Institute and Faculty of Actuaries

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Green House Gas Emissions – the road to Net Zero

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Agenda

1. Background to GHG emissions
2. Practices on measuring and disclosing GHG emissions
3. Net Zero Strategies – the role that GHG emissions play
4. Validation frameworks for a sustainable Net Zero Strategy
5. Closing Remarks

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1. Background to GHG emissions

What are GHG emissions?

Greenhouse gas emissions are categorised into three groups or 'Scopes' by the most widely-used international accounting tool, the Greenhouse Gas (GHG) Protocol.

The GHG Protocol was developed in the late '90s and is the global standard framework for measuring and managing greenhouse gasses from both public or private organizations.

Mandatory

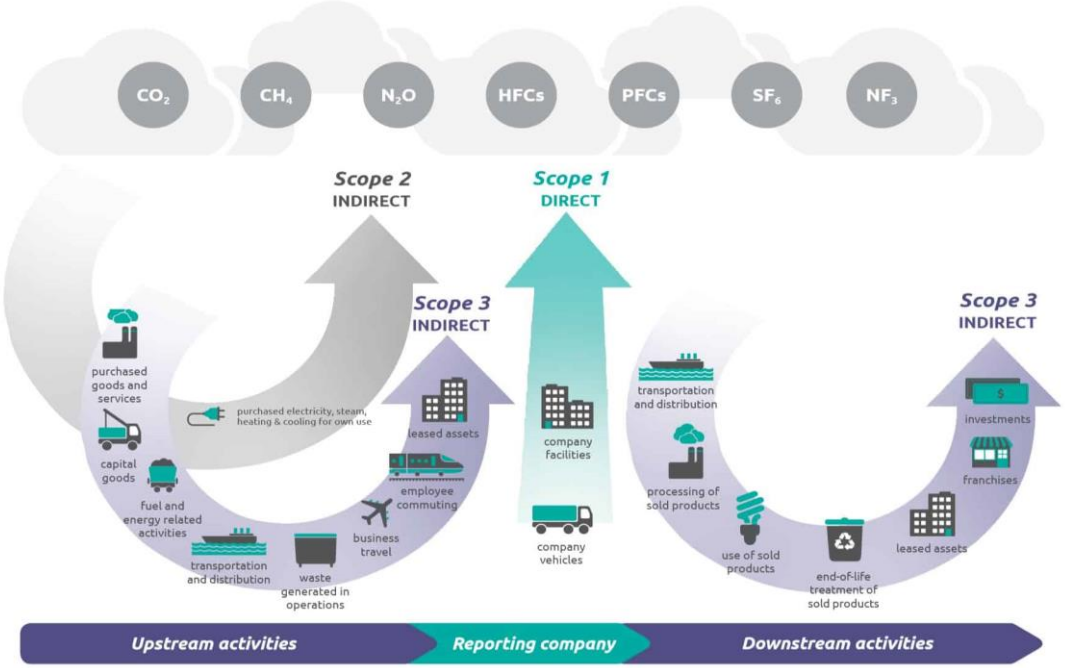
Scope 1 emissions – direct emissions from sources **owned** or **controlled** by a company.

Mandatory

Scope 2 emissions – indirect emissions from purchased electricity, steam, heat, and cooling (responsible for 40% of the emissions globally)

Voluntary but encouraged

Scope 3 emissions – all other emissions associated with a company's activities (can represent up to 70% of a company's emissions). Split further into **upstream** and **downstream**



Source: GHG Protocol

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GHG emissions – why are they important?

Critical to understanding your company's carbon footprint and impact. If you want to reduce your emissions and fossil fuel use, you have to calculate them before creating a reduction target.

Good for business. It requires a deepened understanding of every part of your business—your own operations, product lifecycle, supply chain and value chains, stakeholder relationships, and all other related activities.

Will not only help you stay ahead of the legislative curve but also help you **maintain a competitive business advantage** by looking for efficiency opportunities, waste reduction, or ways to streamline procurement or other essential activities.

Demonstrating leadership which will help strengthen their green credentials in an increasingly environmentally conscious marketplace. Organisations are seeking information from their suppliers on greenhouse gas emissions and so many small businesses will increasingly be expected to measure and report on their emissions.

