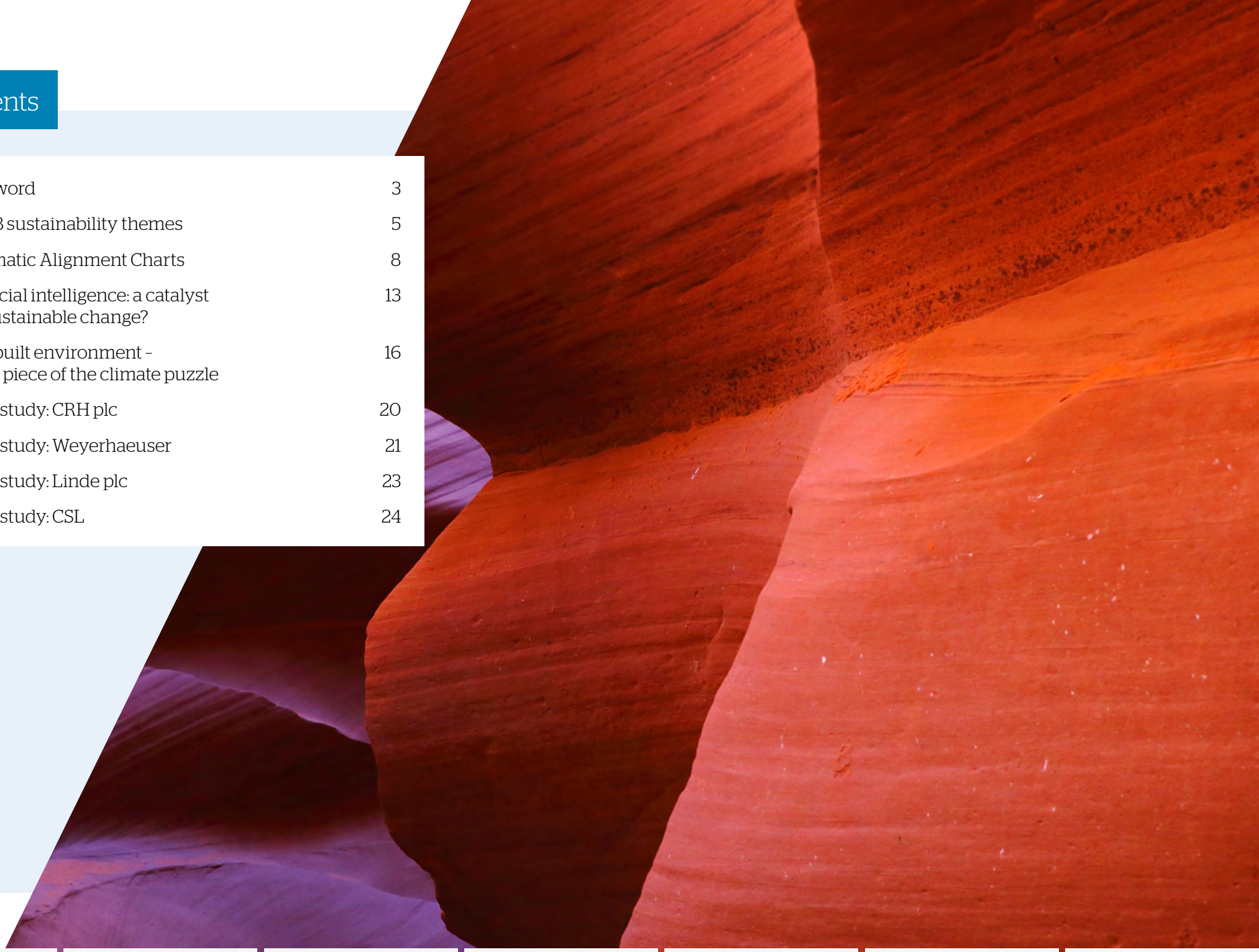
Responsible Investment Service (RIS) Report

Spring/Summer 2024

BROOKS MACDONALD

Contents



Welcome to the latest edition of our Responsible Investment Service Report

In 2023, we saw positive absolute returns from our responsible portfolios however on a relative basis compared to core Brooks Macdonald portfolios, it was a more challenging period. This is partly because many themes and sectors that are central to tackling sustainability challenges are sensitive to interest rates, which was a major headwind in the first three quarters of the year in the environment of rising interest rates amid high inflation. In particular, renewable energy investments were susceptible, given the twin headwind of inflation increasing the cost of making and installing capital-intensive renewable projects and higher interest rates raising financing costs for renewable energy companies. These factors contributed to the cancellation of renewable energy projects which weighed on market sentiment for the sector.

While performance of responsible portfolios can fluctuate versus traditional portfolios in the short term, it is our view that the combination of greater policy focus and a more accommodative investment backdrop will be beneficial for responsible investing going forwards.

After the rapid rate hiking cycle in major economies, the market consensus is that we have reached a peak in rates which provides clarity over the cost of capital. In the fourth quarter of 2023, markets reacted positively to signs of a soft landing and expectations of rate cuts. A steady or declining interest rate scenario would be a better backdrop for the growth focused long duration equity holdings within our responsible investment service, that have a strong potential to benefit from long-term structural trends. The outlook for energy transition equities in 2024 appears more promising, despite potential volatility.

We are also encouraged by regulatory frameworks emerging, particularly the FCA's Sustainability Disclosure Requirements (SDR), to facilitate crucial distinction between ESG as an input and ESG as an output and provide standardised language that covers distinct approaches to sustainable investing, which we believe will increase transparency and confidence for investors. We explored the implications of SDR for advisers in a recent interview with Lee Coates OBE, Director of ESG Accord, available here.

The structural growth opportunity of sustainability

Regardless of the short-term volatility we have witnessed in capital markets, the urgency to address and adapt to climate change has only intensified. 2023 was the hottest year on record, with global average temperatures climbing to an average of 1.46 degrees above pre-industrial times and nearing the critical 1.5 degrees threshold set by the Paris Agreement.[1] While this is a sobering stocktake, there are reasons for optimism. The fossil fuel share of global energy use is falling at -0.40% per year as the transition progresses and global spending on renewables jumped by 17% in 2023.[2] COP28 delivered a landmark agreement to a "transition away from fossil fuels in energy systems", with commitments to triple renewable capacity and double energy efficiency by 2030.

Policies such as the Inflation Reduction Act (IRA) in the US and the European Commission's Renewable Energy Directive are driving investment in clean energy renewables value chain.

1 https://www.edentreeim.com/insights/edentree-cio-view-feb-2024

2 https://about.bnef.com/blog/global-clean-energy-investment-jumps-17-hits-1-8-trillion-in-2023-according-to-bloombergnef-report/

While performance of responsible portfolios can fluctuate versus traditional portfolios in the short term, it is our view that the combination of greater policy focus and a more accommodative investment backdrop will be beneficial for responsible investing going forwards.

The potential impact of the 2024 presidential election in the US for the continuity of sustainability initiatives, and particularly Biden's IRA, is a hot topic. Trump has referred to climate change as a hoax in the past and he could attempt to withdraw the US from the Paris Climate Agreement once again. While no one possesses a crystal ball to predict the future, we consider the risks to be somewhat overstated. It appears unlikely that former President Trump would have significant practical motivation to completely reverse the IRA, especially given that Republican states have benefitted the most from the IRA, with approximately 80% of IRA subsidies supporting clean technology and 50% of IRA-linked jobs found in those states.[3] In conjunction with policy support, high costs for electricity generated from fossil fuel have contributed to the growing financial attractiveness of renewables, which should serve as a catalyst for largescale investment.

The global sustainability agenda is increasingly highlighting the importance of environmental solutions beyond renewables as key to decarbonisation, and our portfolios reflect this, investing in a range of environmental and social themes beyond pureplay clean energy names. The importance of restoring nature, preserving oceans and transforming food systems were key agenda items at COP28, receiving greater attention than ever before (themes we have discussed in previous editions of the RIS report, available here). There was also unprecedented focus on the need to decarbonise the built environment, including the official launch of the Buildings Breakthrough, with signatories committing to drive the global adoption of near-zero emissions buildings by 2030. We explore this commitment and the wider theme of sustainable buildings on page 16 of this report.

Closer to home, the UK hosted the world's first ever summit on AI safety to build consensus on how to mitigate the risks of AI. 2023 was a key year for AI, which saw a boom in interest from investors and which was dominated by the Magnificent Seven US large-cap tech stocks that are developing or adopting the technology. AI can bring huge positive developments for society and the environment, but it can also bring risks that we believe responsible investors need to be mindful of. We delve into the topic this further on page 13.

As in previous editions, we provide case studies of company exposures within the portfolios, outlining how these businesses are helping to tackle environmental and social issues, whilst also highlighting where they continue to face challenges from a sustainability perspective. We have also assessed the underlying investment exposures of our service, and how our RIS Managed Portfolio Service Advance portfolios are aligned to our eight sustainability themes.

We hope you enjoy this report and if you would like any more information on RIS then please do get in touch.

Mariella Rice-Jones
Responsible Investment Lead

3 https://professionalparaplanner.co.uk/biden-v-trump-and-the-road-to-renewable-energy/

Our Advance strategies aim to gain investment exposure to businesses that directly contribute to creating a more sustainable future.

This can be delivered either through the provision of products and services that have a tangible positive environmental or social benefit, or through responsible business practices where management teams are displaying credible commitments to minimise negative externalities, and proactively increasing the positive impacts of their operations, products and services.

We have identified eight core sustainability themes where we believe businesses can make a meaningful positive contribution, providing an important framework for our research. We also undertake a detailed assessment of how the products and services of the underlying investments in our portfolios align with these themes, in order to help our clients understand how their money is being invested. Examples of the types of investments that may be included in each theme can be found in our thematic framework key on page 7.

