



The Power of Investment

TCFD Report 2021

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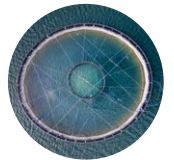
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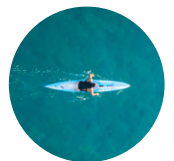
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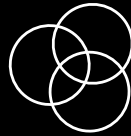




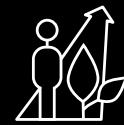
Enabling our clients to be better investors



Technology and insight help empower clients to make better decisions



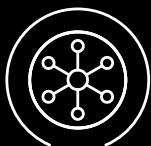
Powerful partnerships help to enhance the expertise that we offer



Enabling clients to invest responsibly helps us to build a better world

Our connected global team

Clients worldwide trust us to find future-fit investment opportunities globally to deliver the outcomes they want.



We manage and administer £542 billion of assets for clients



We have around 5,000 employees globally



We have 800 investment professionals in over 30 locations



Learn more about our business online visit www.abrdn.com

Our business



Our business is structured around three vectors, focused on the constantly changing needs of our clients.



Investments

Across markets globally, we build investment solutions to enable clients to create more opportunities for their futures.

Our investments solutions are built on the strength of our insight, generated from wide-ranging research, worldwide investment expertise and local market knowledge. Our teams collaborate across regions, asset classes and specialisms, connecting diverse perspectives, working with clients to identify investment opportunities that suit their needs.

Fee based revenue

£1,231m

£464bn AUM



Adviser

Our platform technology and tools help UK wealth managers and financial advisers create more opportunities for their clients and their businesses.

We provide technology, expertise and support to make it easy for our clients to run their business and deliver the outcomes their clients want. We offer content and experiences that can be personalised to suit every type of business and client, giving advisers powerful data and insight to make better decisions.

Fee based revenue

£178m

£76bn AUA



Personal

Our personal wealth business offers tailored services to help individuals in the UK create financially secure futures in a way that works for them.

We integrate a full range of services from high-quality financial planning and discretionary investment management capabilities, through to hybrid advice and digital investing tools. Our proposed acquisition of interactive investor transforms and broadens these capabilities.

Fee based revenue

£92m

£14bn AUMA



Enabling our clients **to be better investors**



We are committed to being a positive catalyst for net zero and enabling our clients to achieve their climate goals with a focus on real world impacts.

Stephen Bird
Chief Executive Officer

Climate change is the biggest challenge confronting us all. There is no planet B. At abrdn we view this in two ways, firstly by demonstrating leadership in our operations and secondly by reducing the carbon intensity in our own portfolios with a focus on real world decarbonisation towards net zero.

In our own operations we have set a target to be net zero by 2040 with an interim target of reducing carbon emissions by 50% by 2025. We have adopted app based technology to enable our colleagues to keep track of their own carbon footprint, which is more important than ever in the context of home working.

The biggest positive climate impact that we can have is, of course, through the portfolios that we manage on behalf of our clients. As members of the Net Zero Asset Managers (NZAM) initiative, we are committed to partnering with clients to help them achieve their climate goals and, together, play our part in tackling climate change.

In 2021, we set ourselves an ambitious target to reduce the carbon intensity of the assets we invest in by 50% by 2030. We will achieve our target through three pillars of action – asset decarbonisation, providing net zero investment solutions, and active ownership.

Our climate strategy is focussed on Net Zero Directed Investing (NZDI). This means moving towards the goal of net zero in the real world – not just in portfolios. We are active investors and believe that sustainable change will be driven by transition leaders and innovative climate solutions, alongside bolder collective action by government and effective incentives in the form of appropriate carbon pricing.

We are engaging with our highest financed emitters across equity and credit holdings to seek transparency on their decarbonisation plans and track progress against relevant standards such as the Climate Action 100+ (CA100+) net zero benchmark. The change we need will come from backing credible transition firms on their path from high to low-carbon intensity. However, if company progress against milestones is insufficient despite active engagement then we will look to divest.

Aligning our operations and investments to a net zero future, and being transparent on our progress, is essential for long-term performance. We are fully supportive of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) – both as an investor and as a discloser – and welcome the updated 2021 recommendations particularly the increased focus on transition plans. We have made disclosures we believe are consistent with the TCFD Recommended Disclosures within this report and in a summarised version within our Annual Report and Accounts. We will continue to evolve and enhance our TCFD reporting, in line with data and industry developments. For example, in our next report we aim to incorporate further information on portfolio alignment and follow the Partnership for Carbon Accounting Financials guidelines on calculating financed emissions.

At abrdn we want to be measured by our actions and not just our words.



Our progress in 2021

We joined the Net Zero Asset Managers initiative (NZAM)

30% of our AUM is committed to be managed in line with net zero 2050

70% of our Equity funds have a carbon intensity below their benchmark

We committed to reduce the carbon intensity of the assets we invest in by 50% by 2030 vs a 2019 baseline

We signed the 2021 Investor Statement to Governments to support more stringent policies on the path to net zero

We voted on a total of 99 climate resolutions (2020: 60) and in favour of the majority of resolutions related to climate change (55%)

We launched four climate-focussed funds across Equities, Credit and Multi-Asset to help our clients achieve their climate goals

We appointed a Head of Climate Change Strategy and recruited a dedicated climate change analyst

We published our thought leading climate scenario analysis white paper and investment tools

We published our Real Estate Net Zero 2050 blueprint

We invested in native woodland creation in the Scottish Cairngorms to support nature-based solutions as part of our net zero strategy

We were actively involved in COP26 and contributed towards a range of climate industry initiatives such as the PRA Climate Financial Risk Forum (CFRF)

We target net zero in our operations by 2040, with an interim target to reduce our emissions by 50% by 2025 vs a 2018 baseline

We have reduced our operational emissions by 62% since 2018

We pledge to work with our top 50% of suppliers by spend, asking them to put in place net zero targets by 2025

We are carbon neutral through offsetting 110% of our operational emissions



The Board's role in oversight

The Board and Board committees oversee a number of climate-related issues and reports to provide challenge and ensure we are ambitious in our plans. We have an established governance and risk framework enabling us to identify and review climate-related risks and opportunities, with clear accountabilities. Our Chief Executive Officer has overall responsibility for how we ensure that climate-related issues are integrated into our strategy.

 [More on page 14](#)

Management's role in assessment

Our two Climate Change Working Groups – covering our operations and investments – consist of senior management members across asset classes and business teams. They are key to escalating to the Board material risks and opportunities and ensuring that the implications of these are considered within abrdn's strategy and risk management policies and that the budgets and business plans are in place to achieve this. These groups feed into our Executive Leadership Team and from there to our Board. Our Head of Climate Change Strategy also updates the Board directly on climate-related matters.

 [More on page 14](#)


Climate-related risks and opportunities

The most material climate risks we have identified include regulatory reporting obligations, changes in client demand we cannot meet at the required pace and climate change impacts on markets and asset values. Assessing the risks and opportunities related to climate change across regions and sectors is also a core part of our investment process and includes policy, technology and market as well as physical climate risks.

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Impact of climate-related risks and opportunities

Our material risks and opportunities are linked to our growth strategy, such as the opportunity for increased revenue through increased demand for lower emissions products and services. We also quantify the impact on assets we invest in through our thought leading climate scenario analysis.

 [More from page 20](#)

Resilience of our strategy against climate scenarios

We conducted our unique, industry leading climate-related scenario analysis exercise in 2020 and updated this in 2021 to assess the financial impact of climate change on asset values. This deepened our understanding of the potential implications of climate-related transition and physical risks and opportunities for investments and the resilience of our portfolios and investment strategies. While in the aggregate impacts can be small, there is considerable dispersion across and within sectors which helps to identify winners and losers.

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TCFD summary




Process for identifying climate-related risks and opportunities

We identify climate-related risks through our climate risk and opportunity radar, which is aligned to the TCFD recommendations. Assessing the risks and opportunities related to climate change across regions and sectors is also a core part of our investment process, enhanced via carbon footprinting, transition analysis and our climate scenario analysis.

 [More from page 34](#)


Process for managing climate-related risks and opportunities

We have a Climate Risk Oversight Group that evaluates material climate risks within our radar of climate-related risks and opportunities. Where we identify material risks to the business within the radar we escalate this through our governance structure. The management process determines whether we mitigate, transfer, accept or control risks. In our investments approach, climate change risks and opportunities are managed by actively incorporating their impacts in the investment process, corporate engagement and voting.

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Integrating climate-related risks and opportunities

Our aim is to have a robust risk management process which protects our business and our clients from climate-related risks while ensuring we are well positioned for the opportunities. We use a three lines of defence model focussed on day-to-day risk management, oversight from our risk and compliance function, and our internal audit function to independently verify our system of controls. Climate considerations are a core part of our investment process, toolkit and research templates.

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Metrics used to assess climate-related risks and opportunities

We measure and monitor our operational emissions and emissions related to our investments. In addition, we assess the financial impact of climate scenarios on asset values and measure the ambition and credibility of company transition strategies.

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Our GHG emissions

Our total operational emissions in 2021 were 12,295 tCO₂e, 62% lower than our 2018 baseline. We report Scope 1, Scope 2, and some Scope 3 emissions, which includes our business travel and working from home emissions. For our investments, the majority of our Equity and Fixed Income funds have a carbon intensity below their benchmark.

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Our climate targets

In 2021, we set a target to reduce the carbon intensity of the assets we invest in by 50% by 2030 vs a 2019 baseline to support our net zero ambitions. We are members of the Net Zero Asset Managers (NZAM) initiative and currently, around 30% of our assets are committed to be managed in line with net zero 2050. We have also set ambitious operational targets, such as our aim to be net zero in our operations by 2040 with an interim target of a 50% reduction in emissions by 2025, that we are on track to deliver.

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Our commitment

Net Zero Directed Investing



We announced our net zero related climate commitments in November 2021 during COP26. We are committed to working with our clients to help them achieve their climate goals, decarbonise and move towards net zero.

We aim to reduce the carbon intensity of our assets by 50% by 2030 vs a 2019 baseline to support the transition to net zero.

This is a core component of our Net Zero Directed Investing (NZDI) strategy.


The cornerstone of our climate strategy is Net Zero Directed Investing. That means, being a positive catalyst for net zero by taking action to decarbonise our portfolios, develop net zero solutions for our clients and influence through active ownership. Focusing on real world impact is key.

Eva Cairns
Head of Climate Change Strategy

Net Zero Directed Investing – Our six areas of focus

- 1 Investment integration**
We develop tools and processes to integrate climate change into every investment decision.
- 2 Research and data**
We undertake rigorous, forward looking research related to climate change impacts, including net zero 2050.
- 3 Investment solutions**
We develop climate solutions across all asset classes to enable our clients to achieve their goals, including net zero 2050.
- 4 Transparency**
We are committed to providing transparency via regular TCFD reporting and enhanced ESG client reports.
- 5 Active ownership**
We actively engage with corporates on their climate goals and actions and reflect our views in voting decisions.
- 6 Collaboration and advocacy**
We collaborate with industry initiatives to drive best practice related to net zero and advocate for ambitious climate policy.

 More on NZDI and each of the six areas of focus can be found in the Strategy and Risk Management sections of this report

 Our net zero climate commitment announcement can be viewed [here](#)

1. Assets initially in scope are Equities, Credit, Active Quants, Real Estate and selected Multi-Asset strategies. More detail on our baseline and implementation approach will be published in a separate target setting paper.

Our commitment



We will deliver on our commitment via three pillars of action:

1

Decarbonisation

We are committed to tracking and reducing the carbon intensity of our portfolios. That means continuing to incorporate carbon analysis into our investment process and supporting credible transition leaders and climate solutions. The majority of our public assets have a carbon intensity below benchmark (for example 70% of our Equity assets) and our Real Estate business has committed to aligning our assets to net zero 2050 pathways.

2

Providing net zero solutions

We are committed to increasing the proportion of assets flowing into our NZDI solutions. Around 30% of our AUM is currently expected to be managed in line with net zero 2050. We aim to increase this by continuing to develop net zero solutions across all asset classes, actively engaging with our clients as well as shifting the abrdn fund range to support net zero goals – starting with a review of the carbon targets within our Article 8 and 9 funds.

3

Active ownership

We are committed to voting and engaging with our investee companies to drive change and transition our real assets. We engage with our highest financed emitters across equity and credit holdings seeking transparency on progress against clear transition milestones assessed against relevant standards such as the CA100+ net zero benchmark. We will divest from these companies where, after two years, we consider insufficient progress has been made against the transition milestones set, unless it is not in line with the mandate.

 We are currently establishing a robust baselining and monitoring process and will provide more detail on progress towards our targets in 2022. Further detail on our target setting approach is provided in the Metrics and Targets section.



Case Study

Client collaboration on net zero

In 2021 we joined the NZAM initiative, demonstrating our commitment to working collaboratively with clients to achieve net zero by 2050 or sooner. For us that means developing net zero solutions across asset classes to enable our clients to reach their net zero 2050 goals and to work with current and prospective clients, to outline how goals can be delivered alongside risk-adjusted returns.

In 2021, we worked closely with Phoenix Group, our largest client, to develop a net zero strategy for their investments and have published a joint paper: [Towards a long term net zero climate investment strategy](#). This was led by Craig MacKenzie, our Head of Strategic Asset Allocation.

The paper investigates the investment implications of adopting net zero investment strategies. The

first step in this collaborative piece of work was to explore the implications from a top down, Strategic Asset Allocation (SAA) perspective. The preliminary analysis suggests that it is currently possible to significantly shift Phoenix assets towards net zero goals, with little impact on risk and expected returns. The analysis draws on industry leading climate scenario analysis tools used by abrdn.





Governance

This section provides detail on the following recommended TCFD disclosures:

- a Board oversight of climate-related risks and opportunities
- b Role of management in assessing and managing climate-related risks and opportunities

Our climate-related governance structure



We have an established governance and risk framework enabling us to identify and review climate-related risks and opportunities, with clear accountabilities. Our Chief Executive Officer has overall responsibility and our governance diagram shows how accountability is delegated to various individuals and groups.

Climate Change Working Groups

Key to our governance structure are two Climate Change Working Groups – covering our operations and vectors.

The Investments Climate Change Strategy Working Group has the following responsibilities:

- Review working group recommendations
- Address challenges
- Highlight decisions that require approval
- Integration of research from Research Institute

The Climate Change Corporate Working Group sets the strategic direction for our operations, ensuring we have and are meeting stretching targets as well as compliance.

- Review risk and opportunity radar
- Enable corporate climate change strategy
- Prioritisation, review and validation

The working groups represent senior members from different business areas and asset classes, including our Head of Public Markets as Executive sponsor of the Investments Climate Change Strategy Working Group and the Head of the abrdn Research Institute. The working groups meet quarterly and shape abrdn's strategy and approach when it comes to climate change.

The Groups also provide input into abrdn's climate risks and opportunities radar to ensure risks and opportunities are identified and have required controls in place.

The climate radar is reviewed on at least a quarterly basis. If the scoring of any risk or opportunity materially alters, our Climate Risk Oversight Group reviews and escalates as required via the relevant member of our Executive Leadership Team (ELT) and to the Board. This ensures that the implications of any risks or opportunities are considered within abrdn's strategy and policy and that the budgets and business plans are in place.

The Board

The Board and Board committees, including the Nomination and Governance Committee, oversee a number of climate-related issues and reports – including our TCFD Report – providing challenge and ensuring we are ambitious in our plans.

The Chief Executive Officer

As climate change sponsor, our CEO is responsible for overseeing climate-related risks and opportunities and delegates management to ELT members.

