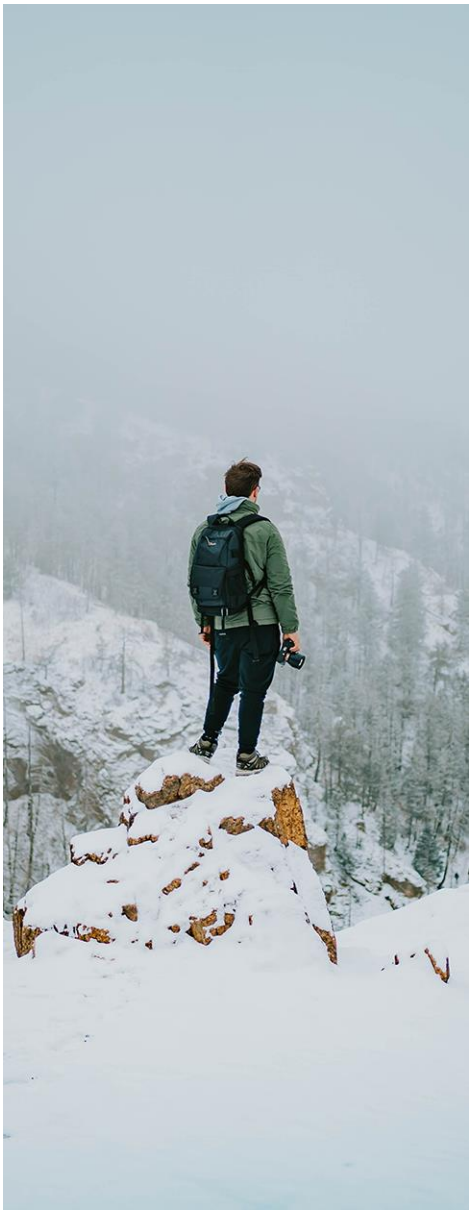
March 2025

Central Networks Group of the ESPS

TCFD Report



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Contents

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1. Introduction

1.1. Chair's Commentary

Welcome to our fourth Task Force on Climate-related Financial Disclosures report for the period from 1 April 2024 to 31 March 2025. The Trustee Directors of Central Networks Group of the ESPS (Group) – also referred to as Group Trustee Directors – have been focused on the impact of climate change for many years and we welcome the opportunity to share this report with you.

Climate change remains a significant global challenge, with increasing scientific evidence that global temperatures are likely to climb above the targeted maximum increase of 1.5 °C above pre-industrial levels without increasingly urgent action. The Trustee Directors continue to focus on the impact of climate change as we believe that the responses to this global challenge will determine the health and prosperity of the world now and for future generations. We also believe that in addition to providing pension provisions for members, it would be reasonable to assume that, when they receive their pension, they and their dependents would want to spend it in a world where the environmental quality of life is broadly similar to or better than it is at present.

We recognise that climate change presents a risk that could impact member outcomes. The impact of climate change is already being felt across the globe, and, left unchecked, could well lead to substantial financial, environmental and social consequences for our members and society as a whole. This is why we consider a thorough assessment and understanding of climate related risks and impacts to be an integral part of performing our fiduciary duty to protect member benefits. This objective can be aligned, rather than at odds with, the desire to protect and preserve the natural environment.

In addition to this, the rapidly evolving geopolitical tensions are likely to affect the pace and the cost of the climate transition, which could also impact member outcomes.

Our commitment on climate change

We have committed our investment portfolio to achieving net-zero greenhouse gas emissions (i.e., not adding to the amount of greenhouse gases in the atmosphere) by 2050 and a 50% emissions reduction from 2020 levels by 2030 at the latest. We have reflected on our target setting and adjusted the baseline date to 2020 as data for 2019 is limited in certain asset classes and, we feel, is not a fair representation of the Group's strategy for the majority of the period measured.

We acknowledge there is a high degree of uncertainty in achieving this, as this requires progress across a range of areas including global collaboration and the development of new, cost-effective technologies.

This is consistent with the Paris Climate Agreement's objective of limiting warming to 1.5 degrees, which science tells us is the limit of warming that our planet can safely absorb.

Our investments

We invest in a balanced portfolio of assets using carefully selected asset managers. A wide range of assets are held which have different exposures to greenhouse gasses.

We delegate the day-to-day investment decision-making to our asset managers. Our asset managers are in a position to exert significant influence on the companies in which they invest. In this regard, we expect our appointed asset managers to be responsible investors and in particular:

- Adopt effective climate change risk metrics to enhance the ability of all stakeholders in the investment chain to assess and minimise such risks. This includes assessing, integrating and reporting relevant greenhouse gas emissions metrics, including Scope 3 emissions (see the Appendix for a description of

what is included in the various emissions Scopes), undertaking scenario analysis, and aligning investment portfolios with net zero greenhouse gas emissions by 2050
- Be signatories to the Principles for Responsible Investment (PRI)
- Disclosing against the TCFD reporting framework
- Engaging companies in investment portfolios in accordance with the UN Principles for Responsible Investment (UNPRI) and/or Stewardship Code requirements (Code Reporting Requirements) as appropriate. As a minimum, to report at least annually on (a) how climate change risks and opportunities have been incorporated into the managers' investment processes and (b) their engagement with companies they invest in to ensure that environmental, social and governance concerns are addressed.

Our property managers are expected to be signatories to the Global Real Estate Sustainability Benchmark (GRESB) and to maintain Green Star status.

Where one of our asset managers is not a signatory to the PRI and/or does not disclose against the TCFD and/or does not adhere to our reporting requirements, we require them to explain why this has not been done. We believe this is a step in the right direction to help us to consider climate change-related risks and opportunities and its impact on the Group as well as helping us to achieve our Climate Change targets. However, we know that there is more to be done and this is our focus, today and in the future.

Sustainability beyond climate change

Climate change is one of a number of sustainability issues important to our investment strategy. We have selected three key stewardship priorities for investment manager engagement, in order to improve alignment with its policies as well as enhance disclosure. The priorities are linked to the UN Sustainable Development Goals with an aim to improving responsible investment characteristics within the portfolio and ultimately deliver better outcomes to our members. Our stewardship priorities are:

- Climate Crisis (with a focus on climate change and net zero greenhouse gas emissions)
- Environmental Impact (with a focus on biodiversity, deforestation, and water)
- Human Rights (with a focus on living wages, gender equality, and health and nutrition)

On behalf of the Trustee Directors, the Investment Adviser has written to our asset managers reaffirming and expanding on our policy and expectations. We expect our asset managers to incorporate these priorities into their voting practices and the Investment Adviser will monitor manager disclosures to ensure alignment against them.

1.2. What is climate change?

Climate change refers to global warming caused by the greenhouse gas emissions of human activity. This leads to the increased frequency and severity of weather events, such as droughts, sea-level rise, floods, heatwaves, hurricanes, and wildfires.

The greenhouse gases that trap heat in the atmosphere include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and fluorinated gases.

The Paris Climate Agreement seeks to limit warming to 1.5°C[1]. This looks to be a challenging target due to the need for unprecedented reductions in greenhouse gas emissions, rapid depletion of carbon budget (maximum amount of CO2 emissions that would result in limiting global warming to a given level), and various technological, economic, and political constraints.

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1006024/statutory-guidance-final-revised.pdf

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1.3. What are our commitments and beliefs?

We have committed to achieving net-zero greenhouse gas emissions on our investments by 2050 and a 50% emissions reduction from 2020 levels by 2030 at the latest. We have done this because we recognise that the climate crisis is one of the most fundamental global challenges society faces.

Climate change is now a widely established concept within financial markets – firstly as a financial risk, due to transition and climate-related risks, and secondly as an investment imperative, because the way in which we direct capital will support (or hinder) climate targets.

It is important that we can achieve a speedy, fair and just transition to a low carbon economy. We recognise this will not be straightforward and will likely constitute the biggest change to the current global economic system in our lifetimes.

Our starting point is to stay invested and have influence rather than disinvest. That said, in the same manner that some investments are judged to be too risky irrespective of returns, some investments will be judged to have too negative a real-world impact, in particular, with regard to systemic issues, such as climate change or respect for human rights.

As at 31 March 2025, the Group's carbon footprint has decreased and continues to track towards their net zero pathway. The Trustee Directors believe there is no reason to change the investment strategy.

1.4. What is TCFD?

The Task Force on Climate-related Financial Disclosures (TCFD) was established in 2015 by the Financial Stability Board (FSB).

The TCFD is an industry-led reporting framework that sets out recommendations for issuers and financial market participants to organise and standardise climate disclosures.

It was set up because the FSB considered that:

- The financial risks and opportunities posed by climate change are not fully understood and not fully priced by financial markets
- Corporate and financial institutions are not prepared for the transition to a low carbon economy
- This will lead to the misallocation of assets, the risk of asset stranding, and market volatility and dislocation

The TCFD has since been adopted by regulators, including by the UK government.

1.5. What are the regulations?

The UK government has issued regulations under the Pension Schemes Act 2021[2] to require large pension schemes such as the Group to publish a TCFD report.

The regulations include the following requirements, across four themes, which we will cover in our report:

- Governance, including how we:
  - Oversee financially-material climate change risks and opportunities (CCRO)

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1006024/statutory-guidance-final-revised.pdf

  - Apply processes to stay informed on climate change
  - Disclose our role with respect to CCRO
  - Disclose third parties' roles with respect to CCRO

- Strategy:
  - Consider climate related risks and opportunities as part of our investment and funding strategy
  - Use at least two scenarios of which one is Paris-aligned (e.g., 1.5°C)
    - A scenario assesses the financial risk of a certain degree of warming, and is used due to the unpredictability of climate change
    - We have selected three scenarios, 1.5°C, 2°C and 3°C
  - We assess the resilience of investment and funding strategies under each of these scenarios, which includes consideration of impact on asset value

- Risk management, including how we:
  - Identify and assess climate-related risks and opportunities and manage their impact on our investment and funding strategies
  - Integrate these processes into our overall risk management
  - Use different risk management tools alongside our investment adviser and the outputs and outcomes of using those tools
  - Consider covenant and funding related risks along with the reliance of our investment strategy

- Metrics and target setting:
  - Absolute emissions-based metric
  - Intensity emissions-based metric
  - Alignment emissions-based metric
  - One other emissions-based metric. We've decided to disclose data availability / coverage due to the importance of climate change data in TCFD reporting
  - A non-binding emissions reduction target. Our target is net zero greenhouse gas emissions by 2050, with a 50% emissions reduction by 2030 based on 2020 levels

1.6. What does this report cover?

This is our fourth TCFD report containing the information required by Part 2 of the Schedule to the Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 (the Regulations).

The full TCFD report has been made publicly available on the website:
https://lwp.aegon.co.uk/retirementplanmanager/ioMicrositeContactUs.do?site=western_power

We have also published a summary version setting out the key points.

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2. Governance

2.1. Statement of the Trustee Directors' Climate Change-related Risks and Opportunities (CCRO) Governance policy

As Trustee Directors, we are ultimately responsible for identifying, assessing and managing the CCRO that the Group is exposed to.

We ensure that we have the knowledge, skills and understanding to identify climate change-related risks, monitor our service providers (including our third-party asset managers), interpret climate change-related analysis, and take actions where necessary. This includes attending training events, undertaking our own research, and reviewing information provided to us by our sponsor, advisers and asset managers. The kind of information provided to the Trustee Directors include portfolio analysis, details of how managers embed climate change considerations into their investment process, manager ratings etc.

We delegate day-to-day decision making on CCRO to our asset managers with oversight from our Investment Adviser (Cardano Risk Management Limited, (Cardano)). The Trustee Directors work closely with Cardano and a number of individuals are specifically responsible for assessing and helping to manage CCRO.

In May 2022, the Trustee Directors adopted a CCRO governance policy which is reviewed on an annual basis. The last review occurred in May 2025.

The policy describes:

- How we oversee CCRO
- The expectations of our investment adviser and asset managers
- The timelines associated with TCFD

We have set out the main aspects of the policy in sections 2.1.1 – 2.1.4. The full policy is available on request.

2.1.1. Introduction to the Trustee Directors' Climate Change Governance Policy

The Trustee Directors have put in place this governance framework to embed the climate change governance requirements into its management of the Group, which will enable it to fully consider and integrate CCRO into its decision-making.

This Policy sets out where responsibility lies and how the framework is implemented on an ongoing basis. It has been prepared in line with:

- The requirements of the Pension Schemes Act 2021
- The Occupational Pension Schemes (Climate Change Governance and Reporting) Regulations 2021 (the Regulations)
- Statutory guidance for climate governance and reporting of CCRO issued by the Department for Work and Pensions (DWP)
- The guidance prepared by The Pensions Regulator (tPR)
- The non-statutory guidance prepared by the Pensions Climate Risk Industry Group (PCRIG)
- Recommendations set out in the TCFD

2.1.2. Trustee Directors' Oversight

The Trustee Directors are ultimately responsible for the oversight of CCRO as they relate to the Group and these are considered as part of its investment decision-making.

As part of their responsibility, the Trustee Directors have established processes and an Investment and Funding Committee (IFC) to assess, oversee, review and effectively manage CCRO relevant to the Group. This includes ensuring that those persons who assist the Trustee Directors with governance activities take steps to identify, assess and manage any relevant CCRO. Considerations of CCRO are made when appropriate, typically on a quarterly basis, as part of the review of the portfolio, including manager and general industry updates. This has included updates on governmental environmental policies, successful engagements from the investment adviser and new regulatory updates. The Trustee Directors recognise that they have a substantial holding in government bonds which has an underdeveloped approach for consistent CCRO assessment across the industry. More in-depth reviews are made on an annual basis in line with the updated TCFD analysis.

The Trustee Directors retain all strategic investment decisions and overall assessment of policy, including setting of climate-related investment beliefs and objectives but, where appropriate, the Trustee Directors have delegated certain functional responsibilities to a sub-committee.