Our mapping of underlying portfolio investments to the eight sustainability themes is based on a careful, case-by-case assessment of each company's business activities, where the threshold for inclusion requires a clear alignment of products and services. Where investments have exposure to more than one theme, we have made a judgement on which area it has greatest exposure to. Investments that have a looser thematic alignment but are making their business models more sustainable are assigned to our 'Responsible Businesses' category.

Sovereign bond exposure

We are comfortable owning dedicated sovereign bond funds, currently UK Gilts and US Treasuries, if the underlying sovereign bond issuers meet the requirements of our dedicated framework. Our requirement for inclusion is for the issuing government to have a net zero target in a policy document, as identified by the Energy and Climate Intelligence Unit's net zero emissions tracker, and for the country to be classified as 'Free' or 'Partly Free' by Freedom House, an independent source that rates people's access to political rights and civil liberties. Whilst we are comfortable owning these funds, we do not include them in our thematic alignment process due to the difficulty aligning them to an individual theme given the broad use of the proceeds generated from these bonds, including transport, housing, health and education.

Our portfolios will also have some indirect sovereign bond exposure through other fixed income holdings. When researching these funds, we must be comfortable that they have a robust process for selecting sovereign issuers that are best managing their ESG risks and opportunities, compared to the countries' respective peer groups. Where it is clear that these sovereign issued bonds are labelled with a clear green or social purpose, we will include these in our thematic alignment. On a similar basis to our dedicated sovereign bond funds, we will not include conventional sovereign bonds which do not have a specific use of proceeds in our thematic alignment.

We have identified eight core sustainability themes where we believe businesses can make a meaningful positive contribution, providing an important framework for our research.

Cleaner Energy

To slow down and eventually halt the progress of global warming and its devastating effects on the planet and society, carbon emissions must be drastically reduced across the economy. Re-orientating the world's energy sources towards cleaner alternatives to fossil fuels, such as wind, hydro and solar power, is a key part of this endeavour. We have mapped our portfolios' exposure to this theme across three areas; cleaner energy generation, cleaner energy distribution and cleaner energy storage.

Resource Efficiency

The planet has a finite supply of raw materials and the efficient management of those resources is becoming increasingly important as the world's population continues to grow, and developing economies industrialise and urbanise. We have mapped our portfolios' exposure to this theme across four areas; efficient products and services, efficient manufacturing, efficient buildings and sustainable food production.

Water and Waste Management

Water is essential to sustain life on earth, creating a clear imperative to ensure the effective management, treatment and provision of this vital resource. A range of factors including rapid population growth, rising living standards, globalisation and industrialisation has driven exponential growth in waste volumes over time. This, in turn, has caused material negative impacts on the natural environment. In order to minimise and reverse these harmful trends, the world needs to transition to a new model whereby we 'close the loop' and create a 'circular economy' where waste products are turned into a resource that can be re-used or re-purposed. We have mapped our portfolios' exposure to this theme across three activities; efficient water use, water treatment and provision, and the circular economy.

Sustainable Transport

Moving people and products around the world is a key enabler of economic and social development, however our current methods for doing this have been to the detriment of the environment. To protect our planet, we need to change both what powers our transport networks, and how we move from place to place. We have mapped our portfolios' exposure to this theme across two areas; alternatives to road transport and less polluting road transport.

Health and Wellbeing

Looking after our physical and mental health is of paramount importance both at an individual and a societal level. This theme covers how we maintain our health and wellbeing from having access to nutritious food, shelter, digital connectivity, and fitness, to how we recover when our health deteriorates. We have mapped our portfolios exposure to this theme across five areas covering: healthcare provision, diagnostics and research, healthier lifestyles, nutrition, and social infrastructure.

Safety

People are exposed to safety risks in several ways and as technology and Generative AI advances the range of risks continues to grow, for example the increasing likelihood of identity theft and cyber security breaches. Finding solutions to keep individuals physically and digitally safe is central to a functioning society. We have mapped our portfolios exposure to this theme across two areas; making people safer and making products safer.

Education

Enabling access to primary, secondary and tertiary education across all sections of society is a central building block of sustainable economic and social development. Within the workplace it continues to be important to offer education and training opportunities to allow individuals to develop their knowledge, skills and meet their full potential. We have mapped our portfolios exposure to this theme across two areas; education services and education content.

Financial Inclusion

To fuel economic and societal development there needs to be an inclusive financial system that provides support across society. Whether that is empowering individuals to purchase their homes, providing corporate facilities to entrepreneurial businesses around the world, or removing barriers to pensions and savings products allowing people to plan for their futures. We have mapped our portfolios exposure to this theme across two areas; access to finance and pensions and savings.

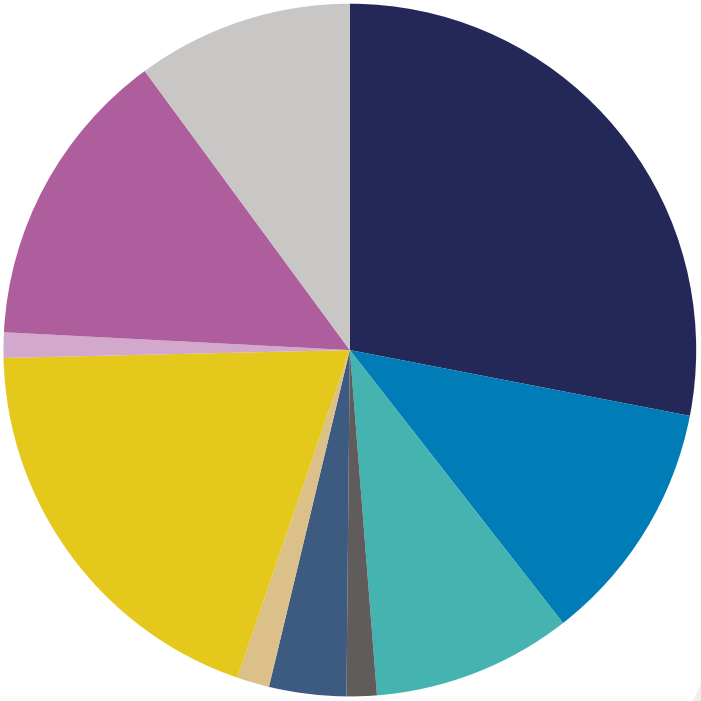
Responsible Businesses

There is inherently a lot of subjectivity when it comes to defining a Responsible Business. We consider these to be companies making clear and tangible efforts to systematically improve the environmental and social impacts of their operations, products, and services. These businesses are often characterised by strong management teams and corporate cultures. They still positively contribute to several of the identified Advance themes, but this is primarily through improvement of their corporate, environmental, and social footprint, and a looser connection of their products and services. For inclusion as a responsible business, a company's products and services must be deemed to have at least a neutral impact on the environment and society.

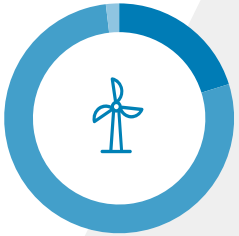
Theme	Sub-themes	Product and service examples
Cleaner Energy	Cleaner energy generation	Renewable energy power generation
	Cleaner energy storage	Grid battery storage
	Cleaner energy distribution	Utilities (electricity network infrastructure)
Resource Efficiency	Efficient products and services	Environmentally friendly materials, energy efficient products, energy smart metering, productivity enhancing software providers
	Efficient manufacturing	Precision manufacturing, robotics, providers of efficient manufacturing services, warehouse automation equipment
	Efficient buildings	Energy efficient construction materials, heating, ventilation and air conditioning (HVAC) systems, sustainable building planning software providers
	Sustainable food production	Precision agriculture, sustainable natural ingredients
Water and Waste Management	Efficient water use	Smart metering technologies
	Water treatment and provision	Utilities (water and waste), drainage and urban planning, commercial and domestic water systems
	The circular economy	Waste management recycling operations, recyclable materials, energy from waste, sustainable timber
Sustainable Transport	Alternatives to road transport	Rail networks/ servicing/ manufacturing, cycling supplies
	Less polluting road transport	Electric vehicle supply chains, multi-passenger services
Health and Wellbeing	Healthcare provision	Pharmaceuticals, medical supplies and devices, healthcare services, specialist health insurers, biotechnologies and life sciences
	Diagnostics and research	Diagnostic and research equipment and services
	Social infrastructure	Social housing, affordable housing, hospitals and medical centres,telecommunications infrastructure, charity bonds, development bank bonds
	Healthier lifestyles	Sports and leisure, personal care products
	Nutrition	Food producers, food retailers
Safety	Making people safer	Personal protection products, home safety, cyber security, commercial hygiene services, emission and air quality monitoring
	Making products safer	Product testing, transport safety products, equipment and product monitoring and servicing, safety component manufacturing
Education	Education services	University bonds, professional training, e-learning platforms, learning disability support, student accommodation
	Education content	Education publishing
Financial Inclusion	Access to finance	Building societies, retail banks, mortgage companies, emerging market banks, payment solutions and platforms, life and non-life insurance
	Pensions and savings	Accessible pension and savings specialists

Thematic alignment charts 31 December 2023

Responsible Investment Platform
MPS Low Advance



- Cash& Conventional Sovereign **28%**
- Resource Efficiency **9%**
- Water & Waste Management **4%**
- Health & Wellbeing **19%**
- Financial Inclusion **14%**
- Cleaner Energy **11%**
- Sustainable Transport **1%**
- Education **2%**
- Safety **1%**
- Responsible Businesses **10%**

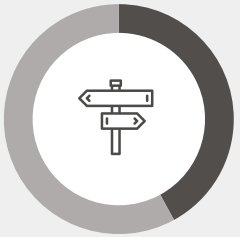


Cleaner Energy

- Cleaner energy distribution **20.2%**
- Cleaner energy generation **78%**
- Cleaner energy storage **1.9%**