Executive Leadership Team

The ELT consists of the most senior executives in the company, with relevant domain and geographical expertise. A number of ELT members have governance responsibility for climate-related issues including our Chief Operating Officer and client vector CEOs.

Throughout 2021 there were a number of climate change discussions at both the Board and ELT meetings to help guide our ambition in this area. These agenda items covered:

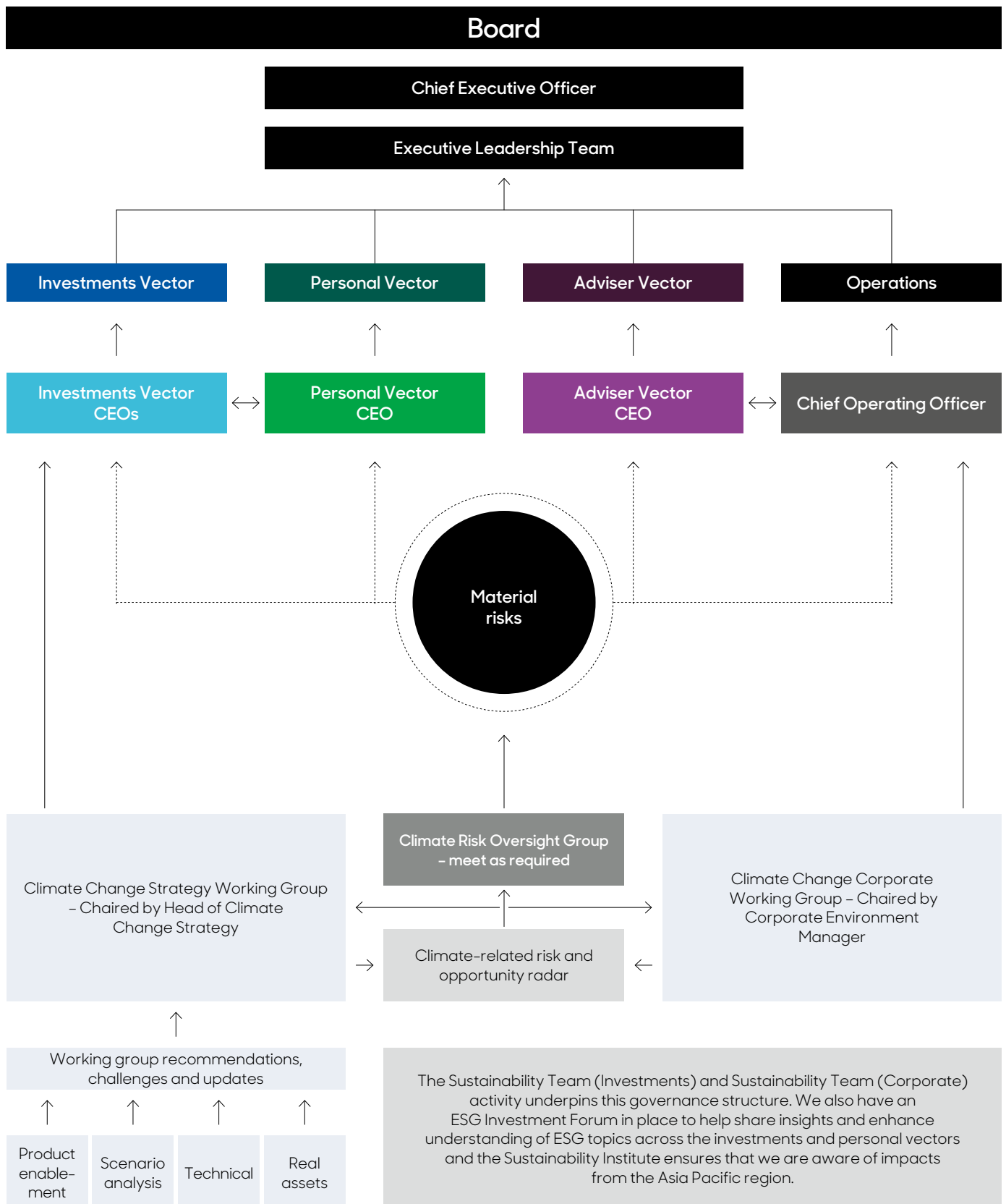
- setting and approving our operational net zero by 2040 and interim 2025 targets;
- our messaging for COP26;
- strategy and targets to reduce the carbon intensity of our investments.

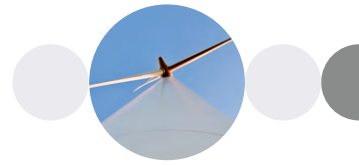
Our Head of Climate Change Strategy provides regular updates to the Board on climate change matters. In addition, Board members are actively involved in external climate-related messaging: Our Chairman participated in a workshop we delivered during COP26 on 'Investment Solutions for net zero' and our Chief Executive Officer participated in a 2021 review webinar on how net zero changed the landscape for investors.

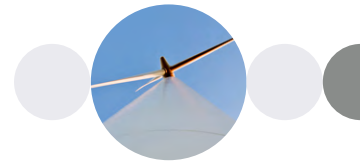


The 2021 review webinar can be viewed [here](#)

Our climate-related governance structure







Strategy

This section provides detail on the following recommended TCFD disclosures:

- a Climate-related risks and opportunities identified over the short, medium and long term
- b Impact of climate-related risks and opportunities on businesses, strategy and financial planning
- c Resilience of the organisation's strategy and business plans with regards to different scenarios
- d Factoring of climate-related risks and opportunities into relevant products or investment strategies
- e Impact of transition to low-carbon economy on products or investment strategies

Our beliefs



We believe that understanding and managing the risks and opportunities related to climate change leads to better investment decisions, better outcomes for our clients, and a more sustainable world. That's why climate change is core to our ESG integration process across all asset classes.

In 2021, we have seen an unprecedented number of companies and countries across the globe committing to a net zero 2050 goal to tackle the climate crisis. This goal is critical for our planet, and, as investors, we have an important role to play in achieving it.

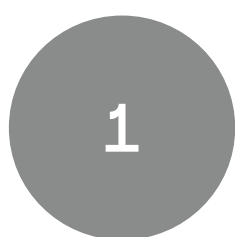
Our NZDI strategy means moving towards the goal of net zero in the real world – not just in our portfolios. We seek to achieve this goal through a holistic set of actions, including rigorous research into net zero trajectories, developing net zero-directed investment solutions and active ownership to influence corporates and policy makers.

The direction of global net zero is clear as temperatures cannot be stabilised without emissions reaching net zero. However, when that might be reached is uncertain. Current pledges and policies fall woefully short of achieving the goals of the Paris Agreement to keep warming below 2°C, ideally at 1.5°C. Despite ambitious announcements at COP26, the world is on track for 2.4°C warming. Effective incentives in the form of appropriate carbon pricing are critical to enable capital allocation in line with net zero.

At abrdn we are acutely aware of our obligation to support the drive towards net zero. That's why we have made strong climate commitments both for the investments we manage and our own operations. But we must be very clear: simply moving our clients' money out of high-carbon intensity stocks into greener options will not solve the world's climate crisis. Decarbonising a portfolio is not the same as decarbonising an industry. To achieve that we need effective engagement with companies because more seismic change will come from backing credible transition firms on their path from high to low-carbon intensity.

Stephen Bird
Chief Executive Officer

Our climate change strategy is underpinned by four core beliefs:



1. We believe the incorporation of climate risks and opportunities improves long-term returns for our clients and must be an integral part of the investment process.



2. We believe asset managers must take a forward-looking view to support the net zero transition by providing capital to companies with ambitious and credible decarbonisation strategies and companies offering decarbonisation solutions.

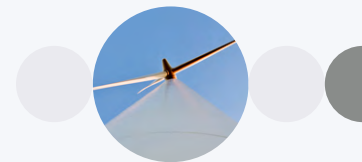


3. We believe active ownership is a powerful tool to influence real world decarbonisation by challenging companies on their transition strategies and influencing corporate behaviour.



4. We believe that stronger climate policy is fundamental to enabling capital allocation in line with net zero 2050 and we urge governments globally to step up ambition and action.

Our approach



It starts with us

We aim to lead by example, striving for the same high standards that we expect from investee companies.

In 2021 we set an ambitious interim target to achieve a 50% reduction in operational emissions by 2025, against our 2018 baseline. This is five years earlier than the latest climate science deems necessary to meet the goals of the Paris Agreement and an important step towards our target to be net zero by 2040.

We have outlined a strategy to reduce our Scope 1 emissions by 50% by 2025. We will achieve this by efficiency measures in our estate (focusing on sites with the highest natural gas use), changes to our fleet, and improvements in refrigerant gas usage. Our strategy to reduce our Scope 2 emissions by 60% by 2025 is through efficiency

measures in our estate (focusing on sites with the highest use). For Scope 3 emissions reductions we are focussed on reducing our business travel by 72% by 2025 and influencing a reduction in emissions associated with colleagues working from home.

We first reduce as much as we can and then we offset 110% of our residual emissions with accredited projects. This includes our working from home emissions.

We are further looking at our supply chain and will expect our top tier suppliers to have net zero targets in place for 2025.

Identifying climate risks & opportunities

We assess climate-related risks and opportunities impacting us as a business through our climate risk and opportunity radar. The radar is based on our risk and control self-assessment process which assesses the inherent risk (the risk before the consideration of controls) against:

- Likelihood – the % chance of an occurrence in the next 12 months.
- Impacts – financial, customer, regulatory, reputational and process.

The inherent risk is then scored after the consideration of the effectiveness of controls (both in terms of design and performance) currently in place. Where a score is very low (i.e. where the likelihood is low or the impact is low) then we may choose to accept the risk. Where this is not the case we ensure we have the correct controls in place to either prevent/minimise the risk or help materialise the opportunity.

For our Investments, assessing the transition and physical risks and opportunities related to climate change across regions and sectors is a core part of our investment process. These are shown in the table below. Active research is supported and enhanced via carbon footprinting, transition analysis and our climate scenario analysis.

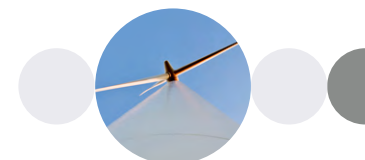
We conducted our unique, industry leading climate-related scenario analysis exercise in 2020, updated this in 2021 and will do so on an annual basis. This deepened our understanding of the potential implications of climate-related transition and physical risks and opportunities for investments and the resilience of our portfolios and investment strategies.

Climate-related risks and opportunities are evolving quickly and the materiality of risks could also quickly change and is therefore assessed on a regular basis.

The core dimensions of climate change risks and opportunities

	Risks	Opportunities
Transition to low-carbon economies	<ul style="list-style-type: none"> – Policy – Technology – Market – Legal – Regulation 	<ul style="list-style-type: none"> – Renewables – Energy efficiency – Electrification of transport – Innovative technologies – Carbon removal
Physical impacts of climate change	<ul style="list-style-type: none"> – Extreme weather and gradual changes in temperature – Disruption to: <ul style="list-style-type: none"> – business operations – suppliers – customers 	<ul style="list-style-type: none"> – Adaptation and building resilience through: <ul style="list-style-type: none"> – infrastructure – technology – water, food and soil management

Risks and opportunities



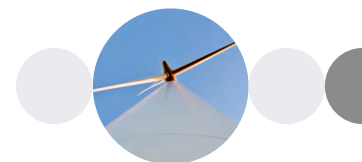
Tables 1 and 2 highlight our most material risks and opportunities resulting from our climate risk assessment. We assess financial impacts on a scale of 1–4. All material risks and opportunities have a 61–100% chance of occurrence in the next 12 months (i.e. are a 1 in 1 year event).

One of the most material transition risks for abrdn relates to the enhanced reporting regulations and the cost of analysing and gathering climate-related data across all

our asset classes, which is complex and resource intensive. Climate-related market impacts on asset values is another important risk which we carefully analyse through our climate scenario analysis. Thirdly, there is a risk related to changes in client preferences and demand for climate-related products and reduced revenue if we are not prepared for this shift – this also provides the greatest opportunity for us and is a key driver for the development of our net zero directed solutions.

Table 1: Key climate-related risks

Risk type	Potential financial impact (-)	Mitigation strategy	Financial impact post control (-)	Strategic priority		
Transitional	Policy and legal	Enhanced reporting regulations	Cost of analysis, data gathering and publication: 4	<ul style="list-style-type: none"> – Process to identify and respond to regulatory and voluntary change – We have data and tools necessary for analysis and research – Carbon footprinting is available for all funds – Our platform embeds scenario analysis outcomes – Client reporting is being further automated 	3	<ul style="list-style-type: none"> Technology Solutions Investing responsibly Client ecosystems
	Market	Significant shifts on consumer preferences	Reduced revenue from decreased demand for products: 3	<ul style="list-style-type: none"> – Enhanced communication of our ESG credentials – Distribution teams ensure we understand clients' needs – Our in house ESG score integrates ESG criteria into our funds – We are developing products to meet the growing demand for low-carbon solutions 	2	<ul style="list-style-type: none"> UK adviser and consumer market Growth in Asia Technology Solutions Investing responsibly Client ecosystems
		Climate-related risks impact the market	Abrupt and unexpected market impacts reduce the value of AUM, impacting clients and reducing investment management revenue: 4	<p>We protect our clients' investments from negative climate-related impacts by:</p> <ul style="list-style-type: none"> – Diversified portfolios – Embedded scenario analysis into our investment process – Embedded carbon footprinting engagement – Thematic notes disseminated across all investment – ESG House Score in our fund analysis – Research led thematic notes for investment desks 	1	<ul style="list-style-type: none"> Private markets Investing responsibly Client ecosystems
Physical	Reputational	Increased stakeholder concern or negative stakeholder feedback	Reduced revenue from decreased demand for products: 3	<ul style="list-style-type: none"> – We aim to exceed stakeholder expectations on reporting, transparency and action – We support transitional policies and proactively engage with governments, regulators and industry organisations – We are an active investor – We integrate ESG criteria into all of our funds 	2	<ul style="list-style-type: none"> Investing responsibly
	Acute	Increased severity of extreme weather events	Reduced revenue due to transport difficulties, damage to facilities: 3	<ul style="list-style-type: none"> – We have an established business continuity process – We provide flexible working for colleagues – Insurance is in place for travel and buildings 	2	

**Table 2: Key climate-related opportunities**

Opportunity type	Potential financial impact (-)	Mitigation strategy	Financial opportunity post control (-)	Strategic priority		
Transitional	Products and services	Development and/or expansion of low emission goods and services	Increased revenue through demand for lower emission products and services: 4	<ul style="list-style-type: none"> – We have and are further developing low-carbon and net zero focussed products – We identify the climate transition leaders – We have a climate toolkit – Developing easier access to ESG products on our platforms 	3	UK adviser and consumer market Technology Solutions Investing responsibly Client ecosystems
		Move to more efficient buildings	Reduced operational costs, better working environment: 3	<ul style="list-style-type: none"> – A building strategy linked to sustainability targets including energy efficiency – Efficiency projects in place 	3	
		Use of more efficient modes of transport	Reduced operating costs, increased productivity, resulting in revenue, workforce and reputation benefits: 3	<ul style="list-style-type: none"> – Increasing videoconferencing online meetings – We are moving towards electric/hybrid cars – Travel reduction targets and strategy are in place 	3	

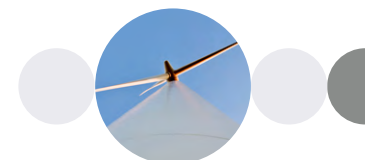
It is vital that investors understand how the transition to net zero as well as physical climate change may affect the long-term returns of the companies and markets they invest in. Climate change needs to be integrated into every investment decision. We believe that doing so will enable us to build more resilient portfolios and generate better long-term returns for clients.