2.1.3. Trustee Directors' Knowledge and Understanding (TKU)

While the Trustee Directors are not directly involved in the day-to-day management of the assets, they are ultimately responsible for ensuring that CCRO are identified, assessed and managed on behalf of the Group members as well as being taken into account in their strategic investment decisions. The Trustee Directors are therefore required to ensure they have sufficient knowledge and understanding of the principles relating to the identification, assessment and management of CCRO, including understanding how scenario analysis works, setting metrics and targets and interpreting the results of any analysis and reporting.

By doing this the Trustee Directors ensure that they are sufficiently informed to be able to challenge assumptions, external advice and information received and to understand any proposals developed by the Investment Adviser and/or the asset managers. The Trustee Directors will engage their service providers to provide such training as they consider necessary to meet these revised TKU requirements. This includes training on CCRO, how they are present in the portfolio and how the Investment Advisers identify and monitor these risks which is done on at least an annual basis.

The Trustee Directors govern the portfolio and rely on the Investment Adviser and asset managers to help scan, measure and monitor the CCRO and determine their relevance to the Group. The Trustee Directors, along with their Investment Adviser and asset managers, adopt a variety of methods to help with the analysis including the following:

- Identifying regulatory developments that are relevant to the Group, including guidance from the Pensions Regulator and Department for Work and Pensions
- Engaging with peer groups, industry bodies and advisers to compare the Group's position to peers or competitors
- Identifying relationships between events and news, and business and financial impacts to manage reputational risks
- Identifying and assessing physical and transitional risks (discussed further below) over different time horizons
- Considering the impact of physical and transitional, including operational, risk factors

In determining their policy, the Trustee Directors consider CCRO to include:

- Transition risks - the financial risks and opportunities associated with the ability of a company, supranational or sovereign to transition to a low carbon economy. For example, the financial risks of public policy change. Here we also include environmental opportunities - the financial opportunities of climate change-related solutions, such as the technology solutions necessary for low carbon energy provision
- Physical risks - the financial risks and opportunities associated with a company, supranational or sovereign's resilience to climate change-related weather events. For example, the financial risks of rising sea levels or increased droughts, floods or wildfires
- Systemic Risks – the "top down" financial risks of the macro-economic impacts of climate change through changing governmental policy, consumer behaviour, productivity, competitive pressures, commodity inflation, immigration and other economic drivers of growth and inflation and hence market wide returns. In the long term this includes the risks of tipping points in global warming that could lead to more extreme outcomes and impacts.

With support from their Investment Adviser and asset managers, the Trustee Directors will consider the transition risks and physical risks, systemic risks and opportunities for the Group's investment strategy over a range of different scenarios. These scenarios broadly reflect: (i) a measured orderly transition to net zero tracking Paris Agreement commitments; (ii) a sudden, disorderly transition reflecting a late transition to net zero; and (iii) a hot house world reflecting high physical risks.

2.2. Investment Adviser

As Trustee Directors, we have reviewed Cardano's climate change expertise and are satisfied that Cardano has the skills and resources to integrate climate change-related risks and opportunities into their investment advice. Cardano provide updates on a quarterly basis on actions they have taken with regards to stewardship and industry developments they are involved in. We were pleased to note that Cardano's skills in this area were enhanced with their acquisition of ACTIAM, a sustainable investor with 30 years' experience. It has increased their number of dedicated sustainability professionals which in turn brings additional expertise that support the work we do.

Cardano has published its sustainable investment beliefs, sustainable investment policy, engagement policy, and its climate crisis action plan[3], which we have reviewed.

Cardano is a signatory to the UNPRI, a member of the Institutional Investors Group on Climate Change (IIGCC), and a signatory of the UK Stewardship Code. Cardano's engagement policy sets out how they promote and monitor the shareholder engagement activity of investment and third-party managers that are included in the portfolios that Cardano manages.

Cardano has publicly stated that they will measure their portfolio greenhouse gas emissions and set portfolio targets consistent with achieving net-zero greenhouse gas emissions by 2050, with a target to halve emissions by 2030. The Cardano Group became a net-zero firm (firm operations) in 2021.

In addition to being a signatory to the UNPRI, Cardano is a member of the Partnership for Carbon Accounting Financials (PCAF), the International Capital Market Association (ICMA), the Net Zero asset managers initiative, the Net Zero Investment Consultants Initiative, Climate Action 100+, and The Diversity Project. More detail on Cardano's approach to sustainability is available on their website[4]. In addition, the Cardano Group has signed up to the UN Global Compact.

Cardano has integrated sustainable investment throughout its business, with activities overseen by the Sustainability Steering Committee. Cardano has also employed the services of MSCI and their ESG data to assist with climate change-related reporting.

[3] https://www.cardano.co.uk/sustainability-policies/
[4] https://www.cardano.co.uk/our-approach-to-sustainability/

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3. Strategy

3.1. The short-, medium- and long-term time periods identified for the Group

Consistent with guidance from the Pensions Regulator and the position of our Group, we consider:

- Short-term to be up to 5 years
- Medium-term to be up to 10 years
- Long-term to be up to 20 years

We use these time periods alongside the metrics, scenarios and target-setting to inform our engagement with Cardano and with our asset managers.

3.2. The climate change-related risks and opportunities that will affect the Group's investment strategy over the short-, medium- and long-term

We consider the following key risks:

- Transition-related risks & opportunities i.e., policy, legal, reputational and technology including environmental opportunities relating to the need to transition a business to be consistent with the de-carbonisation pathways set out in the Paris Climate Agreement
- Physical risks & opportunities relating to the increase in weather events that result from a warming, and unpredictable climate, such as rising sea levels, droughts, floods, and wildfires
- Systemic risks & opportunities i.e., economic implications

The systemic risks relate to the economic impact of extreme weather events, political activity and policy progress. There will be social and economic impacts across our portfolio, which need to be identified and managed across the short-, medium- and long-term.

Physical risks over the medium-term (up to 10 years) are relatively similar regardless of the scenario we look at because in all scenarios the climate will continue to warm to at least 1.5°C over this period. Nonetheless we expect increasing impacts of climate change such as extreme weather over this period under all scenarios. Over the longer term, the physical risks will start to diverge substantially in warmer versus cooler scenarios. We expect that the discounting of these physical risks will start to be priced into markets over the medium term.

For our scenario analysis we choose to focus on the medium-term time horizon. Despite little difference in physical risk, this is a time horizon over which we could see dramatic shifts in policy and consumer responses to climate change, so we believe that it is the most useful time horizon for Trustee Directors' decision making.

The table below summarises the climate change-related risks likely to materialise, as reported by The Bank of England's Prudential Regulation Authority[5]:

[5] https://www.bankofengland.co.uk/climate-change

Climate-related risk		Short/Medium/Long Term	Main causes of financial impact on members
Physical	**Acute**	Medium/Long	Increased frequency and/or severity of extreme weather events
	Chronic	Medium/Long	Steady increase in global sea levels and changes in precipitation patterns
		Medium/Long	Rising temperatures
Transitional	**Policy and legal changes**	Short/Medium	Regulations of existing products and services
		Medium/Long	Sectors facing penalty incentives could harm current business models
	Market demand	Short/Medium	Changing consumer behaviour
	Technology	Medium	Existing products replaced with lower emission technology
	Reputational	Short/Medium	Increased scrutiny following changes in stakeholders' perceptions of climate-related action or inaction
Liability	**Direct**	Medium	Those seeking compensation for financial losses as a result of physical and transitional risks
	Third-party	Medium/Long	Those seeking compensation for damages as a result of physical risk

3.3. The impact of the risks and opportunities on the Group's investment strategy

We consider climate change-related risks and opportunities in relation to all aspects of the Group's investment strategy, including the asset allocations and asset management structure. Examples of the types of issues that climate change-related risks and opportunities could affect include:

- The dividend paying capability and the share prices of companies that we own (either directly or indirectly)
- The prospects and prices of portfolios that we invest in via derivatives
- The creditworthiness of the issuers of the fixed income assets in which we invest
- The prospects for banks and other financial institutions that we place cash with
- Systemic impacts on multiple parts of the portfolio at the same time and in the same direction

We consider climate change-related risks and opportunities will affect our decision-making in a number of ways:

- Our investment policy, and how climate change may affect the different asset classes we are invested in over time
- Asset class selection and their susceptibility to climate risk
- Allocation within an asset class
- Selection of instruments
- The geographical nature of investments (for example, the preparedness of different geographies to climate change risks)

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3.4. Scenarios

3.4.1. Details of the most recent scenarios we have selected

Our three scenarios are 1.5°C Paris-aligned transition, 2°C "late transition" and 3°C "slow transition" or "hot house".

- Paris-aligned transition – this is our goal: AIM/CGE[6] 1.5°C assumes measures are taken that will keep the rise in temperature limited to 1.5°C
- Late transition – following a review in conjunction with Cardano, this is a forecast of what we think is most likely to happen: Late AIM/CGE 2°C assumes measures are introduced to tackle climate change, but are introduced too late to meet the Paris Agreement
- Slow transition – this is our hot-house scenario: AIM/CGE 3°C assumes current policies being continued. According to the UN, we are currently on track for 3°C warming

3.4.2. The reasons for choosing the scenarios we have used

We have chosen to disclose three scenarios, because we believe this provides us with sufficient scope to inform our investment decisions. They are scenarios that highlight the impact of physical risks and transition risks as well as systemic risks in different scenarios and so enable us to draw conclusions about the different components of climate change-related risks and opportunities.

Each scenario consists of a degree of warming and an assessment of its impact on the portfolio. In other words, what do we expect the financial risk to be, and across which asset classes / investments, based on a certain degree of warming?

3.4.3. The resilience of our investment strategy in these scenarios (in other words, the results)

For the following analysis, we have considered the period to 2030 consistent with our medium-term time horizon for the Group. We are realistic about the challenges with scenario analysis; it is too complex an impact to model far into the future with high confidence and too long a time horizon to be decision useful for the Trustee Directors. Nonetheless, it is important that we try to reflect on the types of risks and opportunities that our strategy may face over the medium-term that may not materialise over shorter-term time horizons. We believe 2030 is an appropriate timeframe as it is enough time for different policy and economic outcomes to develop and affect markets and to be decision useful to trustees.

Additionally, we assess resilience of the Sponsor's covenant and tolerance its tolerance to changes in assumptions. This commentary is provided in section 4.6.

We have chosen not to provide a quantitative assessment of scenario risks, as we believe that the commercially available scenario metrics are inadequate in the way that they quantify climate change risks. Instead, we have chosen to provide a qualitative assessment of various risks and ultimately portfolio outcomes based on narrative scenarios across the three scenarios for climate outcomes. These scenario narratives and portfolio impacts are set out in detail in Appendix 6. Our analysis incorporates physical and transitional risks but also separates out systemic risk (impacts on the whole economy) which is often missing from current climate scenario modelling.

As a summary, the impact is set out in the below table

[6] The Asia-Pacific Integrated Modeling/Computable General Equilibrium (AIM/CGE) is a multi-regional, multi-sectoral model analysing energy use, agriculture, and climate change policies (among other inputs). It is used by MSCI in determining the financial impacts of climate change.

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Table 1:

	1.5°C	2.0°C	3.0°C
Physical Risk	*Moderate*	*Moderate*	*High*
Transitional Risk	*High*	*Low*	*Initially moderate but increasingly uncertain*
Systemic Risk	*Positive*	*Moderate*	*High*
Portfolio Impact	**Positive**	**Moderate**	**Negative**

Physical Risks: The impacts of climate change on physical assets owned by a company or in its supply chain, from climate change. For example, the damage to a factory due to coastal flooding and storm damage

Transition Risks: The impacts of climate change on the individual assets due to changing climate policies, legal risks, market and reputational risks faced by companies, particularly as reflected in the increase of either direct or indirect costs of greenhouse gas emissions of the company or its supply chain.

Systemic Risks: The macro effects of the consumer and government policy responses to climate change which affect overall economic growth, inflation and broad market outcomes.

Portfolio Impacts: The combined effect of the scenario on both assets and liabilities.

Further detail of the scenarios can be found in the Appendix.

3.4.4. Describe the key assumptions for the scenarios you have used and any limitations of the modelling

We used a qualitative scenario assessment compared to quantitative analysis due to complexities and inaccuracies involved in forecasting the degree of warming that will result from climate change, including:

- Uncertainties surrounding regional projections and effects of climate change
- Uncertainties around the government policies which will drive transition risks including legislation and regulation, monetary policy and fiscal policy
- Uncertainties around consumer reactions to climate change and how preferences may change over time
- Uncertainties around the economic impacts on future growth and inflation of both the climate change factors and the government policies
- Uncertainties around the market reactions to changes in policy, consumer behaviour, growth and inflation prospects

Key assumptions are explained in the narratives for the scenarios in appendix 6 and focus on overall growth asset performance and the effects of interest rate and inflation on liability values.

3.5. Scenario analysis informing our decision making

3.5.1. Investment decisions made with sustainability in mind

We have been investing in Forestry since the Group's inception in 2011 and increased our allocation over

the past 5 years. In addition to growing and maintaining woodland we also use the land for the development of windfarms. Combined, these help to support a more sustainable world. For example, our manager Bidwells latest estimate stated that the Group's Bidwells holding has c.63,000T of CO2 net carbon benefit per year. In addition to this, via windfarms, the Group is currently supporting the generation of renewable energy equivalent to at least 78,000 homes and this is expected to increase over time as new windfarms are developed.

3.5.2. Engagement with companies and governments

We believe it is more important to engage with companies and governments and to supply enabling capital to achieve long-term profitable transformation and decarbonisation than it is to hit short term carbon footprint target metrics. For example, emerging markets, which have higher carbon footprints, in part because they produce carbon intensive goods consumed by developed markets, require capital in order to transform their economies.

We will resist pressure to modify portfolios to meet headline portfolio level decarbonisation targets at the expense of incentivising the necessary real-world transition. Our goal is net zero greenhouse gas emissions globally – and we seek to maximise our influence to achieve this. In the long-term, this is the only effective strategy to mitigate the systemic effects on markets of climate change.

For these reasons, portfolio decarbonisation targets will continue to be reviewed at least every three years to ensure they remain appropriate and aligned with fiduciary objectives.

