Institute
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Institute and Faculty of Actuaries

Climate Change and the Role of the Actuary
Guiding the Financial Sector

Hetal Patel
Head of Climate Investment Risk, Phoenix Group

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Today's Session

- Impact of climate and the typical corporate response
- Climate risk fundamentals
- Overview of a decarbonisation strategy
- What should actuaries be doing?

1. Impact of climate and the typical corporate response

Forms of Climate Related Risks

Physical Risks

Risks arising from climate and weather related events

Acute physical risk: short lived extreme weather impacts e.g. flood, drought

Chronic physical risk: impacts due to slow insidious change such as increasing temperature or water stress

Transition Risks

Risks arising from the process of adjusting to a low carbon economy

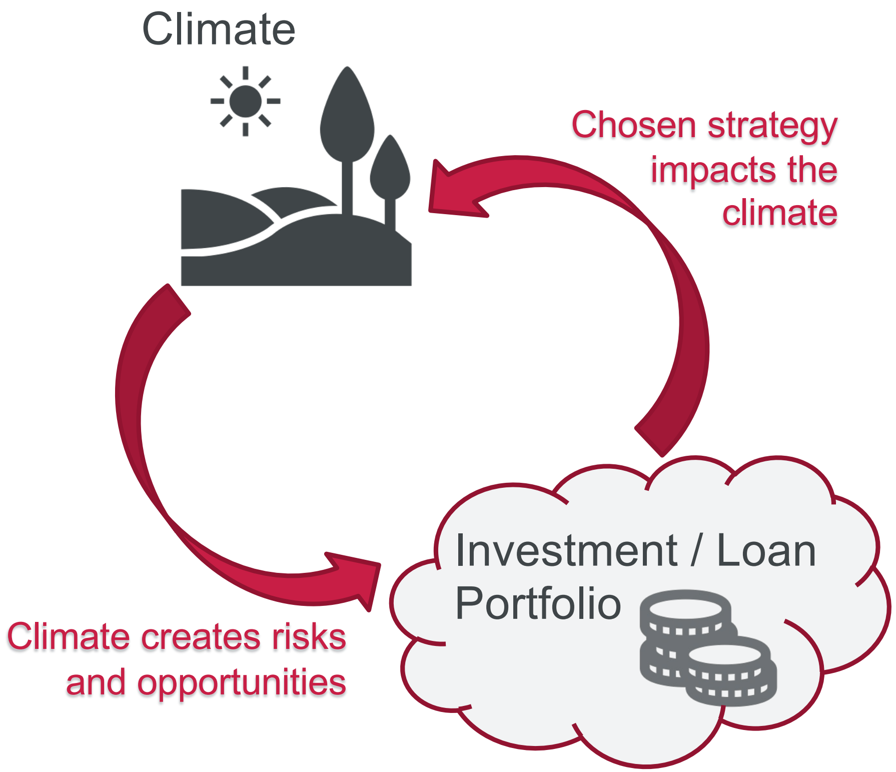
Policy & legal risk: compliance costs; stranded assets; restriction on carbon intensive assets; and asset deprivation