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2. Practices on measuring and disclosing GHG emissions

Measuring GHG emissions

Work out how much fuel you used/make an estimate

X

Latest emission factor for the type of fuel

=

KgCO2eq

GHG units - A **carbon dioxide equivalent** (**CO_2eq)** is used as a metric to compare the emissions from various greenhouse gases on the basis of their global-warming potential (i.e. it is used to convert amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential)

Best results obtained from direct measurement; second best by making estimates based on fuel use/spend/distance travelled; alternatively, you can use numbers based on distance travelled and industry averages.

The better the accuracy of internal data the more accurate and meaningful the measure produced.

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Scope 2 – How to measure

The GHG Protocol guidance requires companies to use two reporting methods for disclosures:

- **The market-based reporting method**
- **The location-based reporting method**

When companies calculate the emissions from their local power grid, this is the so-called ***location-based method*.** This method is based on the average emission factor of the local grid.

When companies specifically look into the contracts they have with their electric utilities, this is the ***market-based method*.** This gives insights into the emissions that companies are responsible for through their electricity purchasing decisions. Companies can include a number of contractual instruments in this method that reduce their scope 2 emissions. This method considers any contractual instruments that may be used in competitive energy markets. Therefore, any green tariffs, renewable certificates are included.

Scope 3 – How to measure

Methods commonly used:

- **Spend-based** carbon accounting estimate takes the financial value of a purchased good or service and multiplies it by an emission factor – the amount of emissions produced per unit or monetary value of the goods – to calculate an estimate of your emissions.
  - There is no universal source of emissions factor, sources that could be used are from government agencies, academic research, company reports, and third party standards organizations.
- **Average data** carbon accounting estimate. This method is similar to the spend-based method, but instead of using financial data relies on material weight data. If our company's clothing is made of X tons of cotton, multiply the weight times the appropriate emissions factor for the material. Like the spend-based method, average data carbon accounting also suffers accuracy issues due to the use of averages.
- S**upplier-specific** or primary source method. Supplier-specific carbon accounting collects product-level cradle-to-gate GHG data from each supplier using sustainability surveys and data collection workflows. Provides the most accurate Scope 3 calculation.

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Scope 3 emissions – Top Tips

- Prioritise material sources
- Engage your vendors and suppliers
- Set up schedule surveys
- Look for smart data integrations

Reporting GHG emissions

Checklist for meaningful reporting:

- ✓ Details on ‘company boundary’
- ✓ Reporting period
- ✓ Absolute emissions (total emissions for your company; typically what companies use to target for overall reductions)
- ✓ Emissions intensity measurement (emission per metric used – e.g. tonnes, cubic metres, revenue)
- ✓ Baseline year
- ✓ Changes since baseline

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3. Net Zero Strategies - the role the GHG emissions play

The role of GHG emissions – why should I set a target?

There are many good reasons to do so:

- To **establish a credible route** towards a net zero business model
- To **track progress** – inform whether adjustments to the strategy are required, including the use of offsets
- Demonstrate **accountability** and **commitment**
- To help **compare** companies across industries and establish their place in an increasingly **environmentally conscious market-place**

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Types of GHG emissions targets

Organisations can look to set:

- An **absolute GHG** reduction target – compares total GHG emissions in the target years to those in a base year;

  + easy to define and track against the commitment to reduce GHG emissions

  - Does not take into account changes in company's size and strategy, and therefore might not be easy to achieve or meaningful

- An **intensity target** based on a decrease in GHG emissions intensity using an appropriate normalising factor – this

  + takes into account changes in company size or strategy over time

  + more directly comparable across similar sectors

  - Might need to be recalculated for changes in product prices/mix, inflation if a sales driven metric is being used

- Organisations could also consider the benefits of setting **Science Based Targets**

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Science-based targets

- Science-based targets provide a clearly-defined pathway for companies to reduce GHG emissions, helping prevent the worst impacts of climate change and future-proof business growth.
- A set criteria must be met in order for target(s) to be recognized by the Science Based Targets initiative (SBTi). In addition, companies must follow the GHG Protocol Corporate Standard, Scope 2 Guidance, and Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
- Need to be officially validated by SBTi before disclosing and sharing it with key stakeholders
- More than 2000 companies have committed to taking science-based action on climate change – this represents more than two fold increase from 2020 (Source: 2021 SBTi report).
- The large number of companies who have committed to setting science-based targets shows a rise in climate ambition. These targets are ambitious, but if every business were to set science-based targets, we would have the confidence that we would be on track to prevent the worst effects of climate change.