Amanda Young
Chief Sustainability Officer

Stress testing

The transition to a lower-carbon global economy is likely to have significant impacts on global financial markets and client demands for our products. These variables were both explored as part of our corporate stress testing and scenario analysis programme.

As part of our most recent exercise we explored a range of severe stresses that included shocks to financial markets (with equity markets falling around 30% from year-end levels) and net outflows (leading to assets under management and administration (AUMA) falling up to 15% over the scenario horizon). The Group had sufficient capital and liquid resources to withstand all of the stresses that were explored and did not need to take any management actions other than those assumed within the business plan.



Our climate change strategy for Investments

A significant low-carbon energy transition is clearly under way. This transition is simultaneously one of the greatest opportunities and risks to our business. Understanding who the winners and losers of this shift will be will therefore generate better returns for clients. Developing the right products and managing our portfolios effectively is key to our strategy, underpinned by our market leading research processes and climate scenario analysis.

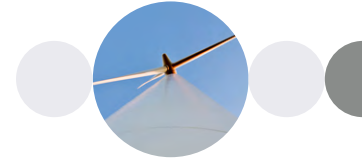
Our NZDI strategy is implemented via six areas of focus and is a key enabler for delivering on our decarbonisation targets, to reduce the carbon intensity of the assets we invest in by 50% by 2030. It is also aligned with the UN supported Principles of Responsible Investment (PRI) investor agenda:

Table 3: Our climate change strategy: Net Zero Directed Investing

Investor agenda category	Focus area	Objective	Action
Investments	Research and data	Provide high-quality climate change insights and thematic research across asset classes and regions	<ul style="list-style-type: none"> – abrdn Research Institute thought leadership eg climate scenario analysis white paper – Thematic research (climate policy, fossil fuels, sectors) – Carbon footprinting and transition analysis
	Investment integration	Integrate the potential impacts of climate-related risks and opportunities into our investment decisions	<ul style="list-style-type: none"> – ESG scorecard with climate change – ESG considerations is part of our research note template for fund managers – Carbon footprinting as core data to consider for our funds
	Investment solutions	Understand client needs regarding climate change and low-carbon product demand. Develop innovative solutions and products	<ul style="list-style-type: none"> – Bespoke product solutions for climate change focussed investors – Net zero 2050 aligned solutions – ESG integration as standard across all our products
Corporate engagement	Active ownership	Understand investee exposure and management of climate change risks and opportunities. Influence investee companies via engagement and voting	<ul style="list-style-type: none"> – Regular engagement with companies on climate change – CA100+ collaborative engagement initiative to influence – We voted in favour of 55% of climate-related resolutions in 2021, and incorporated a voting policy against TPI laggards (those scoring 1 or below)
Policy and advocacy	Collaboration and influence	Collaborate with industry associations and participate in relevant initiatives. Engage with peers and policy makers to drive change and best practice	<ul style="list-style-type: none"> – Members of Net Zero Asset Management (NZAM), Principles of Responsible Investment (PRI), Institutional Investors Group on Climate Change (IIGCC), Climate Financial Risk Forum (PRA/FCA led), CA100+, Powering Past Coal Alliance (PPCA), Transition Pathway Initiative (TPI), Farm Animal Investment Risk and Return (FAIRR) – Providing our views on climate matters to Governments
Investment disclosure	Transparency	Disclose using the TCFD reporting framework, including additional disclosure for asset managers	<ul style="list-style-type: none"> – The publication of this report – Encouraging disclosure of the TCFD framework in engagements – Transparency via recently launched ESG client reports

Further detail on what NZDI means to us is provided [here](#)

Scenario analysis



Climate scenario analysis

The transition and physical risks of climate change are wide reaching and impact every country, sector and company. Through climate scenario analysis, we wanted to develop a robust, forward looking, quantitative assessment of the possible implications of these risks and opportunities on our investments. We have developed a bespoke approach to climate scenario analysis, that integrates and quantifies the macro and micro drivers of climate impacts on asset prices within a probabilistic framework.

What we did

Our 2021 climate scenario analysis update took place against a very different economic and policy backdrop to our initial 2020 analysis. Our bespoke approach has enabled the update to take into account: the long-term alterations to economic outlook in many countries due to the COVID-19 pandemic and the consequential changes to projected energy demand; the rapid gain of market share by renewable technologies; and the changing ambition and credibility of policy commitments.

Our latest analysis includes 17 scenarios in total with projected 2100 temperature rises ranging from 1.4 to 3.1 °C. Our approach brings together eight industry standard off-the-shelf scenarios built by the Network for the Greening of the Financial System (NGFS) alongside seven more nuanced and plausible bespoke scenarios. We also include two probability-weighted scenarios, one of which captures the mean across the full range and another that captures the mean across only the Paris-aligned scenarios.

Our off-the-shelf scenarios are now based on those built by the Network for the Greening of the Financial System (NGFS) which have become the standard used by regulators to assess climate risk exposures for regulated financial entities. Using them as the base scenarios for our bespoke framework facilitates comparability and better meets the needs of our clients.

Our mean scenario now sees greater emissions reductions than in our 2020 exercise. And though we do not yet think that the outlook for global climate policies and technology pathways is consistent with the objectives of the Paris Agreement, we have increased the probability attached to stronger action and Paris-aligned scenarios.

By capturing more plausible central scenarios, and assigning realistic probability weights, we are in a much stronger position to integrate scenarios into our investment decision making and climate solutions for clients.

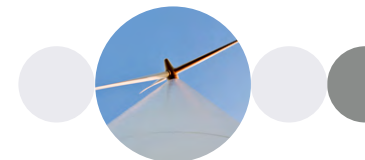
Jeremy Lawson
Chief Economist



Climate Scenario Analysis: A Rigorous Framework for Managing Climate Financial Risks and Opportunities, provides more detail of our methodology, alongside an overview of key results and an outline of our approach to integration.



abrdn's 2021 climate scenarios: the evolution of investment risk and opportunity since the Covid crisis, provides an overview of our year 2 scenario developments and key findings.



The outcomes

Although we have become more optimistic about the speed of the energy transition, that view is better reflected in market pricing than in early 2020. More realistic market expectations, together with our revisions to likely future energy demand and carbon pricing, imply that the investment opportunity set is not quite as large as in 2020.

In general, downward revisions to long-term fair valuations are more common than upward revisions, so even greater discrimination in stock selection is required to capture opportunities.

Our 2021 exercise affirms one of our key findings from 2020 that climate risk and opportunity is mostly a micro, or security-level, phenomenon. That is because there is much greater dispersion across securities within a sector or region, than there is across the sectors or aggregate regional indices themselves. Many companies have seen increased impacts in our Year 2 analysis with securities in the energy, utilities and auto sectors showing the greatest changes, as illustrated in the graph on page 25. We also show, for a representative firm, how the impairment estimates can be disaggregated into their key drivers, which helps us understand the nature of the business risk or opportunity.

There is a marked downward shift in valuation estimates for the MSCI global index (and regional indices) in almost every scenario. This is due to new expectations of greater demand destruction, less demand creation and higher carbon costs. At a sector level, these updates have the largest effect on valuation estimates in the energy, materials, auto and utilities sectors. Changing scenarios affect long-term fair valuations relative to what is reflected in the asset price.

For utilities, this will still result in the largest valuation uplift in our mean scenario, but the size of this uplift is smaller than before because of reduced demand creation.

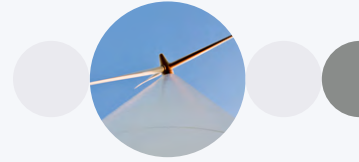
The energy sector continues to suffer the largest impairment, but the size of this impairment is considerably bigger, thanks mostly to the greater demand destruction envisaged and higher expected carbon prices.

The effects on listed corporate credit valuation mostly mirror those for listed equities, but on a smaller scale. This means less investment risk compared to equities. Longer-duration bonds experience larger impacts as climate shocks become more severe and as the scenarios progress towards 2050. However, companies with higher-quality starting credit ratings are better able to absorb those shocks.

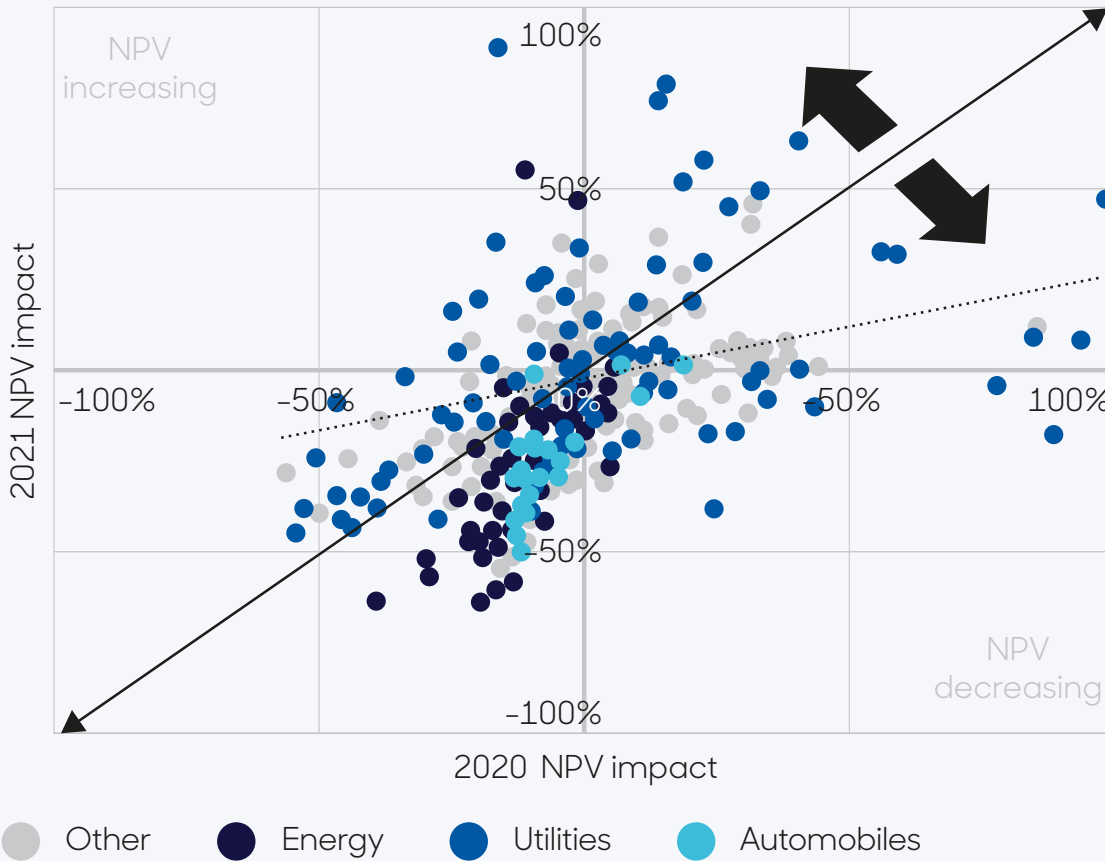
We have also deepened our analysis of the implications of physical climate change in our 2021 exercise. While transition analysis often dominates the industry's focus, significant further negative physical effects of climate change are guaranteed, even if net zero 2050 ambitions are achieved.

As part of our Year 2 programme we are publishing a series of papers to provide insight into key aspects of the climate scenario analysis. The first of these sets out how and why the scenarios were updated and the implications for estimated security valuation uplifts and impairments. The latest publication focuses on our evolving insights with regard to the climate risk for sovereign bonds. Over the coming months we will publish, inter alia, follow-up research relating to: the deeper exploration of our physical risk analysis; insight from the incorporation of credible transition strategies into our core frameworks; and extending the use of our climate scenarios to portfolio temperature alignment.

Scenario analysis



Year 1 vs. Year 2 Net Present Value (NPV) impacts in the probability-weighted mean scenario



Major integrated oil & gas company: US (total impact -31.7%)

Physical impact	-7.38%	
Adaptation		3.35%
Demand destruction	-21.65%	
Demand creation		0%
Cost pass through		10.97%
Direct carbon costs	-17.88%	
Abatement		0.88%

Scenario analysis




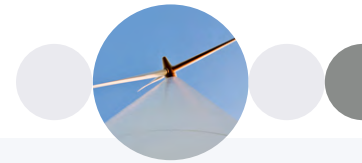
How we are using this information

At individual company level, we are able to break the total impact down into its main drivers providing us with a clear way to assess the impairments or uplifts via the scenario analysis at asset level.

The insights from our analysis are now being embedded throughout the business and we are integrating our climate scenario framework and insights into our business strategy, the key stages of our investment process and the development of climate-driven solutions to deliver superior outcomes for our clients



 More detail on how the scenario analysis outputs are used in our investment approach is given within the Risk Management section.



Climate scenarios and developed market sovereign bonds: an evolving science

The demand to take climate risks into account in sovereign bond investing is growing rapidly, especially among asset owners for which sovereigns account for a large share of their aggregate portfolios, and these sovereign exposures are increasingly falling within the climate regulation net. In response to this need, we have begun to extend our climate scenario insights to cover developed market sovereign bonds.

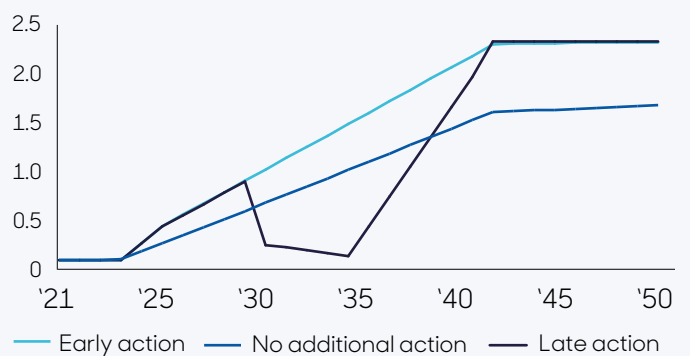
Our main takeaway from the analysis undertaken so far is that a lot more development is required before frameworks are ready to be integrated into mainstream developed market investment processes. Nevertheless, when making a qualitative assessment of how more plausible assumptions about probable future climate policies would likely interact with growth, inflation and central bank policy settings, we think that for most of the major sovereign developed bond markets, climate effects are likely to have a relatively modest effect on average yields over the longer term. There may of course be some highly fossil fuel, or transition metal exporting emerging markets for which this is not true and we will explore these effects in more depth in follow up work.

In the meantime, from a developed market bond perspective, our rates team is of the view that asset managers can play a more effective role in encouraging

efficient and effective climate risk mitigation through new ESG and climate product development. This offers asset owners the opportunity to invest in a more impactful way via consideration of not just the climate risks but the understanding and appreciation of these risks by policy-makers and the policy environments and frameworks which are implemented to address such risks.

Indicative paths for UK government bond yields under the Bank of England's Climate Biennial Exploratory Scenarios (CBES)

1-year UK government bond yield (%)



Source: abrdn/Planetrics/ Bank of England (October 2021)

Assessment of fund and portfolio resilience

We can use the scenario analysis to understand how resilient our portfolios are to different, uncertain future pathways. Our Power BI tool enables every fund manager to understand the resilience of their portfolio to different scenarios and against the benchmark.