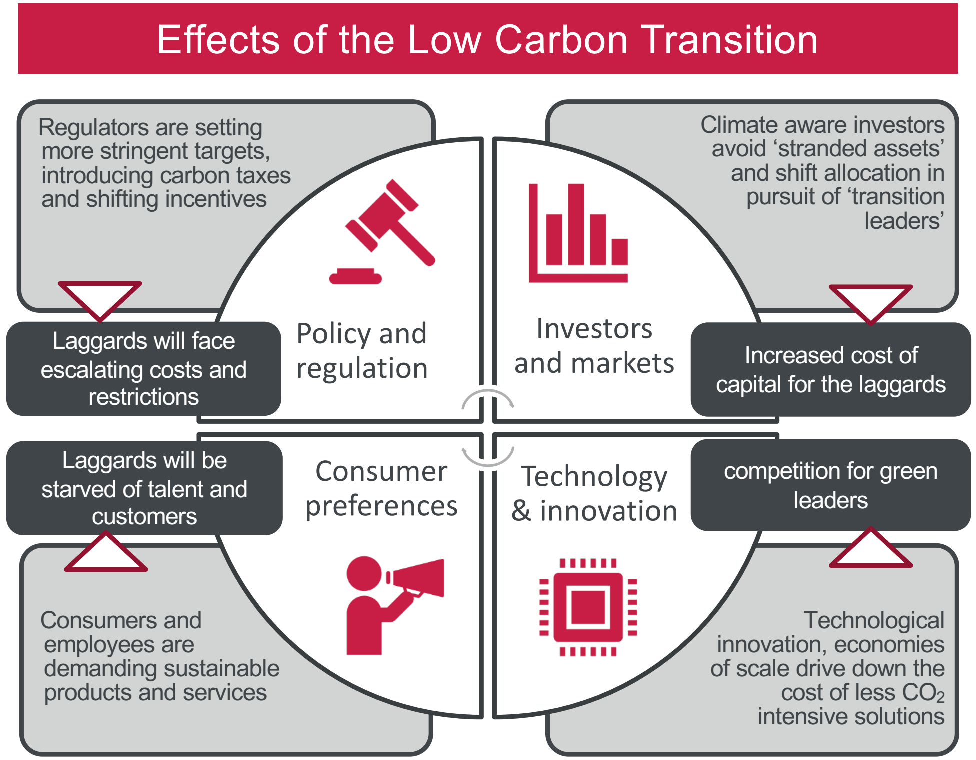
Market & Economic : company or securities valuations viability of models; and credit rating implications

Technology risk: write-offs for investments in disrupted technologies; process change costs

Reputational risk: damage to brand value resulting in lost revenue and additional expenditure

The Impact of Climate on the Financial Sector





The Portfolio Climate Management Cycle

Monitor and make changes

Measure climate impacts and risks → **Set Targets** to reduce climate impacts → **Develop Strategy** to meet targets → **Disclose** climate risks, targets and strategy

Emissions inventory

Decarbonisation objective

Integrate frontline processes

Net-zero emissions by 2050

Tightening regulatory environment on disclosure

Increasing climate related disclosures (TCFD) driven by regulation or by accepted market practice

2. Climate risk fundamentals

What Exactly is ‘Net Zero’?

What?

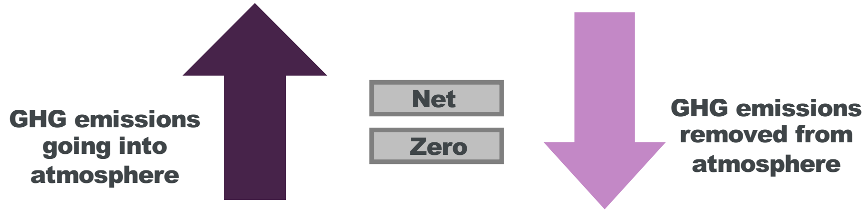
“Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and **pursuing efforts to limit the temperature increase to 1.5°C** above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.”

Article 2(a) of the Paris Agreement

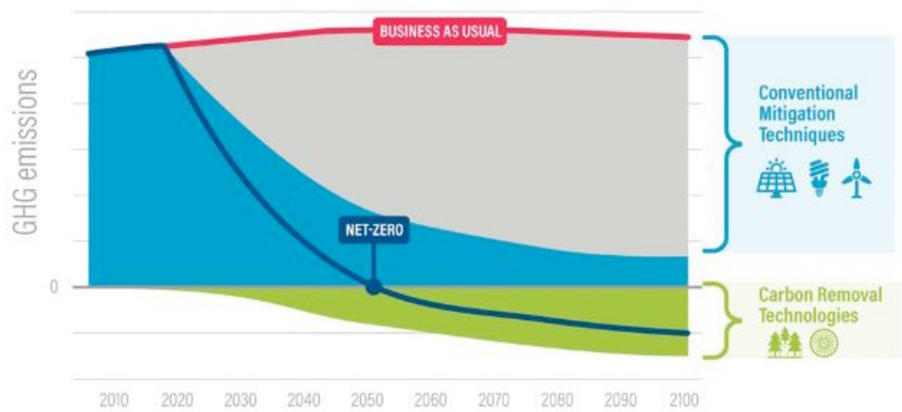
When?