Resource Efficiency

- Efficient buildings **29.8%**
- Efficient manufacturing **6.2%**
- Efficient products & services **62.2%**
- Sustainable food production **1.8%**



Sustainable Transport

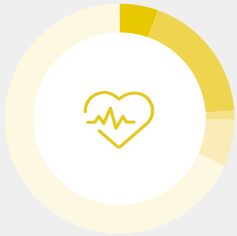
- Alternatives to road transport **42%**
- Less polluting road transport **58%**

Water & Waste Management

- The circular economy **21.8%**
- Water treatment & provision **78.2%**
- Efficient water use **0%**

Education

- Education content **42.2%**
- Education services **57.8%**



Health and Wellbeing

- Diagnostics & research **5.4%**
- Healthcare provision **18.4%**
- Healthier lifestyles **1.3%**
- Nutrition **6.5%**
- Social infrastructure **68.3%**

Safety

- Making people safer **86.8%**
- Making products safer **13.2%**

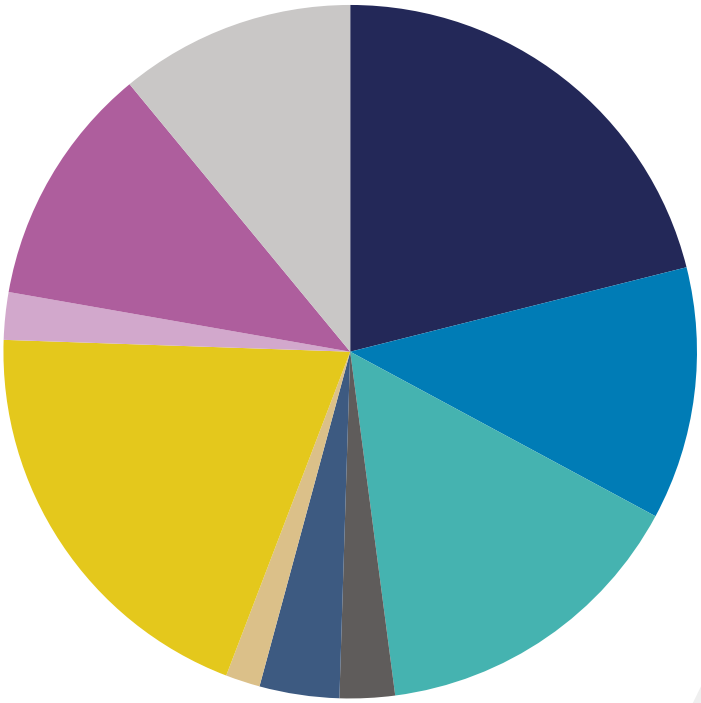
Financial Inclusion

- Access to finance **80.4%**
- Pensions and savings **19.6%**

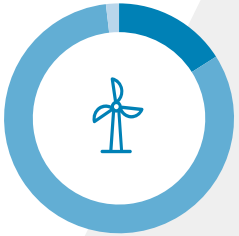
Data as at 31 December 2023
Themes and sub themes may not add up to 100% due to rounding

Thematic alignment charts 31 December 2023

Responsible Investment Platform MPS Low to Medium Advance



- Cash& Conventional Sovereign **28%**
- Resource Efficiency **9%**
- Water & Waste Management **4%**
- Health & Wellbeing **19%**
- Financial Inclusion **14%**
- Cleaner Energy **11%**
- Sustainable Transport **1%**
- Education **2%**
- Safety **1%**
- Responsible Businesses **10%**

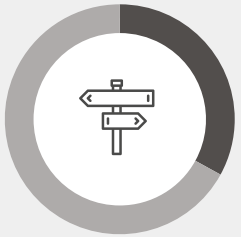


Cleaner Energy

- Cleaner energy distribution **16.0%**
- Cleaner energy generation **82.2%**
- Cleaner energy storage **1.8%**

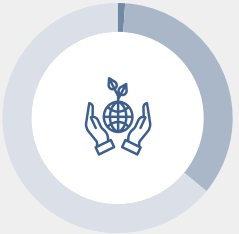
Resource Efficiency

- Efficient buildings **17.4%**
- Efficient manufacturing **12.9%**
- Efficient products & services **68.4%**
- Sustainable food production **1.3%**



Sustainable Transport

- Alternatives to road transport **33%**
- Less polluting road transport **67%**



Water & Waste Management

- Efficient water use **1%**
- The circular economy **34.9%**
- Water treatment & provision **64%**

Education

- Education content **50.3%**
- Education services **49.7%**

Health and Wellbeing

- Diagnostics & research **9.8%**
- Healthcare provision **26.1%**
- Healthier lifestyles **2.9%**
- Nutrition **8.0%**
- Social infrastructure **53.2%**

Safety

- Making people safer **68.1%**
- Making products safer **31.9%**

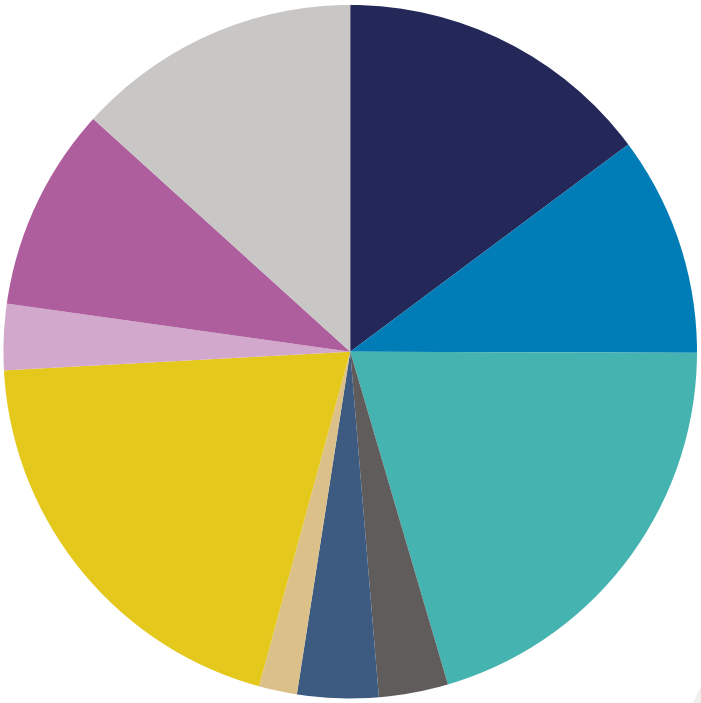
Financial Inclusion

- Access to finance **85.8%**
- Pensions and savings **14.2%**

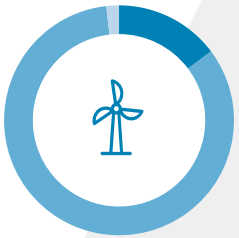
Data as at 31 December 2023
Themes and sub themes may not add up to 100% due to rounding

Thematic alignment charts 31 December 2023

Responsible Investment Platform MPS Medium Advance



- Cash& Conventional Sovereign **15%**
- Resource Efficiency **20%**
- Water & Waste Management **4%**
- Health & Wellbeing **20%**
- Financial Inclusion **9%**
- Cleaner Energy **10%**
- Sustainable Transport **3%**
- Education **2%**
- Safety **3%**
- Responsible Businesses **13%**

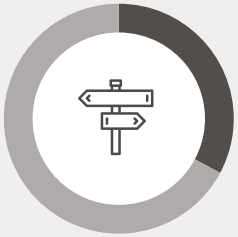


Cleaner Energy

- Cleaner energy distribution **14.8%**
- Cleaner energy generation **83.5%**
- Cleaner energy storage **1.8%**

Resource Efficiency

- Efficient buildings **13.2%**
- Efficient manufacturing **15.7%**
- Efficient products & services **69.5%**
- Sustainable food production **1.7%**



Sustainable Transport

- Alternatives to road transport **32.8%**
- Less polluting road transport **67.2%**

Water & Waste Management

- Efficient water use **2%**
- The circular economy **46.8%**
- Water treatment & provision **51.2%**

Education

- Education content **56.2%**
- Education services **53.8%**

Health and Wellbeing

- Diagnostics & research **12.9%**
- Healthcare provision **35.5%**
- Healthier lifestyles **4.3%**
- Nutrition **10.6%**
- Social infrastructure **36.7%**

Safety

- Making people safer **61.1%**
- Making products safer **38.9%**

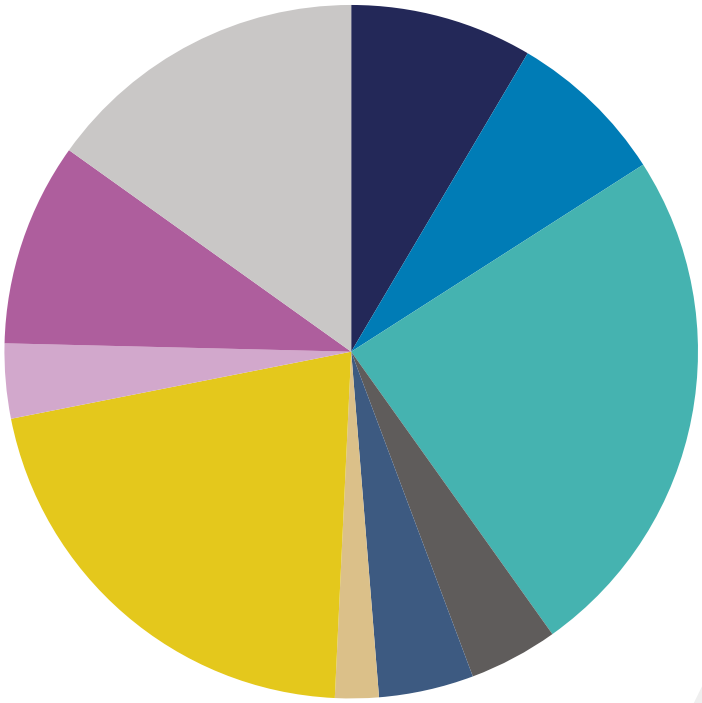
Financial Inclusion

- Access to finance **88.2%**
- Pensions and savings **11.8%**

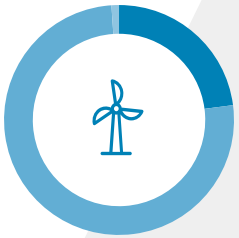
Data as at 31 December 2023
Themes and sub themes may not add up to 100% due to rounding