At fund level

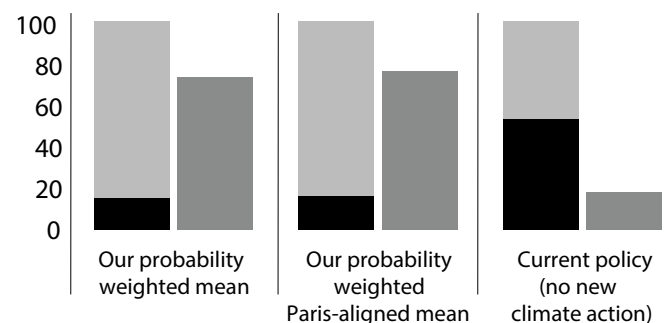
We can use the results to test the valuation impact on individual funds under the different scenarios. Our Multi-Asset Climate Solutions fund, for example, comprises companies that derive over 40% of their revenues from climate solutions. For this fund we saw that for most scenarios and in our scenario mean, the valuation implication was strongly positive.

At aggregate level

The results can be used to examine the resilience to different scenarios across our range of products. The marked downward shift in valuation estimates we have seen across the MSCI global and regional indices is reflected in the increase in the number of funds that have a projected impairment in their aggregate valuation.

However, the chart below shows that under our mean scenario as well as our Paris-aligned mean approximately three-quarters of equity portfolios outcompete their benchmarks.

Equity



- % funds with uplift
- % funds outcompeting benchmark
- % funds with impairment

Investment solutions



Our sustainability focussed solutions offer a range of approaches to cater to different client needs. We categorise investors with sustainability-related goals into four broad types:



Values

Reflecting investors' ethics or values



Sustainable

Improving standards and supporting better practices



Impactful

Positively impacting the world around us



Thematic

Focus on environmental or social themes

We have fund ranges aligned to the outcome expectations for each of the above categories. As climate considerations are so important when it comes to sustainable investing, they are incorporated to varying degrees across the range. There are funds within the Thematic category, for example, that are purely focussed on climate, while others incorporate climate considerations into broad sustainable mandates.

We are proactively developing NZDI solutions to align climate ambition with investment opportunity, to help our clients achieve their climate goals. To meet the different climate goals of our clients, our NZDI solutions span a range of options – from alignment with stringent net zero 2050 decarbonisation trajectories to less stringent carbon targets or a dedicated focus on climate solutions. All these solutions support the ultimate goal of net zero.

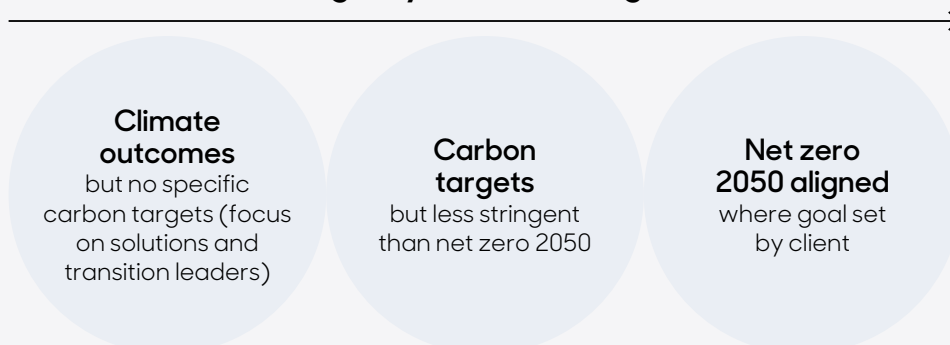
When developing net zero solutions and targets, we use the Net Zero Investment Framework (NZIF) as a foundation for our approach. We have contributed towards this as part of our involvement in the Institutional Investors Group on

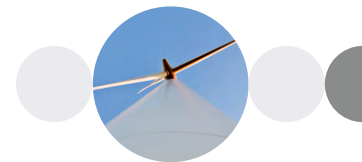
Climate Change (IIGCC) Paris Aligned Investing initiative. The framework centres on real world decarbonisation with a combination of targets that go beyond simple carbon metrics. The core features of the framework incorporate decarbonisation of assets within the portfolio by:

- Investing in transition leaders (rather than divestment);
- Allocation of capital to climate solutions increasing over time; and
- Targeted net zero stewardship, focusing on the largest-financed emitters.

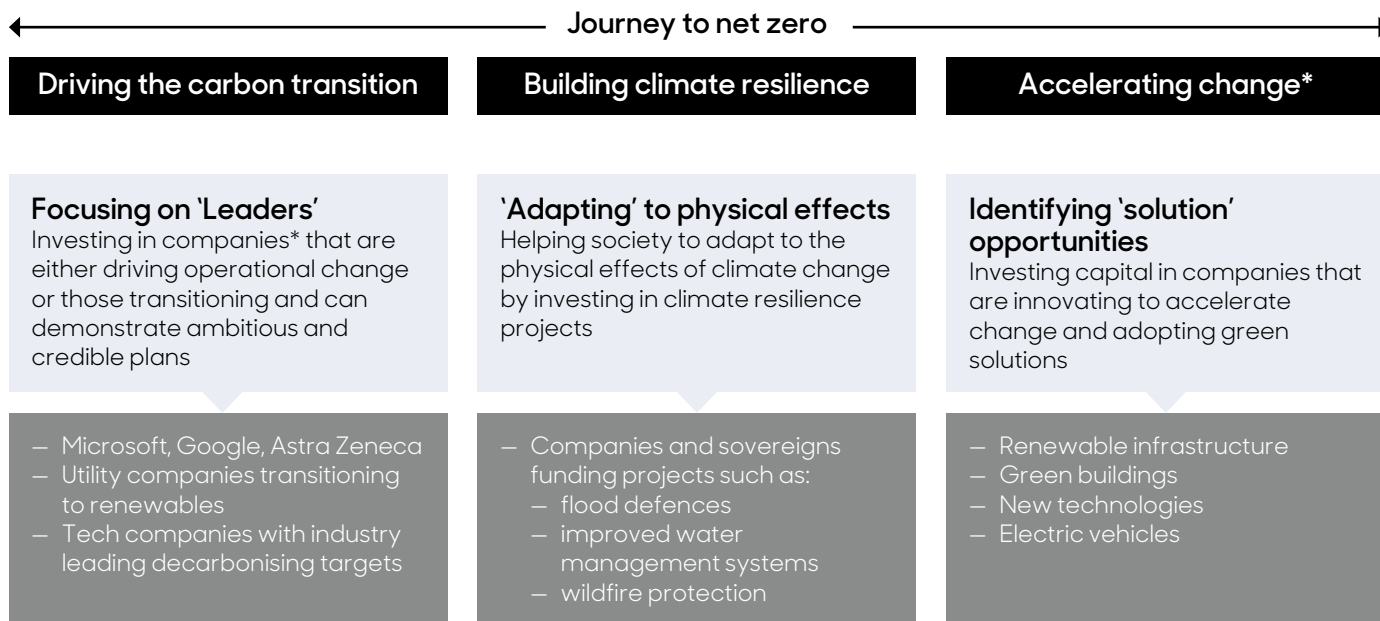
In 2021, we launched four climate investment strategies across credit, global equities and multi-asset which are focussed on climate outcomes. Moreover, we also invest in adaptation solutions to build resilience to the physical impacts of climate change. Below is a visual representation of the concept underpinning these climate investment strategies.

Stringency of carbon targets





Climate change is impacting how investors allocate capital



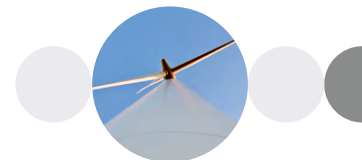
* Companies selected for illustrative purposes only to demonstrate the investment management style described herein and not as an investment recommendation or indication of future performance.

Solutions for net zero

We are developing frameworks and solutions for clients with net zero ambitions. Phoenix Group, our largest client, has set a net zero 2050 goal and we are developing solutions across different asset classes to help them achieve these goals, including:

1. Active Climate Transition (ACT) – Our active Equities team is developing an investment approach based on the foundations of the IGCC's NZIF. Focussed on identifying and investing in 'transition leaders' via the results of our climate scenario analysis and our evaluation of company targets and research on companies' decarbonisation potential and strategy.
2. Paris-aligned transition companies – Our Fixed Income team is using analyst expertise, our climate scenario analysis data and external data to identify issuers that may be considered potentially 'Paris-aligned' transition companies, as well as climate solutions providers for this portfolio.
3. Net Zero Real Estate – In our Real Estate investments, we have committed to working with all our clients to transition their portfolios to net zero by 2050 with clear net zero pathways for all funds by 2025. To help us achieve this, we've developed a net zero framework for real estate.
4. Private markets – We are active members of the IGCC Paris Aligned Investing Initiative working group for Infrastructure and Private Equities and are assessing what net zero means in Private Markets. We lend to a number of sectors within the renewables space, including UK wind, solar and hydro power and district heating.
5. Strategic Asset Allocation – We also incorporate net zero considerations into our SAA to reflect climate change as another dimension embedded in risk-return optimisations. You can find more on the topic in our award-winning SAA research paper and the net zero investment strategy paper published in collaboration with Phoenix.

Investment solutions



Impact investing

We also have a number of more generalist impact investing solutions which aim to support the delivery of measurable, positive environmental and social impact while generating strong financial returns. For example, our Global Equity Impact Fund, which is aligned to the UN Sustainable Development Goals (SDGs), includes companies that provide solutions for clean energy, energy efficiency and access to energy.

Discretionary at abrdn

We offer discretionary management services dedicated to delivering client-focussed solutions through mandates that cover a range of financial and sustainability objectives across the risk spectrum. We work with private clients, family offices, financial advisers, accountants, solicitors, trustees and charities and our range of investment solutions can be tailored to match their specific requirements. Consideration of ESG factors is integrated throughout our proposition and directly invested solutions are aligned to the NZDI strategy.

For these portfolios we are targeting 50% decarbonisation of equity and corporate debt holdings by 2030 (2019 baseline). For clients looking to hold only sustainable investments, we offer positively themed Climate Active, Global Impact solutions and a sustainable Managed Portfolio Service offering sustainable investment, available across a range of risk profiles and access points. Our Global Impact Strategy is aligned to the UN's SDGs and aims to have a positive social and environmental impact, while also delivering on clients' financial objectives. We are focussed on helping clients to define their sustainability objective and connect to the right solution. We have utilised client survey data and direct feedback to create a framework that defines different types of objectives and how they relate to our investment process and proposition and we are looking to roll this out during 2022.

Personal

Sustainable solutions are also available to customers through our ISA offering.



Case Study

Multi-Asset Climate Opportunities fund

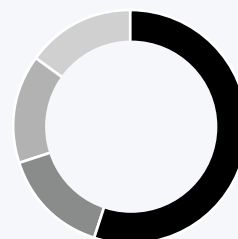
The climate transition is gaining pace and is starting to transform key sectors of the economy, like electricity generation and road transport. This is a large opportunity for investors willing to put their capital to work financing the companies that are driving this transition. abrdn has created a fund (Multi-Asset Climate Opportunities (MACO)) that enables clients to direct their capital to companies whose products and services drive the transition to a sustainable, low-carbon economy.

The fund is multi-asset, which allows stronger diversification and more powerful risk management. It combines allocations to equities, listed infrastructure and bonds.

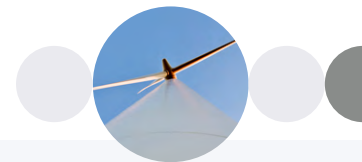
- c. 55% equities – renewable energy generators, turbine and solar panel manufacturers, electric vehicles, batteries, energy efficiency, pollution control and sustainable water.
- c. 15% listed infrastructure – operational wind farms, solar parks, battery storage and energy efficiency.
- c. 30% bonds – bonds issued by companies with green products (as above), as well as 'green bonds' issued by standard companies, but where the proceeds from the bond are ringfenced for exclusive use to finance green projects.

Our green bond allocation has a special focus on emerging markets. Enabling these countries to transition to a low-carbon future is a key priority for global Paris-aligned capital flows. The fund aims to score very highly on the new EU Taxonomy for Sustainable Activities. The Taxonomy is a new objective standard for sustainable activities, developed by the EU to tackle 'greenwashing' (calling a fund 'sustainable' but investing in the same old standard companies). MACO expects the vast majority of its holdings will be aligned with the Taxonomy standard.

Multi-Asset Climate Opportunities Target asset allocation, January 2022



- Green equity
- Renewable infrastructure
- DM green bonds
- EM green bonds



Case Study

Investing in nature-based solutions

On behalf of one of our abrdn strategies, our Natural Capital team has acquired a substantial nature-based project situated in the Cairngorms National Park. The land acquired extends to an area of over 1,400 ha and will represent one of the largest afforestation and peatland restoration projects in the UK.

- The aim is to restore over 900 ha of woodland, planting over 1.5 million trees and to restore over 150 ha of degraded peatland.
- It's estimated the project will deliver up to 195,000 tonnes of claimable carbon to 2060 at a cost of £22 per tonne on a discounted cash flow basis. The fund will have valuable flexibility to hold the asset beyond 2060, with further carbon offsetting benefit if required.
- Biodiversity net gain will be monitored and independently reported to investors over time. This will be done using a leading science-based approach, carried out by a team of ecologists.
- Focusing on native broadleaf and Scots pine, the woodland creation element of the project will improve amenity, enhance biodiversity, mitigate flooding and improve air quality, while restoring the drained peatlands. This wider environmental net gain will also be measured.
- Local contractors and forestry consultants will be employed to deliver the project. Benefits for the local community will be promoted where possible,

such as bird-watching huts and the restoration of bothies for hillwalkers.

- On areas of open land and unplanted land, nature will be left where possible to recover in a natural way with minimal intervention management practices to promote further biodiversity net gain benefit.

Cash flows and project risks were reviewed in detail during an in-depth pre-acquisition due-diligence exercise.

Peatland surveys and breeding-bird surveys were carried out prior to completion of the purchase to assess risks and the impact on the potential planting plan and the carbon it could sequester. Outputs are modelled using the UK Government's Woodland Carbon Code methodology and calculator. Expert advice is provided by leading ecologists and forestry consultants.

Far Ralia Estate represents one of the largest native woodland and peatland restoration projects in the UK. It signifies to our clients that abrdn is committed to taking real tangible action in providing innovative solutions on the pathway to net zero and helping to address biodiversity decline. It is crucial to note that investing in nature-based solutions plays an important role in achieving net zero but this has to be alongside emission reduction targets.