Reaching **net zero carbon emissions by 2050** will be necessary if the world is to have a higher than even chance to limit global warming to +1.5°C

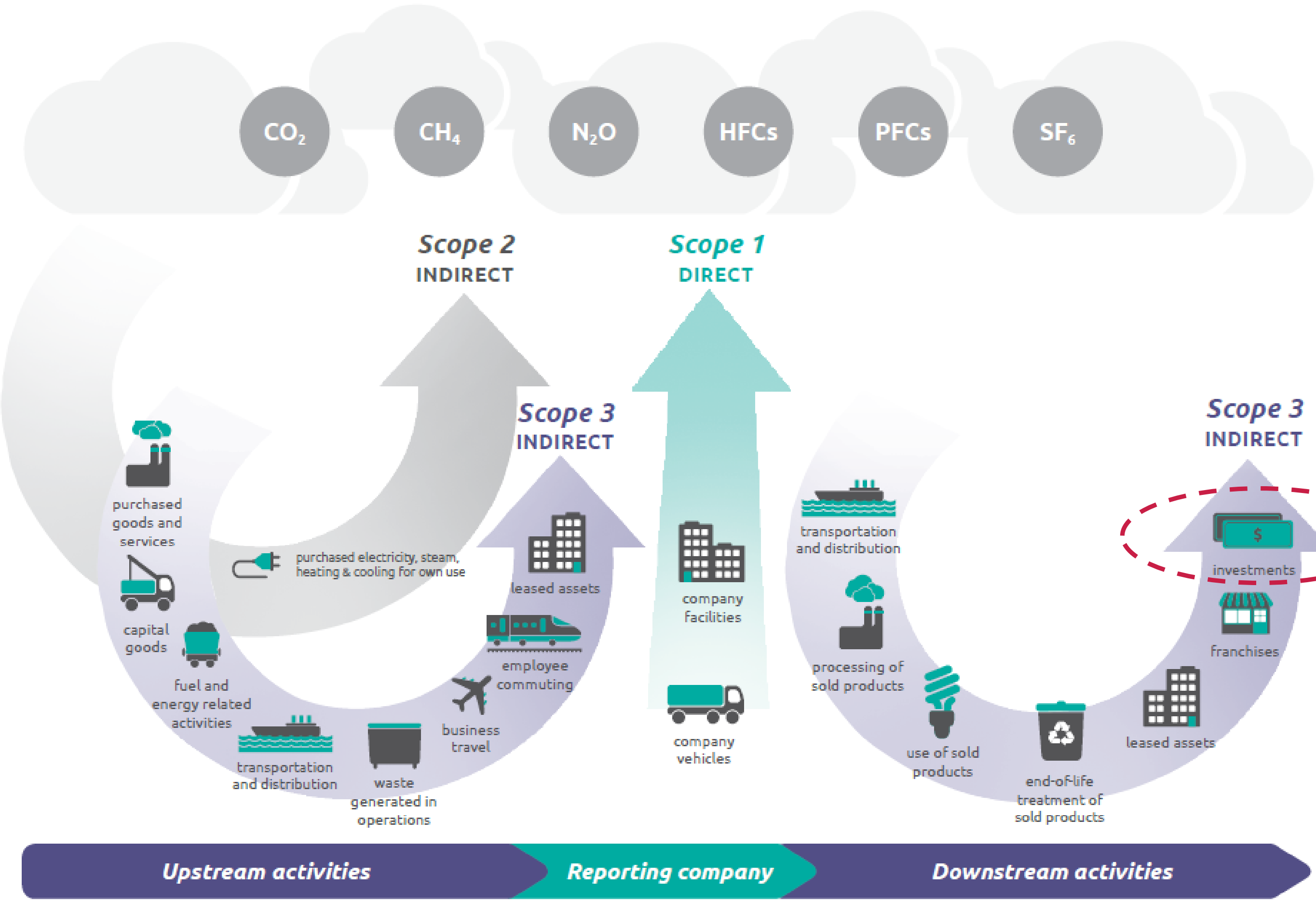
How?