Thematic alignment charts 31 December 2023

Responsible Investment Platform MPS Medium to High Advance



- Cash& Conventional Sovereign **8%**
- Resource Efficiency **24%**
- Water & Waste Management **4%**
- Health & Wellbeing **21%**
- Financial Inclusion **9%**
- Cleaner Energy **7%**
- Sustainable Transport **4%**
- Education **2%**
- Safety **3%**
- Responsible Businesses **15%**

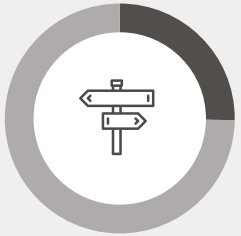


Cleaner Energy

- Cleaner energy distribution **22.9%**
- Cleaner energy generation **76%**
- Cleaner energy storage **1.1%**

Resource Efficiency

- Efficient buildings **12.9%**
- Efficient manufacturing **16.8%**
- Efficient products & services **68.7%**
- Sustainable food production **1.7%**



Sustainable Transport

- Alternatives to road transport **25.2%**
- Less polluting road transport **74.8%**

Water & Waste Management

- Efficient water use **2.1%**
- The circular economy **50.7%**
- Water treatment & provision **47.2%**

Education

- Education content **61.4%**
- Education services **38.6%**

Health and Wellbeing

- Diagnostics & research **15.5%**
- Healthcare provision **42.7%**
- Healthier lifestyles **5.2%**
- Nutrition **12.7%**
- Social infrastructure **23.8%**

Safety

- Making people safer **61.9%**
- Making products safer **38.1%**

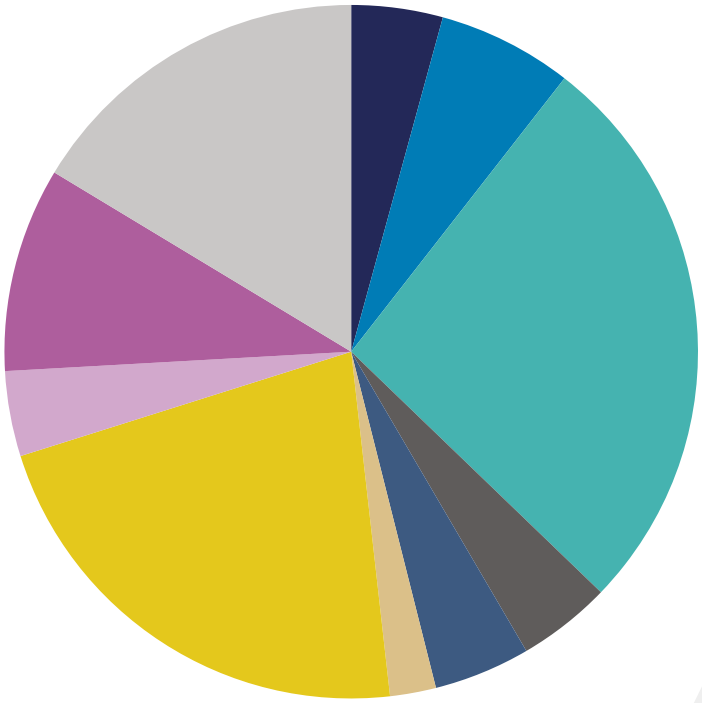
Financial Inclusion

- Access to finance **89.4%**
- Pensions and savings **10.6%**

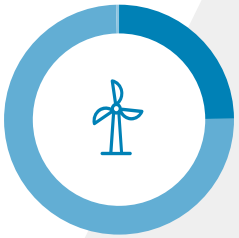
Data as at 31 December 2023
Themes and sub themes may not add up to 100% due to rounding

Thematic alignment charts 31 December 2023

Responsible Investment Platform MPS High Advance



- Cash& Conventional Sovereign **4%**
- Resource Efficiency **27%**
- Water & Waste Management **4%**
- Health & Wellbeing **22%**
- Financial Inclusion **10%**
- Cleaner Energy **6%**
- Sustainable Transport **4%**
- Education **2%**
- Safety **4%**
- Responsible Businesses **16%**

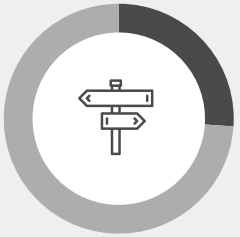


Cleaner Energy

- Cleaner energy distribution **24.9%**
- Cleaner energy generation **74.7%**
- Cleaner energy storage **0.4%**

Resource Efficiency

- Efficient buildings **12.2%**
- Efficient manufacturing **17.1%**
- Efficient products & services **68.9%**
- Sustainable food production **1.7%**



Sustainable Transport

- Alternatives to road transport **26.1%**
- Less polluting road transport **73.9%**

Water & Waste Management

- Efficient water use **2.5%**
- The circular economy **53.9%**
- Water treatment & provision **43.6%**

Education

- Education content **63.6%**
- Education services **36.4%**

Health and Wellbeing

- Diagnostics & research **15.8%**
- Healthcare provision **44.8%**
- Healthier lifestyles **6%**
- Nutrition **13.4%**
- Social infrastructure **20.1%**

Safety

- Making people safer **59.9%**
- Making products safer **40.1%**

Financial Inclusion

- Access to finance **90.1%**
- Pensions and savings **9.9%**

Data as at 31 December 2023
Themes and sub themes may not add up to 100% due to rounding

Artificial intelligence: a catalyst for sustainable change?

We must navigate this landscape as we allocate capital and engage with companies producing critical components for AI technology and those integrating it into their processes and product offerings.

Artificial intelligence has had one of the fastest adoption curves markets have ever seen[4], outpacing the rate of adoption of smartphones and tablets seen over the past decade or so, and it is unlocking opportunities for all industries and organisations. The technology is streamlining processes, cutting costs, and facilitating the development of new products and improved customer service.

In 2023 we saw a new wave of enthusiasm around AI sparked by the rise of "Generative AI" (GenAI). GenAI refers to algorithms which are capable of creating new content, such as text, images, videos, or audio, in response to prompts as opposed to traditional AI which focusses on making inferences out of historical data. It is this capacity for creativity, previously believed to be a uniquely human trait, that sets it apart and has caused such huge excitement among investors. As a result of this excitement, 2023 saw narrow market leadership, with the 'Magnificent 7' large cap US tech stocks (Alphabet, Apple, Amazon, Meta, Microsoft, Nvidia and Tesla), companies which have big plans for developing AI, significantly contributing to overall returns. Within RIS portfolios, our technology overweight is generally not to these mega-cap names, but includes exposure to technology companies developing AI technologies (such as Salesforce), companies providing the chip making equipment required for AI (such as semiconductor manufacturing giant TSMC) and data centre operators who provide the computing power needed by AI models (an example being Digital Realty).

Companies are increasingly leveraging AI technology to enhance the sustainability of their operations and deliver more impactful products and services, however, as responsible investors, we are aware that the development and adoption of AI must be approached with care. If not managed carefully, AI could inadvertently cause environmental and social harm. The intricate nature of AI introduces a novel challenge for responsible investors. We must navigate this landscape as we allocate capital and engage with companies producing critical components for AI technology and those integrating it into their processes and product offerings. Balancing innovation with ethical considerations is paramount.

AI as an environmental solution

The AI revolution could bring transformative benefits for society and the environment.

Our Responsible Investment Portfolios have exposure to companies offering AI-powered solutions that can be used to bolster environmental efficiency across various sectors. Holdings such as Schneider Electric and Delta Electronics deliver a suite of AI based solutions that can enhance energy efficiency in buildings, data centres, infrastructure and the manufacturing industry. In the realm of precision agriculture, Deere & Company, a global leader in agricultural machinery, leverages AI to revolutionise farming practices. Their autonomous tractors are equipped with AI that precisely targets weeds with herbicides, thereby preserving the surrounding crops. This targeted approach not only optimises agricultural output but also minimises chemical usage, contributing to a more sustainable agricultural ecosystem.

Other companies are adopting AI to make their operations more energy efficient, environmentally friendly and resilient to climate challenges with use cases including the optimisation of energy use, reduction of emissions and monitoring of deforestation in supply chains. The water equipment company Xylem, for example, is using AI to predict infrastructure damage risks from climate change.[5] As the pressure to both tackle and adapt to climate change continues to grow, companies harnessing the potential of AI to help them achieve operational efficiencies may be set to benefit.

4 https://www.robeco.com/en-ch/insights/2023/11/the-energy-challenge-of-powering-ai-chips
5 https://www.whebgroup.com/our-thoughts/the-merry-month-of-ai

A number of startups, scientific groups and environmental organisations are actively developing AI tools to combat ecological challenges. These innovative solutions range from AI-assisted deforestation mapping and weather prediction models to advanced systems for waste recycling and oceanic restoration. These businesses and technologies could filter into the investment opportunity set as they move through their development cycle.[6]

AI to drive social impact

Looking beyond its environmental use cases, AI is being increasingly used in healthcare and education. Within healthcare, the technology is facilitating drug discovery and development as well as the diagnosis of patients; by 2025, it is estimated that more than 30% of new drugs and related materials may be systematically discovered using GenAI.[7] In order to deliver a COVID-19 vaccine, pharmaceutical companies utilised AI tools to speed up data analysis and optimise gene sequencing. Beyond pharmaceuticals, other businesses we consider to be leveraging AI for the benefit of health and wellbeing include Intuitive Surgical and Panasonic.