GHG emissions targets - Considerations

When setting your targets you should consider:

- Coverage (company wide, or local)
- Scope – which emissions to include (scope 1, 2 and 3)
- Data to be based on
- Timeline – short, medium and long term ambitions
- Government policies and transition plans (depends on company's size, industry etc.)
- Market dynamics, including customers' sentiment towards a greener economy
- The role you want to play in making the transition towards a Net Zero economy (e.g. playing an active, reactive, or passive role)

Common pitfalls in disclosures

Measuring GHG emissions and setting targets to deliver a credible Net Zero Strategy is an emerging regulatory and market practice. The journey to a standardized approach will evolve over the coming years.

Examples of common pitfalls observed in disclosures to date:

- Not disclosing what is actually included in the net zero emissions targets (e.g. CO2 only, or all greenhouse gases)
- Committing to a carbon neutral state by accounting for scope 1 and 2 emissions only (for some organisations Scope 3 could account for more than 70% of their emissions)
- Carbon offsetting footprint (more clarity on what emissions are “allowed” to be offset; what kinds of offsets should count, in both the near and long term)
- Vague carbon neutral statements - Challenging back decision makers on the clarity and credibility of the timeline, ambitions, completion etc.

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Emerging best practice

Measuring all three emissions, or at least considering the key scope 3 emissions

Science Based Targets certified

Independently assured

Meaningful granularity in disclosures (e.g. locations, source of emissions, methodology)

Uses well established external data supplemented by internal analysis to validate it

Leveraging internal data and looking for means to address any gaps – both internal and external options being persued

Includes the offsets information

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4. Validation Framework – for a sustainable and credible Net Zero Strategy

Net Zero Action Plan - Overview

Validation/Assurance scope:

- **Data**
  - Adjustments
  - Simplifications
  - Market vs company availability
  - Choosing external provider given differences in ESG scorings
- **Assumptions**
  - Expertise
  - Science based
  - Stability over time
  - Materiality
- **Methodology**
  - Interpretation of guidance
  - Stability over time
- **Outputs**
  - Stability of results
  - Credibility
  - Benchmarks

Transparency, Consistency

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Validation checklist

- Data quality assurance
- Targeted controls
- Documentation of data, assumptions, methods
- Peer review – qualified and fit for purpose
- Market insight – as general best practice emerges more value would be gained from this

Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

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Appendix

Formatting your presentation

Page setup

- This presentation is set to 16:9 screen size. Do not reset the size to any other screen size
- Do not alter anything in the master slides.

Type and typography

- Only use the font Arial and never use type smaller than 10pt
- Headings and sub-headings should always be in mid blue and body copy and chart text should always be dark blue
- Page titles are pre-set to mid blue. Page text, text blocks and chart text are pre-set in the correct dark blue
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Colour palette

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GHG emissions – why are they important? Continued

Why should an organisation measure its Scope 3 emissions?

For many companies, the majority of their greenhouse gas (GHG) emissions and cost reduction opportunities lie outside their own operations

- To help define a credible and sustainable Net Zero strategy by **tackling the hotspots** in their supply chain;
- **Engage suppliers** and assist them to implement sustainability initiatives;
- **Improve the energy efficiency** of their products;
- **Positively engage** with employees to reduce emissions from business travel and employee commuting.

How are GHG emissions disclosed?