Net zero achieved principally through emissions reductions; residual emissions be offset through carbon removal techniques



Introduction to the Greenhouse Gas (GHG) Protocol



Source: GHG Protocol

Scope 1,2 and 3

- We distinguish between a company's own direct 'operational' footprint which comprises scope 1 (own business operations) and scope 2 (its share of purchased electricity), and
- The much larger estimate of scope 3 emissions, which includes supply chain upstream and downstream emissions; in a financial institution's case this captures the 'financed' carbon emissions from the companies that it invest in or lends to.

Portfolio Related Climate Metrics

Key Types of Portfolio Metrics

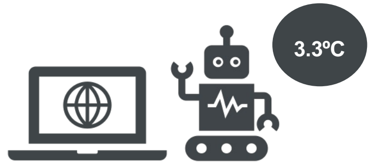
Footprint	**Absolute Emissions**	total CO_2e emissions associated with companies in a portfolio; difficult to compare portfolios of different sizes
Footprint	**Emissions Intensity – normalized by invested value**	Volume of emissions expressed per million dollars of capital invested
Footprint	**Emissions Intensity – normalized by output**	Volume of emissions are in terms of physical output e.g. per ton of steel; often used in specific high emitting sectors
Alignment	**Percentage Alignment**	Crude metric to measure what percentage of the portfolio AUM is net zero aligned
Alignment	**Implied Temperature Rise**	A measure of alignment with the Paris objective that looks at the difference between a company's declared and the relevant sector pathway for Paris
Risk	**Climate VAR**	Percentage loss of a portfolio or security under a certain climate scenario and a certain timeframe

Comparing the Climate Transition

'Best in class' cement manufacturer

High carbon footprint, but aware of its impact and investing in low-carbon solutions

Aligned with the climate transition



'Middling' technology company

Small footprint, but investing in energy intensive technologies that increase emissions

Not aligned with the climate transition

Important not to focus just on current footprint; alignment (implied temperature rise) is an indicator of trajectory of emissions

3. Overview of a decarbonisation strategy

Calculating Emissions Inventory – use of PCAF Methodology

Partnership for Carbon Accounting Financials (PCAF) is a global collaboration of financial institutions that work together to develop harmonized methods to assess and disclose the GHG emissions associated with their loan and investment portfolios.

Key principles employed in calculating portfolio footprint:

- **'Follow the money'** references the need to capture the emissions associated with the activity that the investment/loan finances.
- **Apportionment** refers to capturing the correct 'share' of the emissions of the activities of the investee organization.

Listed Companies (equities and bonds) Financed Emissions

$$= \sum_c \frac{Outstanding\ amount_c}{Enterprise\ Value\ Including\ Cash_c} \times Company\ emissions_c$$

Emissions Profile

Scope 1 (Direct): 1,300,000 tCO2e

+

Scope 2 (Indirect): 200,000 tCO2e

Total GHG Emissions (Scope 1& 2): 1,500,000 tCO2e

Capital Profile

Debt: $10,000m

+

Equity: $5,000m

Enterprise Value Incl. Cash (EVIC): $15,000m

Pension Fund's financed emissions in respect of holding in Company A

Pension Fund Investment: $150m

→ **Pension Fund Capital Share =** $150m / $15,000m **= 1%**

→ **Pension Fund's Financed Emissions =** 1,500,000 * 1% **= 15,000tCO2e**

Different Approaches to Setting Decarbonisation Targets

Absolute Emissions Targets

- Emissions reduction targets for whole portfolio or by segment (e.g. by loan sector)
- Often used in bank loan books

Emissions Intensity Targets

- Intensity reduction targets for whole portfolio or by segment (e.g. by asset category)
- Typically used by the asset manager / asset owner community