Case Study

Sustainable Index Equity Strategies

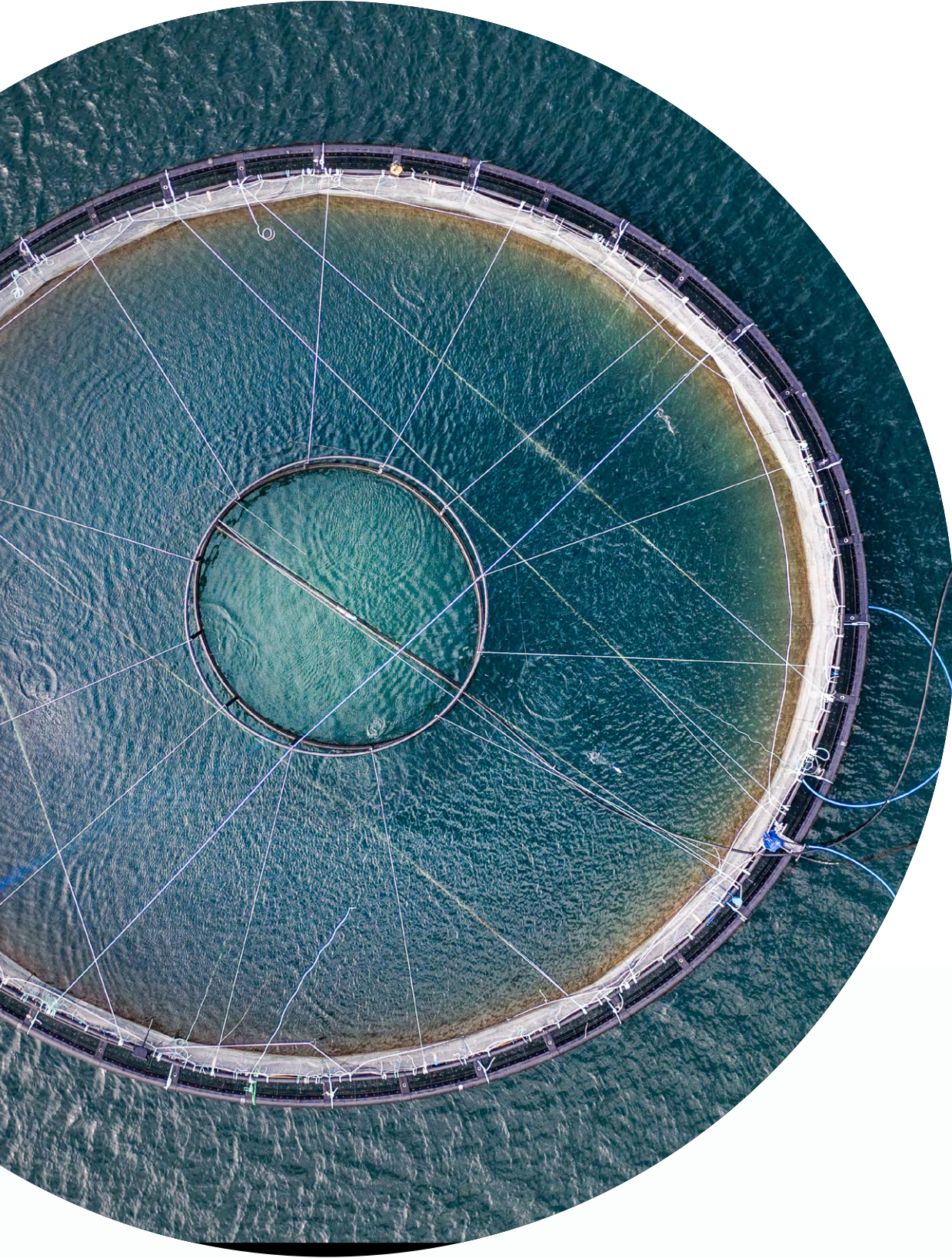
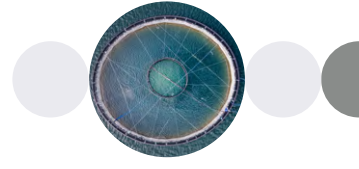
Our range of Sustainable Index Equity Strategies seeks to match the return of their respective MSCI Select ESG Climate Solutions Target indices – a range of customised MSCI indices created exclusively for abrdn, with the purpose of generating a similar risk and return profile as their parent indices, but with meaningfully improved broad-based sustainability outcomes. The sustainability targets are:

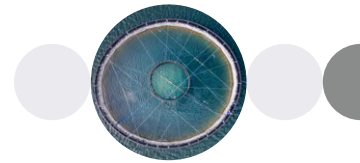
- Aim to improve the aggregate ESG score of +10% to +20%, relative to the parent index
- Climate risks – Aim to reduce carbon intensity by up to -50%, relative to the parent index
- Climate opportunities – Aim to enhance green revenues scores by up to +50%, relative to the parent index

The indices are designed, relative to their parent indices, to produce a portfolio with circa 50% reduction in carbon emission intensity and potential emissions per dollar of market capitalisation. These are calculated using the formulae defined in the MSCI Global Low Carbon Leaders Indexes Methodology.

The indices, relative to their parent indices, target an improvement in clean technology solutions revenue (green revenues) of 50% as a weighted average percentage of revenue derived from any of the six clean technology themes, including: alternative energy, energy efficiency, green building, pollution prevention, sustainable agriculture, and sustainable water.

Two sustainable index equity strategies (World and UK) are available as sustainable index equity funds within a tax transparent Authorised Contractual Scheme (ACS) vehicle for certain qualifying UK investors.





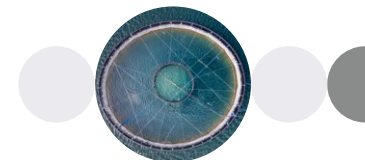
Risk Management

This section provides detail on the following recommended TCFD disclosures:

- a Processes for identifying and assessing climate-related risks
- b Processes for managing climate-related risks (including mitigation, transfer, acceptance and control)
- c Integration of processes related to identifying, assessing and managing climate-related risks into overall risk management
- d Describe how material climate-related risks are managed for each product or investment strategy
- e Describe engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks in order to improve data availability and asset managers' ability to assess climate-related risks

03. Risk Management

Our approach



It starts with us

For over ten years we've identified operational climate-related risks through our climate risk and opportunity radar. In the last three years we have added investment risks to this as well. In 2018 we aligned our radar to the TCFD recommendations. The radar is based on our risk and control self-assessment process which assesses the inherent risk (that is the risk before the consideration of controls) against:

- Likelihood – the % chance of an occurrence in the next 12 months
- Impacts – financial, customer, regulatory, reputational and process

The inherent risk is then scored after the consideration of the effectiveness of controls (both in terms of design and performance) currently in place.

We have a climate risk oversight group that evaluates material climate risks within our radar of climate-related risks and opportunities. Where we identify material risks to the business within the radar we escalate this up through our governance structure. The management process determines whether we mitigate, transfer, accept or control risks.

Our climate-related risk and opportunity radar provides a score post existing controls. Where a score is very low (i.e. where the likelihood is low or the impact is low) then we may choose to accept the risk. Where this is not the case we ensure we have the correct controls in place to either prevent the risk or support the materialisation of the opportunity. More detail is provided in tables 1 and 2 on pages 20 to 21.

We operate 'three lines of defence' in the management of risk with clearly defined roles and responsibilities:

- First line: Day-to-day risk management, including identification and mitigation of risks and maintaining appropriate controls.
- Second line: Oversight from our Risk and Compliance function, which reports to the Chief Risk Officer.
- Third line: Our Internal Audit function, reporting to the Chief Internal Auditor, independently verifies our systems of control.

Our aim is to have a robust risk management process which protects our business and our clients from climate-related risks while ensuring we are well positioned for the opportunities.

Gareth Murphy
Chief Risk Officer

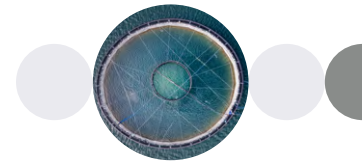
We have a responsibility to shareholders, clients and all stakeholders to assess, report on, manage and mitigate our climate-related risks and we continue to review climate-related risks and manage our own business impact on climate change.

Investing with purpose

Climate change risks and opportunities are managed by incorporating them into our investment process via tools and corporate engagements. Integrating climate change into our investment decisions is supported by rigorous climate change research, data and tools. We evaluate the financial materiality of climate change transition and physical risks as well as opportunities across regions and sectors, and reflect this in our portfolio construction choices. This section outlines the tools and resources we use in more detail.

03. Risk Management

Our approach



Research and data

Rigorous research is the foundation of our approach to understanding climate change impacts. Our climate-related research and scenario analysis provides insights on regulatory and industry trends across regions. It also helps us understand the physical and transition risks and opportunities, enabling us to take informed decisions about how and where to invest. Climate-related research is carried out by our Research Institute and ESG Investment Team as well as investment desks across all asset classes. The ESG Research Forum meets monthly to discuss research priorities and review content.

Our in-house Research Institute, supported by our ESG Investment Team expertise, produces original research for use by our investment teams. It analyses the intersection of economics, government policy and markets, producing an assessment of the likelihood and impact of macro and systemic risks such as climate change and geopolitical issues.

Our research papers

In 2021, we published a wide range of climate change-related papers and articles which are available on our climate change website:

 [Our research papers can be viewed here](#)

Webinars and podcasts

Climate-related thought leadership and insights are also shared via:

- Climate Action Series of online webinars – we delivered six webinars in 2021.
- Our climate-focussed podcast range includes discussions with: Daisy Streatfield from the Institutional Investors Group on Climate Change, Adam Matthews, founder and Chair of the Transition Pathway Initiative and our abrdn climate fund managers.

 [Our climate webinars can be viewed here](#)

 [Our climate podcasts can be viewed here](#)



Net zero

[Investing for net zero, March 2021](#)

[Net Zero paper in collaboration with Phoenix, June 2021](#)

[Net Zero Directed Investing – What is means for us, November 2021](#)

[Real Estate Net Zero blueprint](#)

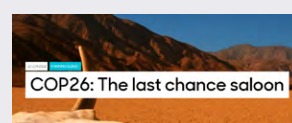


Scenario analysis

[Climate Scenario Analysis white paper, February 2021](#)

[Summary of Year 1 research](#)

[Summary of Year 2 research](#)



COP26 & IPCC

[COP26: The last chance saloon, June 2021](#)

[IPCC Report – Code red for humanity, September 2021](#)

[COP26: Was it a cop out? Nov 2021](#)

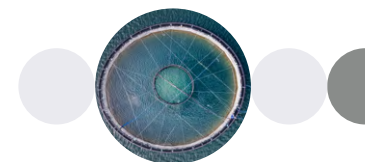


Climate themes

[Why the green bond label isn't enough, Oct 2021](#)

[Naturally tackling climate change, Oct 2021](#)

[A low-carbon portfolio by itself won't save planet Earth, Nov 2021](#)

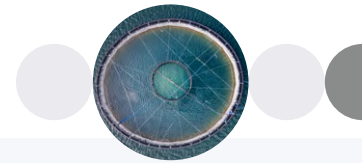


Our climate change toolkit

We have developed a range of tools to help integrate climate change into our decision making.

1. **Carbon footprinting** – Enables portfolio managers to understand the carbon intensity and absolute emissions of their portfolios and holdings over time and it provides a baseline for benchmarking and decarbonisation. In 2021 we expanded carbon footprinting capabilities to sovereign bonds.
2. **Transition assessment** – We use a number of tools and data sources to assess whether companies have credible transition strategies, including the TPI, CA100+ Net Zero benchmark assessment, CDP and data from the Science-based Targets initiative (SBTi).
3. **Climate policy index** – We have developed an index which builds on the IIGCC-recommended Climate Change Policy Index, incorporating it into our in-house climate policy expertise and adding a weighting to reflect the central role of policy action in the energy transition.
4. **Bespoke climate scenario analysis** – Used to assess the impact by geography, sector and industry right down to the company level. Enabling us to assess the impact on future pricing and embed this into our thinking so we can achieve two main objectives:
 - Climate-resilient portfolio construction: make current investment portfolios more climate-resilient to different pathways by incorporating the risks and opportunities identified in the climate scenario analysis into our portfolio-construction process.
 - Climate-driven solution development: develop new climate-driven products and benchmarks to enable clients with climate-specific goals to achieve these in a research-founded, measurable manner.
5. **ESG House Score** – Our ESG House Score for companies is based on the collection of data for 140 key performance indicators (KPIs) arranged in categories aligned with frameworks such as the Sustainability Accounting Standards Board (SASB) and the UN Global Compact. These KPIs allow us to assess the performance of companies in each category and to particularly analyse the possible adverse impact of our investment and the impact on client portfolios. One quadrant of this scorecard is environment which includes climate change and provides both backward (carbon footprint) and forward looking data (such as targets and projects) to assess a company's response to its climate risks.

We developed Power BI tools so our teams right across the business can access and analyse the climate change-related data at asset, sector, region and portfolio level.



Case Study

Developing a climate toolkit in Power BI

The Power BI tool enables on-desk information on both carbon footprinting and the results from our climate scenario analysis to help fund managers make decisions with climate-related information factored in.

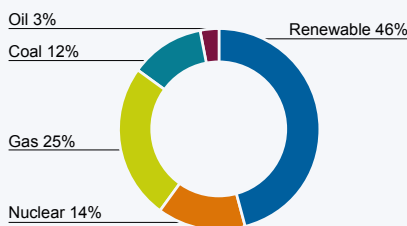
The carbon footprinting tool

The image below shows the summary portfolio carbon data available to investment desks from our carbon footprinting tool.

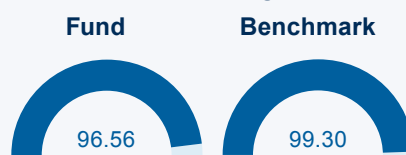
Example fund

Intensity	Weighted average carbon intensity (WACI) Scope 1 & 2 in tonnes of CO ₂ e/billion USD revenue	83.38	Low	
	Weighted average carbon intensity (WACI) Scope 3 in tonnes of CO ₂ e/billion USD revenue	134.72		
	The portfolio carbon intensity compared to benchmark, Scope 1 & 2	52.3%	Low	
	Total emissions Scope 1 & 2 (tonnes CO ₂ e)	17k	Scope 3 (tonnes CO ₂ e)	21k
Absolute	Trees needed to offset the emissions	86.92K	Cars taken off the road	6,913

Portfolio power generation mix

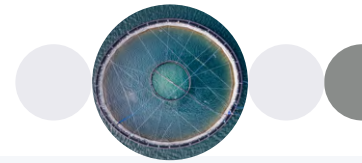


Trucost coverage %



Disclosure

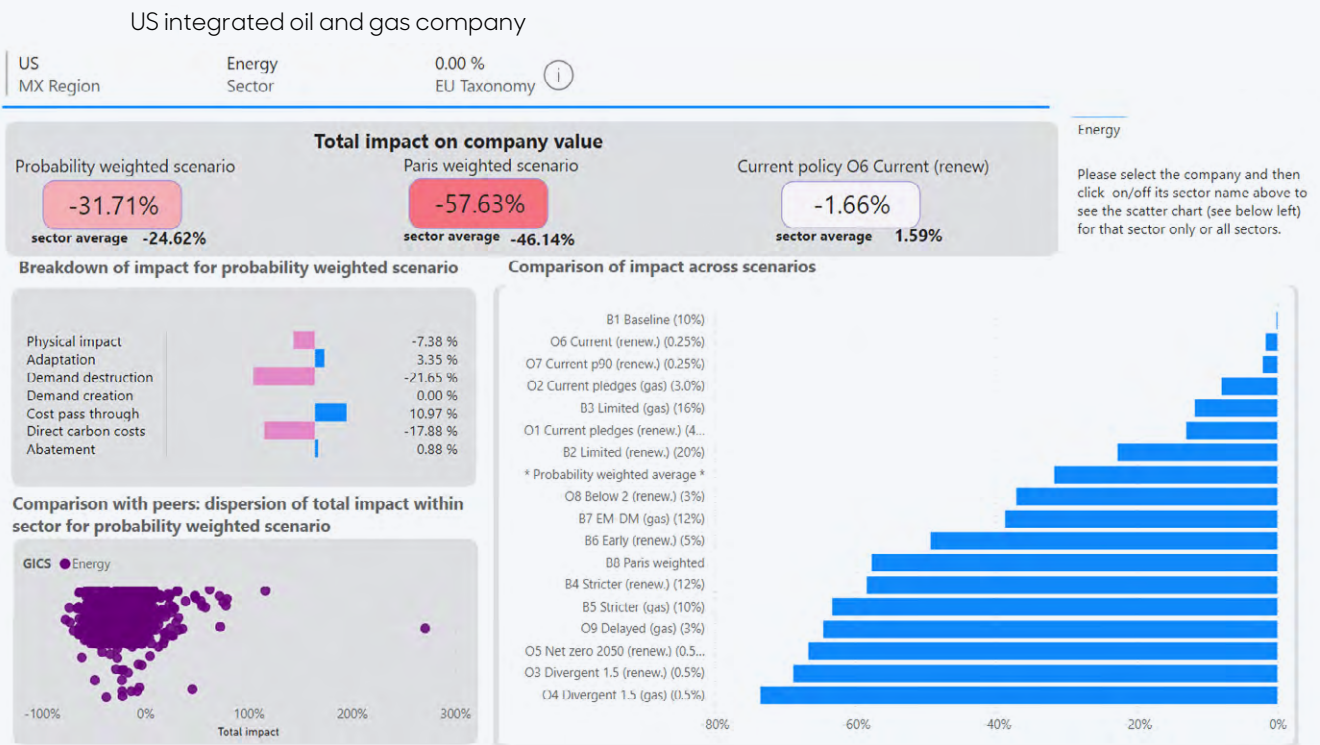
Fund	Benchmark
18.75% Trucost estimate	16.60% Trucost estimate
24.92% Trucost estimate	28.89% Trucost estimate
56.33% Trucost estimate	54.51% Trucost estimate



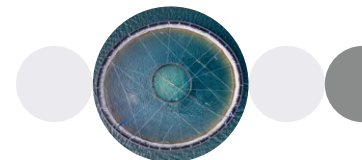
Case Study

Celsius – abrdn’s unique climate analytics and scenario platform

The image below shows an example of the forward looking climate scenario analysis outputs at company level.



