

Whitepaper | September 2022

Transitioning to a more sustainable future

How investors can help drive change

It takes Aviva Investors



Contents

Introduction	3
<hr/>	
A trio of connected transitions: People, climate and Earth	3
<hr/>	
Mobilising capital and backing the transition	8
<hr/>	
Value creation and opportunities	9
<hr/>	
Value destruction and risks	12
<hr/>	
Portfolio diversification: Different thinking creates different outcomes	14
<hr/>	
Portfolio considerations: Natural Capital Transition Global Equity	15
<hr/>	
Engaging for change	17
<hr/>	
Macro stewardship: Changing the rules of the game	20
<hr/>	
Accelerating change	23
<hr/>	

Introduction

Millions demand climate action on a single day.¹ Campaigners insist they will not stand by as humanity triggers the Sixth Mass Extinction.² Cries of “Shame” meet news that hundreds of workers have been dismissed on a Microsoft Teams call without consultation, to be replaced by cheaper contractors.³

These events show something specific about the way much of the world is run, with scant regard for people, climate and Earth. It does not have to be this way.

In this paper, we explore three of the biggest challenges facing the planet – the climate crisis, biodiversity loss and social inequality – and consider pragmatic transition pathways to putting the world on a more sustainable footing. We explain the vital role investors can play through capital allocation, corporate engagement, and macro stewardship initiatives with governments and other policymakers to address market failures.

A trio of connected transitions: People, climate and Earth

“No country in the world meets the basic needs of its population with a level of resource use that could be extended to everyone globally. If we take almost any contemporary issue and apply systems thinking, we see systems failure,” says Tom Tayler, senior manager at Aviva Investors’ Sustainable Finance Centre for Excellence.

“We are living beyond our means. We are living outside planetary boundaries, and we have increasing inequality with people being left behind, despite the narrative around growth,” he adds. (See Figure 1).

So, while the size of the global economy has ballooned – it is around 13 times larger today than it was in 1950 – leading conservationists like Harvey Locke believe we are “destroying the context for all human life”.⁴

“We’re changing the climate, we’re destroying the oceans with overfishing, we’ve over-cleared the land, we’ve caused an extinction crisis and forecasts suggest we could lose up to a million species. That’s like throwing all the rivets out of all the aeroplanes and saying: ‘Let’s continue to fly’. We just can’t continue this way,” he explained in a recent interview.

The widening gap between the demands being placed on the planet and its ability to supply them has deep implications: for everyone concerned for the future, for biodiversity, and companies going about their work.

“Without urgent changes, national economies will continue to drive ecological breakdown, while delivering slow and insufficient improvements in living standards”

Andrew Fanning et al., 2022

1. [Kate Abnett, 'World's youth take to the streets again to battle climate change', Reuters, September 25, 2021.](#)

2. ['Part 3: The lie of the land... What other damage are we doing to our planet?', Extinction Rebellion, 2022.](#)

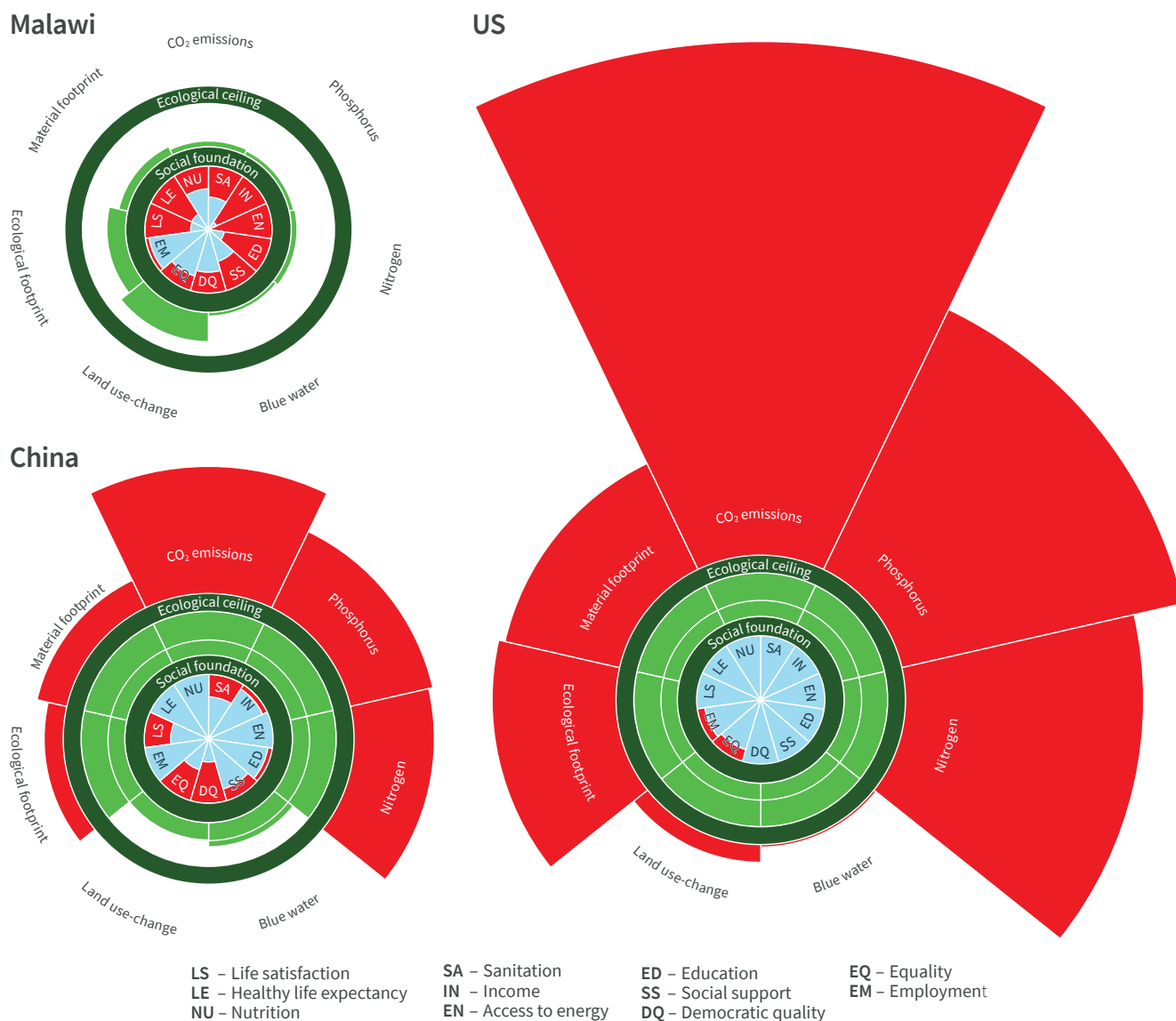
3. [William James and Muvija M, 'UK's P&O Ferries sacks 800 staff; unions threaten standoff', Reuters, March 17, 2022.](#)

4. ['Harvey Locke on COP26 and why "nature needs half"', Canadian Geographic, November 2, 2021.](#)

“Companies are recognising they are not islands, independent of the social system, political system, economic system or climatic system. They are connected,” as Mark Carney, UN Special Envoy on Climate Action and Finance, stated.⁵

Being mindful of connections means realising the limits to growth and acknowledging the drivers of investment returns may change and slow. “We cannot expect to achieve returns near historic levels ad infinitum, because they have been achieved through extractive environmental and social behaviour the planet and society simply cannot sustain,” Vaidehee Sachdev, Aviva Investors’ people pillar lead, points out.