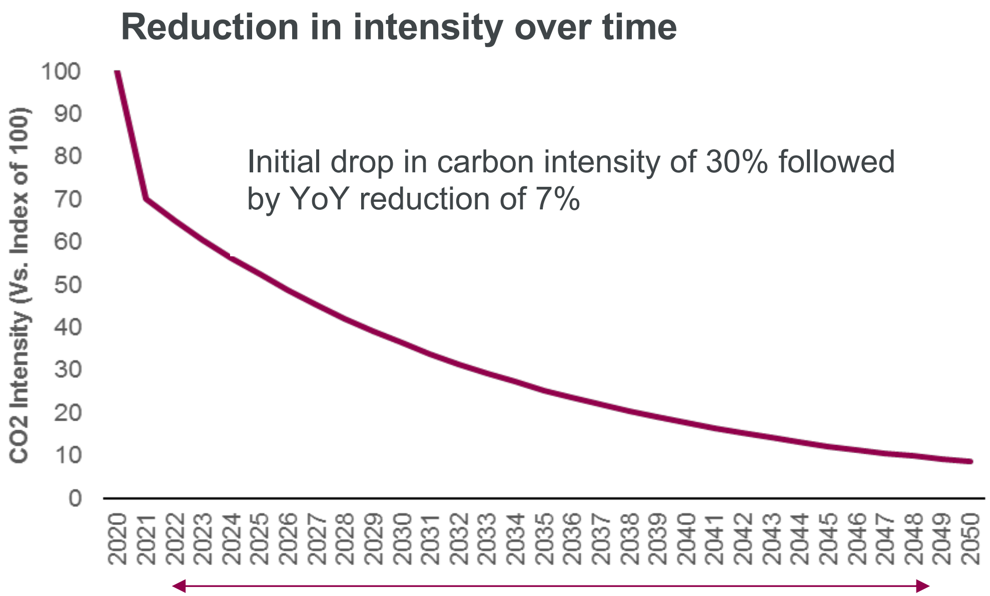
Portfolio Alignment Targets

- Alignment measures such as a temperature score applied to a whole portfolio or to a segment.
- Benefits from being a 'forward-looking' measure

The Portfolio Decarbonisation Toolkit

Portfolio Levers	
Stock Selection	▪ Avoid laggards; select the transition leaders within a given sector ▪ Use of negative screens (exclusions) for most egregious categories of stocks (e.g. thermal coal)
Sector Tilting	▪ Tilt portfolio weighting away from high emitting sectors towards those that have a lower carbon intensities.
Climate Aligned Indices	▪ Use of 'climate' indices – those that have a specific objectives related to GHG emissions ▪ EU Benchmarks Regulation has been updated to allow for indices with the labels 'Climate transition benchmark' (CTB) and 'Paris aligned benchmark' (PAB)

Illustration of a self-decarbonising index

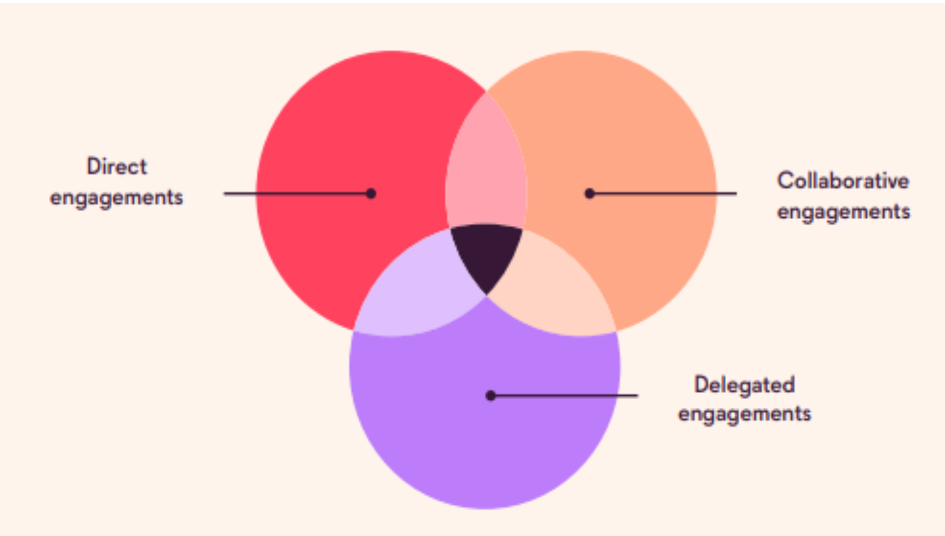


Decarbonisation pathway will be subject to future review to keep consistency with net-zero by 2050 target as research and market consensus progress further

Engagement as a decarbonisation driver

- Engagement refers to a **two-way interaction** between the investor and investees in relation to the corporate business strategy and ESG practices.
- It can be used to encourage counterparties to adopt good climate management practices including publishing climate related disclosures, setting of decarbonisation targets etc. This can lead to a reduction in the investor's financed emissions.