Active ownership



Active ownership via stewardship, engagement and voting is critical to our approach, especially within Fixed Income and Equities. To effectively respond to the climate crisis, we expect companies to follow the TCFD recommendations and demonstrate:

- transparency on climate-related risks and opportunities
- a clear climate strategy
- robust, Paris Agreement-aligned targets
- action to achieve the targets
- support of public policies that are aligned with the Paris Agreement's goals

We believe that companies managing these issues well are reacting effectively to climate-related risks and opportunities. If companies are not acting, we have a stewardship escalation process.

Engagement

We engage with companies about aligning their strategies with the Paris Agreement and setting appropriate greenhouse gas (GHG) emissions targets. Our net zero engagement strategy is focussed on the largest financed emitters and their commitment to decarbonisation towards net zero with credible actions supporting this. We use the CA100+ net zero benchmark as a useful guide for measuring progress as well as our own climate scenario analysis results. We engage

independently and collaborate with other investors as an active member of CA100+, Microfiber pollution and Farm Animal Investment Risk and Return (FAIRR). In 2021 FAIRR won the Sustainable Investment in Action award for their sustainable proteins engagement initiative which we have actively been leading with Nestlé and Unilever. In 2021, we led the engagement with E.ON as part of our CA100+ involvement and discussed climate change-related topics with a large number of companies including General Motors, BHP, Total, BP, Singapore Airlines, Adani Green, Arcelor Mittal and CRH.

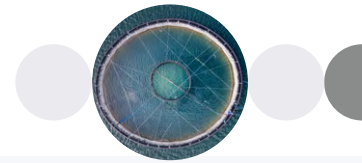
Independently we carried out engagement across the auto sector, engaging with different companies across geographies to discuss preparedness for the low-carbon transition.

Over the year we noted the emergence of climate votes across different sectors as part of resolutions tabled at AGMs. We voted in favour of these resolutions and also engaged with companies to discuss climate votes. The case study on page 40 offers an example of one of these engagements.

abrdn engages with the highest financed emitters across equity and credit holdings seeking transparency on progress against clear transition milestones assessed against relevant standards – such as the CA100+ net zero benchmark. We will divest from companies where, after two years, we consider insufficient progress has been made against the transition milestones set, unless it's not in line with the client mandate.

Devan Kaloo
Head of Public Markets

Active ownership



Case Study

HSBC

HSBC is a UK-based bank offering multinational banking and financial services across over 70 countries. The company's global footprint and range of services offers numerous challenges in the transition towards a low-carbon economy. We have engaged with the bank for numerous years on both its overall strategy and its approach to climate change.

In 2021 the bank faced a resolution coordinated by the NGO group ShareAction and multiple asset owners and asset managers. The resolution included the support of a group of 15 institutional investors representing \$2.4 trillion in assets and 117 individual filers, coordinated by ShareAction. The resolution requested that HSBC set and publish a strategy detailing short, medium and long-term targets to reduce its exposure to fossil fuel assets on a timeline aligned with the goals of the Paris Agreement. It was proposed that the group begin this process by reducing its exposure to lending linked to coal. We had numerous discussions with ShareAction in relation to the proposal. We were supportive of a move toward alignment with the Paris goals however also recognised that HSBC already had numerous strategies in place to achieve this and questioned if this approach would marry with existing strategies.

During our discussion with HSBC it outlined that its existing strategy was built around three key objectives: becoming a net zero bank by 2050 or sooner, supporting customers to transition to more sustainable practices and seeking new solutions that would help finance the transition. The company further evidenced this approach with a commitment to lend between \$750 billion and \$1 trillion over the next ten years to projects that supported the

climate transition. We were supportive of these steps and questioned the company on how a reduction in lending to areas such as coal would further bolster these initiatives. The company was of a view that its focus on transition was more appropriate than sector-based withdrawals and that encouraging transition could better support climate positive outcomes than simply the withdrawal of finance.

We believed that there was a common goal to address climate change between HSBC and the proponents of the resolution and encouraged all parties to find common ground. After constructive discussion between ShareAction and HSBC the proponents withdrew their resolution. HSBC committed to propose a special resolution on climate change at its Annual General Meeting on 28 May 2021. HSBC tabled a resolution detailing its commitment to disclose and implement a sustainability strategy that has at its core a commitment to support our customers on their transitions to net zero carbon emissions. We supported the resolution which received the support of 99% of shareholders who cast a vote. The resolution will commit the bank to set clear short, medium and long-term targets to meet the Paris goals, phase out the financing of coal on set timelines and report on its progress beginning with its 2021 Annual Report and Accounts. We were supportive of the constructive discussion which the resolution initiated. We actively engage with companies before reaching voting decisions and believe that this case offers an example of where active engagement can achieve positive outcomes for both investee companies and investors.

Escalation

Periodically, we may encounter significant disagreements with our investments on matters relating to stewardship and ESG factors which will result in us having to escalate our engagement activity. The cause of such disagreements, and our strategy for resolving them, is the subject of discussion and agreement by our ESG Investment and asset class teams. The strategy is determined on a case-by-case basis. We have a number of strategies we can use for escalation:

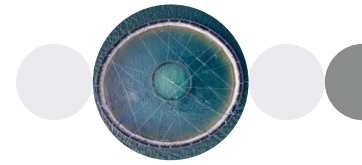
1. Collaborative engagement

In certain circumstances we may decide to join with other investors who are seeking to achieve similar change from a single investment or a range of investments. Collaborative engagement may therefore be used as a result of an escalation of our own activities or to drive change.

2. Public statements

Where we feel it is beneficial to do so we will make our views known publicly so that our view is clear to clients and our wider stakeholders. Such statements can be made through the press or if appropriate through a statement made at the general meeting of a company. Such statements will be used when we believe that the additional scrutiny they bring would help in achieving the change we are seeking.

Active ownership

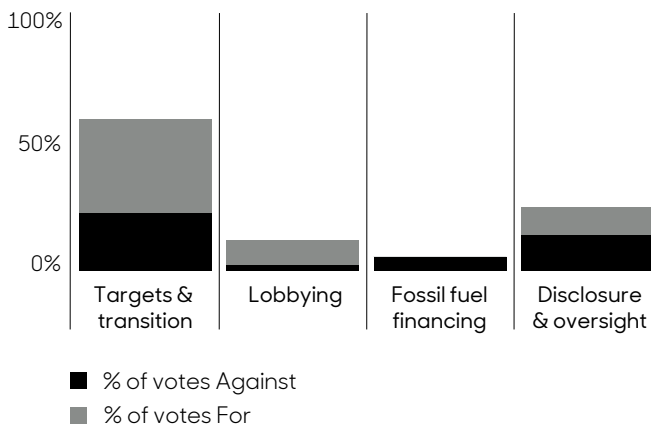


3. Voting/ownership rights

We believe that voting at company meetings is one of our most important activities when investing on behalf of our clients. We therefore take great care to set high expectations in our custom voting. More detail of our voting process is provided in our Stewardship Report. We have a strong record of using our proxy voting to influence investee companies towards the transition to a low-carbon world. In 2021, we voted on a total of 99 climate resolutions (2020: 60) and in favour of the majority of resolutions related to climate change (55%). However, after detailed analysis of certain proposals we found that a vote in favour of management (and against the resolution) was warranted as companies transition to a low-carbon economy and the progress made via our engagement efforts needs to be taken into account. Our quarterly ESG reports, published on our website, provide details on engagements including those on climate change.

Climate change resolutions 2021

Climate change and the environment



 [Our quarterly active ownership reports can be viewed here](#)

4. Divestment

When we believe that concerns relating to ESG factors are significant and we have been unable to elicit changes that we believe are necessary to mitigate risks we may consider divesting from an investment. This allows us to protect our clients' portfolios when material sustainability risks are not mitigated sufficiently.



Case Study

Using TPI data in our voting

Given the importance abrdn places on incorporating climate change into its active ownership decisions and in seeking to hold boards to account on climate inaction, we took the decision to incorporate TPI Management Quality scores as a data point in our internal voting policy in 2021.

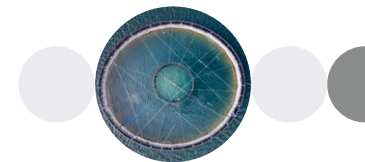
The first step was to vote against the Report and Accounts of companies which scored a Level 0 or 1. Directing concerns against the Report and Accounts enabled us to emphasise the importance we place on companies' climate-related disclosures and actions. abrdn is strongly of the view that engagement and voting goes hand in hand. As such, where laggards are held actively, this is flagged to investment analysts who have the opportunity to engage with companies on their climate change approach prior to voting. This meant there were some instances where voting action was not taken at the 2021 AGM, and instead chosen as a future escalation tool – depending on the outcome of the engagement and any improvements seen to the TPI score. In cases where there is no vote on the Report and Accounts a vote against a different item may be actioned. So far, in 2021, abrdn has voted against the Annual Reports of 15 companies due to their low TPI score and against one governance committee chair.

For example, we voted against the Financial Statements at the AGM of Yanzhou Coal Mining Company (TPI Level 1). At Berkshire Hathaway Inc. (TPI Level 0) we voted against the re-election of the Chair of the Governance Committee, Walter Scott Jr, as there was no vote on the Annual Report.



[Our TPI case study is publicly available here](#)

Collaboration and influence



We work with industry associations, regulators and policy makers globally to drive change, including through improving standards, driving best practice, influencing regulation and developing capital allocation strategies. We share our time, expertise and research to do this. Aligning our expectations helps to increase pressure on investee companies and drives more effective change.

For example, we actively participated in the PRA Climate Financial Risk Forum and its sub-working groups on

Disclosure and Scenario Analysis. Our Head of Climate Change Strategy is also the Chair of the Investment Association TCFD Working Group. We also signed the 2021 Global Investor Statement to Governments on the climate crisis to highlight the need for more stringent climate policies.

The key collaborative industry initiatives we were involved in in 2021 are provided below.

Initiative highlights 2021

Joined the NZAM initiative which is part of the Glasgow Financial Alliance for Net Zero (GFANZ)



Research Funding Partners of the Transition Pathway initiative



Climate Financial Risk Forum



'PRA' Climate Financial Risk Forum

Strategic partners with Global Ethical Finance Initiative for their path to COP26 campaign



IIGCC Paris-aligned investing initiative



Case Study

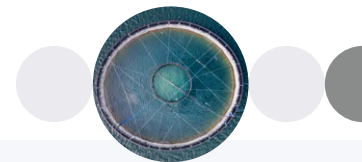
Driving best practice by contributing to the Net Zero Investment Framework

abrdn contributed to the Institutional Investors Group on Climate Change NZIF by being involved in the Paris Aligned Investing Initiative (PAII). The group was split into different asset class working groups and we co-chaired the SAA working group. The framework provides a robust foundation for how we develop net zero solutions, based on the following key features:

- Decarbonising by investing in 'transition leaders' - that means not just considering a carbon footprint, but taking a forward looking view and assessing credible transition strategies.

- Allocating capital to climate solutions - that means investing in assets and companies that help the world decarbonise - from renewable infrastructure and low-carbon buildings to electric vehicle manufacturers and energy efficient technology providers.
- Net zero stewardship - that means developing a clear net zero engagement strategy with milestones and targets that focus on the most carbon intensive companies in the portfolio.

The NZIF was published in March 2021 and the PAII continues in 2022 to enhance and improve the framework and we are actively involved in private markets and net zero implementation focussed working groups.



Case Study

COP26

The 26th United Nations Conference of Parties on climate change (COP26) took place in 2021 and was considered the most important climate conference since the signing of the 2015 Paris Agreement, focusing on keeping the internationally agreed 1.5°C goals alive.

We took part in a programme of events to highlight the actions investors can take to help achieve real world decarbonisation – underlined by the urgent need for stronger climate policies to support net zero directed investing. We were actively involved in:

- The Green Horizon Summit where Jeremy Lawson, Chief Economist and Head of the abrdn Research Institute, participated in a discussion on climate scenarios and Eva Cairns, our Head of Climate Change Strategy, discussed how to decarbonise portfolios with real world impact
- World Climate Summit – The Investment COP where we delivered a collaborative breakout session on exploring investment solutions for net zero
- The Global Ethical Finance Initiative's Path to COP26 workstream where we participated in a panel to discuss best practice around net zero for pension providers and a session on climate scenario analysis

The sixth assessment report by the UN's Intergovernmental Panel on Climate Change (IPCC) provides the latest evidence on the physical impacts of climate change and is referred to as 'code red for humanity'. It highlights that extreme weather events will be more severe, more frequent and affect every region on the planet, with possibly irreversible tipping points being reached. COP26 was seen by many as the last opportunity for putting pledges into practice to avert a climate catastrophe.

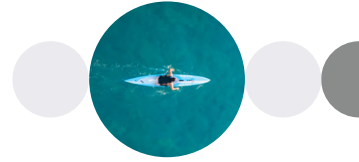
Finance is recognised as an important pillar of the COP26 agenda. But what investors and corporates are able to achieve when it comes to climate goals is heavily dependent on the policy framework in which they operate. We urgently need ambitious and binding climate commitments from national governments – widespread political buy-in backed by clear, durable legislation, including higher carbon pricing.

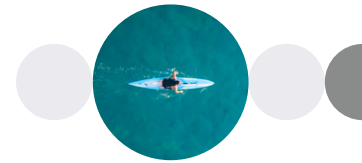
We highlighted our expectations in the article 'COP26 – Last chance saloon' and provided an assessment on whether they were met in our COP26 outcomes review article 'Was COP26 a cop out?'

So was COP26 a success? The Glasgow Climate Pact explicitly anchors the goal at 1.5°C and it was the first time that governments have pledged emissions targets that are sufficiently ambitious to hold global warming to under 2°C. However, many of the pledges can be described as 'plans for plans'. There are few details around how they will be achieved or financed. The world needs action plans that will halve emissions by 2030 and not just vague longer term ambitions. Carbon pricing is still woefully inadequate in nearly every economy. For example, there are carbon prices for only some 20% of global emissions and those prices, in most cases, are far too low. An analysis of credible commitments to reduce emissions between now and 2030 points to something closer to 2.4°C. In addition, developed countries failed to provide substantially more financial support to developing countries to help them transition and adapt to climate change.