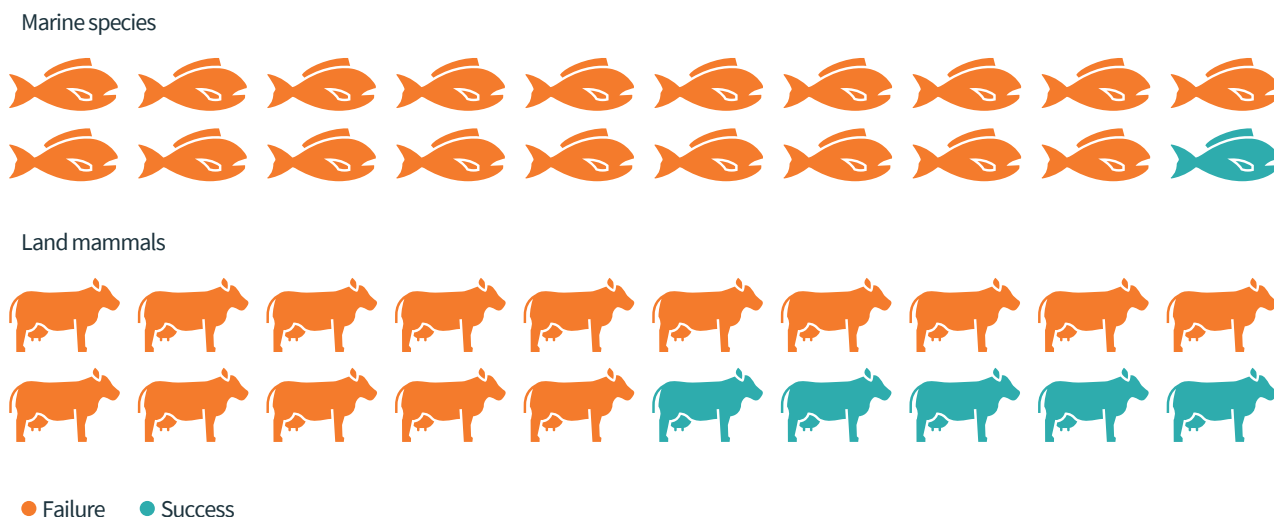
Figure 1. Using too much, delivering too little



Source: [Andrew Fanning et al., ‘The social shortfall and ecological overshoot of nations’, Nature Sustainability 5, 2022.](#)

5. [‘Mark Carney: Investing in net-zero climate solutions creates value and rewards’, United Nations, January 2021.](#)

Figure 2. Could climate warming trigger another ‘Great Dying’?



Source: Aviva Investors, June 2022. Original data sourced from National Geographic, September 2019.

With resource constraints in mind, treading more lightly, reducing waste and ensuring no-one is left behind are essential goals.

The conversation has swiftly moved beyond climate – an area of obvious market failure – to incorporate natural capital (defined as the world’s stock of natural assets, including all living things, air, water, geology and soil), as the prospects for the two are closely intertwined.

We also need to address relationships with each other, as the world faces an unprecedented cost of living crisis. Inequality was an issue long before the Russian incursion into Ukraine; now, dramatically higher energy and food costs are expected to force millions more into poverty. Human dignity is being breached, and it is widely accepted an unequal world is more unstable and less productive.^{7,8}

How the world is financed, how it is powered, how complex ecosystems are maintained and how resources are shared all need to be transformed, radically.

“If species are like safe deposit boxes, we are destroying the contents before looking inside”

Andrew Beattie and Paul Ehrlich
2001⁶




6. Andrew Beattie and Paul Ehrlich, ‘Wild solutions: How biodiversity is money in the bank’, Melbourne University Publishing, January 31, 2005.

7. James Galbraith, ‘The unsustainability of inequality’, Project Syndicate, August 23, 2019

8. Gabriela Ramos, ‘The productivity and equality nexus’, OECD, 2016

People, climate, Earth: Connections and spill-overs

Figure 3. Key sustainability challenges

Challenges		
 People	 Climate	 Earth
Social inequality	Climate change	Biodiversity loss
Net zero and climate resilience		
Social justice	Net zero and climate resilience*	Nature positive
Definitions		
Social transition	Climate transition	Natural transition
<p>“Social transition refers to the transformation required to address inequality. It starts with paying workers fairly, respecting human rights and providing people with access to basic services to enable them to live in dignity. The consequences of ignoring these factors are potentially devastating.”</p> <p>Vaidehee Sachdev People pillar lead</p>	<p>“Climate transition means changing behaviour, to stop us putting future generations and the planet in peril. In the climate context, that means limiting global warming to 1.5 degrees C and adapting to the consequences of a hotter planet at pace.”</p> <p>Rick Stathers Climate pillar lead</p>	<p>“Natural capital transition involves taking action to restore the natural world to health. We are experiencing a mass extinction event; we need action urgently to reverse species loss, but we are simply not doing anything fast enough.”</p> <p>Eugenie Mathieu Earth pillar lead</p>

Note: *Planned for the Climate Transition range, subject to regulatory approval. Outcomes may not be achieved.
Source: Aviva Investors, June 2022.

Connected thinking for connected issues

People, climate and Earth issues are so intertwined that holistic, systems-thinking is needed to tackle these sustainability challenges.

“Climate change is potentially the biggest environmental crisis, but it also happens to be the largest long-term financial and social risk” says Tayler. “In 2020, more people were internally displaced by climate than by war. We now have climate refugees as well as conflict refugees^{9,10}. That issue is only going to increase, with financial and social consequences. It’s like a spider’s web of threads; when you pull one, it impacts everywhere.”

Understanding this complexity informs our sustainability approach, where we focus our efforts around the three pillars of people, climate and Earth, but each helps inform the others.

Take antimicrobial resistance, for instance. “It is a social issue because it is a clear risk to human health, but it is also a biodiversity issue and a climate issue,” says Tayler. “When it comes to pharmaceutical production, if the release of wastewater kills microbes in the water, that impacts the soil downstream from the site, affecting how it sequesters carbon.” (See *From antibiotic failure to research success*).¹¹

Intricate dependencies like this are found everywhere. The pharmaceutical industry, for example, relies heavily on biodiversity to drive drug discovery and development.

“Of the 185 small molecule drugs approved for cancer treatments between 1981 and 2019, 65 per cent were naturally derived or inspired,” Kiran Sehra, biodiversity analyst at Aviva Investors, explains.

“Research suggests the planet is losing the source of at least one important drug every two years; if biodiversity is not managed sustainably, the opportunity to draw on nature for new molecules will be at risk.”

There is an important social aspect to this, too. “Indigenous people are often the source of the traditional medicinal knowledge that provides the inspiration for research,” Sehra adds. “Signatories of The Nagoya Protocol should ensure the benefits that flow from genetic material are shared equitably with those communities.”

“Historically, the owners of this knowledge have not been valued or compensated,” Sachdev points out. “There are many examples of situations where companies have benefited at the expense of traditional owners, via biopiracy. Countries and companies need to find ways to overcome the pitfalls of existing access and benefit sharing schemes, to avoid exacerbating the problem.”

But rival demands – for land, water and other resources – have become increasingly difficult to satisfy as the human population has grown. Take agriculture, for instance, the single largest driver of species loss and responsible for almost one quarter of carbon emissions. While industrial agriculture continues to expand, sensitive ecosystems are being threatened, yet the nutritional needs of millions are not being met and around one-third of all the food produced is going to waste every year.¹²

“This is a huge social issue and enormously costly, given the drain on the land as well as the fuel, water, seeds, fertiliser and man hours that have gone into production,” says Jonathan Toub, portfolio manager on Aviva Investors’ Natural Capital Transition strategy. “We cannot hit net zero without transitioning our food system; we need to improve the efficiency of agricultural production and supply chains urgently, as well as our attitudes to waste.”