Intuitive Surgical is using AI to enable surgeons to study their own procedure data. The tool can measure what happens during surgery and quantify surgeon behaviour. Surgeons can then find correlations between surgical technique, patient populations and patient outcomes, and develop objective performance indicators. This can help shorten surgeon training times, help hospitals improve surgical program efficiencies and ultimately reduce costs.[8] Panasonic, the Japanese multinational electronics company, designs autonomous robots that can help the elderly improve their mobility, provide companionship and deliver medication door to door and in 2023 the company developed a new AI technology to make the path planning and travel of these robots speedier and more efficient.[9]

Within the education sector, AI has the potential to enhance accessibility, enabling students with different abilities and in remote locations to access quality education. The technology's real-time feedback and assessment can accelerate learning, while AI-powered administrative tools could free up educators to focus more on teaching. In 2023, it was reported that most academic and education publishers were optimistic and ready to embrace AI opportunities in this area.[10] For example, portfolio company Pearson, a major higher education publisher, is expanding its use of GenAI study tools in its academic content.[11]

The darker side of AI

AI could, however, pose a sizeable threat to the environment and society if not carefully managed.

Some environmental advocates are concerned that the surge in AI technology could exacerbate the climate emergency, rather than solve it. This is mainly because AI requires a lot of electricity; models are trained, housed and deployed on warehouse-scale datacentres that are notorious for their high energy demands, and due to its water footprint – training a single GenAI model is estimated to consume up to 284,000 litres of water, an amount which would take the average person 27 years to consume.[12] Concerns also arise from the potential for AI to facilitate climate misinformation through biased algorithms.[13]

6 https://www.weforum.org/agenda/2024/02/ai-combat-climate-change/

7 https://www.gartner.com/en/topics/generative-ai

8 https://www.medtechdive.com/news/ISRG-Intuitive-Surgical-Tony-Jarc-AI-robots/692914/#:~:text=Intuitive%20Surgical%20in%20July%20launched,achieve%20better%20results%20for%20patients.

9 https://news.panasonic.com/global/press/en230601-2

10 https://corp.oup.com/feature/ai-in-education-where-we-are-and-what-happens-next/

11 https://www.prnewswire.com/news-releases/pearson-to-expand-generative-ai-study-tools-to-more-pearson-etextbooks-302070384.html

12 https://www.cazenovecapital.com/en/channel-islands/wealth-management/insights/ai-what-is-the-social-and-environmental-impact/

13 https://www.theguardian.com/technology/2024/mar/07/ai-climate-change-energy-disinformation-report

This brings us on to consider the social risks associated with AI; not only could it spread misinformation, but issues around privacy breaches, discrimination, and the displacement of jobs are now widely discussed. There is a movement towards establishing regulations and best practices, but significant voids remain, especially concerning social equity and the long-term implications for the workforce. Last summer the European Union introduced the world's first comprehensive AI law. The Artificial Intelligence Act aims to address issues such as facial recognition, emotion detection, surveillance, credit scoring, and biased recruitment processes. Similarly, over the past few months the United States has outlined AI safety standards and requirements for both AI developers and users.

Implications for responsible investors

The extent to which AI can have a net positive climate impact somewhat depends on the speed of the scale up of renewable energy as well as the future energy efficiency of AI models. As AI innovators and adopters seek to meet net zero targets, they will need renewable energy to continue to grow – which could have positive implications for the scale up of renewable energy capacity and providers of energy efficiency solutions, leading to attractive investment opportunities in related companies, that our portfolios have exposure to.

Increasingly, it will be key for responsible investors to evaluate company exposure to, and management of, environmental and ethical AI-related risks. Despite the absence of a definitive guide on what constitutes best practice, investors can be engaging with innovators and adopters to ensure they have sound AI policies, complete with accountability and governance mechanisms. This could include conducting a human capital risk assessment, that determines any potential costs of reskilling employees or compensating unavoidable layoffs.[14] This is not only about "doing the right thing" – as expectations around AI become clearer and more stringent, companies may face reputational or regulatory risk if they fail to implement sufficient policies and controls around AI usage.

Investor engagement with companies on AI-related risks is important, though it is a nascent engagement theme for many asset managers compared to other themes such as net zero and biodiversity.

Some fund managers are signatories to the World Benchmarking Alliance's 'Collective Impact Coalition for Digital Inclusion', which advocates for the adoption of ethical AI guidelines by technology companies and conduct collaborative engagements as part of this. Within the RIS service, in our dialogue and ongoing monitoring of fund managers we are increasingly placing focus on how they consider AI risks, their engagement and their participation in industry groups seeking to further progress.

Artificial intelligence presents a powerful set of tools with the potential to address some of humanity's most pressing issues. As sustainability challenges intensify, the opportunity for those who can harness the potential of AI in their product offering and own operations may be set to benefit. However, negative environmental impacts and ethical considerations surrounding data privacy and social bias must be carefully considered and addressed. Despite recent regulatory progress, there are significant gaps in the governance of responsible AI. These gaps are likely to necessitate industry involvement, including from investors, to influence best practices.

Despite recent regulatory progress, there are significant gaps in the governance of responsible AI. These gaps are likely to necessitate industry involvement, including from investors, to influence best practices.

14 https://www.bnpparibas-am.com/en-gb/professional-investor/forward-thinking/accounting-for-ai-risk-in-esg-investing-its-a-black-box/

The built environment – a key piece of the climate puzzle

The buildings we live, work and shop in generate roughly 40% of global CO2 emissions and consume over 30% of all energy.[15]

Under a business-as-usual scenario, this is set to increase – emissions are growing at an average of 1% per year.[16] Decarbonisation efforts across the industry are an urgent priority if we are to achieve the goals of the Paris Agreement, made more complex by the need to balance unprecedented urbanisation driven by population growth.

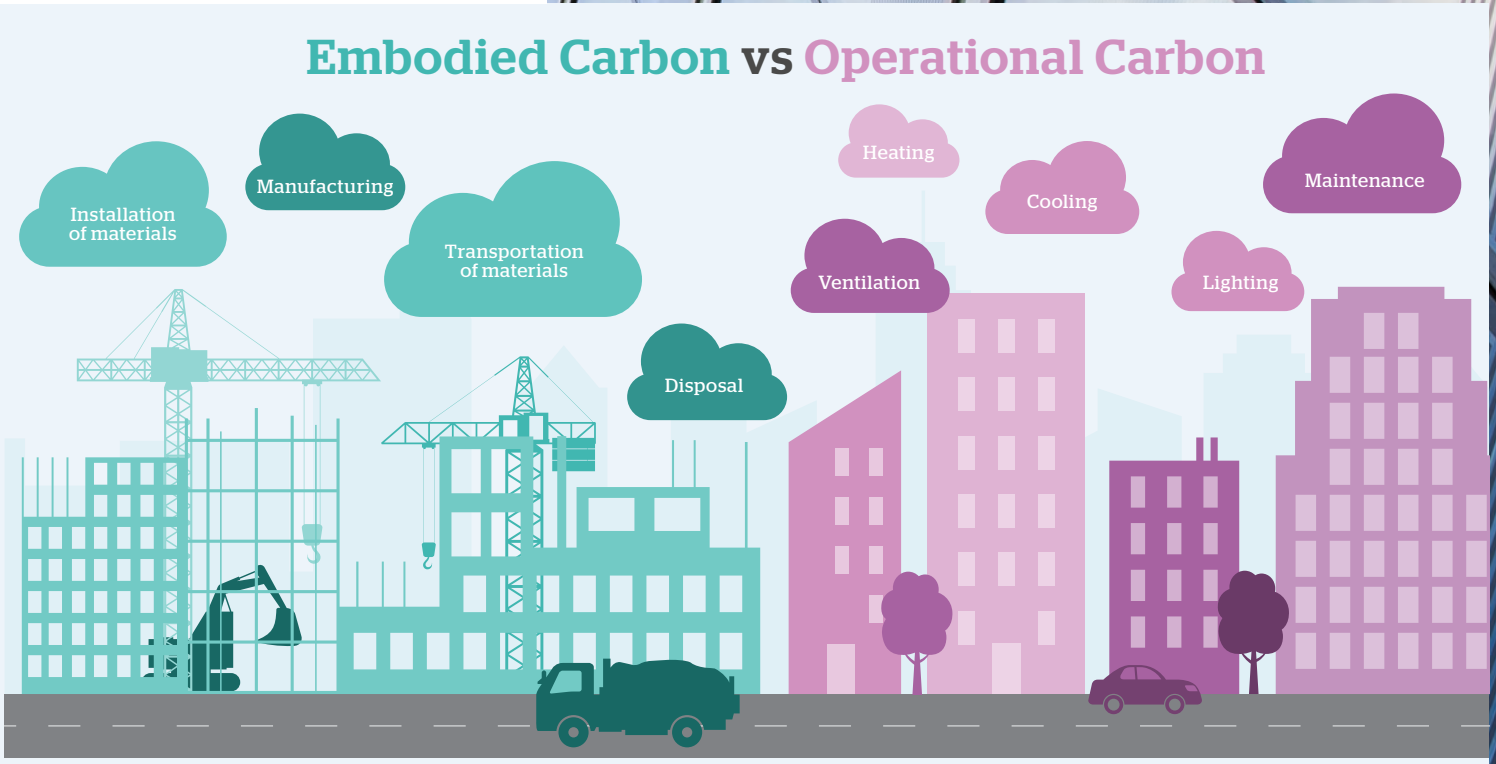
Emissions in the built environment can be split into operational carbon and embodied carbon:

Embodied carbon

This is the carbon footprint of a building before it becomes operational, and the emissions associated with disposal. It includes the emissions used to source, extract, process, manufacture, and transport materials, as well as construction.