On the positive, it was encouraging to see China and the US, the biggest emitters, announce their intention to work closer on climate issues. Another important outcome was that countries changed the 'ratcheting mechanism' to bring forward the date for revisiting 2030 targets to 2022 from 2025. That means COP27 in Egypt will be another important milestone for countries to credibly update their Nationally Determined Contributions to keep the 1.5°C goal alive.

While some positive signals were sent during COP26 on intention and willingness to take stronger action, current binding policy pledges are expected to result in an average temperature rise of 2.4°C. This is not going to be sufficient to provide the right incentives for net zero 2050 aligned investing.



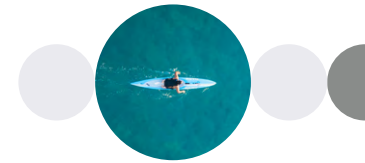


Metrics and Targets

This section provides detail on the following recommended TCFD disclosures:

- a Metrics used to assess climate-related risks and opportunities in line with strategy and risk management
- b GHG emissions (Scope 1, 2 and 3) and related risks
- c Targets used to manage climate-related risks and opportunities and performance against these targets
- d Metrics used to assess climate-related risks and opportunities in each product or investment strategy and metrics considered in investment decisions and monitoring
- e GHG emissions associated with each product or investment strategy normalised for every million \$ including description of data and methodology

Our operational emissions



It starts with us

In our operations we use a number of metrics to assess our strategy. We report Scope 1, Scope 2 and Scope 3 GHG emissions, where possible. We obtain third-party verification for our Scopes 1 and 2 emissions, as well as for some Scope 3 categories – business travel, transmission and distribution, waste and working from home.

We have targeted net zero in our operations by 2040, with an interim science-based target to achieve a 50% reduction in our operational emissions by 2025. Our targets reflect a commitment to drive positive change as a responsible business.

Our targets directly relate to our identified climate risks and opportunities (page 20-21) as we aim to exceed stakeholder expectations on reporting, transparency and action. We are also targeting opportunities, such as reduced operational costs, through increased energy efficiency measures and long-term travel reduction strategies, which represent the most material aspects of our global footprint.

An example of our commitment to this opportunity is the planned move of our London team to a new space in 2022, which will upgrade our colleague and client experience and meet the highest environmental standards.

Our wider sustainability disclosures are also detailed in our 2021 Sustainability Report.

Scope 1 – 1,061 tCO₂e

We have outlined a strategy to reduce our Scope 1 emissions by 50% by 2025 (versus 2018 baseline). We will achieve this by efficiency measures in our estate (focusing on sites with the highest natural gas use), changes to our fleet, and improvements in refrigerant gas usage.

Scope 2 – 2,396 tCO₂e

We have outlined a strategy to reduce our absolute Scope 2 emissions by 60% by 2025 (versus 2018 baseline). We will achieve this by efficiency measures in our estate (focusing on sites with the highest use). The reduction is an absolute reduction in MWh and is not linked to green tariffs. We will continue to increase the proportion of MWh on green tariffs but reduction is our focus.

	2018	2020	2021
% of MWh from renewables	68%	77%	81%

Scope 3 – 8,838 tCO₂e

Our strategy for Scope 3 emissions reductions is focussed on reducing our business travel and how we can influence a reduction in emissions associated with working from home.

	2018	2020	2021	2025 Target
tCO ₂ e from business travel	22,030	1,933	639	6,259

We also want to empower our colleagues to take individual action. We are a pioneer partner of the eco-app Pawprint and make it available to all colleagues so they can understand their carbon footprint and take part in company-wide challenges to reduce it. Through our employee benefits scheme we also provide the option for electric car leasing.

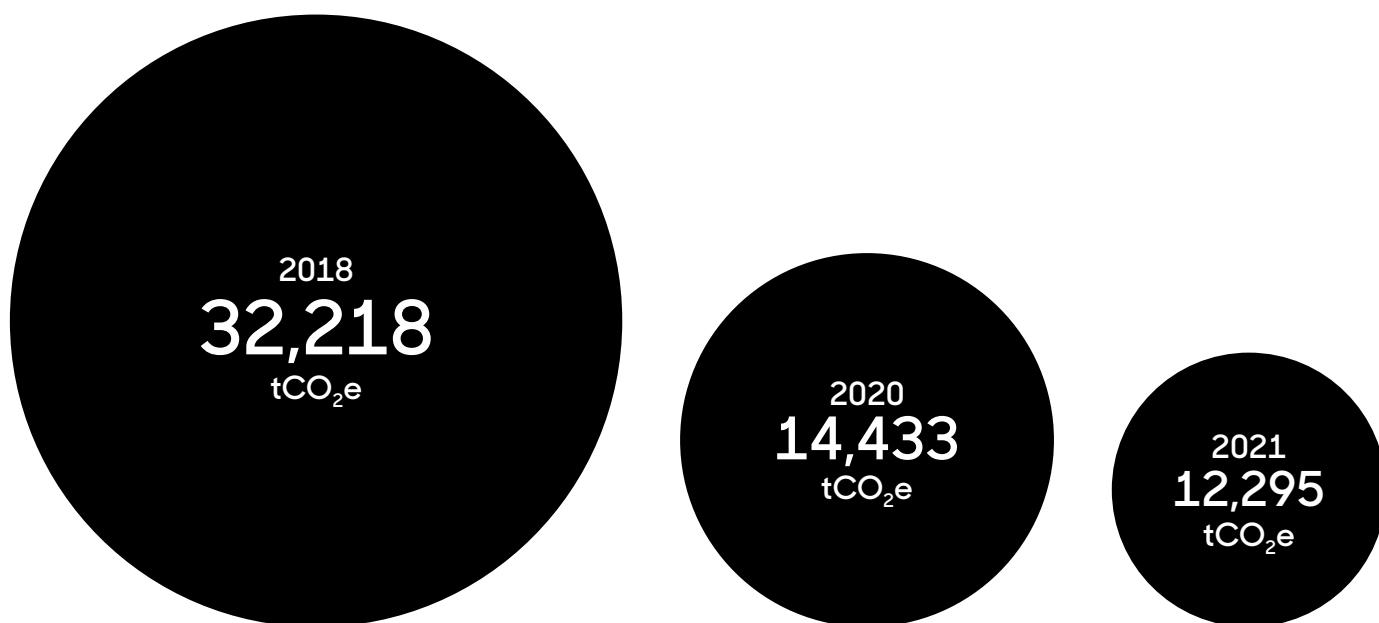
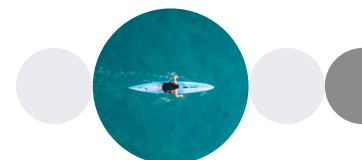
Our environmental champions are a colleague-led network with a purpose to encourage and inspire environmental practices in abrdn and beyond. Throughout 2021, they have been sharing blogs on making sustainable choices and have organised volunteer days in our local communities.

We also want to work with suppliers that are supportive of our aims and have committed to engage with our top suppliers – who equate to 50% of our spend – and ask that they set out their net zero alignment plans by 2025.



Our 2021 Sustainability Report can be viewed [here](#)

04. Metrics and Targets



2018: 32,218 tCO₂e

Scope 1	Gas	6%
	Car	2%
	F-Gas	1%
Scope 2	Electricity	21%
	District heating	1%
Scope 3	Flights	68%
	Transmission and distribution	1%

2020: 14,433 tCO₂e

Scope 1	Gas	7%
	Car	1%
Scope 2	Electricity	24%
Scope 3	Flights and rail	13%
	Working from home	55%
	Transmission and distribution	1%

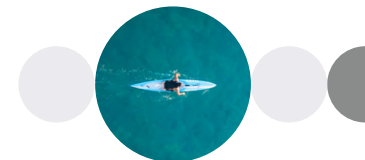
2021: 12,295 tCO₂e

Scope 1	Gas	7%
	Car	1%
	F-Gas	1%
Scope 2	Electricity	19%
	District heating	<1%
Scope 3	Flights and rail	5%
	Working from home	65%
	Transmission and distribution	1%
	Waste	<1%

Our absolute emissions have dropped by 62% since 2018. This is primarily due to a reduction in business travel related to the pandemic as well as a reduction in electricity and gas emissions due to our office consolidation process and focus on efficiency.

Targets and pledges	Scope	Status
50% reduction in operational emissions by 2025	Scopes 1 and 2 and Scope 3 (business travel, working from home, T&D)	Reduced our operational scope 1, 2 and some 3 by 62% since 2018
Energy reduction	50% reduction in energy use	62% reduction since 2018
Reduce carbon footprint per Full Time Equivalent (FTE) by 50%	Scopes 1 and 2	52% reduction since 2018
Offset 1.10% of emissions, align with Oxford Principles for Carbon Offsetting	Scopes 1 and 2 and Scope 3 (business travel, working from home, T&D)	We are carbon neutral since 2020
100% renewable electricity	For locations where we procure	99.5%

Our investments



Robust quantitative and qualitative climate-related data is critical for effective investment decision making. This includes externally sourced data from specialist providers as well as data derived from our own research, analysis and engagements.

Investing with purpose

In our actively managed products we evaluate companies' positioning and decarbonisation strategy and targets, coming to our own views on how well companies are positioned for transition – particularly for the largest emitters. This is based on active research and engagement, supported by data.

Climate change metrics

Examples of climate change metrics we consider in our investment process are:

- Greenhouse gas emissions – absolute, intensity, trends over time (Source: Trucost)
- Financial impact on asset value and probability of default in a range of climate scenarios (in partnership with Planetrics)
- Forward looking emission trajectories (Source: Planetrics)
- TPI – Score on the quality of transition management
- Green revenues data and revenue alignment with EU taxonomy (Source: FTSE Russell)
- Science-based targets data (Source: SBTi)
- Bloomberg New Energy Finance data and research
- Carbon Disclosure Project (CDP) scores
- CA100+ Net Zero Benchmark Framework scores
- ESG House Score (climate change score)
- Physical risk assessment – via our climate scenario tool and individual asset research & engagement

Carbon footprinting our portfolios

Calculating the carbon emissions related to our investments is an important starting point to understand carbon exposure and develop baselines for decarbonisation.

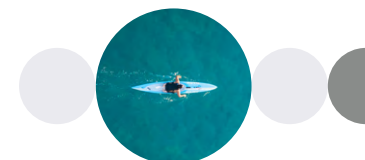
We currently provide a carbon footprint for a number of our portfolios in Equities, Credit, Quantitative Investments, Real Estate and Sovereign Debt. We are continuously expanding the scope of all of these asset classes in terms of both depth and breadth of data coverage. In 2021 for example we have launched a sovereign bond carbon footprinting tool and sourced forward looking carbon emission trajectories from Planetrics

In 2022 we are broadening our metric coverage to include the Partnership for Carbon Accounting Financials (PCAF) aligned metrics: Financed Emissions and Economic Emissions Intensity. Along with portfolio carbon footprinting the Finance Emissions will be core to our engagement practices.

Our specialist GHG emission provider is Trucost. They were selected based on their global coverage and their strong estimation methodology to address disclosure gaps. As a global asset manager this is particularly important as these gaps tend to be prevalent in emerging markets, private debt issuers and smaller companies.

The Weighted Average Carbon Intensity (WACI) shows a portfolio's exposure to carbon-intensive companies. As carbon-intensive companies are likely to be more exposed to carbon pricing mechanisms or other carbon regulatory risks, this metric is regarded as a useful indicator of a portfolio's potential exposure to transition risks (such as policy intervention or changing consumer behaviour) relative to other portfolios or benchmarks. The majority of our funds have a WACI below benchmark.

Our investments

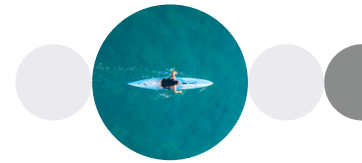

Table 4 WACI for our Equity, Fixed Income Investments and Active Quantitative Strategies

WACI (Scopes 1 & 2)						
Unit: Tonnes of CO ₂ e per million \$ revenue						
Portfolio	% AUM with WACI below benchmark	2021	2020	2019	Notes	
Equities (~20% of total AUM)						
AsiaPac	69	265	271	377	<p>WACI is calculated by adding the Scope 1 and 2 emissions of companies in the portfolio, divided by million US\$ of revenue and multiplying these by portfolio weights.</p> <p>The 2021 WACI data is as of December 31st 2021 for Equities, Fixed Income and Active Quantitative Strategies. Emissions data has a 1-2 year lag, therefore 2021 carbon footprinting reports reflect 2019 or 2020 corporate emissions.</p> <p>Carbon intensity related to our Japanese equity portfolios in 2019 are reflected in the AsiaPac calculations in 2020 and 2021 due to restructuring.</p> <p>Note that we consider Scope 3 emissions for companies and sectors where these are material, but due to data gaps and inconsistencies these are not incorporated into portfolio level reporting.</p>	
Global Emerging Markets	100	236	160	325		
Global Equities	65	216	224	175		
Europe	22	136	177	153		
US	22	134	183	152		
UK	88	155	112	104		
Japan	-	-	-	60		
Small Cap	100	43	65	37		
Fixed Income (12% of total AUM)						
EM Credit	49	959	339	869		
US HY	100	312	251	361		
Global IG	43	227	320	270		
US IG	60	284	327	232		
Euro IG	87	102	197	193		
Euro HY	91	302	82	181		
Sterling IG	48	106	153	161		
Active Quantitative Strategies (2% of AUM)						
UK	100	105	114	128		
Europe	100	120	132	221		
US	100	130	117	175		
Asia Pacific ex Japan	100	238	238	411		
Japan	100	62	77	87		
Global Emerging Markets	100	307	238	429		
Global Developed Markets	88	117	99	223		
Global All World	55	150	129	473		

When interpreting WACI changes over time, it is important to understand the drivers. Carbon intensity numbers may increase due to falling revenues even if absolute emissions decline. Regional averages may change due to fund closures or new funds launching.

We may also increase our exposure to carbon intensive companies which we believe to be credible transition leaders, which can lead to a short-term increase in WACI which we expect to reduce over time. For example we noted last year in our previous TCFD report that increases in WACI for US and European equities in 2020 captured a shift towards utility companies with credible climate strategies; this year in 2021 reporting we have seen a significant reduction in these fund strategies.