On the adaptation side, today’s fertile land may not be as productive in future due to temperature rises, droughts or floods. This could impact food security and farmers’ livelihoods, as well as value creation in the world’s largest food and beverage companies.

“When large companies work with farmers, we need to ensure they are managing those risks, mapping the territories they operate in and understanding the impacts of temperature rise and other climatic factors on agricultural yield,” explains Ed Kevis, manager on the Aviva Investors Climate Transition European Equity strategy.

None of these issues should be viewed in isolation, including the social impact of corporate behaviour, “one of the great blind spots of the financial industry”, notes Sachdev. “It’s often ignored, despite the obvious damage negative social impacts can induce at a company level, while also generating cumulative risks to society at a macro level.”

Fairer solutions, that recognise the value of all people, will take some crafting.

9. [‘New report: Alarming levels of climate-related displacement’, IFRC, March 17, 2021.](#)

10. [Saeed Kamali Dehghan, ‘Climate disasters ‘caused more internal displacement than war’ in 2020’, The Guardian, May 20, 2021.](#)

11. [Abigail Herron, ‘From antibiotic failure to research success’, Aviva Investors, 2022.](#)

12. [Mark Hall, ‘Food waste 2022 The facts’, Businesswaste.co.uk, January 4, 2022.](#)

Mobilising capital and backing the transition

While the prognosis might seem bleak, investors should not underestimate their ability to challenge and change the status quo.

“We can change outcomes,” says Steve Waygood, chief responsible investment officer at Aviva Investors. “As an asset manager, we have power to mobilise. We can work with clients making long-term decisions to shape the kind of future they want to retire into. We can change things in a really big way if we all work together.”

The investment industry can power change by directing capital towards assets – in equities, credit and real assets – that will enhance the prospects for people and the planet rather than undermine them.

Translating the objective for a ‘good’ transition – meeting the needs of the present without harming future generations – into investment strategies is complex, because society is in the foothills when it comes to getting the measure of the issues.

We carry out detailed analysis and engagement to drive bottom-up asset selection, in an effort to understand a company or issuer in its broader context. We believe it is disingenuous to describe a company or strategy as ‘sustainable’ without this. Our engagement activity – where we use our influence to promote sustainable business practices, gain insight and reduce investment risk – feeds directly into investment decision-making across asset classes and strategies, not just in equities.

“It is not an excuse for endless ESG analysis,” says Sachdev. “Our transition strategies integrate specific deadlines related to the Paris Agreement on climate, the 2030 Sustainable Development Goals and so on. Talk of transition must not become a proxy for light-touch ESG engagement and integration; that gives the impression we have more time than we do.”

As markets are inefficient and investors are mispricing the seismic changes coming, we use our proprietary transition-risk framework to identify companies, governments and physical assets we believe will be competitively placed as the global economy is re-wired.

This approach should also help us avoid investments that will have negative societal impacts. We apply our ESG lens regardless of capital structure; it is relevant for senior unsecured debt, subordinated debt as well as equity.

Multiple sources of data are drawn on to identify companies and issuers:

- ✓ Focused on delivering sustainability solutions
- ✓ Exhibiting high standards of corporate behaviour measured against national and international norms

or

- ✓ Having begun the journey to ‘green’
- ✗ We will not invest in organisations causing significant harm, but our approach is clearly differentiated from impact strategies defined by rigid exclusions

“We have power to mobilise. We can change things in a really big way if we all work together”

Steve Waygood
Chief responsible investment officer

“Real change requires a radical overhaul of the world economy,” explains Mark Versey, CEO of Aviva Investors. “Investors must be willing to support and be fully engaged in the transition. When we are successful in achieving that objective, we believe it can add value to most investments, irrespective of asset class.”

He cites the possibility of encouraging energy companies to pivot decisively to renewables; refurbishing buildings for a low-carbon future; engaging to reduce the use of antibiotics in the food chain or improve the rights of low-paid workers in the retail industry.

“These actions aren’t ‘woolly’ or taken because they make us feel better – they are commercially driven and allow us to meet our fiduciary duty,” Versey says.

Our approach allows us to underpin change – not just through investing in a limited group of solutions providers – but also keeps the ultimate sanction of divestment alive. It increases the size of the investible universe and brings specific portfolio construction opportunities. (see Portfolio considerations: Natural Capital Transition Global Equity on page 15).

Value creation and opportunities

As the global economy changes, there will be enormous value creation in some areas, while others look vulnerable to chaotic value destruction.

First up: transitioning the global economy (about 80 per cent fuelled by hydrocarbons) to become net-carbon-free. “Globally, around \$275 trillion of investment is required over the next 30 years to meet net zero,” says Rick Stathers, climate pillar lead at Aviva Investors, pointing out that a large part of the financing gap could be bridged by redirecting subsidies for fossil fuels.

Financing change could accelerate the growth of climate and environmentally oriented companies and achieve positive impact in the process. From novel approaches (e.g., remote-controlled underground mining for transition metals, resulting in healthier working conditions for miners and lower energy inputs overall) to proven technologies (e.g., componentry for electric vehicles and wind turbines), investors need careful positioning.

“For example, in the renewable energy sector, we find wind park developers have better return profiles than turbine manufacturers,” says Andrea Carzana, co-manager of the Aviva Investors Climate Transition Global Equity strategy. “There is a lot of price pressure coming in; those sitting at the top of the value chain are best placed to resist that pressure and are able to pass it down the value chain. The turbine manufacturers sit at the bottom of the chain and struggle to protect their returns.”

“The built environment is a major contributor of carbon emissions, but also one of the easiest to address”

Andrea Carzana

Senior portfolio manager

Among strategic ‘easy wins’, Carzana flags improving energy efficiency in buildings.

“The built environment is a major contributor of carbon emissions, but also one of the easiest to address,” he points out. “The policy environment in France and Italy has already changed to support spending on improving efficiency, which is supportive of earnings growth.”

Data management could be another growth area, according to Max Burns, co-manager of the Aviva Investors Climate Transition Global Equity strategy, as companies develop tools for utilities to manage variable network loads. “As the percentage of renewables on the grid increases, there is a real need for more sophisticated ways for power generators and consumers to communicate. There are companies working to link usage data back to the utilities, to help them understand where demand is coming from and control allocations more effectively.”

When it comes to natural capital, food and water systems will also need to be rethought. Areas of the globe affected by drought have more than doubled in the past 40 years¹³ and uncomfortable ‘hot zones’ are expected to swell.¹⁴ Agri-food production, responsible for significant carbon and methane emissions, biodiversity loss, soil depletion and water use, will have to change.

“We don’t need more intensive farming,” says Toub. “We need more precision and regenerative agriculture, with efficient use of fertilisers and irrigation.” He points to the detailed data available to farmers at field level, which can be used to reduce inputs and boost productivity.

Overall, the availability of water is expected to become a much greater concern, either due to drought or on the back of extreme weather, as many different users compete for this essential resource. Companies providing technologies that can monitor leaks, enable water to be re-used or control flows of wastewater may have scope to grow.

With more eyes on ecosystem monitoring, there may also be positive earnings impacts for companies improving the management of biodiversity and environmental risks.