3.5.3. Asset manager engagement

The Trustee Directors expect:

- UK-regulated asset managers to be signatories of the Stewardship Code
- Non-UK regulated managers to exercise their voting rights in a manner consistent with a focus on medium- and longer- term investment performance

As part of their responsibilities, where applicable, the Trustee Directors expect the Group's asset managers to:

- Engage with investee companies with the aim to protect and enhance the value of assets; and
- Exercise the Trustee Directors' voting rights in relation to the Group's assets
- Incorporate the Trustee Directors' views on climate change risk and opportunities

With the assistance of our Investment Adviser, the Investment and Funding Committee undertakes an in-depth review of the investment managers' ESG credentials, including their stewardship and voting activity and policies every year. Our Investment Adviser monitors the stewardship activity of our investment managers on an ongoing basis and alerts the Investment and Funding Committee of any material concerns between this review period.

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4. Risk Management

4.1. How we identify and assess climate change-related risks and opportunities

We recognise that climate-related risks can be financially material and that incorporation of identified risks and opportunities into Group's risk management is therefore essential.

We have identified these risks in conjunction with the Investment Adviser who, in addition to their own research from their sustainability team, have worked to identify risks together with expert organisations such as the IIGCC, PCAF and MSCI (see section 4.3 below).

The Trustee Directors have identified the following risks as posing the greatest potential loss and being the most likely to occur:

- Risk 1 – we do not correctly identify portfolio risks from climate change - new risks are likely to emerge (physical, transitional and systemic)
- Risk 2 – insufficient policy action globally to avoid a "hot-house" scenario (the 3 degree scenario) – which results in longer term systemic risks for overall markets and negative effects for the portfolio
- Risk 3 – policy action globally accelerates more quickly than anticipated leading to unexpected asset stranding and the portfolio is not able to capture the positive benefits in this scenario
- Risk 4 – correlated portfolio risks - while asset managers may consider the individual climate change related risks and opportunities per company or investment, the Trustee Directors need to consider them across the portfolio as a whole

We have set out the processes we have followed to identify these risks in sections 2.1 (our climate change-related risks and opportunities policy), 3.1 – 3.5 and, in the section that follows, 4.2. For purposes of readability, we have not repeated them here.

4.2. How we integrate these processes into overall risk management for the Group

The Trustee Directors govern the portfolio and oversee the Investment Adviser and the Group's investment asset managers (asset managers) who help scan, measure and monitor the CCRO and determine their relevance to the Group. The Trustee Directors, along with their Investment Adviser, adopt a variety of methods to help with the analysis including:

- Reviewing relevant background material and identifying regulatory developments that are relevant to the Group, including guidance from TPR and the DWP
- Engaging with peer groups, industry bodies and advisers
- Identifying relationships between events and news, and business and financial impacts to manage reputational risks
- Identifying and assessing physical and transitional risks over different time horizons
- Considering the impact of physical and transitional (including operational) risk factors
- Integrating the climate related risks within the Trustee Directors' wider risk management framework and risk register

For further details on how the Trustee Directors manage CCRO, and how relevant processes are integrated into the Group's overall risk management strategy, we refer readers to sections 2.1 and 3.1 – 3.5. For details on the climate risks related to the employer we refer the reader to sections 4.6.

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4.3. The risk management tools we – and our Investment Adviser – have used and the outcomes of using those tools

Climate Scenario Analysis

Scenario analysis allows us to consider potential outcomes in different scenarios and think through the impact on different individual positions and the overall portfolio.

Outcome: considering the appropriateness of the overall strategic asset allocation including the LDI strategy, the need for a portfolio risk management overlay and decisions on the appropriateness of each new investment from a climate perspective.

LDI hedging

The Trustee Directors consider the appropriate level of LDI hedging.

Outcome: The Trustee Directors have adopted an approach of maintaining the hedging in line with the Technical Provisions (TP) liability value to stabilise the TP deficit i.e. the Group's assets move in line with the TP liabilities for shifts in interest rates and inflation expectations. The impact of climate change on real and nominal interest rates is highly uncertain in the different scenarios, so this hedging strategy reduces that uncertainty on the TP deficit of the Group. However, this strategy does require sufficient collateral to maintain the LDI hedges in scenarios where interest rates or inflation expectations increase. Maintaining sufficient liquidity is part of the risk management strategy of the LDI portfolio.

The Trustee Directors understand that this does not include hedging the funding ratio which could increase (or reduce) in percentage terms if interest rates (or inflation) fall (or rise).

Portfolio risk management tools

The Trustee Directors may deploy a risk management overlay to protect the value of assets. This may include exposure to inflation assets, government bonds or options on equities and interest rates. These tools can be effective in protecting the portfolio from more acute risks at moments in time. However, these tools may not be effective against longer term slower developments of chronic risks such as climate change induced risks. Therefore, they need to be deployed dynamically by the Investment Adviser overseen by the Trustee Directors and Investment and Funding Committee.

Portfolio Analysis tools

In 2020, Cardano appointed MSCI as its external sustainability data provider. The appointment followed a request for proposal process which reviewed the service offerings of different providers. Cardano selected MSCI for a number of reasons including the extent of its coverage, MSCI's research process (and as such, data reliability), and portfolio scenario analysis based on degrees of warming, following the acquisition of Carbon Delta in 2019[7].

The appointment (and reappointment) is also overseen by the Cardano Group's Sustainability Steering Committee.

This data provides insights into where climate risk may be most acute on a geographic, sectoral and individual security level both from a physical and a transition risk perspective. It is used by Cardano and Trustee Directors to understand and discuss risk exposures. It is not particularly useful when considering systemic risks which tend to be underestimated in the models used, where Cardano make use of their

[7] https://ir.msci.com/news-releases/news-release-details/msci-strengthen-climate-risk-capability-acquisition-carbon-delta

approach to macro scenario analysis.

Participation in industry groups working on methodology development, in particular, IIGCC and PCAF

The DWP's TCFD regulations set out multiple methodologies to determine corporate and sovereign greenhouse gas emissions metrics. There remain methodological challenges for 'hard to reach' asset classes, such as hedge funds, commodities and derivatives.

We assess Cardano's participation in and contribution to multiple industry initiatives to develop and evolve metrics and reporting on climate change, in particular, IIGCC and PCAF. IIGCC is the Institutional Investors Group on Climate Change, and it hosts the Paris-Aligned Investment Initiative and the Net Zero Investment Framework. The initiative sets out the advantages and disadvantages of the multiple methodologies used to determine a company's, and a portfolio's absolute emissions, emissions intensity, and more recently, environmental alignment.

Methodologies used to calculate GHG emissions: Typically, financed emissions (the emissions we are responsible for as an investor) are calculated using GHG emissions per unit of sales or per enterprise value. Our preference is enterprise value which we consider a more stable measure, allowing for year-on-year comparisons. Enterprise value consists of a company's equity, debt and cash, and goes by the acronym EVIC (enterprise value including cash). This aligns with MSCI and the recommendations of PCAF – the Portfolio Carbon Accounting Financials initiative.

Internal controls

Cardano has implemented internal controls in the preparation of TCFD metrics and scenarios, which we have reviewed. We assess these internal controls to ensure they are appropriate.

Finally, we note that there will be inaccuracies in the data. In some markets, corporate greenhouse gas emissions disclosures are not regulated, and not subject to audit. The quality of the data is constantly improving. We believe that the processes we have implemented are market-leading and mitigate for known limitations in data quality and coverage. We will continue to engage with Cardano, our asset managers and, where appropriate, standard-setters, policymakers, data providers and individual companies to improve data quality.

4.4. Investment decisions that help address climate change-related risks and opportunities

In November 2023, the Trustee Directors carried out a beliefs survey to reaffirm / establish their investment beliefs. These beliefs were intended to be used by all key stakeholders as a guide when making investment decisions. The outcome of the survey reaffirmed the Trustee Directors' beliefs outlined in section 1.1, that appropriate assessment of sustainable factors and climate-related risks and opportunities is expected to improve outcomes for members over the longer-term, and therefore confirmed that ESG considerations should be applied to all investment decisions.

Decisions have been taken over the year to help further address climate change-related risks and opportunities, some of which are outlined in this section. These beliefs will be reviewed as part of the 2025 valuation process.

LDI Risks and Opportunities

T**he LDI portfolio permits investment into Green Gilts.**

The financial characteristics of sustainable bonds such as green gilts are the same as conventional bonds. They have a fixed term, fixed notional and a fixed coupon. The main difference is that the proceeds of the bonds are used for green, social or sustainable purposes.

Systemic risks such as climate change, by definition, cannot be completely diversified away, they affect whole market outcomes. As a result, by focusing on investments such as green bonds the Trustee Directors can contribute towards the objectives of the Paris Agreement to limit global warming to 1.5 degrees. In this small way the portfolio can contribute to mitigating the systemic risk that members are exposed to as a result of climate change.

In addition, over the year the IFC explored the possibility to incorporate sustainable bonds in the LDI portfolio.

The options explored included a Buy and Hold Green and Sustainable Bond mandate, or an Impact Euro Corporate Credit Fund. The IFC agreed to pause any decision until after the 2025 actuarial valuation results when they will assess whether any other investment strategy changes are required.

A Buy and Hold mandate would entail purchasing green, social or sustainability bonds that are classified as aligning with the International Capital Markets Association (ICMA) Green and Social Bond Principles and which further pass Insight's Impact Bond Assessment (i.e., assigned a 'light green' or 'dark green' rating). Holdings would be integrated into the LDI portfolio and reviewed under Insight's Impact Bond Assessment. The bonds would subsequently be sold within 90 days if no longer considered to meet their criteria.

Impact bonds would be accessed through an existing impact fund focused on euro investment grade credit as that is where the manager's expertise is focused.

Forestry Risks and Opportunities

Over the years we have expanded our holding in Forestry, including greenfield sites which in time will help to remove greenhouse gases from the atmosphere. Our use of forestry has contributed to the return and risk management of the Group's assets as well as having a positive real-world impact.

4.5. Understanding covenant risks

The strength of the sponsor covenant is an important factor in determining the resilience of the funding strategy, given that the Group depends on the Sponsor for support in the event of adverse experience.

Climate change and the global response to it will influence Short-, Medium-, and Long-term covenant resilience and could affect the ability to pay the member benefits in full. We therefore believe it is important for us to understand the CCRO faced by our Sponsor.

To help with this we have reviewed the Sponsor's stated environmental strategy and goals, by reference to both:

- The NGED Group (as the Sponsor is part of the NGED Group); and
- The NG Group, as the NGED Group has aligned its position with the NG Group post integration of the NGED Group, and the NG Group is (as a much larger group) required to report and disclose on such matters

as well as consulted with our independent covenant adviser.

4.5.1. NGED Group

In its latest financial statements for the year ended 31 March 2025 ('FY25'), the NGED Group has stated:

- The industry is undergoing an unprecedented change, including a rise in EVs, heat pumps and battery storage; it plays a vital role in transforming the energy systems in its region, safely and reliably connecting millions of people to the energy they use, while investing to power growth, resilience and the transition to a cleaner future
- It is committed to supporting the UK's ambition to grow the economy, build more homes, develop industry, and transition to a clean power system and net zero carbon emissions by 2050
- DNOs will be at the forefront of delivering this, enabling the transition to a smart, flexible, low cost and low carbon energy system for all consumers and network users
- Its vision is to be at the heart of a 'secure, affordable and clean energy future'
- Updated strategic priorities deployed in FY25 to deliver on that vision include:
  - enable the energy transition for all
  - build the networks of the future now
  - operate safely and efficiently
  - deliver for customers efficiently
  - build tomorrow's workforce today

- Notable achievements have been seen in FY25 in relation to all strategic priorities
- NGED Group's strategic priorities are aligned to its RIIO-ED2 (ED2) business plan commitments, which include achieving crucial outcomes for customers, such as:
  - Sustainability – support the UK's ambitions to achieve net zero carbon emissions by 2050, driving crucial changes in energy usage and customer green behaviour; set the benchmark by achieving net zero in its own operations by 2043 (excluding Scope 3 emissions), in line with its 1.5°C SBTi; by rapidly reducing emissions in its operations, demonstrating excellent environmental performance, and improving biodiversity at its sites, it is also helping its communities achieve their own net zero ambitions
  - Connectability – ensure customers can connect to Low Carbon Technologies (LCTs) quickly and easily, with the network ready to support 1m+ Electric Vehicles (EVs) and 600k heat pumps by 2028
  - Vulnerability – offering smart energy action plans for vulnerable customers via a first-class programme of inclusive support
  - Affordability – deliver the highest standards of safety, reliability and customer service, keeping power cuts at their lowest levels, whilst keeping its portion of the average domestic customer bill affordable

- The business environment is shaped by governments' drive to deliver economic growth amid a major shift in how energy is produced and consumed. Against a backdrop of political and technological change, the NGED Group is delivering the energy infrastructure of the future, enabling the energy transmission and economic growth in our communities
  - **Energy transition** - growth in renewable and low carbon energy continues to be a major driver of growth for NGED Group's portfolio; demand for electricity continues to grow and across the UK is expected to increase by almost 50% from 2024 levels by 2035; smarter and larger networks will be needed to facilitate these changes; the UK government has set out ambitious energy targets in the Clean Power 2030 report (calling for 95% of Great Britian's generation to be produced by clean sources by 2030)
  - NGED Group responses to date include:
    - collaborated with the SBTi to align its GHG emissions reduction targets with their 1.5°C pathway
    - increased fleet electrification year on year
    - continued work with waste management partners to significantly reduce landfill waste