Operational carbon

This is the energy usage and subsequent greenhouse gases emitted when the building is in use, for activities like lighting, heating and cooling. These make up a significant 60–80% of a building's total footprint.[17]



Adapted from RPS Group 'Embodied carbon: What it is and how to tackle'

15 https://www.bnpparibas-am.com/en-gb/professional-investor/forward-thinking/buildings-are-becoming-more-efficient-but-not-quickly-enough/
16 https://www.iea.org/reports/breakthrough-agenda-report-2023/buildings
17 Strengthening Sustainable Building Operations | BCG

As technology develops and there is a shift to renewables in national grids, buildings will become more operationally energy efficient, and a greater proportional carbon footprint will come from embodied carbon. Energy efficiency measures will need to be employed in new and existing building, and low-carbon materials used in construction, to achieve this.

COP28 recognised the urgency of the challenge, with the official launch of the "Buildings Breakthrough" initiative. This is a global effort to make "near-zero emission and resilient buildings the new normal by 2030"[18] , recognising the climate science that all new buildings need to be net zero from 2030 (up from less than 5% today)[19] and also that the sector must manage the inevitable physical risks of climate change.

A retrofit revolution is needed

The initiative puts explicit focus on the need to retrofit existing buildings – in the UK, 80% of existing buildings will still be standing by 2050 and the country has some of the least energy efficient housing in Europe.[20] Moreover, retrofitting an existing building can result in 50-70% less carbon than constructing an equivalent building from scratch.[21]

Retrofitting properties should, in theory, be one of the easier areas of sustainability to get public support for, as it can deliver economic and social co-benefits. Energy efficiency upgrades can lower energy bills and help tackle fuel poverty. Improved building insulation and ventilation can also create a healthier living environment; millions of deaths globally can be attributed to excessively hot or cold temperatures in poorly insulated buildings.[22]

In the commercial property sector, there is increasing evidence to suggest that buildings with strong sustainability credentials achieve significantly higher capital values and rents.[23] Companies actively seek "green" buildings to align with their net-zero strategies, creating a lucrative market for retrofitted properties.

However, the current retrofit rate of 1% per year falls far short of what's needed. To meet the goals laid out in the Paris Agreement, we need a significant increase – aiming for annual retrofit rates of 2.5-5% by 2030.[24] This will require regulators to do to more to incentivise energy efficiency upgrade and, adoption of sustainable construction materials, while bringing down the associated costs.

Regulatory focus on operational energy efficiency

As of September 2022, 40% of countries worldwide had mandatory or voluntary regulations or codes for building energy performance.[25] In Europe, the EU's "Fit for 55" initiative includes a requirement for countries to speed up the renovation of buildings that are not deemed energy efficient, with fines for building owners that are underperforming. In the UK, while the government implements stricter energy efficiency standards for new builds, the government has reversed its plans to enforce tougher minimum Energy Performance Certificate (EPC) ratings for existing properties. However, a positive development is that a growing number of banks in the UK also offer green loans specifically for energy-efficiency projects, making retrofits more accessible for property owners.

These developments are associated with investment opportunities in businesses producing products required for energy efficiency upgrades, including advanced insulation, smart building software solutions and heat pumps (see table).

	Opportunity	Why?	Portfolio Company
	Advanced Insulation	Poor insulation is a major energy drain. Uninsulated cavity walls can lose up to 35% of heat, and poorly insulated flat roofs can lose 25%.[26]	Kingspan Kingspan offers a range of high-performance insulation solutions and building envelope products that minimise heat loss and gain in buildings.
	Smart building software solutions	Modern buildings that use sensors to track usage and identify patterns, allow for real-time energy consumption monitoring. This data empowers targeted interventions that can reduce consumption.	Schneider Electric Schneider Electric's EcoStruxure platform analyses real-time data on energy consumption and can automatically adjust settings for lighting, heating, cooling, and other systems based on occupancy, weather conditions, and other factors. This not only reduces energy waste but also translates to lower operational costs for building owners.
	Heat pumps	A low-carbon alternative to fossil fuel boilers, heat pumps extract heat from outside a building and move it inside to provide warmth. Unlike gas boilers, heat pumps deliver more energy than they consume and should be at least 300% more efficient (delivering three times as much energy as they use).[27] Financial incentives for new heat pumps are becoming increasingly available, demonstrating a promising growth trajectory for this technology.	Daikin Daikin is one of the top manufacturers in the air-source heat pump market. Many Daikin heat pumps can function` in both heating and cooling modes, offering year-round climate control with a single system. These heat pumps can be powered by renewable energy sources like solar panels, further reducing their environmental footprint.

18 https://www.unep.org/news-and-stories/press-release/buildings-breakthrough-global-push-near-zero-emission-and-resilient

19 https://www.iea.org/reports/breakthrough-agenda-report-2023/buildings

20 https://www.newstatesman.com/spotlight/sustainability/energy/2023/07/retrofit-revolution-race-net-zero-emissions

21 https://www.weforum.org/agenda/2024/02/deep-retrofit-buildings-carbon-emissions-climate-change/

22 UBS Sustainability and Impact Institute, Retrofit Revolution: Why the world needs one and how we can achieve it, November 2023

23 https://www.jll.co.uk/en/newsroom/environmentally-sustainable-real-estate-attracts-higher-prices#:~:text=Buildings%20with%20better%20sustainability%20credentials,in%20a%20five%2Dyear%20period.

24 https://www.iea.org/energy-system/buildings/building-envelopes

25 https://www.business.hsbc.com.eg/en-gb/insights/growing-my-business/sustainable-buildings-create-opportunities-in-green-investment#:~:text=Building%20upgrades&text=According%20to%20an%20IFC%20analysis,new%20jobs%20globally%20by%202030.&text=Policies%20to%20stimulate%20green%20construction,time%20span%2C%20the%20IFC%20estimates

26 https://grsinsulation.co.uk/insulation-grants/#:~:text=Approximately%2025%25%20of%20energy%20is,reduce%20your%20homes%20environmental%20impact.

27 https://www.whebgroup.com/our-thoughts/why-we-love-heat-pumps

Regulatory focus on embodied emissions

Embodied emissions are receiving more government attention, for new and refurbished buildings. An amendment to the UK Building Regulations 2010, Part Z, is ensuring that the embodied carbon of all building projects will be assessed and capped as part of a comprehensive whole-life carbon assessment. And green building certifications such as LEED and BREEAM now require embodied carbon reduction targets. This has implications for contractors and developers, and materials manufacturers, who will need to tackle embodied carbon appropriately.

> ....retrofitting an existing building can result in 50–70% less carbon than constructing an equivalent building from scratch.

A key strategy for lowering embodied carbon involves using durable materials that have a longer lifespan and are less carbon-intensive to produce. Timber as a building material is being promoted as having significant climate mitigation potential and which can replace higher-emission concrete and steel, if produced from sustainable forestry practices (timber is used to refer to the wood at any stage after the tree has been felled). Wood is 400 times more efficient than steel and 15 times more efficient than concrete[28], for example. Timber building materials can also store vast amounts of carbon and are fire-safe, offering fire resistance of up to two hours.

The UK Government has launched a new timber roadmap to increase the supply of sustainable timber products and, when unveiling the foundations of the EU Green Deal, Ursula von der Leyen highlighted the crucial role of wood to Europe's net zero by 2050 goal. Local government in Paris has mandated that any buildings lower than eight stories built for the 2024 Olympics must be made entirely from timber. Within RIS portfolios, we have indirect exposure to timberland real estate investment trusts that provide wood/timber for use as a building material, and we explore the example of Weyerhaeuser in the case study on page 21.

We also have exposure to companies developing sustainable and lower carbon alternatives to steel and cement production – we discuss the related challenges further in the case study on the materials manufacturer, CRH, on page 20.

Climate adaptation is rising up the agenda

Investment is not only required into solutions that can minimise negative climate impacts, but those that can protect buildings from extreme weather events caused by climate change – as reflected in the Building Breakthrough initiative's focus on building climate resilience. An example of a portfolio company tackling this issue is Arcadis – a design and consulting firm that is integrating climate adaptation into their services. In 2022 Arcadis consultants modelled predicted climatic conditions in the City of London, identifying potential heat stress and flooding impacts and highlighting the most vulnerable areas. Arcadis is now designing intervention measures to protect the City's most vulnerable assets.[29]

Our exposure to real estate investment trusts (REITs)

Within our Alternatives allocation, we invest in real estate investment trusts (REITs), which own and operate physical properties. We seek exposure to REITs that are making progress to minimise their negative environmental impacts, including their energy efficiency and embodied carbon. Considerations include the proportion of their portfolio that have green building certifications such as LEED (Leadership in Energy and Environmental Design) and BREEAM (Building Research Establishment Environmental Assessment Method), whether they have set science-based decarbonisation targets and their approach to climate-related disclosures.

We also have exposure to REITs that we consider 'solutions providers'. To be classified as a solution provider, properties need to be used in a way that aligns to a RIS Advance theme – REITs that would come under this include those that own or operate student accommodation, healthcare-related properties such as nursing homes and life science campuses. These examples fall under our 'Health and Wellbeing' and 'Education' themes.