“Companies involved in the testing, inspection and certification of natural capital tend to get overlooked, despite the fact they are facilitating better standards in biodiversity risk management globally,” says Julie Zhuang, portfolio manager of the Aviva Investors Natural Capital Transition Global Equity strategy. She highlights the spin-offs that might flow from reshaping relationships with the natural world (illustrated in Figure 4).

“We need more precision and regenerative agriculture, with efficient use of fertilisers and irrigation”

Jonathan Toub
Portfolio manager

13. ‘Drought and agriculture’, Food and Agriculture Organization of the United Nations, 2021.

14. Chi Xu, et al., ‘Future of the human climate niche’, PNAS, May 4, 2020.

Figure 4. Nature first: What's to gain from transition?



Source: Amanda Russo and Max Hall, '395 million new Jobs by 2030 if businesses prioritize nature, Says World Economic Forum', World Economic Forum, July 14, 2020.

Meanwhile, there is a need to address widening social disparities, directing capital to meet the UN's SDGs in a way that is performance enhancing.

"Provision or access to skills, healthcare and financial resources are exciting areas from an investment perspective, although they need to be considered in the context of the role of public sector actors as well," says Matt Kirby, portfolio manager on the Aviva Investors Social Transition Global Equity strategy. "Broadly speaking, we're interested in companies that offer solutions that will reduce, not exacerbate, the inequalities we see in society today.

"In healthcare, for example, we have identified a company focused on democratising genetic testing, and another enabling the technology to support the World Health Organization's goal to eradicate the tuberculosis epidemic by 2035. There are also emerging market banks providing access to finance for underserved communities in Indonesia and India. We are also looking at an EdTech company that is one of the handful of publicly listed B-Corps (i.e., committed to balance purpose and profit), along with a company focused on bringing clean water and safe sanitation to more people, with less environmental impact."

Kirby also believes how companies address their responsibilities is revealing. "How a company treats its people is vitally important to company financials," he says. "We search for genuinely good corporate citizens, supporting our investment decisions through analysis of company stakeholders, and by gathering data from a wide range of valuable but typically overlooked external entities (primarily NGOs), as well as looking at fundamentals.

"We have a long-term investment horizon: unless we see an unexpected deterioration in fundamentals or social credentials, we are inclined to back these companies, because that will ultimately have a positive impact on the transition towards a more socially just and equitable economy and create long-term value for stakeholders as a result."

"How a company treats its people is vitally important to company financials"

Matt Kirby
Portfolio manager

Value destruction and risks

On the other side of the coin lies a threat: the Paris climate targets imply “massive” capital destruction, according to Professor Richard Tol from the University of Sussex, former member of the Intergovernmental Panel on Climate Change (IPCC). (See more from Tol in *Climate change: The journey from denial to crisis*).¹⁵ “If we are serious about getting emissions down, it means a whole lot of existing capital will have to be prematurely retired, long before the end of its technical or economic life,” he told *A/Q*.

That raises all kind of questions. What might the true value of today’s energy majors be? Some have written down the value of their assets but gone on to benefit from an ultra-tight market as Russian sanctions started to bite.

“My view is that the long-term terminal value of many fossil-fuel producers should be lower, and the cost of equity higher, because of risks on the horizon, including climate-related litigation and the amount of change needed to transition,” says Aviva Investors’ UK equity income portfolio manager, Chris Murphy.

As the operating environment shifts, laggards may become exposed. “We know there is significant downside risk from not greening your portfolio,” says Dixon. “If you choose not to act, you’re ignoring the risks we can see in plain sight, because there is reputational, liquidity and potentially long-term credit risk associated with carbon-intensive infrastructure and property assets. (see page 18 for more on greening infrastructure and the built environment).

What about the value of semiconductor producers whose production lines may be threatened by water shortages, or chemicals companies vulnerable to transport disruption when river levels drop too low? These nature-risks are more prevalent than many appreciate.

“People associate nature-based risk as the home of agriculture and fishing, but you will be amazed at the dependencies industries have when you look at the natural environment and across their supply chains,” says David Craig, co-chair of the Taskforce on Nature-Related Financial Disclosures (TNFD), the body developing a framework to assess nature risk.

“Rising global temperatures and intensifying competition for water access are material factors for investors when it comes to evaluating market risk,” agrees Eugenie Mathieu, Aviva Investors’ Earth pillar lead. “Investors need to understand how companies are monitoring and minimising the long-term environmental risks in their supply chain; these issues need to be addressed.”

Then there is social value erosion. Organisations that failed to treat their staff with respect and aggressively sidestepped their responsibilities to guarantee minimum social safeguards proved higher risk for shareholders during the COVID-19 pandemic.

“We know there is significant downside risk from not greening your portfolio”

Ed Dixon

Head of responsible investment,
real assets

15. ‘Climate change: The journey from denial to crisis’, Aviva Investors, February 28, 2020.

Figure 5. Value-at-risk



Source: Aviva Investors, June 2022.

16. Cornel Ban, et al., 'A perfect storm: COVID-19 and the reorganisation of the German meat industry', *Transfer: European review of Labour and Research*, 2022.

17. Leticia Miranda and Isabel Soisson, 'Most cruise lines don't pay federal income tax — just one of the reasons they aren't getting a bailout', *CNBC*, March 31, 2020.

18. Tim McDonnell, 'The most important number in the new IPCC report is a warning to investors', *Quartz*, April 5, 2022.

19. 'State of climate in 2021: Extreme events and major impacts', *World Meteorological Organization*, October 31, 2021.

20. 'Chipmakers in drought-hit Taiwan order water trucks to prepare for 'the worst'', *Reuters*, February 24, 2021.

Portfolio diversification: Different thinking creates different outcomes

The transition is likely to drive security selection: as the world changes, earnings drivers will too.

“Economic transition implies a transition in investment thinking,” Stathers says. “As we are envisioning systemic changes to the global economy, past performance is no guarantee of future performance. Investors will need to think much more carefully about the investment characteristics they cherished in the past.”

For example, in credit, managers historically looked to energy, utilities and financials for yield, but in future, these may not necessarily deliver. It is not possible to make broad generalisations about the energy sector, for instance, because of the way business strategies are diverging.

“European majors seem keen to transform themselves into renewable power companies,” says Derek Foster, senior credit analyst at Aviva Investors. “North American majors are going down the route of carbon capture and sequestration, as well as applied technology. It’s an interesting dichotomy, and it will be fascinating to see which path is most successful.”

Some companies, like Occidental Petroleum, already suggest earnings from nascent direct air capture could be substantial, Foster explains.

While the future is not clear, it is possible to identify solutions with potential, companies with industry leading approaches, and companies and assets with the capacity to become greener and more efficient. These subsets tend to have different style characteristics (e.g., in terms of market capitalisation, factor, industry, geography), bringing investors different risk exposures than broad indexed strategies.

Interestingly, companies rating highly on one metric, such as biodiversity risk management, do not necessarily have high ESG scores.

“Some solutions providers may not be leaders in overall ESG performance terms, although their business models are designed around products and services that protect nature,” Zhuang says. This highlights why it is important to assess each company on its own merits and engage actively over quantifiable, time-bound targets to maximise positive impacts overall.

On the ground, our approach should drive measurable improvements in carbon efficiency, reduce environmental impacts across supply chains and ensure an analytical focus on human rights standards, across infrastructure, buildings, agriculture, industry and transport.

“We believe companies doing the right thing should outperform in the long run, as measured both by financial returns and their impacts. Those combined outcomes are what our strategies target,” explains Zhuang.