    - as part of the Energy Networks Association (ENA), collaborating with other DNOs to develop a common approach to measuring and implementing biodiversity net gain across the network
    - working with the wider NG Group to transform its supply chain, focusing on circular economy principles, addressing Scope 3 emissions and reducing unnecessary waste
    - moving away from installing apparatus containing SF6 where technology allows
  - **Affordability and economic development** – to play its part in delivering affordable energy and enabling economic growth, it is focused on delivering its critical infrastructure projects as quickly and affordable as possible, while avoiding both premature investment and delays
  - **Technological change –** the past year has seen a rapid shift in the technological landscape impacting both energy supply and demand; the most significant change has been the rapid rise of generative AI and the associated impact of data centre development.
  - NGED Group responses include:
    - collaboration with Octopus Energy to explore options for accelerating grid connections utilising AI tooling to test potential solutions
    - continued monitoring of cyber risks and implementation of control improvements recommended by government and private intelligence agencies to manage the increasing threat landscape
    - developed a new Network Opportunity Map to provide stakeholders with accessible and accurate network data
  - **Global uncertainty** - geopolitical conflicts and trade tensions pose an ongoing risk; supply chains have been stressed since the pandemic and may tighten further if trade disagreements escalate; resilient and secure energy supplies are crucial in adapting to disruptions in this more uncertain world

- It is committed to achieving various environmental improvements throughout its business, such as a reduction in its carbon footprint and in the oil and gas leaks from its equipment (see below); business carbon footprint (BCF), sulphur hexafluoride (SF6) emissions and fluid cable losses are reported and monitored as KPI's
- The NGED Group continues to work to the internationally agreed environmental standard ISO 14001, to improve its environmental performance; to be certified to the standard, an organisation must consider all environmental issues relevant to its operations, such as air pollution, water and sewage issues, waste management, soil contamination, climate change mitigation and adaptation, and resource use and efficiency

In terms of environmental targets and KPIs, the NGED Group's targets/monitoring can be summarised:

- **BCF** – in FY25, the NGED Group's BCF increased by 11.7% (compared to FY24); primarily due to Scope 1 emissions, driven by an increase in SF6 fugitive emissions attributed to an increase in top ups required due to switchgear assets being predominantly outdoors and exposed to the elements. Long lead times were also experienced in obtaining spares from manufacturers and conducting repairs to address leaks. There was also an increase in Scope 2 emissions due to emissions associated with electricity consumption increasing (increase in office electricity consumption and an increase in the number of communication locations and telecom masts brought online during the current year); the target is in line with its verified 1.5°C SBT. To remain on track to deliver on its regulatory and sustainability commitments, the NGED Group restructured its Environment and Sustainability function and appointed a new team lead, to be followed by recruitment of 2.8 full time employees (FTEs) in FY26
- **SF6 emissions** – overall the level of leakage is reducing over time as older units are replaced with new units containing lower levels of SF6. For ED2, the target is a 20% reduction in total SF6 leakage rate from the FY20 baseline actual leakage rates. Total SF6% leakage in FY25 (as a % of the overall 'bank' of SF6) reduced from 0.40% in FY24 to 0.37% (0.39% at the end of ED1)
- **Fluid filled cable losses** - the target over the ED2 period (to FY28) is to reduce fluid filled cable losses by 50% from a baseline average over the last 3 years of ED1 for each licence area. In FY25, there was a significant increase in fluid filled cable losses (oil loss of 44.k litres vs 9.3k in FY24), primarily due to old circuits degrading and becoming more prone to leakage principally due to climate conditions. A

working group is being set up to address these increases to focus on identifying and prioritising the replacement of leak prone circuits, consistent reporting across all four licence areas and improving the leak protection and mitigation processes

This reduction of BCF to net zero by 2043 in line with its verified 1.5°C SBT (Scope 1 and Scope 2 emissions) will be delivered by:

- Reducing the amount of waste that the NGED Group sends to landfill
- Adopting electric vehicles across its transport fleet to reduce emissions
- Installing renewable energy at its depots and non-operational sites
- Significantly reducing harmful gas and oil leaks from its equipment
- Ensuring it enhances the local environment by delivering a net gain in biodiversity for new major projects and at selected primary sub-stations

From a risk management perspective:

- The NGED Group is exposed to a range of uncertainties that could have a material adverse effect on its strategic objectives, financial condition, operational results, reputation and value
- The NG Group board establishes and oversees the level of risk that the NG Group is willing to accept in pursuit of its strategic objectives through the NG Group's risk appetite framework. This framework is applicable to NGED Group in all instances (unless stated otherwise)
- The NGED Group board reviews its Principal Risks (PRs) and Emerging Risks (ERs) at least annually with any urgent risks escalated to the NG Group board. Additionally, there is a bi-monthly Ethics, Risk & Compliance Committee which focuses on monitoring both PRs and ERs.

The NGED Group has considered the following environmental risks:

- **Energy transition role and delivery of net zero** – risk of failing to enable the UK's transition to net zero or to meet its own net zero commitments
- **Significant disruption of energy** – the risk of failing to predict and respond to a significant disruption of energy supply

4.5.2. NG Group

The following commentary is intended to supplement the NGED Group commentary above.

The NG Group's FY25 Annual Report included the integration of its annual progress update against its Responsible Business Charter (RBC) for the first time. The RBC focuses on three core pillars: its environment, its customers and communities, and its people. The progress update summary noted:

- Good progress on emissions reductions where it has full control
- Limited progress on emissions reductions where it has less control (partly due to increased investment in energy infrastructure) although this will ultimately reduce future emissions in its jurisdictions

Broader coverage included:

- Over the last year, the NG Group has had to navigate a complex landscape driven by significant geopolitical and macroeconomic challenges; the importance of energy security and affordability have come into sharper focus
- The biggest impact the NG Group has on the environment is investing in its networks so they can transport cleaner forms of energy safely and reliably to homes/businesses, reducing emissions across the UK and the US Northeast
- Plan to invest c. £60bn in the networks in the 5 years to March 2029, 85% of which is expected to be 'green investment' – to deliver significant increases in network capacity to connect much more low carbon power generation and storage, support load growth and the electrification of heat and transport

- Approx. 81% of FY25 capital investment aligned with EU Taxonomy principles (78% in FY24)
- Connected 3k MW of renewable capacity to its networks across the UK and US
- Reduced SF6 emissions from its assets, increased the number of EVs in its light duty fleet and continued to reduce the operational emissions from its gas distribution networks in the US Northeast
- Despite this, Scope 1 and 2 GHG emissions increased 8% (against FY24); the second Climate Transition Plan (CTP) issued in 2024 noted progress would not be linear; the CTP outlines the NG Group's roadmap to achieve net zero by 2050
- Due to increased generation from the Long Island generation facilities, NG Group fulfilled a temporary surge in demand (due to matters outside its control)
- Key near-term target is to reduce absolute Scope 1 and Scope 2 GHG by 60% by FY31 (from a FY19 baseline)
- Total Scope 3 GHG emissions increased by 4% vs FY24; emissions from the use of sold gas delivered to customers increased; increased investment in energy infrastructure requires greater procurement of goods and services which increases Scope 3 emissions
- Key near-term target is to reduce absolute Scope 3 GHG emissions by 37.5% by FY34 (from a FY19 baseline)
- Near-term emissions reduction targets are aligned to the 1.5°C pathway, as verified by the SBTi and noted in the NG Group's Climate Transition Pathway (CTP)
- The NG Group is seeing increasing energy demand and growing concern about affordability and security of supply; there is also slower progress on the policies and regulatory frameworks needed to meet its emissions reduction targets. There is a growing risk that balancing these challenges will slow down the pace of decarbonization, and reduce the likelihood of targets being met on time

The principal relevant risks and uncertainties in NG Group's FY25 Annual Report include:

- **Climate change mitigation (strategic risk):** the risk that the NG Group fails to identify and/or deliver on actions necessary to meet its climate change targets/enable the wider energy transition, leading to legal risks or reputational impacts of not meeting its climate change targets and in the longer-term reaching net zero by 2050
- Mitigating actions taken by management include:
  - Continued monitoring of actual and potential impacts of climate change and implementation of risk management strategies to mitigate these risks as part of the energy transition
  - Setting near-term climate targets to align with the SBTi's 1.5°C pathway
  - Alignment of governance processes to ensure that emissions reduction strategy is embedded into financial planning processes and performance management
  - Updated the CTP to include revised pathways for matters key to achieving targets
  - Report on progress against targets
  - Changes to its sustainability operating model to help embed sustainability resources and capabilities in its business and provide greater clarity on roles and responsibilities
- **Significant disruption of energy (operational risk)**; the risk that the NG Group fails to predict and respond adequately to significant energy disruption events to its assets from asset failure, climate change, storms, attacks or other emergency events - leading to significant customer harm, lasting reputational damage with customers/regulators or material financial losses and damage to investor confidence
- Mitigating actions taken by management include:
  - NG Group management continues to prioritise preventative measures and response plans to address the risk of significant disruption of energy
  - Active engagement in climate adaptation work, conducting group-wide assessments and planning for multi-decade adaptation to bolster resilience
  - Proactive preventative measures include: acceleration of proactive pre-winter maintenance and asset checks, collaboration with all stakeholders, enhancement of flood contingency plans, robust

winter and summer preparedness/scenario planning, testing response plans, outage planning, group-wide assessment of climate vulnerabilities and development of emergency response plans covering wildfire and cyber scenarios along with asset risk assessment and integrity management plans.

The above risks were reviewed as part of the bi-annual NG Group risk review; they are considered as part of, and integrated into, the NG Group's Enterprise Risk Management ('ERM') process. The splitting of the risk into two distinct elements has generated greater oversight, focus and adoption of distinct and proportionate control frameworks in line with current risk appetite – mitigating downside risk and maximising opportunities, where applicable.

NG Group – TCFD

The NG Group:

- Recognises that addressing climate change is the defining challenge of the 21st century and the energy transition is accelerating at pace; it sees responding to climate change and the transition to net zero at the heart of its strategy
- Its networks and operations are crucial to transforming the energy system in the jurisdictions in which it operates.
- Is supportive of 2016 Paris Agreement's long-term goal to keep the rise in global average temperature by 2100 to well below 2°C above pre-industrial levels and to pursue limits to the limit the increase to 1.5°C
- Has supported the recommendations of the TCFD since its initial publication; by helping it understand the impact of climate change on its operations, has benefited the NG Group by:
  - Shaping its governance structure to effectively oversee risks and opportunities
  - Aligning its business strategy to identify and seize transitional opportunities (including the significant step up in asset growth)
  - Developing values of sustainability in its corporate culture
  - Embedding climate change into its risk management framework, engaging its lines of defence to manage the associated risks

From a strategic perspective, efforts to understand climate related risks and opportunities inform its strategic decisions, including the announcement in 2024 to refocus on energy networks and drive unprecedented levels of investment.

The NG Group:

- is well positioned to take advantage of these significant growth opportunities from the transition to net zero, by enabling the transportation and distribution of clean energy to homes/businesses in the regions in which it operates. This requires a fundamental upgrade of its electricity and gas networks at a pace and scale not seen for several decades. The NG Group is delivering these upgrades now across all its jurisdictions
- is also well prepared to mitigate the physical and transition risks associated with climate change. It uses scenario planning to explore distinct possible futures, highlighting the opportunities and risks in each scenario. This allows it to test the robustness of its business strategy to a range of potential outcomes and prepare for likely impacts on the business.
- has continued to focus its business on electricity with nearly 80% of NG Group assets expected to be electric by 2029 as part of streamlining its focus on networks.

The 5-year financial framework forecast £60bn of investment across the energy networks and adjacent businesses, of which £51bn is directly linked to the decarbonisation of energy networks. In the UK, it is

leading the largest overhaul of the electricity grid in a generation. The Electricity Transmission business plan for RIIO-T3 (to FY31) includes up to £35bn of investment in expanding network capacity, connecting customers and ensuring the health and resilience of the network. The plan is also designed to adapt to an accelerated pathway in line with the Government's Clean Power 2030 ambition.

The NGED Group business is investing £6.7bn during ED2 (to FY28) to ensure the readiness of the electricity network to unlock the potential to decarbonise further and faster.

As the NG Group embarks on a new growth phase, it has refined its strategy to focus on networks that will enable economic growth and the transition to net zero. The updated strategic priorities support its CTP.

The NG Group uses transition and physical scenario modelling to test how robust its strategy is to a range of possible futures out to 2050. It also looks at the implications of its group scenarios for its approach to sustainability and its climate targets and commitments. In relation to its climate targets, its CTP aligns to a 1.5°C scenario.

The NG Group models 3 bespoke transition scenarios, tailored to the specific business environments within the UK and USA (UK assumptions only noted below):

- **delayed policy (2-4°C)/upper range**: a world with higher warming levels where governments, industry and consumers do not pursue the transition at pace, meaning climate targets are missed; decarbonisation progresses but is insufficient to meet net zero in 2050; resource nationalism disrupts established trade flows; supply chain disruptions and higher material prices; policy delays; EV uptake stagnates (cost) and low uptake of heat pumps (gas heating dominates); reduced opportunities for further interconnection growth beyond current pipeline
- **balanced pathway (2°C)**: replaces the **'hybrid net zero (1.5°C) scenario as a 1.5°C trajectory is now seen as less likely than in previous years**; energy transition drives forward at pace, but ongoing supply challenges, policy implementation delays and short term financial concerns mean jurisdictions narrowly miss targets; decarbonisation progresses but just falls short of 2030 and 2035 targets; total energy consumption reduces 25% by 2050; electricity demand doubles by 2050 mainly because of electrification of heat and transport; wind capacity targets missed by five years; heat pump growth restricted to new build houses; EVs continue to grow at the current rate; interconnector projects progress at pace; gas for power sector still has a role to play in the 2030s beyond the maximum 5% of power generation targeted in Clean Power 2030
- **electric net zero (1.5°C)/lower range**: sees governments prioritise achieving decarbonisation goals through supportive policies and regulatory reforms, new load is met through clean power sources; achieves net zero power system by 2035 and economy-wide net zero by 2050; energy consumption reduces >30% by 2050 as more efficient electric technology replaces combustion technology; near-complete electrification of demand sectors such as heat and transport supported by strong renewable expansion with distributed flexibility, storage, interconnection and some abated gas capacity providing dispatchable supply; heat pumps mandated in existing homes; widespread EV adoption as policies achieve targets; increased collaboration and coordination results in faster adoption of offshore hybrid assets and overall increased interconnectors

These scenarios are developed internally; inputs are continually updated during the year as part of normal risk management process, with a manual refresh to reflect the macroeconomic environment as part of the NG Group's strategic horizon scan. The scenarios help the NG Group to understand a credible range of possibilities in those countries for the changes which drive different levels of climate change, as well as the secondary effects of different climate scenarios. The scenarios are not intended to be predictions of likely future events, but they inform an understanding of possible risks and opportunities arising because of

climate change and, along with strategic planning and risk management approaches, guide the NG Group in the identification of material climate related risks and opportunities.