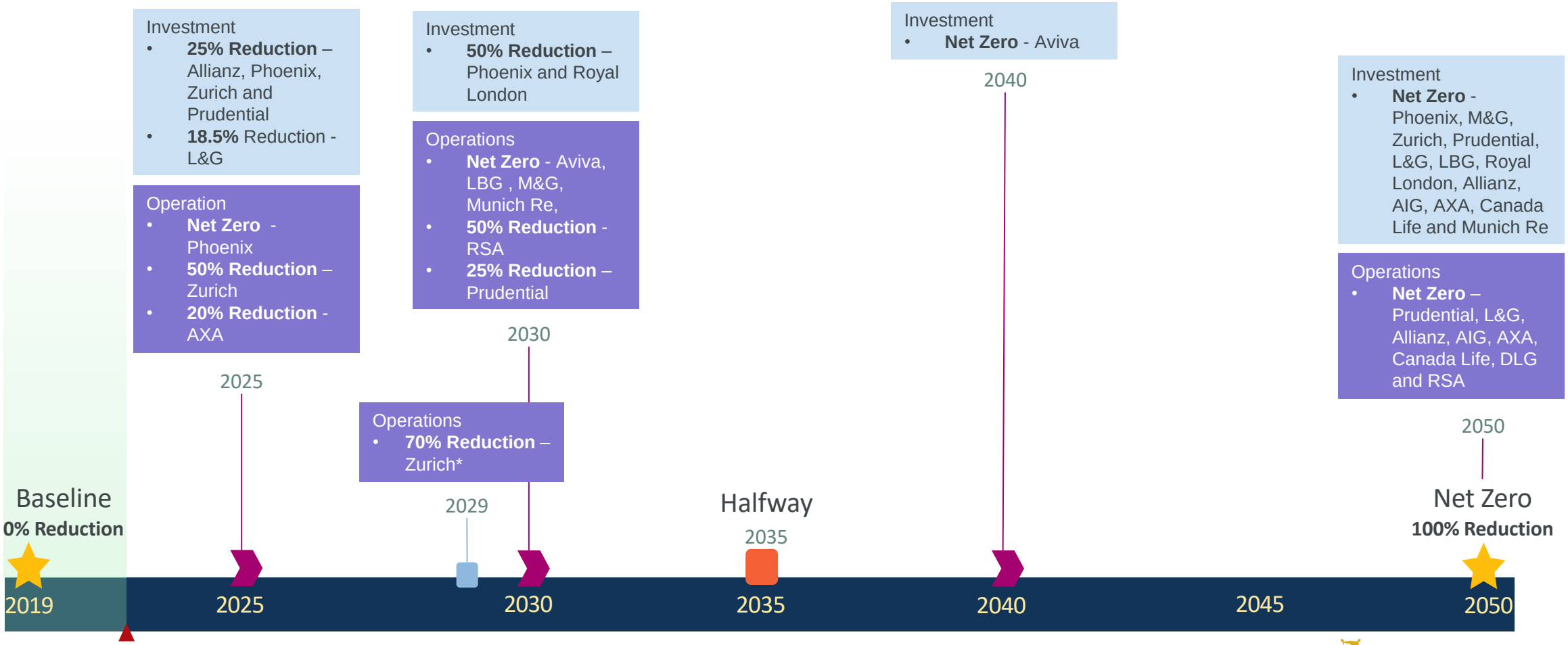
Analysis of change presentation focused on changes in emissions intensity with the following steps:

1. Quantify change in Scope 1 and Scope 2 emissions of invested business
2. Change in normalising factor (companies' market cap change or revenue changes)
3. Change in holdings of invested company
4. Changes in methodology

The expectation is that the emissions intensity will reduce over time in a stable manner.

However, currently there's substantial volatility in the emissions analysis as a result of COVID which will impact (1) & (2) of invested companies and (4) as the market has not aligned on a concrete methodology yet – this component is expected to become more stable over time.

Net zero targets



Investment –
- DLG net zero not stated in report

Operational –
- Zurich net zero target not stated in report
- Royal London net zero by 2030 (scope 1&2 only), scope 3 target not stated in report

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GHG emissions - Financial sector investments (example)

- Calculating the emissions of governments to help measure the carbon intensity of sovereign assets looks to leverage the climate tracker scores: https://climateactiontracker.org/countries/

- Methodology in terms of the normalising factor is still not concrete, some companies are using GDP and other Sovereign Capital stock.
- **The methodology change will impact the analysis of change results when comparing emissions over a period, therefore should be taken into account when making any financial analysis.**

- Companies are using data from climate change data providers to inform their scope 3 emissions.
- **Most of the time, only the larger companies are likely to have the climate data on them which could imply that asset managers are more likely to select such investments.**