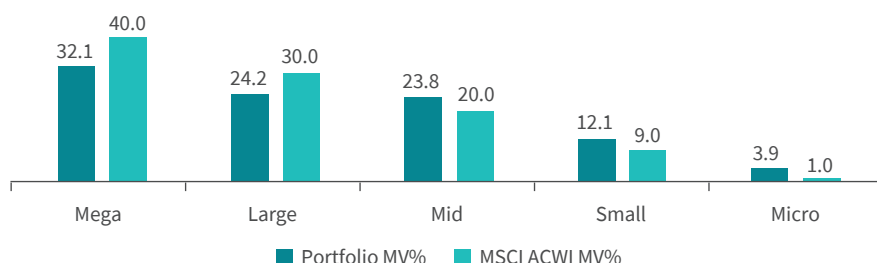
Companies rating highly on one metric - such as biodiversity risk management - do not necessarily have high ESG scores

Portfolio considerations: Natural Capital Transition Global Equity

To transition towards a nature positive economy – which enhances planetary resilience and reverses nature loss – we aim to maximise impact by investing in a combination of solutions companies (i.e., companies able to address natural capital challenges), environmental leaders in their fields and organisations and assets where there is scope to make positive, measurable improvements.

Our focus alters the nature of the portfolios we can construct and should bring diversification benefits.

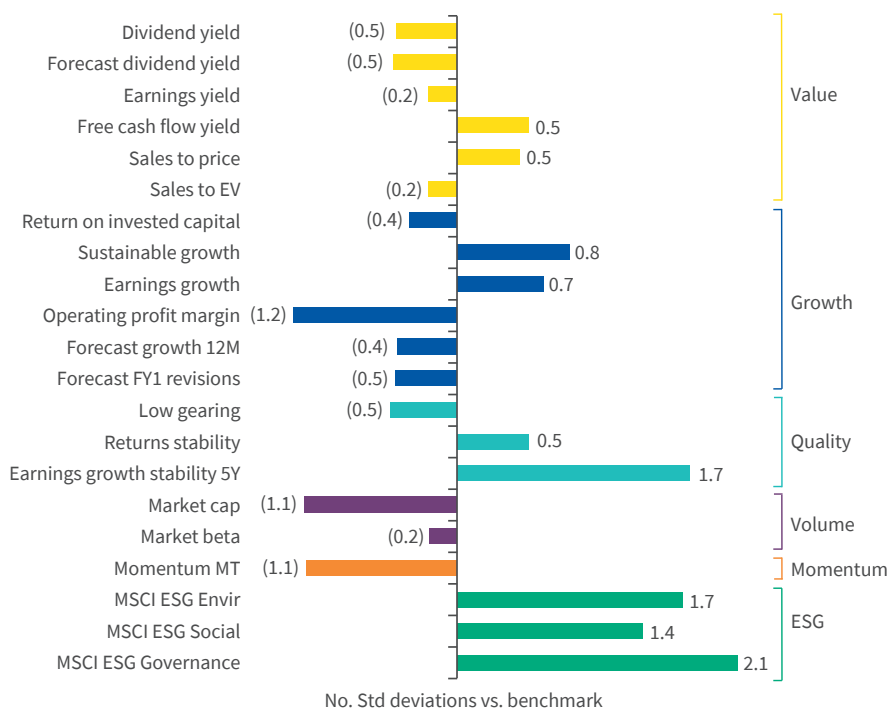
Figure 6. Diversification considerations: Size (per cent)



Overweights in quality, large-cap transition leaders as well as micro-size companies combine the benefits of resilience with a smaller-cap growth engine.

Source: Aviva Investors Investment Risk, BlackRock Aladdin, and Style Research. Data as of June 30, 2022.

Figure 7. Diversification considerations: Style



Transition leaders tend to be quality businesses in the mid-stage of their lifecycle, with more predictable cashflows and the resources to set high internal benchmarks. Solutions providers typically have potential but less transparent future earnings trajectories.

With wholesale change on the cards, we believe access to both should be performance enhancing.

Past performance is not a guide to future performance.

Source: Aviva Investors Investment Risk, BlackRock Aladdin, and Style Research. Data as of June 30, 2022.

Figure 8. Diversification considerations: Industry (per cent)

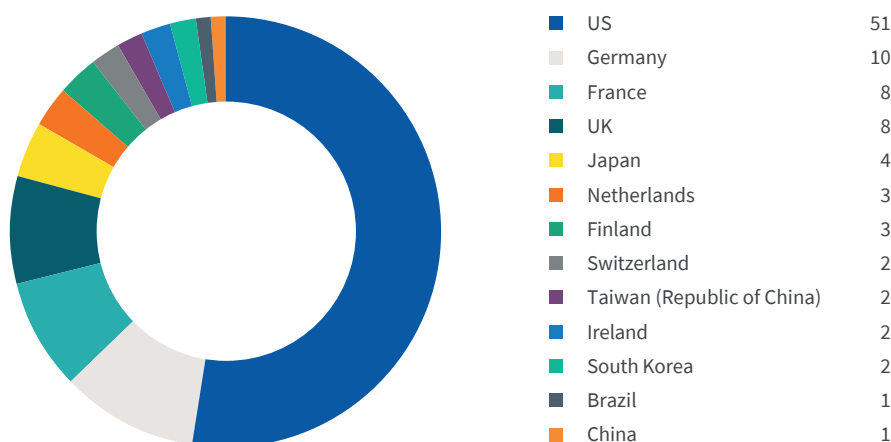
	Difference
Software	18.4
Semiconductors and semiconductor equipment	11.3
Autos	8.2
Electric utilities	5.4
Electrical Equipment	2.8
Chemicals	2.6
Equity Real Estate Investment Trusts (REITs)	1.8
Internet and direct marketing retail	-2.9
Insurance	-3.2
Interactive media and services	-3.9
Technology hardware, storage and peripherals	-4.4
Oil, gas and consumable fuels	-4.4
Pharmaceuticals	-4.7
Banks	-6.9

In MSCI ACWI, the distribution of solutions companies (i.e., companies generating 20 per cent + of revenue from 'green' activities) is concentrated in some areas (e.g., software, semiconductors and semiconductor equipment, autos, electric utilities) but poorly represented in others (e.g., banks, pharmaceuticals.)

A 'solutions-only' focus tilts the risk distribution towards certain industries, whereas a combined solutions and transitions approach offsets that.

Note: Solutions companies are taken as those in the ACWI with >20% green revenues, IPCC, 2014. Exit based on global emissions from 2010. Details about the sources included in these estimates can be found in the Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Source: Aviva Investors Investment Risk, BlackRock Aladdin. Data as of June 30, 2022.

Figure 9. Diversification considerations: Geography (per cent)



Our European overweight reflects environmental governance standards, which broadly exceed those in China, the US and the rest of the world.

Past performance is not a guide to future performance.

Note: Holdings and allocation are subject to change. Excludes cash.

Source: Aviva Investors Investment Risk, BlackRock Aladdin, and Style Research. Data as of June 30, 2022.

Engaging for change

Active engagement is an essential part of our role as an asset manager.