The NG Group tests the resilience of its business strategy against its transition scenarios, focusing its transition risks on the scenarios associated with lower temperature rises. The NG Group noted that, whilst current global climate policies and actions suggest a lower than 4°C scenario, that scenario was still modelled in line with the NG Group's approach to scenario modelling. The transition impact on the NG Group is most significant in scenarios resulting in a lower degree of warming, given the increased action required.

5 transition insights noted are therefore more relevant to a 1.5°C scenario:

- Achieving energy transition targets depends on effective reforms to drive clean power deployment and policies that incentivize consumer uptake of low carbon technologies
- CTP achievement will be challenging in slower scenarios
- Electricity use and share of final demand will increase driven by consumer electrification and large load growth
- Energy supply structure will shift to power generation from renewable/low carbon sources
- Pathways will adapt to global and local realities

The NG Group concluded by noting that:

- **None of the transition scenarios threaten the NG Group's resilience**
- **It is well-positioned to adapt its portfolio to maximise the opportunities of the energy transition**

The NG Group uses group-wide climate scenarios to directly assess its vulnerability to climate change. It has modelled the way in which its business could be directly impacted from increasing physical climate impacts, including extreme weather event/chronic changes in weather patterns. For physical risks, it reviews climate hazards which it believes have the most significant impact and are most likely to occur within its territories. Climate hazard data is modelled using 4°C and 2°C scenarios based on climate hazards such as: coastal flooding, river flooding, high winds, high temperatures, heatwave, low temperatures, freeze/thaw cycles, and ice accretion.

The conclusions from the Physical insights indicated:

- **Most hazards are projected to increase in frequency in the future, with high temperatures and coastal and river flooding of particular concern across consistent areas of the NG Group's operations**
- **The level of risk, in most cases, is greater in a 4°C scenario than a 2°C scenario**

The NG Group has progressed its physical risk analysis and asset vulnerability to inform its strategic planning and investment choices. Its internal Climate Change Risk Tool (CCRT) enables it to create bespoke physical risk assessments for each business area, based on the specific asset and hazard data material to its operations, while still retaining a group-wide strategic view of its overall business.

The outputs are used in the group-level Climate Vulnerability Assessment (CVA) which considers the impacts of climate change on the NG Group's assets over the next several decades. Understanding climate change conditions and the risk to assets ensures appropriate mitigation efforts are considered to protect existing assets and build climate resiliency into future assets.

Guided by its scenario modelling, strategic planning and risk management approaches, the NG Group has assessed the climate-related risks and opportunities that pose a financially material impact, assessing the relative materiality by establishing scope of impact, timeframe and likelihood for each risk/opportunity.

Timeframes used are:

- **Short (up to 1 year)** – in line with annual planning and shorter-term budget processes
- **Medium (from 2 to 10 years)** – reflecting strategic business planning process period
- **Long (10 years +)** – in line with longer-term emerging risk assessment timelines/up to the date of the net zero commitment

Likelihood is based on the following categorisation: **very low (remote), low (less likely), moderate (equally unlikely as likely), high (more than likely) and very high (almost certain).**

The material climate-related risks and opportunities **(focusing on impacts on the NGED Group operations)** include:

- **Transition Risk – Market/policy/legal (uncertainty in the extent of electricity demand growth); medium- and long-term; moderate likelihood**
- Whilst electric demand growth is expected in all scenarios, there is uncertainty about the scale of that growth in the face of potential political, technological or societal trends
  - Potential impact: by under-estimating demand, there is a risk that the transmission/distribution networks the NG Group operates may not be adequately prepared to handle the substantial growth in electricity demand necessary to achieve net zero; over-estimating demand may lead to a risk that surplus assets are built, undermining consumer and regulator confidence and leading to inefficiencies and misallocated resources. Reputation and credibility impacts
  - Response: maintain close stakeholder relationships to anticipate the extent of electric demand growth and influence enabling policy; use internal analytics teams to model different futures with varying electric demand growth; combine this proprietary analysis with decades of experience in energy infrastructure development; to mitigate the risk of under- or over-build, work closely with regulators and system planners; pushed for a framework for anticipatory investment to meet new connections and electrification on time. Ofgem accepted this as part of the ED3 framework decision document; to mitigate the risk of under-build if demand is higher than expected, 'no regret' anticipatory investment is being made to meet demand for connections. To mitigate over-build in NGED Group, the DSO governance panel is charged with ensuring all distribution network build carried out by NGED Group is absolutely essential and that all other options for deferral have been considered first. The NG Group also regularly measures and reports its network reliability across transmission, distribution and interconnection networks

- **Transition risk – Reputation and market (affecting the ability to deliver on commitments); medium- and long-term; moderate likelihood**
- Delivering an unprecedented transformation of the energy system comes with delivery risk; failure to deliver the energy networks of the future where/when they are needed, jeopardises wider societal decarbonisation goals. There is also a risk of falling short of its own stretching GHG emissions targets/commitments, risking the credibility the NG Group has with investors, regulators and other stakeholders
  - Potential impact: failing to deliver major network reinforcement required to meet government renewable installation targets; failing to attract investors could undermine the ability to deliver necessary investments and result in materially lower financial performance; it could also impact relationships with trusted stakeholders
  - Response: climate-related targets are embedded into business unit performance management processes with internal reporting against targets; emissions reduction targets are also embedded into incentive arrangements for senior management. There is a detailed CTP setting out the revised roadmap to a vision of reaching net zero. The NG Group continues to work closely with stakeholders, including regulators, to ensure policy and regulatory frameworks enable, and

facilitate, net zero plans. The strategic priority to 'build tomorrow's workforce today' is there to put in place the talent/team to deliver the transition. The 'Great Grid Upgrade' has been launched, aimed at delivering the largest overhaul of the grid in generations

- **Physical Risk – increased frequency of extreme weather incidents and changing long-term climate trends; short-, medium- and long-term; high likelihood**
- Acute physical risks – assets are at risk of physical impacts from increased frequency of such events, leading to asset damage and operational risks
- Chronic physical risks – assets are at risk of physical impacts from changing long-term climate trends, leading to asset damage and operational risks
  - Potential impact: significant costs are incurred due to asset damage and operational interruptions due to major storms; such costs over pre-determined thresholds are typically recoverable in the UK in future years under regulatory frameworks; these incidents and associated costs are likely to increase unless climate adaptation is appropriately measured and implemented
  - Response: CVA is being undertaken for energy-carrying assets, leveraging the Climate Change Risk Tool analysis to identify long term climate hazard risk to the energy infrastructure; the findings are being used to develop tailored climate change adaptation plans, outlining solutions for the high-risk assets and confirming the strategic approach to managing risk; in the UK, innovation projects have been commenced to understand the impacts of climate change hazards on asset performance. £57m was invested in FY25 in climate adaptation in the form of storm hardening and flood defences

- **Transition Opportunity – Market and Products/Services (increased demand for electricity even in the slowest decarbonising scenarios); short, medium and long-term; very high likelihood**
  - The changing energy system opens up new opportunities and market segments. The NG Group is well positioned to capitalise on the significant growth opportunities associated with the increasing demand for electricity. This transformational period in the energy sector presents a significant opportunity to invest in innovative solutions to decarbonise the network and reap the rewards of those investments as technologies scale
  - Potential impact: even though the extent of electrification is uncertain, growth in electricity networks is clear and underpinned by regulatory frameworks. The UK government has announced its Clear Power 2030 Plan which will see clean power sources produce at least as much power as Great Britan consumes over the whole year, and at least 95% of Great Britian's generation in 2030. Leveraging these opportunities will significantly enhance capital investment and growth, increasing profitability – a key driver in the 5-year financial framework. The NG Group is a leader in developing electricity interconnector projects to connect Great Britian with other European countries; by enabling cross-border electricity trade, interconnectors can displace fossil fuel generation in favour of renewable energy and generate revenue. The UK CP2030 Plan assumes c12GW of interconnector capacity will be required (from 10 GW today)
  - Response: evolving strategy to focus on networks and streamlining the business (announcing sale of the Grain LNG and National Grid Renewables businesses); also set out an ambitious Green Capex commitment of £51bn over FY25-29. The Electricity Transmission team submitted a business plan to Ofgem to deliver the most significant advancement in the UK's transmission network in a generation. The NGED Group is planning for 1m+ EVs, 600k heat pumps and a large uptick in renewable energy generation over the ED2 price control period

From a net impact perspective, the NG Group has concluded that:

- **on balance of the different pathways, and even under the worst-case scenarios considered, none of the risks identified threaten the NG Group's resilience**

- **it is in a strong position to adapt its portfolio to maximise the opportunities of the energy transition**
- **the momentum behind decarbonisation targets makes growth of electrification certain even in the most pessimistic scenarios but there is still a wide range of possibilities for the future**
- **it must influence to reduce uncertainty and build in resilience to weather the risks outside of its control**

The latest Responsible Business Charter (RBC) was released in 2023. As part of that charter refresh, the NG Group undertook a new ESG materiality assessment. The top 6 identified material topics included: GHG emissions, decarbonisation and clean energy transition, affordability, natural capital and biodiversity, network reliability, and diversity, equality and inclusion.

From an environment perspective, the message remains to 'deliver a clean energy future', to be achieved through 5 commitments:

- Achieve long-term target of net zero by 2050 for Scope 1,2 & 3 emissions with:
  - Reduction of 60% in absolute Scope 1 & 2 GHG emissions by FY31 (from a FY19 baseline)
  - Reduction of 37.5% in absolute Scope 3 GHG emissions (excluding sold electricity) by FY34 (from a FY19 baseline)
  - Move to a 100% electric fleet by 2030 for light-duty vehicles and pursue the replacement of medium- and heavy-duty vehicles with zero carbon alternatives
  - Reduce absolute SF6 emissions from operations by 50% by FY31 (from a FY19 baseline)
  - Reduce absolute energy consumption in the flagship offices by 20% by FY31 (from a FY21 baseline)
  - Reduce absolute annual air travel emissions by at least 50% by FY26 (FY20 baseline) and offset any remaining emissions responsibly
  - Engage with the top 50% of its US suppliers by emissions to establish a decarbonisation roadmap/action plan towards a SBT by FY26
  - The top 80% of UK suppliers by emissions will have formally committed to set a SBT by FY26
- Protect the natural environment; restore the natural environment by 10% on the land managed in the UK and preserve the natural environment in the land managed in the US
- Invest at least £29bn in green infrastructure and projects in the 5 years ending March 2026
- Report on its climate change risks and opportunities and its investment in climate change adaptation activities
- Report on the management of its environmental impact with a focus on pollution, waste and water use

The NG Group's second CTP was issued in the summer of 2024, setting out: GHG emissions reduction targets, the plan to achieve net zero by 2050, the actions to be taken to achieve that goal and the support required from others. The near-term SBTi aligned targets set out above and in the 2023 RBC remain valid.

4.5.3. Principal identified risks

The NGED Group and the NG Group (and by extension the Sponsor as part of both groups) play a central role in enabling and accelerating the energy transition and the move to a cleaner future. The vision is to be at the heart of a 'secure, affordable and clean energy future' and provide the platform for others to meet their own net zero commitments.

The direction of the energy transition is set. The UK government has set out ambitious energy targets in the Clean Power 2030 Plan, calling for 95% of Great Britain's generation to be produced by clean sources by 2030; there is also the target to achieve a net zero power system in the UK by 2035 by which time electricity demand is expected to increase by approx. 50% from 2024 levels in the UK (and in its US jurisdictions by approx. 25% over the same period)

There are ambitious supply and demand UK energy generation targets. The energy sector is undergoing a significant period of change as the UK works towards a net zero carbon future. Net zero cannot happen without the DNOs, which will be at the forefront of driving a more sustainable future and achieving net zero carbon emissions by 2050. To that end, and recognising that responsibility, the NGED Group directors ensured that the ED2 business plan placed the DNOs at the heart of the transition, outlining how they will create a smart, flexible energy grid, facilitate the mass connection of LCTs and ensuring the plan took full account of the UK Government's published plans to achieve net zero by 2050.

Energy systems will look very different in the coming decades, and the NG Group is working with governments and partners globally to accelerate this transition, while balancing decarbonisation, affordability and reliability. The NG Group's business strategy and CTP are aligned to a low carbon economy and decarbonising its operations, as highlighted by the continuing pivot to electricity globally.

From a general covenant perspective, the Trustee Directors:

- Consider the NGED Group/NG Group being central to decarbonisation and the electrification of heating and transport to be a positive (including planning for 1m+ EVs, c600k heat pumps and a significant increase in renewable energy), in that it will lead to greater electricity demand and the associated need for investment in the network to enable more power to be provided
- Note the NGED Group/NG Group have incorporated their key mitigating and adaption responses into its business plans which are regularly reviewed
- Note that NGED Group reports on various adaption actions such as substation flooding resilience programmes and storm weather responses to Ofgem as part of its normal reporting requirement. Many network assets have long useful lives; therefore, the NGED Group takes account of predicted climate change impacts when planning new installations or safeguarding existing key equipment (for example flood protection currently being provided to key assets is designed to be resilient to the end of this century)
- Note the continued strength of the employer covenant (as advised by their independent covenant adviser), noting in particular:
  - The regulatory framework/ringfence
  - Investment grade credit ratings
  - Strong operational performance – Sponsor/NGED Group profitability and operational cash generation
  - Strong Sponsor/NGED Group balance sheet(s) with significant coverage for the scheme
  - Good degree of certainty around the Sponsor's/NGED Group's profitability, operational cash generation and recovered investment in the network (as a result of the various RIIO-ED price control periods)

- The strategic pivot towards electricity has positioned the NG Group to benefit from the significant growth opportunities from the transition to net zero; these opportunities are reflected in recent NG Group announcements forecasting £60bn of investment across its energy networks and adjacent businesses (with £51bn linked to the decarbonisation of energy networks and considered aligned with the principles of the EU Taxonomy for climate change adaptation and mitigation); this sets out the 'once-in-a-generation' increase in capacity to build the networks of the future, so customers can connect quicker than previously planned

Notwithstanding these general views, the Trustee Directors have noted the transition scenario analysis undertaken by the NG Group and the risks/opportunities associated with those various transition scenarios (these are noted at Appendix 7):

The Trustee Directors also note the NG Group's own conclusions that:
- None of the transition scenarios threaten the NG Group's resilience
- It is in a strong position to adapt its portfolio to maximise the opportunities of the energy transition

- The momentum behind decarbonisation targets makes growth of electrification certain even in the most pessimistic scenarios, but there is still a wide range of possibilities for the future

Whilst the Trustee Directors recognise that there are risks associated with climate change above, in all scenarios and specifically in the chosen scenario, we currently expect continued covenant reliance/support for the Scheme at least beyond the medium-term (being the NG Group's strategic business planning process period), ensuring that the network remains resilient to ensure consumer demand is met.