Accounting for embodied carbon and setting targets that incorporate this is a growing area of focus and best practice. Assessment also includes consideration of how REITs are identifying and managing the risks of climate change – reporting is becoming mandatory, and this should increasingly facilitate informed judgements on the resilience of real estate exposures.

In conclusion, we consider there to be considerable opportunity for investment in both companies and properties that can help align the buildings sector with a global net zero trajectory, as regulation and tenants demand progress. However, it is also clear that further government intervention will be essential, particularly when it comes to incentivising retrofitting, and that the pace of regulatory and financial incentives could dictate the opportunity set's pace of development and growth.

28 https://blogs.iadb.org/ciudades-sostenibles/en/wood-as-a-housing-construction-material-which-are-its-benefits/

29 https://www.cityoflondon.gov.uk/services/environmental-health/climate-action/climate-action-projects/resilient-buildings#:~:text=In%202022%20Arcadis%20consultants%20modelled,highlight%20the%20most%20vulnerable%20areas.

In this section, we provide case studies of portfolio exposures, highlighting the contribution companies are making as '*solutions providers*' or '*responsible businesses*'. Understanding that no company is perfect, and that sustainability is not black and white, we also outline areas for further improvement or where nuanced judgements must be made as investors.

Case study

CRH plc

Responsible business

CRH is a leading provider of building materials and products, which operates over 3,200 locations across 29 countries.

The company manufactures and supplies a wide product portfolio that includes cement, lime, asphalt and ready-made concrete for the construction industry. Cement makes up 15% of the company's revenues and is a crucial ingredient for concrete which is the second most used material on Earth after potable water.

Challenge: carbon emissions associated with cement production

Cement production is one of the highest-emitting industries, accounting for approximately 7% of global CO2 emissions. 15% of the CO2 emissions from cement come from electricity use and 30% from the combustion of fossil fuels. These two sources of emissions are the most straightforward for cement manufacturers to deal with. By switching from fossil fuels, like coal, to alternative fuel-sources, cement plants can get some way towards net zero.

However, over 50% of cement's emissions come from the chemical reaction that takes place when limestone (calcium carbonate) is turned into clinker, a key input material for cement. These are referred to as process emissions that cannot be mitigated by switching fuels or reducing electricity use. Clinker replacement is one avenue to tackle this issue but cannot get cement emissions to zero on its own. To decarbonise cement fully, Carbon Capture and Storage (CCS) will need to play a role. In the IEA's net-zero scenario for cement, CCS captures about 180 million tonnes of CO2 per year (Mtpa) by 2030. This is a huge amount of growth and does not match the current ambition set out by the cement industry.

CRH is tackling these challenges head on. In 2021, CRH released a new low-carbon cement product in Finland which reduces emissions by 40% by replacing clinker with the leftovers from steel production. The company is also collaborating with industry peers to support an innovative carbon capture solution pilot project which uses micro algae technology to capture CO2 emissions from cement plants while producing biomass and releasing oxygen.

We classify CRH as a responsible business rather than a solutions provider, given that its products are used for a wide range of construction applications and are currently highly carbon intensive. However, we believe the company is leading in its approach to transitioning its product set to be more sustainable and supportive of green construction, even if more progress is required. From an operational perspective, as part of the Science Based Targets Initiative (SBTI), the company has committed to a 30% absolute reduction in carbon emissions by 2030 and to reaching net-zero emissions by 2050. In our view, it is key to continue investing in cement players with net zero strategies, rather than divesting, if we are to achieve real world results.

Key sources

ESG Viewpoint_Challenges of realising zero-carbon cement.pdf (columbiathreadneedle.com)

Decarbonizing cement and concrete value chains: Takeaways from Davos

CRH 2022 Sustainability Performance Report

Case study

Weyerhaeuser

Theme: Water and waste management
Sub-theme: Circular economy

Weyerhaeuser is a vertically integrated forest products company, that is the largest private owner of timberlands in North America, owning approximately 11 million acres of timberlands in the US.

The company has three business segments: Wood products (c.74% of total revenue) Timberlands (c.22%) and Real Estate, Energy & Natural Resources (c.5%). Weyerhaeuser's Wood products division delivers lumber, structural panels and engineered wood panels for residential, multi-family, industrial and commercial applications. Within the Timberlands segment, Weyerhaeuser manages private commercial forestland, growing and harvesting trees for lumber, building, pulp, paper, and other wood products.

The company's products and services promote a circular bioeconomy – an economy powered by nature, which emphasises the use of renewable natural capital to replace fossil-based products and aims to minimise waste. Weyerhaeuser only harvests roughly 2% of its land each year and 100% of timberlands are reforested after harvesting, which entails planting 150 million trees annually. This active forest management approach (certified under the Sustainable Forestry Initiative Forest Management Standard) creates a continuous cycle of timber production, promoting a renewable resource. Weyerhaeuser's forests also absorb carbon dioxide and store it as carbon – even once harvested and made into wood construction materials, much of this carbon remains stored for the life of the building. In addition to this, using wood requires less energy than other non-renewable building materials, such as steel and concrete, resulting in fewer greenhouse gas emissions.

The company's manufacturing process also promotes a circular economy, with 95% of each log that enters Weyerhaeuser's mills being turned into a useful product and by-products used to make essential hygiene products. The company reuses, recycles or repurposes 99% (on average) of what would have been waste in their operations – which is equal to more than 12 billion pounds of material each year that otherwise would have found its way to landfill. The company uses a minimal amount of water in its wood product manufacturing facilities and remains committed to reducing water use where possible.

A circular bioeconomy is reliant on biodiversity, which Weyerhaeuser protects within its forests. The company conducts regular biodiversity assessments and implements habitat conservation and species management plans. Forests also absorbs rain and snowmelt, filtering it into clean water which is then released into streams, rivers and groundwater systems that benefit people, fish and other living organisms.

Weyerhaeuser

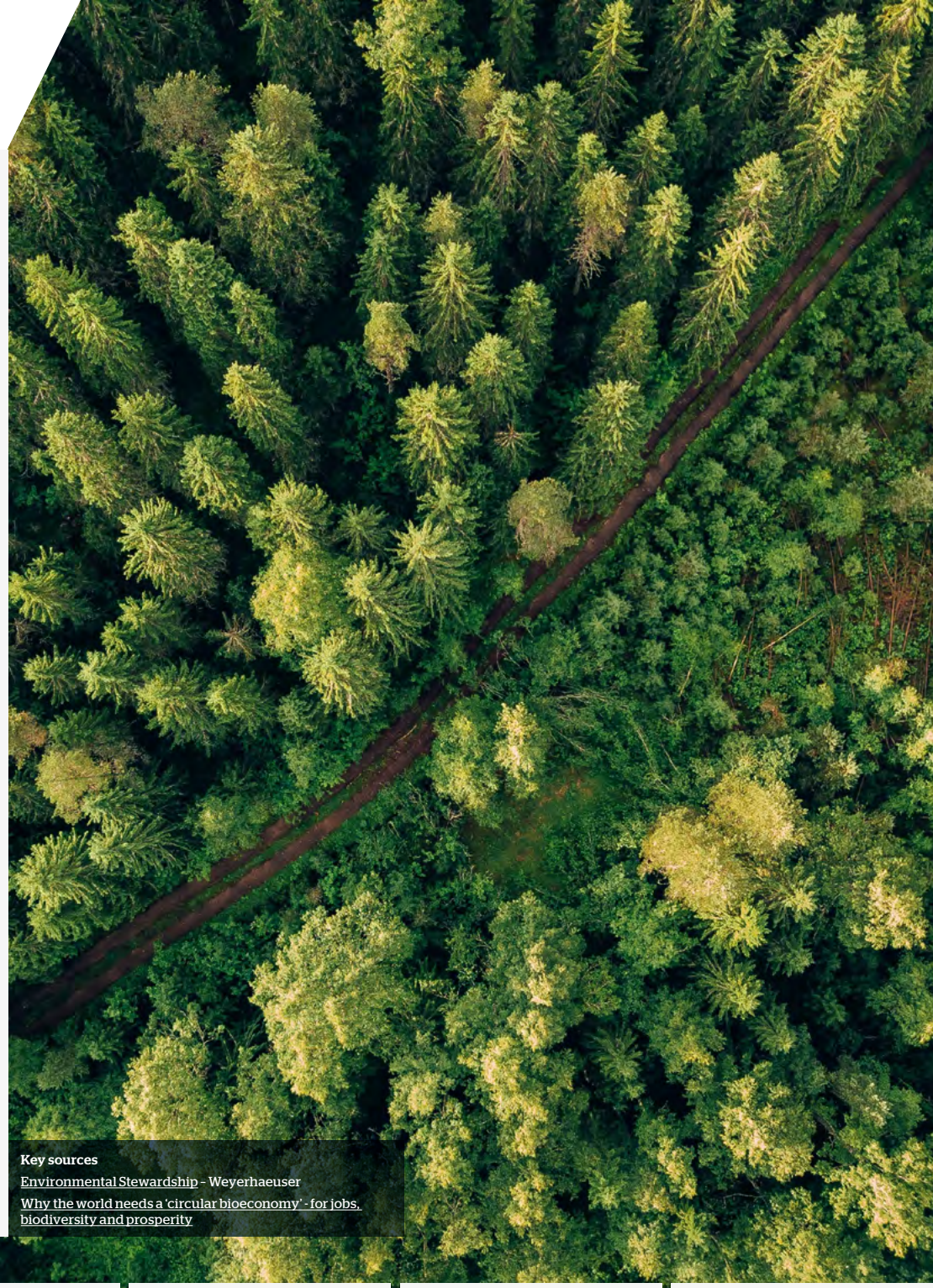
Theme: Water and waste management
Sub-theme: Circular economy

Challenge: Building Trustworthy Carbon Offsets

Within its Natural Climate Solutions segment (a part of the Real Estate, Energy & Natural Resources division), Weyerhaeuser sees strong potential in utilising its sustainably managed forests to provide credible carbon offsets. These offsets can be purchased by other companies to counterbalance their own emissions. In September 2023, Weyerhaeuser announced the approval of its Improved Forest Management (IFM) carbon credit project in Maine. The project is projected to generate 475,000 credits over its lifetime. In December 2023, Weyerhaeuser made its inaugural transaction, selling nearly 32,000 carbon credits to an undisclosed buyer.