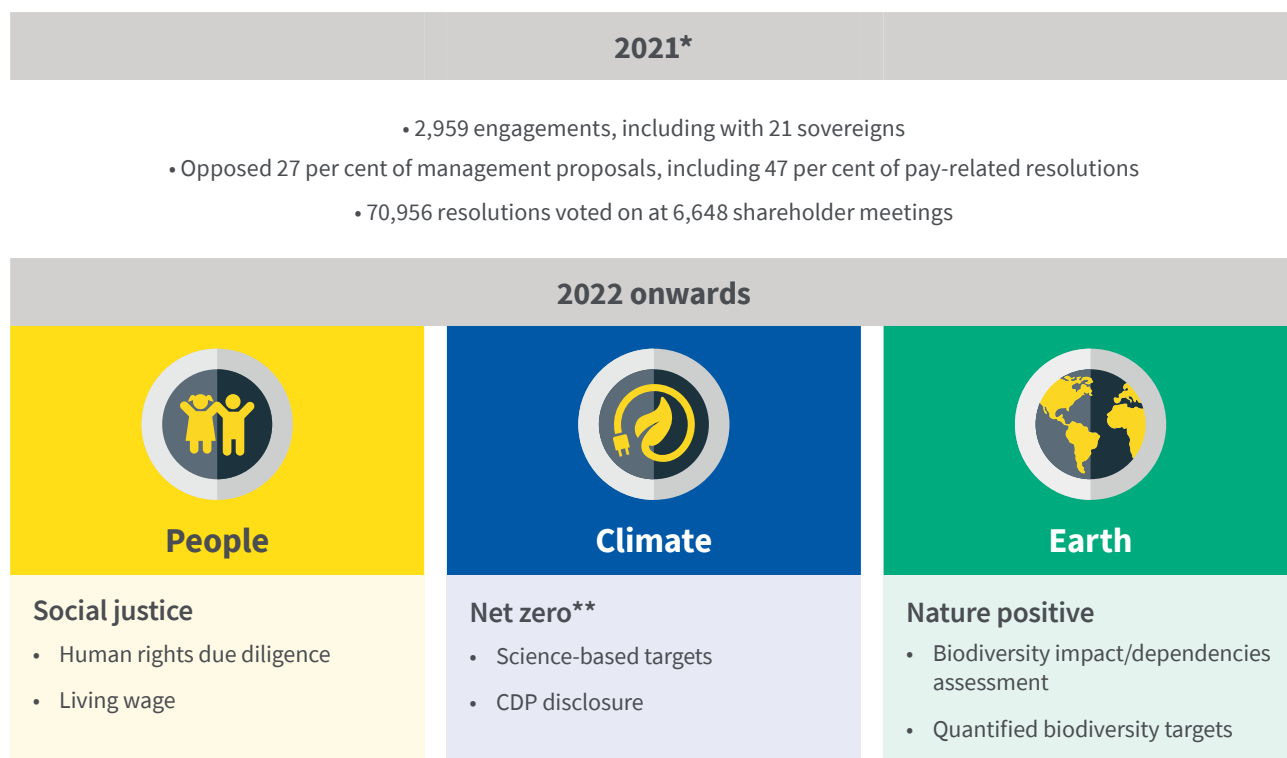
Persistent and constructive dialogue with companies and other issuers is vital to preserve the value of assets we manage on behalf of our beneficiaries and clients. It enhances our understanding of developments that could have risk and valuation implications and gives us scope to accelerate change by encouraging more sustainable business practices.

The insights we gather through engagement help inform our investment decisions. If we identify information gaps, we try to bridge them. Written correspondence, phone calls and face-to-face meetings are all important ways to stay connected.

“Companies should understand engagement ‘asks’ have consequences and those will ultimately flow through to how their investors allocate capital, their risk appetite, and their pricing points,” says Mirza Baig, Aviva Investors’ global head of ESG investments.

“We need to be granular and detail the kind of actions we want to see. To manage the transition to net zero, for example, that might include carbon pricing, capital expenditure plans, management incentives and so on,” he adds. “But investors need to be bold enough to recognise if a company isn’t responding and the situation falls outside their risk tolerance. At that point, we will walk away. This makes engagement more impactful. It demonstrates we are willing to put our money where our mouth is.”

Figure 10. Engagement with teeth



Note: *Engagement and voting statistics reflect activity across Aviva Investors, not solely related to the Sustainable Outcomes range. ** Planned for the Climate Transition range, subject to regulatory approval. Outcomes may not be achieved.

Source: 2021 Responsible Investment Annual Review, Aviva Investors, 2022.

As well as driving change by investing in liquid markets, there is an enormous opportunity to change environmental and social dynamics through real assets. Meeting the needs of over 7.9 billion people will require significant investment in buildings, transport, data and energy networks in the coming years, and legacy assets, like poorly insulated properties, need to be addressed as well.

This is an opportunity to rethink how capital is deployed. Real asset investors can contribute to decarbonisation, focus on maintaining biodiversity and ensure procurement is properly aligned with social goals, and in the process reduce risk.

Figure 11. Our progress in greening infrastructure: 2021



Source: Aviva Investors, June 2022.

Achieving a greener world will require the wholesale rewiring of infrastructure networks, at a cost of around £650 billion in public and private investment over the next decade in the UK alone.²¹ But there is a long way to travel for institutions wanting to drive change. (See *An investor's perspective on the UK's Net Zero Strategy*).²²

“Much of the investment required to achieve net zero will be in new or emerging technologies,” explains Darryl Murphy, managing director for infrastructure at Aviva Investors. “This presents major investment challenges: in technology and delivery risk and longer-term revenue and market risk. As a result, investors will be looking for a combination of the capability of industrial sponsors to bring forward these technologies alongside government policy incentives or capital.”

New approaches are needed; for the moment, only offshore wind is considered “capital markets ready” for those investing at scale. (See Figure 12 for UK assessment of the commercial maturity and capital requirements of low-carbon sectors). Low-carbon hydrogen, green hydrogen, CCUS, advanced nuclear, long-term energy storage, electrification of transport and energy efficiency are not yet proven commercial propositions. Investors will need to spend time getting familiar with the risk and return dynamics of these emerging sectors; we expect progress soon.

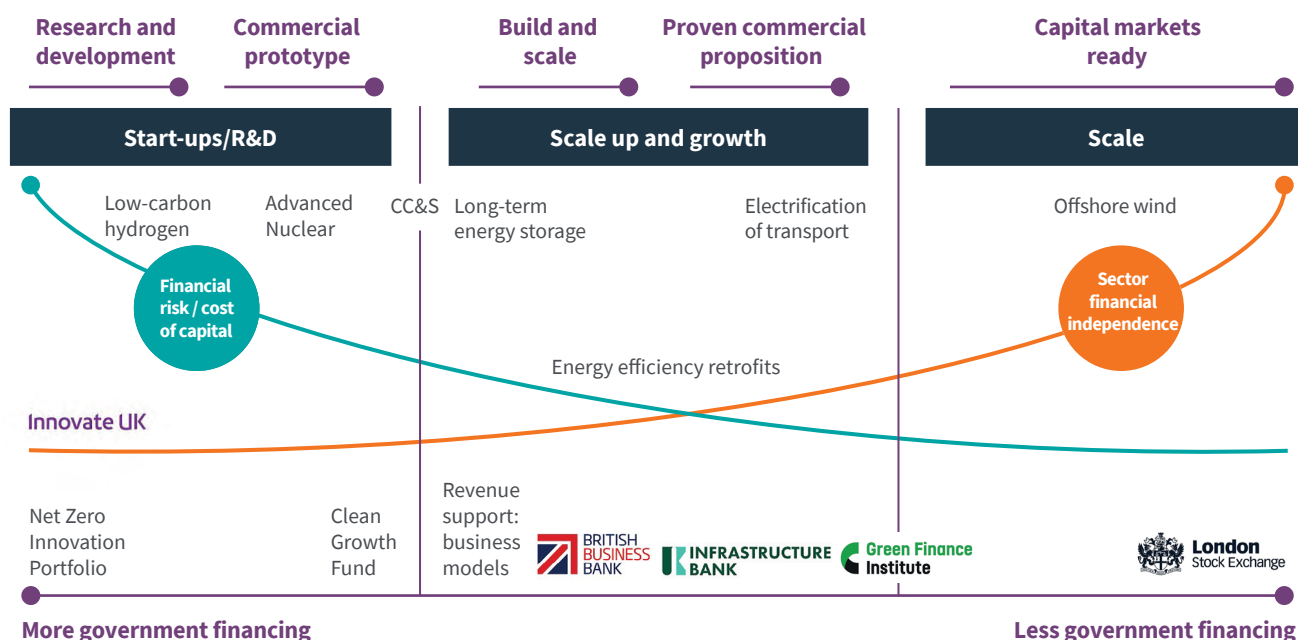
“Much of the investment required to achieve net zero will be in new or emerging technologies”