As funding improves, and we continue to de-risk our investment strategy, reliance on the Sponsor covenant will reduce. This is expected to be the case at least over the medium-term (as above). Although we expect the impact of any risk to reduce over time, we will continue to monitor the Sponsor covenant as part of our ongoing management of the Group and CCRO.

4.6. Understanding funding risks

Climate change may also impact the value of the Group's pension liabilities, i.e. present value of future benefit payments. This impact could be via any or all of:

1. Changes in interest rates,
2. Changes in inflation expectations,
3. Changes in life expectancy.

Whilst we acknowledge the possibility of 1) and 2), we have implemented a 'liability hedging' strategy which manages the risk up to the value of the assets. This strategy helps to mitigate risk to our funding level from adverse movements in interest or inflation rates over time.

Details of the expected changes to the liability values under the different scenarios is shown in the table below.

Indicative impact of a medium term climate shock	1.5 °C	2 °C	3 °C
Liability impact (from age 60) from mortality	+2%	-1%	-4.5%

Source: Aon
Note: The mortality liability impact figures, which are based on market conditions at 31 March 2025, are appropriate for the overall profile the Group and the G+0.25% discount rates being used for the modelling. The mortality projections are based on the S3 base tables and CMI_2022 (previous analysis was based on CMI_2020)

These figures highlight the points made above and, in particular, that if life expectancy improvements are recognised at an earlier stage than currently anticipated (and society achieves the goal of containing heating to 1.5 degrees), the Group may be more likely to require further contributions from NGED.

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5. Metrics and Targets

5.1. Terminology

The GHG Protocol Corporate Standard[8] classifies a company's GHG emissions into three 'scopes':

Scope 1: Direct emissions from owned or controlled sources.
Scope 2: Indirect emissions from generating purchased energy.
Scope 3: All indirect emissions not included in Scope 2 in the value chain of the reporting company, including upstream and downstream emissions.

Carbon dioxide equivalent (CO_2e) measures the emissions from various greenhouse gases on the basis of their warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

5.2. Who is our data provider?

Our third-party managers are requested to provide climate-related analysis for their portfolios. This is to encourage our managers to carry out their own assessments and gain oversight of the climate-related risks and opportunities from the companies in which they invest.

For managers who fail to provide data for the purpose of TCFD reporting Cardano produces the analysis based on proxy indices applied to the managers' portfolios. Cardano employ the services of MSCI to provide them with data and metrics. Measuring the success of sustainability initiatives requires new types of data analysis. A third-party data provider allows us to improve our portfolio analysis and provide valuable insight into ESG factors that can have a significant impact on investment outcomes.

Cardano's primary data source is MSCI ESG and Climate Scenario analytics, which they use to assess the sustainability our investments and is included in their regular reporting[9].

MSCI use reported, publicly available data, where available. Where it is not available, MSCI provides a proprietary estimation model, that uses reported data from similar industries, sectors and geographies to estimate a company's emissions. We believe that this, in turn, encourages companies to disclose, rather than be subject to estimations.

The quality of disclosure is improving, through voluntary and mandatory reporting initiatives. Examples include, the recent International Sustainability Standards Board climate-related disclosure standard, which has been endorsed by regulators, including in the UK and EU.

5.3. What are the limitations?

We recognise the importance of managing CCRO – but also the challenges involved in doing it well. We continue to develop and evolve our policies to reflect climate change-related challenges. This reflects the evolution of our thinking on sustainability and the changes underway in the financial services sector, and society more broadly.

We are acutely aware that managers' methodologies can vary and whilst we encourage our managers to follow best practices and complete industry standard templates, there is a limit to the extent we can practically vet the data provided.

[8] https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf
[9] https://www.msci.com/our-solutions/esg-investing/climate-solutions/climate-risk-reporting

When measuring at the portfolio level, where we aggregate the emissions of investee companies, our approach is to disclose Scope 1 and 2 emissions (to avoid double counting). We also report separately on government bond exposures due to aggregation challenges with government bonds, and differing methodologies.

We recognise that there remain gaps in data availability, in particular, regarding Scope 3 emissions, emissions data from private market and alternative investment managers, and emissions data from managers located outside of the UK and EU region.

Scope 3 emissions help us better understand a company's sensitivity to climate change-related risks and opportunities, and its ability to transition. It can therefore help to understand relative performance of different companies within industries.

While we believe companies should disclose their Scope 3 emissions we note that there are a number of data challenges which will take time to resolve.

As shown in the table below, approximately 23.6% (net credit and equity exposure financed) of the portfolio's assets are included within the emissions data. We note that approximately 58.2% of the portfolio is invested in Liability Driven Investments (LDI), which includes exposure to UK Gilts / Sovereign Bonds. We separate the sovereign bond carbon footprint from the corporate exposure, and this is explained below.

We recognise this does not cover all of the portfolio's Corporate exposure and that this coverage level is a limitation when disclosing our emissions data. We note that the majority of public market equity issuing companies are already being covered and that the credit issuing company analysis is still developing.

5.4. Metrics

5.4.1. The metrics we have calculated

We calculate and disclose the following metrics:

- **Absolute financed emissions** – Our chosen absolute emissions-based metric is in line with TCFD guidance and PCAF (Portfolio Carbon Accounting Financials) recommendations and allows for clear and comprehensive measurement of an organisation's overall impact on climate change, allowing stakeholders to easily compare emissions financed by a portfolio. The metric measures the total greenhouse gas emissions financed, in tons of carbon dioxide equivalent , of the portfolio, using Scope 1 and 2 emissions. The financed emissions are the percentage ownership of the total enterprise value including cash owned by the investor across debt and equity. Our total GHG emissions for financed corporate Credit, Equity and forestry GHG Scope 1 and 2 is: 80,961 tCO2e

- **Carbon Footprint –** Our chosen intensity emissions-based metric is in line with TCFD and PCAF recommendations and describes the total financed emissions per million pounds invested. This adjusts for the size of the portfolio and allows for a standardised and comparable measure of the climate impact of this portfolio compared to other portfolios of different sizes. This approach supports transparent and effective climate risk management, target setting, and stakeholder engagement. The metric measures the total GHG emissions in tons of carbon dioxide equivalent per £m invested, using Scope 1 and 2 emissions. Our emissions intensity for GHG Scope 1 and 2 is: 131 tCO2e. This is the total greenhouse gas (GHG) emissions, in CO2 equivalent, of the portfolio. This is based on public market proxies where the Asset Manager does not provide data

- **Data availability (% Coverage in the tables below) –** Our coverage is 92.2% of the credit and equity exposure financed. This is the proportion of the analysis for which there is high-quality emissions data and is sourced from MSCI and third-party Asset Managers directly. There is good coverage of GHG emissions data in public listed equity markets. In public credit markets, there is sustainability-related data for some issuers, but not all, particularly emerging markets.
  - We will work with our Investment Adviser and our asset managers to engage companies, policy makers and data providers to improve data quality and coverage.

- **SBTi alignment metric –** We use the Science-Based Targets Initiative (SBTi) framework[10] which assesses the ambition of a company's Scope 1 and 2 targets. When organisations demonstrate their commitment to ambitious, scientifically grounded climate action, this not only enhances credibility and stakeholder trust but also supports strategic risk management, regulatory compliance, and long-term sustainable growth. The metric has been chosen because it is a straightforward metric that the Trustee can use to track progress of the portion of their portfolio that have made such commitments. Our estimated alignment is 6.6% of the total portfolio (or approximately 20.0% as a proportion of the assets captured). This is the percentage of the total portfolio exposure having set Science Based Targets to align with either a 1.5 degree or 2 degree climate scenario.

Table 2:

Emissions associated with our direct financed exposure

Asset class	% exposure financed	% Coverage	Absolute Financed Emissions tCO2e		Carbon Footprint: Emissions intensity tCO2e / £m invested	
			Scope 1+2	Scope 3	Scope 1+2	Scope 3
Equity	10.1%	99%	13,784	142,709	53	548
Credit	13.5%	84%	68,474	347,067	197	997
New Forestry	0.4%	100.0%	1,296	-	129	-
Total	**24.0%**	**92.2%**	**80,961**	**489,776**	**131**	**792**

Source: MSCI, Managers (Credit: Beach Point and GoldenTree, Equity: BlackRock Aquila, Egerton and iShares Emerging Markets, Forestry: Bidwells). Data represents emissions as at 31/12/2024 with allocations as at 31/03/2025

Table 3:

In the table below we have included the approximate carbon sequestration benefit of the remaining Forestry portfolio. However, due to regulatory advice, existing forestry cannot be considered for offsetting purposes.

Asset class	% exposure financed	% coverage	Absolute financed emissions tCO2e / EVIC	Carbon footprint: Emissions intensity tCO2e / £m invested
			Scope 1+2 **only**	Scope 1+2 **only**
Forestry	8.9%	100.0%	62,347	272

Source: Bidwells. Data represents emissions as at 31/12/2024 with allocations as at 31/03/2025

The Paris alignment metric helps us understand the extent to which a portfolio is aligned with the goals of the Paris climate agreement, to limit warming well below 2 degrees and towards 1.5 degrees.

We disclose the extent to which portfolio companies have made commitments to net zero GHG emissions,

[10] https://sciencebasedtargets.org/

and whether the commitments have been independently reviewed by the science based targets initiative.

This metric is most useful in helping us understand our own commitment to net zero GHG emissions, and therefore, consistent with guidance published by IIGCC, we have disclosed our physical exposure, not including our derivatives exposure.

Table 4:

SBTi alignment % of portfolio aligned with the Paris agreement*
6.6%

*As a % of total assets as at 31/03/2025

Interpreting the results:

Absolute emissions tell us the emissions associated with our investments that we have financed. While an important metric for us – and the regulator – it is difficult to use this metric for comparison purposes, because it is dependent on the size of the Group at the point we conduct the analysis.

Therefore, we disclose an emissions intensity metric (or carbon footprint), which is the total GHG emissions per £1m invested. This is useful, because, while subject to market fluctuations, it allows us to compare our emissions year-on-year and help us check we are moving in the direction of achieving our targets. For example, both the absolute emissions and emissions intensity should tend to zero if we're to meet our net zero target.

Note that, while we expect our emissions intensity to trend to zero, different regions will have different pathways. For example, some emerging markets may see emissions rise, before they fall. When we make investment decisions we take into account the emissions, the climate change-related risks and opportunities, the asset managers' stewardship activities, and the sectoral and regional characteristics of the portfolio.

The emissions data **does not** include the Group's exposure to:

- Cash
- Funds that have minimal credit and equity exposures or invest in these securities over a short time horizon, mostly using derivatives. These funds include hedge fund strategies and other liquid alternative strategies. We note that these strategies have to date been hard to reach, but progress is being made via industry groups such as the IIGCC - This includes the Group's investments in Hedge Funds (e.g., Caxton)

In order to advance GHG emissions disclosures and methodologies and improve the range of assets included within TCFD analysis for pension funds, such as the Group, Cardano is participating in a range of sustainable investment working groups.

We report sovereign bonds' carbon footprint separately from this measure for several reasons:

- There is no comparable measure for sovereign bonds to financed EVIC (because countries' debt levels are not comparable)
- Total Sovereign country greenhouse gas emissions involve substantial double counting of emissions with corporate greenhouse gas emissions, and
- We believe adding sovereign numbers to corporate numbers can substantially obscure the dynamics of monitoring the changes to the corporate Portfolio Carbon footprint over time.

Our preferred approach to Sovereign emissions is to use a metric that is as close to and consistent with an emissions intensity metric. We use the weighted average consumption based GHG emissions per Issued Debt and to calculate the Group's carbon footprint using $ PPP-adjusted GDP. These sovereign bond measures are reported separately below.

Table 5:

Sovereign bond carbon footprint

Country	Physical Bond Exposure	Derivative Exposure	% coverage	Consumption Intensity per Issued Debt (tCO2e)	Production Intensity per GDP-PPP (tCO2e)
UK	1,097	1,491	100%	430,406	86.6

*Source: LDI manager. Data represents exposure and fund holding data as at 31/03/2025. *Interest rate swaps, inflation swaps, futures, cash and money market fund holdings have all been excluded. Short gilt positions have also been excluded.*

5.5. Targets

5.5.1. The target we have set in relation to the metrics we have calculated, and the Group's performance against that target

The Trustee Directors have set the following principal target with respect to the Group:

- To align our investments to support the goal of net zero greenhouse gas emissions by 2050, in line with global efforts to limit warming to 1.5°C.

Specifically, we commit to:

- Work in partnership with other asset owners on decarbonisation goals, consistent with an ambition to reach net zero emissions by 2050 or sooner.
- An interim target for 2030, consistent with a fair share of the 50% global reduction in greenhouse gases, identified as a requirement in the IPCC special report on global warming of 1.5°C[11].
- Review the progress against our target every year, and review the target itself at least every three years, to ensure it remains consistent with the latest scientific thinking and is appropriately incentivising the necessary economic transition.

The portfolio emissions intensity will be measured against these targets.

