramatic progress in terms of regulatory and legislative mandates to disclose Scope 1 and 2 GHG emissions (and in some cases Scope 3) from the EU and the US as well as the UK. There has also been progress on avoided emissions. Several organisations have published frameworks on the topic, including Carbone 4[44] and Mission Innovation.[45] Most recently, this March, the World Business Council for Sustainable Development (WBCSD) and Net Zero Initiative published guidance that integrates and evolves earlier work.[46] This publication provides more granular recommendations on how to estimate and disclose avoided emissions and on when companies should not make such disclosures.

The importance of avoided emissions has been further cemented by the G7 which stressed the need to develop a 'shared international standard for measuring avoided emissions' at the leaders' Summit in Japan in May 2023.[47]

44. https://www.carbone4.com/en/publication-nzi-pillarb
45. https://misolutionframework.net/pdf/Net-Zero_Innovation_Module_2-The_Avoided_Emissions_Framework_(AEF)-November_2019.pdf
46. https://www.wbcsd.org/contentwbc/download/15909/229494/1
47. The full text of the G7 statement is available at www.meti.go.jp/information/g7hirosima/energy/pdf/Annex003.pdf

That is good to hear – we've used the Mission Innovation work as a foundational document for our approach at WHEB. As the methodologies become more established, what do you see as the value of reporting avoided emissions?

Under existing GHG reporting standards, avoided emissions cannot be included within a company's GHG footprint because that footprint is focused on the emissions from the life cycle of the company's own products. Unlike avoided emissions, Scope 1, 2 and 3 emissions are not calculated relative to the performance of alternative products on the market, so avoided emissions and Scope 1–3 emissions cannot be meaningfully compared.

Yet reporting avoided emissions can provide an important complementary perspective on the actions a company is taking to address climate change. For example, by increasing the energy efficiency of a product, a company may avoid the higher emissions associated with a competing product with lower energy efficiency. This benefit cannot be reflected in a corporate GHG inventory (and may even lead to an increase in the company's Scope 3 emissions!). More broadly, attaining a global 1.5°C target will require considerable technological innovation, and avoided emissions accounting helps us quantify the potential effects of this innovation.

Avoided emissions metrics are particularly helpful for investors looking to guide their investment strategies to fund and scale decarbonising solutions. They also enable companies to differentiate products for customers, build a brand image for the public, inform policymakers about the potential consequences of policy and regulatory choices, and guide product R&D.

And what are the key issues with reporting this kind of data?

The calculations can be quite complex. Perhaps most importantly, it is not always clear what 'baseline' a company's solution should be compared against. Should this be a conventional product, the best available technology, or something else? There may also be effects that occur outside of a product's life cycle but that are difficult to quantify. Rebound effects are a good example – a customer might save money by using a more energy-efficient machine, but then choose to use that machine more often. Finally, companies may face greenwashing risks when they market multiple products, but claim avoided emissions for just a small subset of their products. At the same time, it can be prohibitively costly to accurately estimate avoided emissions across a large product portfolio.

What is your advice to clients? Is it too early for companies to report avoided emissions?

It is not too early! Delivering on a 1.5°C global target requires accelerated innovation and clarity on avoided emissions impacts, in addition to reductions of a company's Scope 1–3 sources. We advise companies to use the most probable conservative baseline and to tailor the specificity of that baseline to their reporting objectives. For example, enabling product differentiation for customers may require a more specific baseline than early-stage product R&D assessments. We also recommend transparently reporting on the assumptions and limitations of an avoided emissions assessment.

How do you think approaches will evolve over the next few years?

Some changes in reporting practices have already occurred over the past several years as companies' understanding of the issues has matured. More companies are providing more information on how they calculate avoided emissions, while fewer companies are committing to avoided emissions targets that lack credibility. In particular, fewer companies try to compare apples to oranges by committing to avoid 'x' times more emissions than the Scope 1–3 emissions they emit. As I explained earlier, because avoided emissions are measured relative to something else, they cannot be netted off against Scope 1–3 emissions.

Looking ahead, there will undoubtedly be growing scrutiny of the credibility of avoided emissions claims. In response, I expect that additional sector-specific guidance will be developed to provide more specific direction on best practices, including on the issues I mentioned earlier. There will also be further clarification and standardisation of what information companies should include in external disclosures, including around the verification of claims and the broader scope of a company's climate change strategy. The WBCSD and Net Zero Initiative's publication provides a useful starting point for understanding existing best practices in these areas.

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