Darryl Murphy
Managing director, infrastructure

21. ‘Analysis of the national infrastructure and construction pipeline 2021’, Infrastructure and Projects Authority, August 2021.

22. Darryl Murphy, ‘An investor's perspective on the UK's Net Zero Strategy’, Aviva Investors, October 28, 2021.

Figure 12. Commercial maturity and capital requirements of low-carbon sectors



Source: 'Net zero strategy: Build back greener', HM Government, October 2021.

In the built environment, there are as many decisions to be made about what not to do (e.g., enforcing no-build zones to protect planetary health, refurbishing rather than rebuilding to reduce carbon impacts) as there are around actions to green (e.g., prioritising social value creation in design and procurement, materials selection, enhancing carbon efficiency.)

Getting these decisions right will drive returns and impact, as the regulatory environment changes and fossil-fuel costs escalate. “We have gone from the need to reduce emissions in the built environment as optional to something that is already having a significant impact on every portfolio, whether clients and managers like it or not,” says Dixon.

His view is that buying ‘brown’, refurbishing, and turning real estate back onto the market, or integrating sustainability principles to support the transition of infrastructure assets, will deliver significantly greater rewards than competing for assets with favourable environmental credentials.

To really power impact, the challenge needs to be addressed right across the investment lifecycle. It is so important to get the acquisition strategy right. Only a small part of our origination is in green buildings – around 13 per cent in 2020 and 2021. That’s deliberate. Brown assets are where we see the opportunity to add most value, in environmental and absolute value terms.

“We can measure and quantify climate risk and outline the capital expenditure needed to transition the asset to net zero. We are using our annual business planning cycle to continually deliver the improvements needed. Embedding this into our processes means we are already making meaningful progress towards our 2025 net-zero goals,” adds Dixon.

Macro stewardship: Changing the rules of the game

As well as engaging directly with the companies in which we invest, we seek to go further – challenging policymakers where regulatory and policy frameworks are delivering sub-optimal outcomes for society. We call this macro stewardship.

“We are looking to mitigate the impacts of how corporate systems are run,” explains Tayler. “We talk to companies directly, carrying out hundreds of engagements each year, but we are also attempting to fix the system via macro stewardship. We need to address multiple factors simultaneously. It’s no use asset managers having transition strategies with billions of assets under management if systemic problems persist and undermine the good work being done.”

“We look for financially material issues that could impact long-term GDP growth, issues that could hold back progress towards the UN’s SDGs and where we can intervene in a timely way, to amplify our message,” explains Jess Foulds, senior manager at Aviva Investors’ Sustainable Finance Centre for Excellence. “It’s how we maximise our influence, bringing our peers along with us, to drive change.”

She points out asset managers already need to promote market integrity under the UK’s Financial Reporting Council’s Stewardship Code. “The financial services industry needs to consider market failures seriously, because we are obliged to act in the best interests of clients and promote market integrity. The Stewardship Code includes a section on promoting well-functioning markets; it already stretches beyond owners looking to achieve sustainability through an asset class lens. That responsibility needs to be addressed more explicitly and understood more widely by our industry.”

Take, for example, the way international financial architecture fails to align with achieving the Paris Agreement: some of it undermines it, including regulatory aspects of Solvency II rules for insurers and Basel III rules for banks.²³

“At the moment, markets are destroying the Paris Agreement. They need to be harnessed so they deliver it,” says Waygood.

He believes a key issue is the piecemeal way in which policy and legislation has evolved. “International financial architecture has no one architect,” he points out. “It was never designed to deliver the Paris Agreement. The way we are investing today could potentially destroy civilisation a century from now. This is not an intelligent or prudential approach: people who have a duty to maintain the structural integrity of the market must see that.”

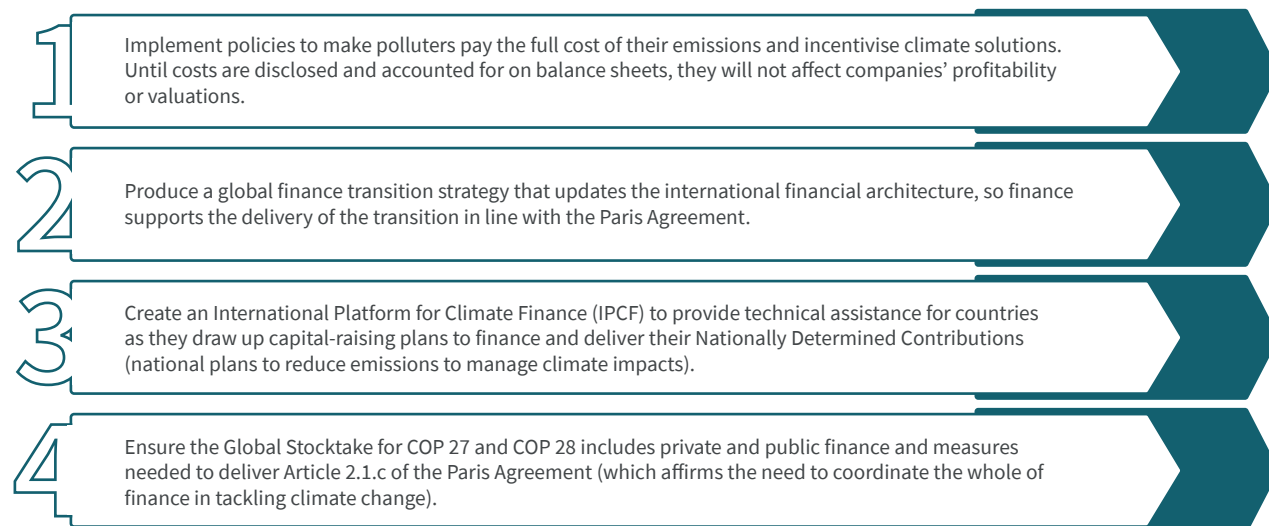
“Our clients and future clients, shareholders and future shareholders, children and grandchildren are all served by us trying to improve the system”

Tom Tayler

Senior manager, Sustainable Finance Centre for Excellence

23. [‘Redesigning the system: the biggest job in finance’ ICAEW, November 5, 2021.](#)

Figure 13. Our macro climate goals: Engaging with governments, policymakers, and regulators



Source: Aviva Investors, June 2022.