Our objective is to achieve, where possible, decarbonisation through the transformation of underlying businesses and government activities rather than divestment (because it is in our members' interests to decarbonise the economy-as-a-whole, and by remaining invested we retain our influence on the companies that must transition).

With regards to corporate assets' alignment with the Paris Climate Agreement, the target over time is to consistently increase the proportion of the corporate portfolio that is Net Zero, Aligned to Net Zero or Aligning to Net Zero until 100% of the portfolio is aligned.

[11] https://www.ipcc.ch/reports/

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We will resist pressure to modify portfolios to meet headline portfolio level decarbonisation targets at the expense of incentivising the necessary real-world transition. Our goal is net zero greenhouse gas emissions globally – and we seek to maximise our influence to achieve this.

For these reasons, portfolio decarbonisation targets will continue to be reviewed at least every three years to ensure they remain appropriate.

Notes to support Net Zero Pathway analysis

The Group's Carbon Footprint projection and ultimate target uses an emissions intensity metric, which is the total GHG emissions per £1m invested. This is useful, because, while subject to market fluctuations, it allows us to compare our emissions year-on-year and help us check we are moving in the direction of achieving our targets.

Both the absolute emissions and emissions intensity should trend to zero net greenhouse gas emissions (not adding greenhouse gases to the atmosphere) if we're to meet our Net Zero target by 2050.

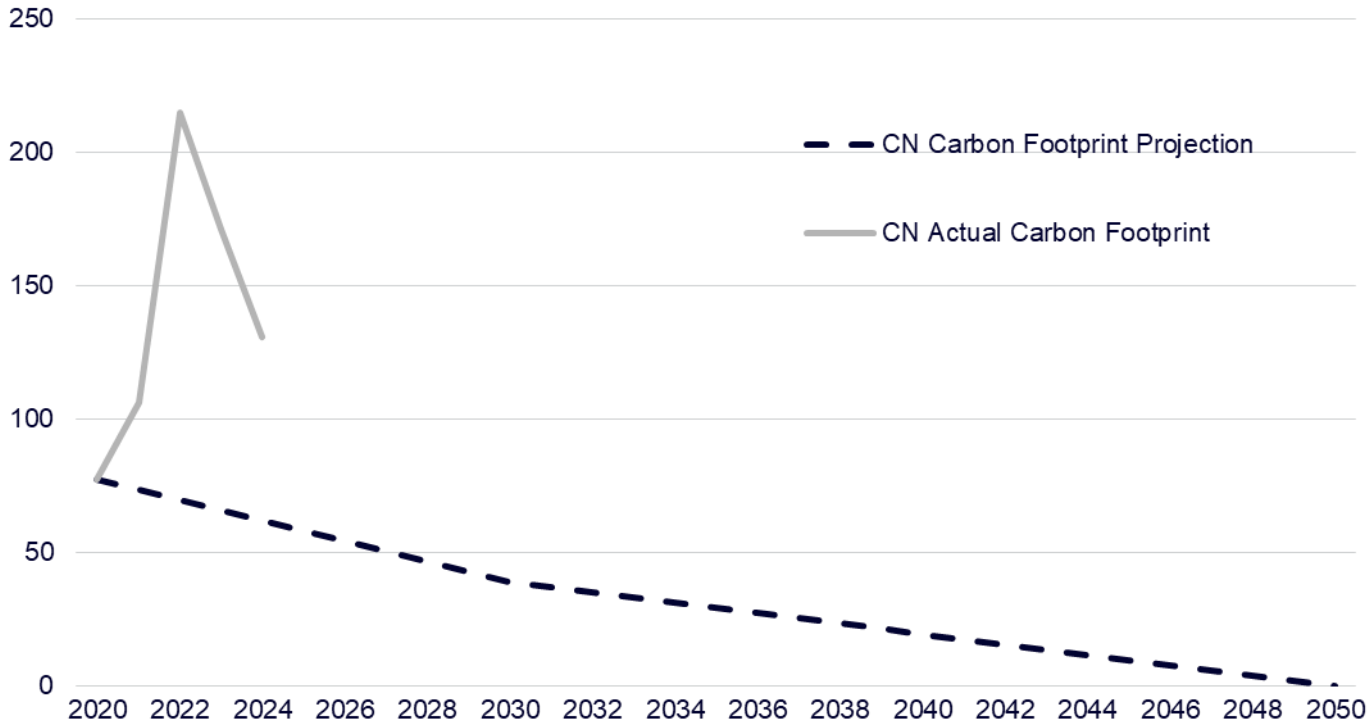
Fully assessing progress of the portfolio towards Net Zero will still take some time. Data is limited in some asset classes so we will continue to first focus on where we have the greatest insight and can have most influence. These data limitations have led us to use 2020 as a base year for our analysis.

The table below summarises the parameters set for the interim target and shows the progress of the Group against the target using the 31 December 2024 metrics reported above.

Parameter	Value	Rationale
Assets within scope	Listed equities and corporate bond assets (scope 1 and 2 emissions) within funds used in the default arrangements	Data is limited in some asset classes so this analysis is in line with our continued focus on where we have the greatest insight and can have most influence.
Baseline date	31 December 2020	Due to the availability of data at the time of this TCFD report the baseline is taken from 2020 for this pathway analysis. This will also more robust future assessments.
31 December 2020 (baseline) level	**77.6** tonnes CO_2e per £m invested	The baseline level has been calculated as per the following: • **DM Equity:** Proxied by MSCI World as at 31 December 2020. • **EM Equity:** Proxied by MSCI EM as at 31 December 2020. • **Credit:** Emissions intensity data as at 31 December 2020.
31 March 2025 (current) level*	**130.8** tonnes CO_2e per £m invested	The current level has been calculated as an average of the underlying fund carbon footprint figures, weighted by asset value as at 31 March 2025. We note that the methodology could change in the future as the industry evolves. If this is the case, these figures would be restated.

* Data represents emissions as at 31/12/2024 with allocations as at 31/03/2025

Net zero GHG pathway analysis:



Interpreting the chart:

The CN Carbon Footprint Projection comprises three key data points: Our estimated emissions as of 2020 (base year used for this analysis), our 50% emissions reduction target by 2030, and our 100% emissions reduction target by 2050.
Due to manager and regulatory advice, only new forestry can be included for offsetting purposes whereas existing forestry cannot.

As at 31 March 2025, the Group's carbon footprint has decreased and continues to track towards their net zero pathway. The Trustee Directors believe there is currently no reason to change the investment strategy.

We note that over 2020 to 2025 the emissions intensity has increased. This is as a result of:

- The baseline target date of 2020 being during the Covid 19 pandemic, which due to lockdowns, saw fluctuations in energy use.
- The Trustee Directors have established the Net Zero Decarbonisation framework to support the long-term monitoring of our carbon footprint. We recognise that we have 4 data points (2021-2025) and so are cautious when drawing conclusions from these short-term results
- The Credit proportion of the portfolio that's currently analysed under TCFD has increased substantially since 2020. In 2020, only 4.7% was held in Credit but in 2021, the strategic allocation of the portfolio changed and an additional 3.5% was added via introducing Bishopsgate. The Credit allocation reached 8.2% in 2021 leading to a more carbon intensive portfolio compared to baseline levels (as the Credit positions held in the portfolio are considerably more carbon intensive than the Equity holdings).

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5.5.2. The steps we are taking to achieve our target

Steps being taken by Cardano:

- Provide the Trustee Directors with information, metrics and analytics on net zero greenhouse emissions by 2050 to enable the Group to invest in accordance with our net zero commitment and account for climate change-related risks and opportunities
- Engage with those key to the investment system including data and service providers to ensure that products and services available to the Trustee Directors are consistent with the aim of achieving global Net Zero emissions by 2050 or sooner
- Ensure any relevant direct and indirect policy engagement is undertaken in support of achieving global net zero greenhouse gas emissions by 2050 or sooner

Steps being taken by the Trustee Directors:

- Take account of and report on progress against Scope 1 and 2 emissions and, to the extent possible, material portfolio Scope 3 emissions
- Prioritise the achievement of real economy emissions reductions within the sectors and companies in which we invest
- Ensuring investment proposals explicitly consider the impact of CCRO
- Use the reporting provided by Cardano to help us assess progress towards our targets

Whilst we expect our portfolio to trend towards our 50% emissions reduction target by 2030, we'll take the decisions necessary to align the portfolio consistent with our goal of net zero emissions by 2050

5.5.3. The method we used to measure performance against our target

In order to help us track progress against our target of net zero greenhouse gas emissions by 2050, Cardano will, at least annually, report to us:

- Our portfolios' absolute GHG emissions
- Our portfolios' carbon footprint (emissions intensity)
- Data coverage, including use of proxies, relevant methodologies, and steps taken to address data gaps
- Update our scenarios.

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6. Appendix

6.1. Climate Scenario Analysis

Approach to developing the scenarios

Global warming is currently at 1.1 degrees above pre-industrial levels. Given that human related GHG emissions will continue to accumulate in the atmosphere at a substantial pace over the next 6 years regardless of action to decrease emissions, the trajectory of climate change over this medium-term period is very similar in all three scenarios - i.e. whether we are ultimately on a +1.5, +2 or +3 degree pathway, we expect that we will continue to experience more and more extreme weather over the coming years. However random variation can lead to substantial variations in actual impacts of weather from year to year around the scenario path. For this reason, we assume similar actual weather outcomes in the +1.5 and +2 degree scenarios and more severe fluctuations and impacts under the +3 degree scenario. This leads to greater physical and economic impacts in the +3 degree scenario.

Under both a +1.5 and +2 degree scenario, we invite you to imagine that the following weather scenario might unfold[12]: Over the next 6 years, the world witnesses a series of increasingly severe weather events. 2024 was the warmest year on record breaching the 1.5 degree limit for the first time in part due to the "El Niño" effect. Despite the transition to La Niña in 2025 we are seeing record weather effects, with the LA fires causing unprecedented property damage and flash floods in Valencia claiming over 220 lives. Globally this pattern continues in the coming years with new challenges: droughts, wildfires and heatwaves in certain regions, ; flooding, and agricultural disruptions in other regions, especially some emerging markets. By 2028, intensifying tropical storms, including hurricanes and cyclones, wreak substantial damage in the US and Asia, while India suffers from an unprecedented heatwave. Meanwhile, Europe experiences milder winters and longer growing seasons. In 2030, the world grapples with unprecedented wildfires, severe flooding in coastal regions, and prolonged droughts in Western Africa. In addition, the Arctic experiences record-low sea ice, highlighting the urgent need for comprehensive climate action amidst escalating environmental fragility.

We assume that in the +3 degree scenario, a very similar overall climate set of outcomes but that weather is more concentrated: that some of these weather impacts, by chance happen back-to-back and happen in particularly impactful regions for the global economy and global food production, compared to a more fortunate spread of outcomes in the other two scenarios.

The government policy responses, economic outcomes and consumer response to climate change over time vary across the three scenarios leading to different outcomes for markets and portfolios over this medium term time horizon.

1.5 Degrees

Scenario outline

Unfortunately, this scenario seems increasingly unlikely because of disparate policy adopted across major economies and in particular the US stepping back from its role in the climate transition. A grass roots consumer led revolution and reaction triggered by extreme weather events and an increasing lack of insurability causes growing global pressure for action. Society responds through their spending behaviour, political activism and voting in favour of climate friendly politicians at mid term elections. China emerges as the unlikely leader on climate issues pushing for consensus to tackle climate change more quickly despite a lack of US involvement. Governments including the EU and UK respond as they recognise the

[12] This weather scenario is loosely adopted from the USS/Exeter University paper “No Time to Lose” which gives a much more comprehensive description of such a scenario and adopts a similar approach to that outlined here.

changing public attitude and large economic appetite for the green transition. Despite a lack of US leadership, geo-political alignment emerges from the COP process, with countries agreeing coordinated initiatives to meet global targets. Supportive policies come into effect to target aggressive Net Zero implementation and climate adaptation. Tax revenues from carbon and resource intensive consumption and public investment is used to support and fund greener alternatives, resilient infrastructure programs and accelerate efforts to catch-up with China's leading renewables programme.

Physical Risk – Moderate

Each year across the globe, different regions are affected by extreme weather events that result in destruction of property, flood damage, and disruption to transport and industry. Sea level rises impact coastal areas with more severe storm damage. In other areas extreme heat waves, drought and water shortages cause modest disruption to regular economic activity. The effects are felt by both business and consumers. Both developed and developing countries experience droughts and changing rainfall patterns which disrupt crop yield and livestock production in some years impacting crop yields leading to temporary food shortages and price spikes in essential commodities and inflation. Insurance losses mount. Portfolio effects are felt through the impacts on the physical locations and supply chains of businesses and consumer demand.

Strong investment in flood defenses infrastructure and other infrastructure leads to mitigation of some of these effects in this scenario. In addition, alternative solutions are implemented to support essential food, energy and climate adaptation and most areas remain covered by insurance with the exception of some coastal areas and fire risk areas that are over exposed. After several years, the aggressive Net Zero initiatives start to slow the pace of increases to atmospheric green-house gases, meaning the more extreme environmental tipping points are likely to be avoided.

Transitional Risk – High

Governments introduce intense green taxation policies on carbon-intensive industries and Carbon Border Adjustment mechanisms tax imports. Reputational risks weigh on companies failing to transition to a greener economy and they are publicly held to account as consumers switch to cleaner alternatives. Carbon pricing significantly increases, putting a large revenue strain on those heavily reliant on fossil fuels and companies are forced to quickly invest in green technology to improve their carbon footprint. Stranded asset risk is high, particularly in fossil fuel industries. Conversely companies with technology and intellectual property that provide solutions benefit from the substantial positive investment in scaling up solutions, offsetting some of the transitional risks.

Systemic Risk – Moderate

Public policy leads to positive robust growth as public and private innovation and investment increases. Revenues from green taxation are directed into green investment and infrastructure, boosting economic growth. Interest rates increase modestly as investments produce strong returns and inflation rises modestly with booming demand for new capital stock but strong productivity growth. Carbon pricing systems provide financial transition support to labour from now-stranded carbon-intensive industries, limiting downside risk. Developing markets receive large funding support following COP agreements and their economies are boosted, accompanied by high inflation, as they emerge as major exporters of solar-based fuels and climate friendly agriculture.