Our investments

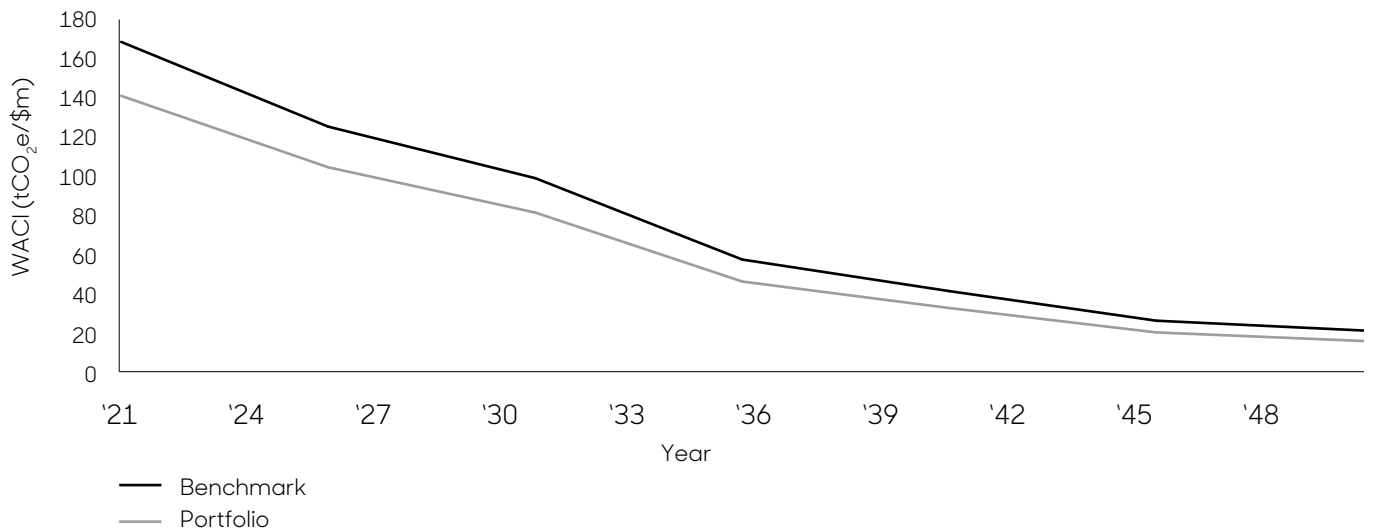


We take a forward looking view

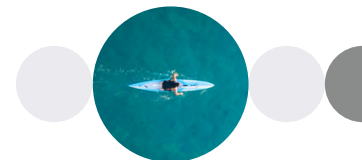
To complement the backward looking carbon emission analysis, it is important to take a forward looking view when constructing our portfolios and assess where we believe company or asset carbon emissions will be in the future – and whether this matches the desired decarbonisation trajectory where carbon goals have been set for the fund. We therefore complement our carbon footprinting with forward looking emission trajectories based on our climate scenario analysis (outlined from page 23) and our active transition analysis.

An example is shown in the chart below. Under the current probability-weighted scenario assumptions abrdn’s Global Climate and Environment Equity Fund is expected to achieve a 42% decarbonisation from 2021 to 2030. The fund is focussed on investing in climate solutions and carbon efficient companies to support real world decarbonisation. Even though it does not have explicit carbon targets, the fund carbon intensity is below the benchmark and the forward looking information helps to understand the decarbonisation potential of assets currently held in the portfolio versus benchmark.

Global Climate and Environment Equity Fund forecasted WACI under the probability-weighted scenario



Our investments targets



In November 2021, we made a commitment to reduce the carbon intensity of the assets we invest in by 50% by 2030 vs a 2019 baseline¹ to support the transition to net zero.

We plan to achieve this via three pillars of action:

- 1. Decarbonisation of assets:** We are committed to tracking and reducing the carbon intensity of our portfolios. That means continuing to incorporate carbon analysis into our investment process and supporting credible transition leaders and climate solutions. Our focus is on achieving decarbonisation through the assets we invest in, recognising the importance of providing capital to support the transition of carbon intensive industries rather than simply divesting from these industries. The majority of our public assets have a carbon intensity below benchmark (for example 70% of our Equity assets) and our Real Estate business has committed to aligning its assets to net zero 2050 pathways.
- 2. Providing net zero solutions:** We are committed to increasing the proportion of assets flowing into our NZDI solutions. Around 30% of our AUM is currently expected to be managed in line with net zero 2050. We aim to increase this by continuing to develop net zero solutions across all asset classes, actively engaging with our clients as well as shifting the abrdn fund range to support net zero goals – starting with a review of the carbon targets within our Article 8 & 9 funds.

We have worked very closely with our largest client Phoenix Group to help develop an approach for implementing their net zero 2050 goals in practice (page 11). We are having similar conversations with other clients, particularly in Europe, to demonstrate how carbon targets can be incorporated into their existing mandates.
- 3. Active ownership:** We are committed to voting and engaging with our investee companies to drive change and transition our real assets. We will engage with our highest financed emitters across equity and credit holdings seeking transparency on progress against clear transition milestones assessed against relevant standards such as the CA100+ net zero benchmark. We will divest from these companies where, after two years, we consider insufficient progress has been made against the transition milestones set, unless it is not in line with the mandate. Further detail on our active ownership approach and net zero engagement strategy is provided on pages 39 to 41.

Implementing our decarbonisation targets What is in scope?

Asset classes in scope

Assets initially in scope for contributing towards our 50% decarbonisation target by 2030 are listed Equities, listed Credit, Active Quants, Real Estate and selected Multi-Asset strategies. This is driven by data availability, maturity of methodologies and control over decision making.

Carbon metrics: Intensity vs absolute

We have set a carbon intensity target because normalising absolute emissions allows for easier comparison across portfolios and assets and does not penalise company growth where this is done in a carbon efficient manner. We acknowledge that it is ultimately the reduction in absolute emissions that matters and will track this over time to demonstrate what is driving the change.

We aim to track our decarbonisation targets with a focus on revenue-based WACI as this is how our tools have been developed in line with the original 2017 TCFD recommendation to understand carbon risks in our portfolios. We know, however, that industry frameworks are moving towards EVIC-based intensity metrics in line with the PCAF guidance. We therefore plan to evolve our tools to track a range of carbon metrics and have the flexibility to measure progress against EVIC-based metrics too.

Scope of emissions

Our carbon target is based on Scope 1 & 2 emissions. We understand that Scope 3 emissions are important and material for many companies, but the availability of reliable, disclosed Scope 3 data is limited at the moment and would also introduce double counting. Our approach is therefore to track and report on Scope 3, but not include it in the measurement of our carbon intensity target for now.

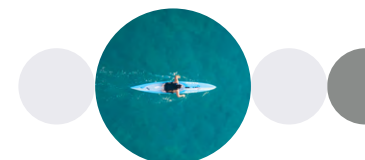
How will we measure progress?

In 2022, we are focussed on laying the foundations to develop a clear baseline as well as data and tools to track decarbonisation progress and understand the drivers. We are likely to use a benchmark baseline as many of our funds have already achieved considerable decarbonisation against the benchmark and we want to acknowledge that starting point. This could be due to a particular investment strategy at the time of the assessment and these funds could increase in carbon intensity in the short term (and still be significantly below benchmark) before falling again.

1. More detail on our baseline and implementation approach will be published in a separate target setting paper.

04. Metrics and Targets

Our investments targets



The target of 50% reduction by 2030 is unlikely to be achieved via a linear 7-8% annual decarbonisation progress. There may be a situation where we invest in transition leaders in carbon intensive sectors and our carbon intensity across assets increases in the short term due to that strategy. In addition, the influence of the business cycle and need to maintain short-term performance in certain mandates may also be drivers for fluctuations.

We need to allow for these fluctuations, provide flexibility for portfolio construction and take a forward looking view on where we expect our carbon intensity across assets to be towards the 2030 goal. We have set an interim milestone of achieving **at least 20-30% WACI reduction by 2025**. At that point we will undertake a deeper analysis into the drivers and potential challenges related to decarbonisation.

Carbon targets implementation timeline

2021	2022	2023	2024	2025	2030
Net zero and decarbonisation commitment	Implement process, data & baselining	Assess progress vs baseline & understand drivers, take action to decarbonise assets	Assess progress vs baseline & understand drivers, take action to decarbonise assets	Interim checkpoint – at least 20-30% WACI reduction expected, recommend action if not on track	Target: 50% carbon intensity reduction vs baseline

Progress against baseline will be monitored on a regular basis with independent oversight provided by our investment governance team, carbon analysis incorporated into portfolio tools as standard, regular checkpoints and review meetings with Heads of asset classes and annual progress updates to the Board. Transparency on progress will be provided via annual TCFD reporting and our annual NZAM target submission.

What actions will we take to achieve our carbon target?

In line with our climate scenario analysis results, we expect the energy transition that is already underway to drive a certain level of decarbonisation of assets across benchmarks. In addition, we want to go further and will take the following actions to achieve our carbon targets:

1. Active analysis of carbon risk to understand carbon leaders and laggards vs peers today and with a forward looking emission trajectory and transition view
2. Investment in climate solutions and transition leaders with strong decarbonisation targets to drive the decarbonisation of assets we hold
3. Active ownership to influence decarbonisation targets of assets we are invested in and escalate via voting and eventually divestment where progress is insufficient
4. Actively develop our net zero directed solution range across asset classes and engage with clients to demonstrate our climate capabilities and increase flows into our climate solutions

Where the above actions do not lead to sufficient decarbonisation of our assets, we will seek to understand the drivers and may need to adjust our holdings to reduce

exposure to carbon intensive companies and assets that are not decarbonising as expected without compromising client goals as set out in the mandate.

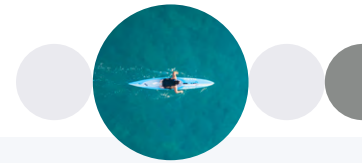
It is important to highlight that we expect these actions to lead to decarbonisation across our asset base on average and contribute to our abrdn target, but we will not impose carbon targets on funds unless desired by the client. This is a company level target and some asset classes and funds may contribute more towards it than others.

Client goals differ across regions and certain mandates have objectives, for example to closely track a benchmark or invest in regions that are still heavily fossil fuel dependent, particularly in emerging markets. In addition, climate policies are still insufficient in many regions to incentivise rapid decarbonisation. The outcome of COP26 has demonstrated that binding 2030 targets would still take us to a 2.4°C world. This is a real challenge for companies decarbonising within environments that do not provide the right incentives to do so (e.g. insufficient carbon pricing). This makes decarbonisation of certain portfolios challenging.

We aim to evolve our target setting approach in line with industry standards and data availability. We are committed to this decarbonisation path on the expectation that climate policy will strengthen globally and that client demand for low-carbon investment solutions will increase. We will review our commitments in 2025 to reflect policy developments and client commitments.

Further detail will be provided in a separate carbon targets implementation paper in 2022.

Our investments targets



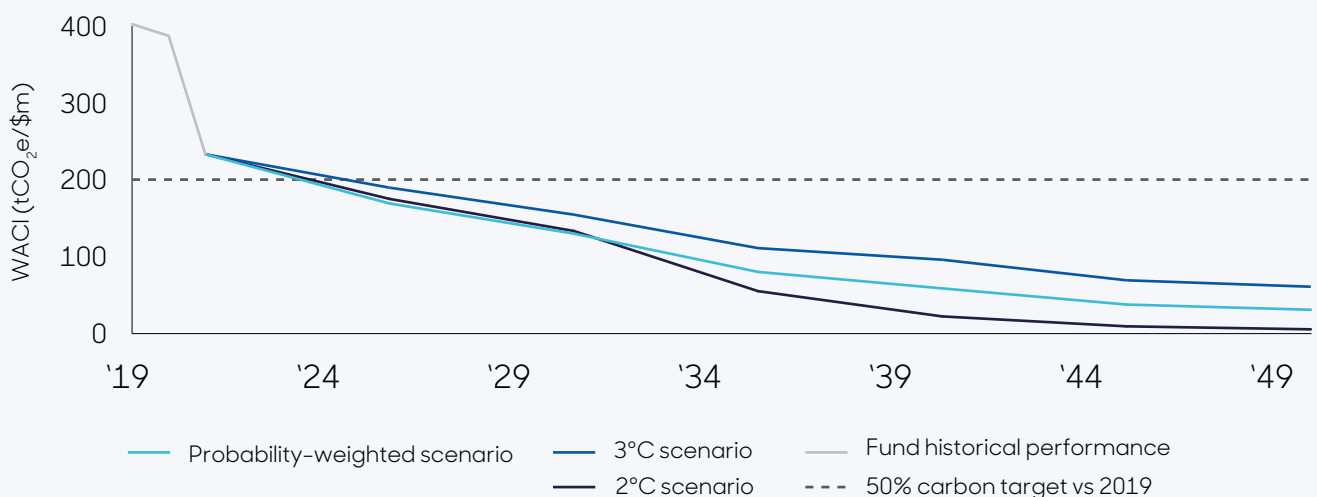
Case Study

Carbon targets in Global Absolute Return Strategies (GARS)

We have recently adopted a target to reduce the average carbon intensity of our portfolios by 50% vs a 2019 baseline. Across the firm, teams have been working to assess portfolio carbon exposures and where possible work to manage carbon more actively. One example we have been working on is our flagship multi-asset GARS fund.

As the chart shows, we have substantially reduced the fund's carbon intensity in the last two years, versus the exposure in 2019. This puts us in a good position to meet, and hopefully exceed, our 50% reduction target.

Historical and forecast carbon intensity (tCO₂/\$m revenue) for GARS Equity

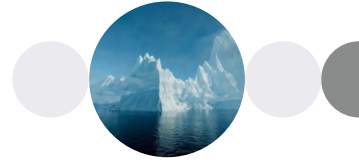


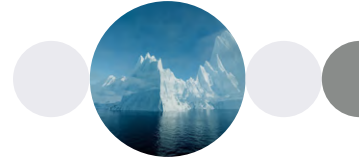
One particular challenge we are grappling with is how to consider companies that are carbon intensive today, but have very strong net zero targets, for example, in the power utility sector. In principle, we would like to allocate capital to these companies, to enable them to finance their transition to net zero. In our view it is important to take a forward looking view and incorporate transition leaders and forward looking emissions in a way that is consistent with achieving our carbon targets. GARS was more carbon intensive in 2019 partly because it held such companies.

Transparency

We want investors to be able to clearly see the sustainability characteristics of their investments, including the carbon footprint of the portfolios we manage on our clients' behalf.

As such, we make ESG metrics, including carbon intensity, externally available for publicly-offered funds. Product level WACI metrics are available to clients via our fund level client reporting.





Appendix



Carbon offsetting

When selecting offsets for our operational emissions, we are progressing towards the Oxford Principles for Net Zero Aligned Carbon Offsetting.* We also encourage the use of the Oxford Principles in our investments and engagements with corporates.

Oxford Principles for Net Zero Aligned Carbon Offsetting	How we are meeting these Principles
Cut emissions	We prioritise the reduction of our emissions. We have reduced our absolute emissions by 62% since 2018 and have targets to reduce our operational emissions by over 50% by 2025 (against our 2018 baseline) and to reach net zero by 2040.
Maintain transparency – disclose emissions, accounting practices and the types of offsets employed	We have disclosed our emissions since 2006 and have them externally assured each year. We detail our accounting practices in our KPI document. We detail the types of offsets we deploy in our Annual Report and Accounts.
Use high quality offsets	We offset via two verified voluntary projects. The first is a Gold Standard wind turbine project in India. The second project is a Verified Carbon Standard Climate, Carbon and Community rainforest protection project in Gola. We chose offsets that we knew were verifiable and correctly accounted for and have a low risk of non-additionality, reversal, and creating negative unintended consequences for people and the environment.
Revise offsetting strategy as best practice evolves	We review our practice every three years.
Shift to carbon removal offsetting	We currently support reduction projects through our offsetting but are looking to move to removal projects.
Shift to long-lived storage	We recognise the need to move to long-lived storage, and will consider this within our offsetting strategy post 2025.
Support the development of net zero aligned offsetting	As long-lived storage comes into the market we'll look to support with longer-term agreements, and work with other peers on sector specific alliances.
Supporting the restoration and protection of natural and semi-natural ecosystems in their own right	We understand that ecosystems secure goods and services on which we depend, including a resilience to the impacts of climate change, and that they contribute to carbon storage over the long term. We support this through our offsetting choices and through our charitable giving strategy.
Adopting and publicising these Principles	We are doing so by publishing this document.

* https://www.sustainabilityexchange.ac.uk/files/oxford_offsetting_principles.pdf