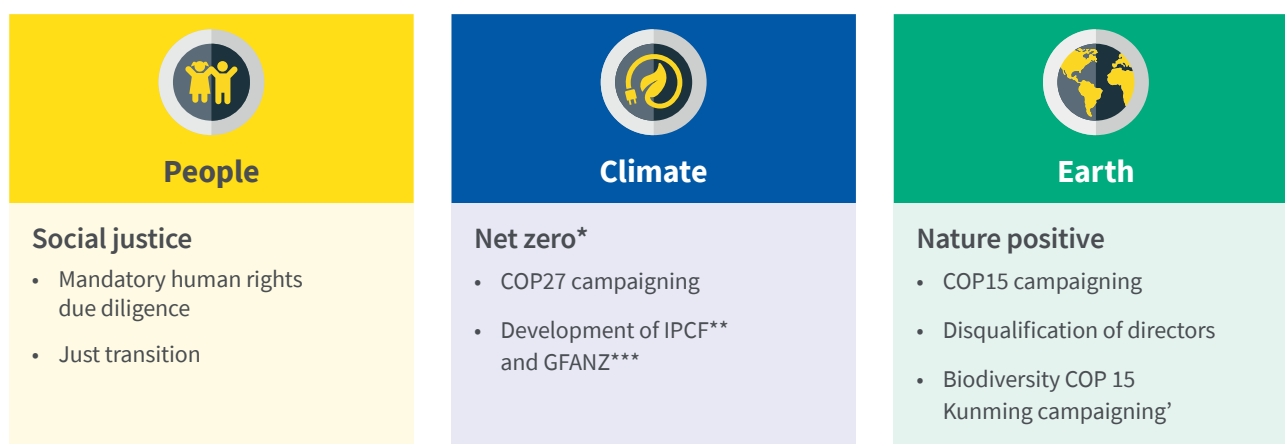
"Concentrating on tracking error in our portfolios is a necessary part of investment management," says macro stewardship analyst Oliver Morriss. "But we believe it's insufficient in helping diagnose and mitigate the causes of risks that could harm all portfolios. We need a paradigm shift in our understanding of what a true risk-adjusted return looks like. It is not just asking 'how are we achieving returns today?' but also considering 'how investment activity could impact our ability to deliver returns tomorrow.'"

"We need a paradigm shift in our understanding of what a true risk-adjusted return looks like"

Oliver Morriss
Macro stewardship analyst

"Investors must act as stewards for the system into which they invest their clients' money. Where market failures perpetuate risks that materially undermine stability, investors must take collective action to drive government policy and market practices to correct them," he adds.





Figure 14. Macro stewardship priority areas: Tackling market failures through collaboration and influencing policy reform



Note: *Planned for the Climate Transition range, subject to regulatory approval. Outcomes may not be achieved. **IPCF: International Platform for Climate Finance. ***GFANZ: Glasgow Financial Alliance for Net Zero.

Source: Aviva Investors, June 2022.

Figure 15. Targeting anti-microbial resistance (AMR)

 The issue	 Threat size	 Engagement	 Macro stewardship
<p>Antibiotics underpin modern medicine and agriculture and contribute to realising the UN's SDGs.</p> <p>In some areas, overuse is leading to the emergence of drug-resistant 'superbugs', threatening human and animal systems.</p> <p>In others, underuse is holding back productivity and human development.</p> <p>Systemic market failure, with current and future impacts.</p>	<p>Current impact²⁴</p> <p>Direct deaths: 1.3 million p.a.</p> <p>Deaths associated with AMR: Up to 5 million p.a. (greater than HIV, malaria, TB)</p> <p>Potential impact by 2050²⁵</p> <p>Annual deaths: +10 million</p> <p>Economic loss: -2% to -3.5% of global GDP, approx. \$100 trillion</p>	<p>Recent action</p> <p>Supporting the FAIRR initiative on animal pharma.</p> <p>Key issues</p> <p>Engaging to ensure producers and users of antibiotics recognise their stewardship role and have risk management strategies in place for wastewater and other effluents.</p>	<p>G7, Germany June 2022</p> <p>Ensure AMR stays on finance ministers' agenda and is not relegated to health ministers.</p> <p>G20, Indonesia November 2022</p> <p>Support recommendation from WHO's Pan-European Commission on Health & Sustainable Development for creation of a new global health board, to replicate the success of the Financial Stability Board.</p>
<p>Corporate roles</p> <p>70% of the world's largest meat, fish and dairy companies are poor antibiotic stewards.²⁶</p>	<p>Investment impacts</p> <p>Concentrated in pharmaceuticals, agriculture, utilities.</p>	<p>Behaviour change</p> <p>Some volume poultry producers have begun to reduce use of antibiotics in certain regions; overuse and preventative (prophylactic) use in intensive agriculture remains an issue.</p>	<p>Outcome</p> <p>"Thanks to Aviva's influence, last month, G7 Finance Ministers committed to work together with investors, policymakers and companies to mitigate AMR. This week, Germany have announced that continuing this multi-stakeholder effort will be a top priority for their 2022 Presidency—a global testament to the success of Aviva's advocacy."</p> <p>Letter to Amanda Blanc, Group CEO, Aviva from UK Department of Health & Social Care, January 2022</p>

Source: Aviva Investors, June 2022.

24. ['Tackling drug-resistant infections globally: Final report and recommendations, Chaired by Jim O'Neill, May 2016.](#)

25. ['Tackling drug-resistant infections globally: Final report and recommendations, Chaired by Jim O'Neill, May 2016.](#)

26. [Collier FAIRR Protein Producer Index 2020.](#)

Accelerating change

The challenge of transitioning from an unsustainable world – where the climate is warming, irreplaceable ecosystem services are being lost and human dignity is being disregarded – to a more sustainable one, is enormous. But the world must switch course, in the best interests of societies and economies.

This means taking a wider view of the impacts of our investments and pressing ahead with metrics to measure environmental and social spill overs. It also means recognising nuance – acknowledging progress in one area may inhibit others, and not allowing that complexity to cause fatal delays.

We can power change by tilting towards solutions providers, as well as those striving to be best-in-class and assets with the scope to green. But moving the dial will also mean confronting areas of market failure, encouraging decision makers to address those fields where we are collectively falling short.

There will be obvious benefits from those that get change right, particularly as transition accelerates. Keeping the opportunity set large, diversifying risk through an assortment of style characteristics, and generating value through the pivot to green are all ways to generate sustainable long-term returns. Conversely, explicit risks lie ahead – the “hellish world of systemic breakdowns” John Elkington, the godfather of sustainability, warns of if no attention is paid to unsustainable pathways, with massive destruction of financial, natural and social capital.

This is the time to change. “We were nowhere on this pathway even ten years ago,” Burns says, drawing on 30-years of experience as an industrials analyst. “When I look at the companies we are invested in and researching and how rapidly they are changing, it gives me cause for optimism. There are naysayers, but if you look at what’s been achieved, it’s a lot. The question is: can these achievements be implemented at the scale and pace we need? What might we do in the next ten years?”

Moving the dial will mean confronting areas of market failure

Key risks

Investment risk

The value of an investment and any income from it can go down as well as up and can fluctuate in response to changes in currency and exchange rates. Investors may not get back the original amount invested.

Illiquid securities risk

Certain assets held in the strategies could, by nature, be hard to value or to sell at a desired time or at a price considered to be fair (especially in large quantities), and as a result their prices could be very volatile.

Credit risk

Bond values are affected by changes in interest rates and the bond issuer's creditworthiness. Bonds that offer the potential for a higher income typically have a greater risk of default.

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