Portfolio Impact – Positive

Overall, the portfolio and funding ratio would most likely benefit, as strong economic growth from accelerated public and private investment offsets some of the negative transitional and physical risks leading to positive overall returns from growth assets.

The high transitional and physical risks create greater dispersion between “winners” and “losers”: the former being companies and countries which are well prepared for and able to contribute to a greener world or with strong adaptation polices, and infrastructure related businesses benefit; and the latter being companies that are negatively affected by increased taxation/carbon pricing policies, and with stranded fossil fuel assets. Businesses with supply chains in higher risk physical locations are still affected, especially those which are highly indebted. In this scenario, countries with strong reliance on fossil fuel export revenues (and high costs of production) are likely to be most negatively impacted, including Canada, the US and some middle eastern countries. The UK is negatively affected as expensive North Sea oil and gas production becomes stranded. The US is least affected due to its diversified economy. Countries more reliant on fossil fuel imports and transitioning quickly to renewables benefit including China and the broader emerging markets.

While growth assets do well in this scenario, liabilities are well hedged. On the back of strong growth, real rates increase modestly reducing liability values in this scenario despite higher inflation but these are matched by modest losses on LDI hedges. The unhedged deficit shrinks.

2.0 Degrees

Scenario outline

Our new expectations for global warming following the events of 2024. Geo-political fragmentation and climate denialism delay action to fight global warming. Global co-operation on Net Zero efforts is stymied as politicians and media channels focus on living standards and energy security. Through the decade, extreme weather damage leads to consumer and investor pressure to act on climate change but progress is patchy and erratic.

Some countries in Europe persevere with their Net Zero goals, investing in greener technology, but growth is limited with supply-chain issues. Climate policies are initially local and patchy but mounting pressure through the decade leads to the return of and support for politicians who target climate action. Finance flows towards affected emerging markets for loss and damage and eventually the developed world succeeds in persuading China to join forces.

Physical Risk - Moderate **increasing to high**

Similar to the 1.5 degree scenario: Each year across the globe, different regions are affected by extreme weather events that result in destruction of property, flood damage, and disruption to transport and industry. Sea level rises impact coastal areas with more severe storm damage. In other areas, extreme heat waves, drought and water shortages cause modest disruption to regular economic activity. The effects are felt by both business and consumers. Both developed and developing countries experience prolonged droughts and changing rainfall patterns which disrupt crop yield and livestock production in some years impacting crop yields leading to food shortages and temporary price spikes in essential commodities and inflation. Insurance losses mount and insurance is increasingly withdrawn from multiple areas leading to falls in property values and wealth. Portfolio effects are felt through the impacts on the physical locations and supply chains of businesses and consumer demand.

The growing frequency and intensity through the decade of extreme weather gradually pushes climate focus up government agendas. However, the mitigating effects of climate adaptation measures are more limited. Limited investment in infrastructure driven by budget constraints and the slow rollout of such measures mean greater losses are absorbed by portfolio exposures. State governments increasingly take on the role of insurer of last resort as areas become uninsurable pushing up credit risks..

In emerging markets, where weather shocks and crop failures are worst felt, economic and political instability increases and supply chains are impacted.

Transitional Risk – Low increasing to Moderate

With the new US administration and global political fragmentation, short-term transition risks have temporarily decreased. Over the next few years, governments and businesses operate under loose initiatives to tackle climate change with limited taxation. Some companies recognise the appetite for greener technology and continue on their paths to Net Zero where there is a clear financial reward, posting positive growth. Pressure from consumers, society and investors start to slowly build through the decade as the effects of global warming are strongly felt. Society becomes increasingly more supportive of businesses on following a Net Zero path and consumers shift away from companies with poor reputations. Later through the decade, the shift to greener companies starts to emerge and strong climate policies come into force, first in Europe, to mitigate the damage from delayed action.

Systemic Risk – Moderate

The return to normality in inflation leads to a decline in interest rates and a surge in economic growth over the next few years which sparks an upturn in lending and investment in proven tech opportunities, creating a tech-led boost in equity markets. Businesses manage to navigate the complex political landscape but eventually, material shortages emerge and the next few years are followed by bouts of renewed inflation, exacerbated by weather-related spikes in food prices.

Subsequently, the burst in growth and rising inflation prompt central banks to raise interest rates again. After a slowdown, policy makers are forced to step in with renewed monetary stimulus and fiscal responses though these are limited by budget deficits and debt levels resulting in anemic growth over the remainder of the decade.

Portfolio Impact – Moderate

Over the short-term, the portfolio is expected to benefit from an initial growth environment led by the technology industry. The majority of growth assets (e.g., equity, credit and private markets) benefit from the boom and the portfolio holds up well.

But, over the longer-term, companies and sovereigns post flat or negative growth with more limited investment and fiscal spending means returns are likely to be volatile. As climate taxation comes into force, the portfolio may need to transition to assets which are making good progress in green tech and benefiting from increased investment and away from highly indebted positions.

On the liability side, the impact on interest rates and inflation is uncertain. However, the liability hedging approach should protect the portfolio which-ever the outcome.

3.0 Degrees

Scenario outline

Geopolitical conflict and division detract from global efforts in climate policy. Tensions across the world, particularly between China and the US, and US domestic political deadlock slow global decarbonisation efforts and technological progress. Diminishing trust between nations undermines any hopes of Net Zero collaboration through COP. Initially we see low levels of government and consumer intervention and climate policies shift to local efforts, not global, with many countries failing to meet their Net Zero commitments.

Private investment continues to accelerate but well below the levels required to create massive scale in the implementation of affordable green technology. The unfortunate back-to-back experience of extreme weather over several years impacts multiple food basins, reducing crop productivity and food availability and generating sustained high inflation. Climate protests gain little traction as extreme weather events

compound political and economic problems and result in social instability where food and energy security take precedence. Inequality grows as masses are severely impacted by extreme weather conditions and rising prices of scarce resources drives the wedge further.

Physical Risk – High

An unlucky combination of back-to-back weather occurrences over two years lead to simultaneous droughts and severe storms across the world. Droughts affect several major crop producing regions, disrupting crop yield and livestock production, while water shortages and the extreme heat waves affect tourism in some regions. The demand for resources and successive years of major crop failures drives up prices globally. Electricity supply in some regions is disrupted and economic productivity is impacted negatively. In other regions, the more severe storm seasons create particularly large losses for insurers through flood and storm damage. This results in more severe destruction of property, flood damage, and disruption to transport and industry. Sea level rises impact coastal areas with more severe storm damage. All of these effects contribute to increased healthcare costs for individuals affected.

Portfolio effects are felt to a greater degree than in other scenarios through the impacts on the physical locations and supply chains of businesses and consumer demand.

Property, businesses and critical infrastructures are severely damaged in several countries requiring increased funding support from governments who are already experiencing budgetary pressures, diverting funds from investment and productive growth. As we progress through the decade, commercial property insurance is retracted from many areas subject to high acute physical risk and insurance losses lead to substantially higher premiums and falls in property values. Investors also become acutely aware of the location of production facilities and supply chains for specific businesses, increasing risks across affected sectors.

As the decade closes, scientists become increasingly concerned that the world is on track to exceeding several climate tipping points. This leads to greater discounting of physical risks in asset prices.

Transitional Risk – Initially moderate, but increasingly uncertain

The lack of climate policies and green taxation puts less initial strain on companies to transition to a greener world. Investment in renewable development is modest with businesses focusing more on continuing their operations as normal. Political attention is focused on keeping prices as low as possible, rather than diverting activity away from damaging fossil fuel practices. However, the extreme weather events lead to increased political pressure and different countries adopt uncoordinated approaches. These sudden swings in policy create heightened uncertainty for investors, driving up risk premia in companies with high emissions.

Systemic Risk – High

Productivity is negatively impacted while inflation remains stubbornly high. Poor market environments stem from political, economic and financial turmoil, which further disrupt trade flow and supply chains. This reduces productivity growth and raises inflation and interest rates. Geopolitical tensions rise and divergent policy responses create uncertainty and increasing risk premia. Financial markets are increasingly volatile in the face of food shortages, recessions and political instability and unemployment runs high. Banks and governments are hit by huge losses on corporate and sovereign failures which fall back on state support. Emerging markets suffer from weak economic activity, limited trade and the failure of developed markets to provide financial support. China benefits from its dominance in renewables and access to materials but its exports are damped by weak global growth.

Portfolio Impact – Negative

Overall, the portfolio is negatively affected with lower transition risks more than offset by higher physical

and systemic risks. Growth assets would struggle from the rising physical risk and low productivity, and company revenues would be directed to recovering against harsh weather conditions as insurance policies are pulled. High interest rates and persistent inflation make it difficult to finance new investment. Many regions would be severely hit, particularly emerging markets, and the portfolio would struggle to deliver positive returns.

It's likely the strategy would need to be revisited to focus on assets and countries which are more resilient to climate change and which benefit from the increased demand of natural resources and need for renewable technology. Fossil fuel assets, while initially benefiting from a slower transition, in the longer term would be subject to increasing risk premia from erratic government responses and lurches in policy. The portfolio would need to focus more on assets that provide inflation protection including against volatile food and agricultural prices, and on stocks that can contribute strongly to climate adaptation such as infrastructure investment.

On the liability side, high short-term interest rates lead to inverted yield curves and the combination of lower levels of real interest rates with higher inflation risk premia may mean higher liability values. The LDI portfolio mitigates the risks of this through the use of hedging to the value of liabilities though this could create some funding level volatility.

6.2. Transition scenario analysis undertaken by the NG Group and the risks/opportunities associated with those various transition scenarios

Delayed policy (2-4℃/upper range modelled although current global climate policies and actions suggest lower than 4℃):

- A world with higher warming levels where governments, industry and consumers do not pursue the transition at pace, meaning climate targets are missed
- Decarbonisation progress is made but too slow to meet net zero in 2050
- Resource nationalism disrupts established trade flows
- Supply chain disruptions and higher material prices
- Policy delays
- EV uptake stagnates (cost)
- Low uptake of heat pumps (gas heating dominates)
- Reduced opportunities for further interconnection growth beyond current pipeline

Balanced pathway (2.0℃ modelled) – replacing the 'hybrid net zero' policy (1.5℃ modelled):

- Energy transition drives forward at pace, but ongoing supply challenges, policy implementation delays and short-term financial concerns mean jurisdictions narrowly miss targets
- Decarbonisation progresses but just falls short of 2030 and 2035 targets
- Total energy consumption reduces 25% by 2050
- Electricity demand doubles by 2050 mainly because of electrification of heat and transport
- Wind capacity targets missed by five years
- Heat pump growth restricted to new build houses
- EVs continue to grow at the current rate
- Interconnector projects progress at pace
- Gas for power sector still has a role to play in the 2030s beyond the maximum 5% of power generation targeted in Clean Power 2030

Electric net zero (1.5℃/lower range modelled)

- Sees governments prioritise achieving decarbonisation goals through supportive policies and regulatory reforms
- New load is met through clean power sources
- Achieves net zero power system by 2035 and economy-wide net zero by 2050
- Energy consumption reduces >30% by 2050 as more efficient electric technology replaces combustion technology
- Near-complete electrification of demand sectors such as heat and transport supported by strong renewable expansion with distributed flexibility, storage, interconnection and some abated gas capacity providing dispatchable supply;
- Heat pumps mandated in existing homes
- Widespread EV adoption as policies achieve targets
- Increased collaboration and coordination results in faster adoption of offshore hybrid assets and overall increased interconnectors

Transition risks - generally more relevant to a 2°C (or lower) scenario. Transition insights (*Balanced Pathway and Electric net zero scenarios)* noted include:

  - Achieving energy transition targets depends on effective reforms to drive clean power deployment and policies that incentivize consumer uptake of low carbon technologies
  - CTP achievement will be challenging in slower scenarios
  - Electricity use and share of final demand will increase driven by consumer electrification and large load growth
  - Energy supply structure will shift to power generation from renewable/low carbon sources
  - Pathways will adapt to global and local realities

- However, there are short-medium, medium and long-term transition risks associated with *all scenarios*:

  - *Market/policy (uncertainty in the extent of electricity demand growth)*
  - *Reputation and market (affecting the ability to deliver on commitments)*

- In response, the NG Group is:

  - maintaining close stakeholder relationships to anticipate the extent of electric demand growth and influence enabling policy
  - pushing for a framework for anticipatory investment to meet new connections and electrification on time; Ofgem accepted this as part of the ED3 framework decision document
  - undertaking proprietary analysis, prioritising system flexibility at distribution level and working closely with regulators and system planners
  - subject to DSO governance panel – ensure essential nature of all distribution network build
  - making 'no regret' anticipatory investment
  - regularly measuring and reporting on network reliability
  - embedding climate-related targets into business unit performance management processes (and reporting against targets) and emissions reduction targets into incentive arrangements (management)
  - revising its CTP when appropriate
  - working closely with regulators to ensure policy and regulatory frameworks enable net zero plans
  - developing Great Grid Upgrade and build tomorrow's workforce today

- There is also a short-medium, medium and long-term transition opportunity pertinent to *all scenarios* which could materially improve financial performance:

  - *Markets and Products/Services (increased demand for electricity even in the slowest decarbonising scenarios)*

- In response, the NG Group is/has:

  - Evolving its strategy to focus on networks and streamline the wider business
  - Set out an ambitious Green Capex commitment
  - Submitted a business plan as part of RIIO-T3 to deliver the most significant advancement in the UK's transmission network in a generation

- Physical risk insights indicate increased frequency of extreme weather incidents and changing long-term climate trends highlighting the significant costs incurred due to asset damage and operational interruptions; the level of risk in most cases is greater in a 4°C scenario than a 2°C scenario
- In response, such costs over pre-determined thresholds are typically recoverable in future years under regulatory frameworks and there are lines of vision built into price control periods given their medium to longer-term nature (and associated forecasting of recovered investment in the network)

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