Navigating this new terrain presents several key challenges, with ensuring the legitimacy and transparency of carbon capture claims being a primary one. Carbon credit offerings must demonstrably show additional carbon capture beyond standard practices, which can bring challenges. Concerns include whether companies are being paid to manage forests as they would normally and relate to assumptions made regarding the ability of forests to store carbon – which can be influenced by numerous factors that may fluctuate over time.

Weyerhaeuser is mindful of these concerns, working closely with regulators before going down the route of offering carbon credits. For its inaugural project in Maine, it underwent third-party audits to verify that their forest management practices would indeed enhance carbon storage compared to conventional operations. The company is collaborating with Carbon Direct to produce scientifically robust, high-quality forest carbon credits. While we consider Weyerhaeuser are operating in line with the best available standards, we are mindful of potential risks in this space as scientific debates around carbon offsetting and accounting methodologies evolve. We believe these, and Weyerhaeuser's response, will be important to continue monitoring.



Key sources

Environmental Stewardship - Weyerhaeuser

Why the world needs a 'circular bioeconomy' - for jobs, biodiversity and prosperity

Linde plc

Theme: Resource efficiency
Sub-theme: Efficient products and services

Linde plc is a global multinational company, headquartered in Ireland, that produces and distributes industrial gases, supplying hydrogen, oxygen and other gases to manufacturing, petrochemical and electronics industries.

The gases are used in a range of applications, which include making manufacturing processes more efficient and in reducing harmful emissions. For example, hydrogen can be used in steel production to reduce reliance on traditional methods that generate high CO2 emissions.

Linde also plays a role in facilitating the transition to cleaner transportation fuels. The company provides hydrogen for fuel cell electric vehicles and technologies for liquefying natural gas (LNG), which is a cleaner alternative to traditional fuels for ships and trucks. Several of the company's gases and technologies also offer a range of solutions for drinking water, seawater, wastewater and industrial water. Oxygen to ozone production enables lower-quality water sources to be converted to drinking water. CO2 is provided for remineralisation in desalination, increasing the availability of drinking water.

Challenge: Hazardous chemicals

Hazardous chemicals pose significant risks to both human health and the environment. These toxic substances have been linked to various health disorders, including cancers, autoimmune conditions, behavioural and attention deficits, male infertility, premature puberty, and an alarming rise in obesity and diabetes cases. Simultaneously, these chemicals, along with other pollutants like plastic and pharmaceutical waste, are released into the environment, accumulating in ecosystems and threatening fragile wildlife and natural balance. Prominent chemical researchers worldwide assert that hazardous chemicals represent a global threat comparable to climate change.

Most of Linde's products are derived from ambient air and not considered to be toxic, however the company does produce 5 products that are considered to be hazardous (which Linde estimates as accounting for less than 2% of sales). These are carbon monoxide, arsine, phosphine, cobalt and formaldehyde. This can be compared with the company's gas-producing peers Air Liquide and Air Products which only produce one: carbon monoxide.

It is encouraging to see that Linde has committed to phase out hazardous chemicals 'where possible' and has committed to finding alternatives to a chemical called hexavalent chromium by 2028. Linde monitors the global applications of its products, assessing potential health and environmental impacts at every stage of their lifecycle. However, there is room for improvement. Linde could broaden its commitment by targeting the phaseout of additional hazardous chemicals. Furthermore, transparent reporting through reduction roadmaps and annual progression reports would enhance accountability. The international NGO Chemical Secretariat (ChemSec) has called for the company to present a rationale for why such chemicals are being produced and provide more transparency around how much money it spends on research and development to find a safer alternative. We consider that investor engagement with Linde can play a role in encouraging the company to progress in this domain.

Key sources

https://chemscore.chemsec.org/reports/linde-2022/

https://www.whebgroup.com/hazardous-chemicals-engagement-case-study-2023

Linde's Position Statement Regarding Chemicals of Concern

CSL

Theme: Health and Wellbeing
Sub-theme: Healthcare provision

CSL is a large Australian-listed healthcare company which develops medical products for serious and life-threatening diseases.

Its core business is as a provider of human blood plasma-derived products to treat bleeding disorders, rare and serious infections and autoimmune diseases, and for which there are no alternatives. The country operates one of the world's largest plasma collection networks.

CSL also manufactures vaccines and related products, including for influenza and cervical cancer, as well as other products that speed up recovery times for patients that have undergone heart surgery, organ transplants and burns. The company provides these solutions across North America, Europe, Asia, Australia as well as other parts of the world. It is well placed to capitalise on growth opportunities created by the growing demand for vaccines and plasma-derived products in emerging markets where access to treatment is improving.

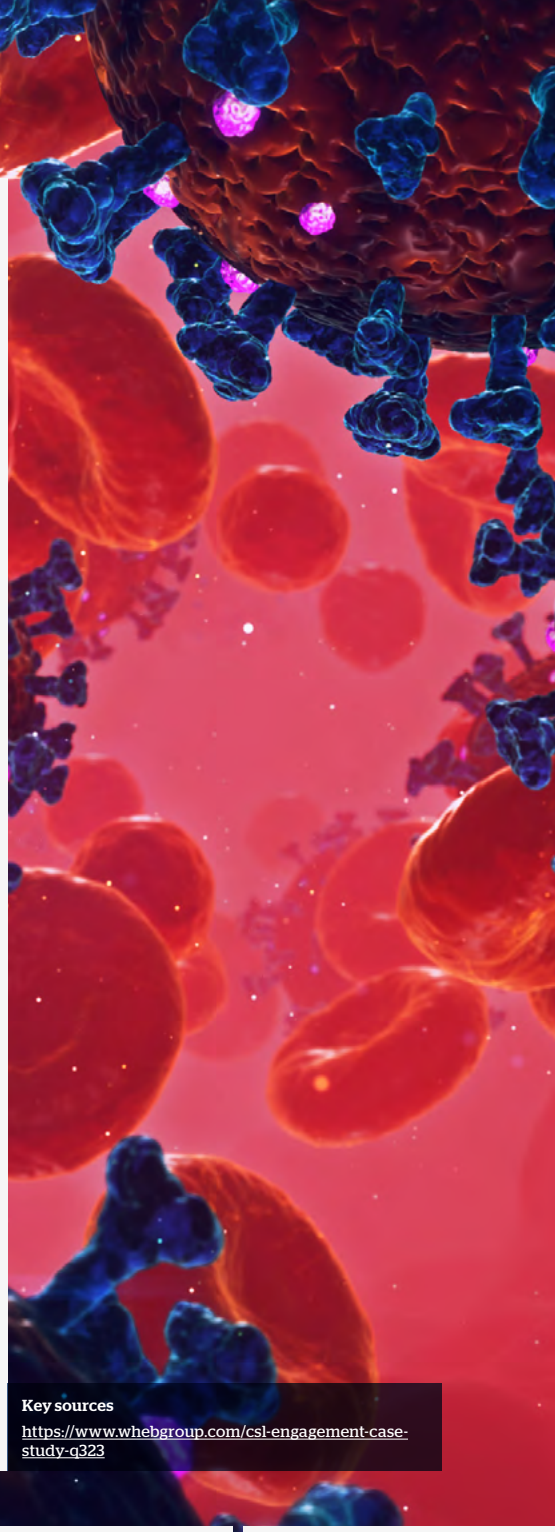
Challenge: the ethics of blood plasma donation

The company operates 90 centres across the US for the collection of blood plasma from which the company then produces a variety of blood plasma products. In the US, blood is not donated but paid for creating a number of ethical issues for companies involved in this activity. One major concern is the potential exploitation of vulnerable populations, especially low-income individuals, who may be incentivised to donate plasma too frequently for financial gain. Critics argue that these practices can lead to health risks for donors due to excessive plasma removal. Some studies have suggested that donating plasma too frequently could lower immunoglobulin levels and make the body less able to fight infection.

It is clear that CSL recognise the ethical issues associated with donating blood. CSL emphasises strict adherence to regulations and guidelines set by governing bodies in each country they operate in. These regulations typically limit donation frequency to ensure donor safety. Additionally, CSL screens donors carefully and provide them with comprehensive information about the donation process and potential risks. Donors must first participate in a rigorous ongoing health, physical and screening processes to ensure they are healthy. Donors are also provided with vital health information, such as blood pressure screenings, that are taken during screenings before every plasma donation.

Further steps taken by the company include the adoption of the RIKA plasma donation system, to improve comfort in the donation process, and reductions in donation time which could reduce potential adverse health effects for donors. CSL has also conducted research in collaboration with the Plasma Protein Therapeutics Association, which has helped establish that donation frequency in the does not have an adverse impact on health.

In our view, the benefits provided by the company to public health far outweigh potential harmful impacts from plasma collection. However, the ever-evolving ethical landscape surrounding plasma collection calls for consistent oversight, and this should be ongoing subject of engagement between investors and the company.



Key sources

https://www.whebgroup.com/csl-engagement-case-study-q323

Though just a snapshot of our portfolio exposures and investment themes, in this edition we hope to have highlighted the strengthening policy tailwinds behind solutions providers and the importance of investor engagement with companies on their ESG practices.

We look forward to updating you with further developments in future editions.

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Important Information

2024-04-001-BM119