Pillars of Stewardship



Escalation Toolkit

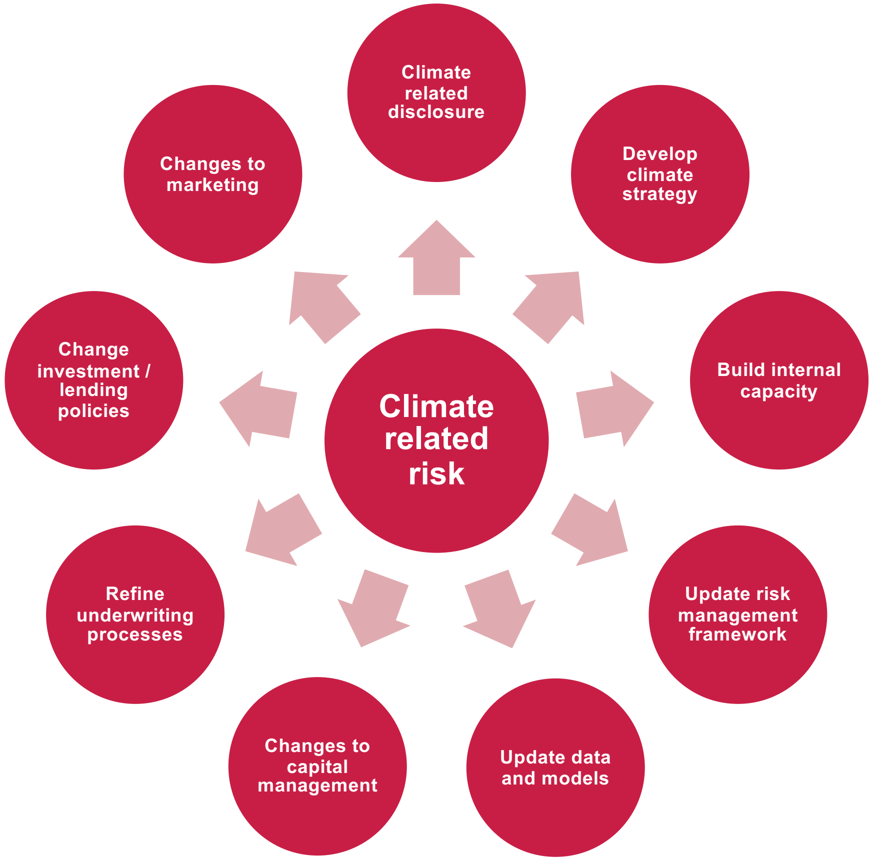
In the case that improvements by investees are not made pursuant to engagement efforts, escalation can take the following forms:

- collaborating with other shareholders
- voting against management
- presenting an AGM statement
- issuing a public statement
- decreasing exposure
- divestment of the holdings.

4. What should actuaries be doing?

Which (Actuarial) Activities are Impacted?

Climate impacts actuaries working in all functions and financial institution types!



Join industry collaborative initiatives to build expertise

Seek outside expertise / opportunity for consultancy

A glance at some of the challenges to overcome

Inconsistent Methodology

- **Inconsistent approaches between organisations**
  - What is measured; choice of metrics are at the discretion of reporting organisation
  - Various approaches to measure carbon emissions profile

Data Challenges

- **Many gaps in data availability**
  - counterparty emissions reporting is often patchy making it difficult to evaluate portfolio emissions

Internal Consensus

- **Wide audience of stakeholders with varied interests**
  - Building confidence in the process and in calculated figures
  - Deciding what assets, business lines to capture in exercise

Greenwashing

- **Risk of overstating climate related credentials**
  - Increasing regulatory and media focus on greenwashing
  - Can result in fines as well as reputational harm

Questions

Comments

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Thank you

1 December 2024