

# Net Zero insurance and the role of the actuary

November 2021



# Agenda for Today's Discussion

1. Overview of GHG emissions, including scope 1, 2 and 3
2. What does it mean to be “Net zero” or “Carbon neutral”
3. Target setting, the SBTi, financed emissions and the implications for insurers
4. Net zero underwriting

## Our ESG team members with you today



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## Overview of GHG emissions, including scope 1, 2 and 3




# GHG inventory and reporting

For GHG inventory and reporting purposes, GHG emissions are divided into **3 scopes**

**Scope 1:** Direct GHG emissions from sources owned or controlled by the company

**Scope 2:** Indirect emissions from the generation of purchased energy; emissions physically occur at the facility where electricity is generated

**Scope 3:** All other indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions



Level of control by reporting org.

# Scope 1: Direct GHG emissions

## Scope 1: Direct GHG emissions from sources owned or controlled by the company

### Generation of heat, electricity or steam



Result from combustion of fuels (natural gas, diesel, coal, etc.) in stationary sources, e.g., boilers, furnaces, turbines

### Physical or chemical processing



Result from manufacture or processing of chemicals and materials, e.g., cement, aluminum, adipic acid, ammonia manufacture, and waste processing

### Transportation



Result from the combustion of fuels in company owned/controlled mobile combustion sources (e.g., trucks, trains, ships, airplanes, buses, and cars)

### Fugitive emissions



Result from intentional or unintentional releases, e.g., equipment leaks from joints, seals, packing, and gaskets; methane emissions from coal mines and venting; hydrofluorocarbon (HFC) emissions during the use of refrigeration and air conditioning equipment; and methane leakages from gas transport

## Expected\* Scope 1 sources for insurers

*(owned or leased offices, and owned or co-located data centers)*


**Natural gas** used to heat offices and data centers

**Diesel** used for backup generators at offices and data centers

**Refrigerant leakage** (fugitive emissions) from air conditioning equipment

# Scope 2: Indirect GHG emissions

Scope 2: Indirect emissions from the generation of purchased energy; emissions physically occur at the facility where electricity is generated.

 Purchased electricity, heating, & cooling



Almost all businesses generate indirect emissions due to the purchase of electricity for use in their processes or services.

Methods for scope 2 accounting are “allocation” methods—allocating generator emissions to end-users. A **location-based method** reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data). A **market-based method** reflects emissions from electricity that companies have purposefully chosen (or their lack of choice). It derives emission factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims.

For many companies, purchased electricity represents one of the largest sources of combined Scope 1 and Scope 2 GHG emissions and the most significant opportunity to reduce these emissions. Companies can reduce their use of electricity by investing in energy efficient technologies and energy conservation.

## Expected\* Scope 2 sources for insurers

*(owned or leased offices, and owned or co-located data centers)*

**Purchased electricity** for lighting and operating offices and data centers

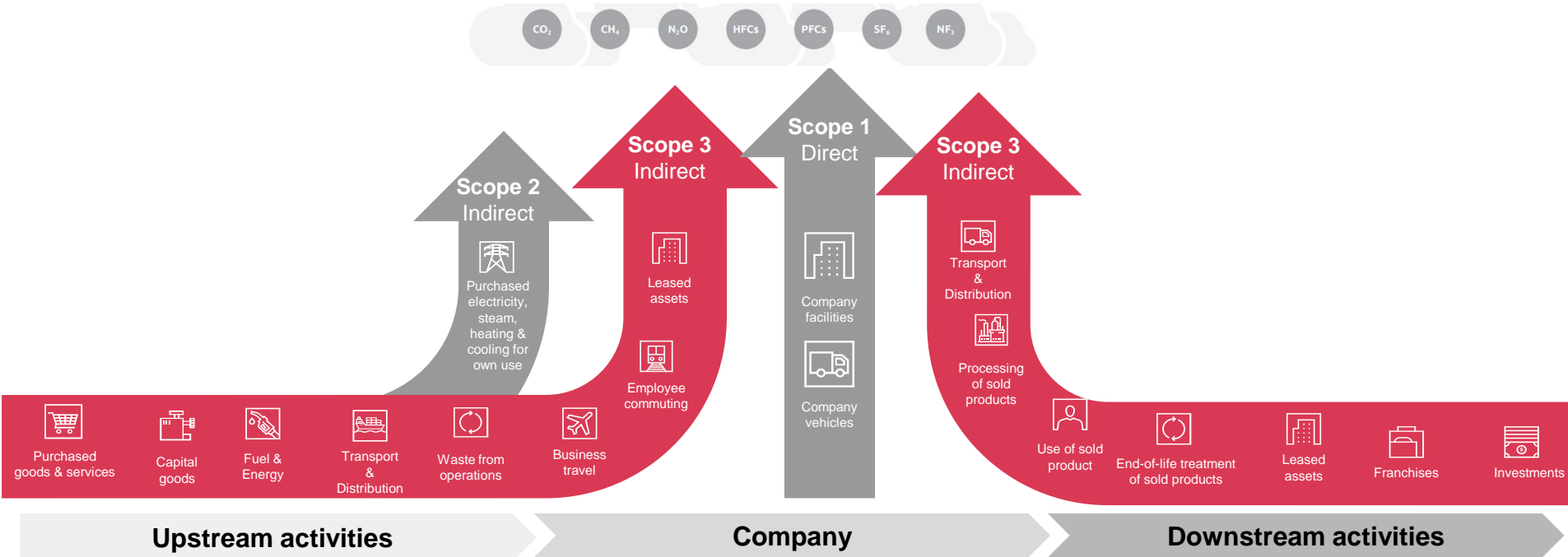
**Purchased steam** for heating offices and data centers

**Purchased chilled water** for cooling offices and data centers

**Purchased renewable electricity** used for lighting, heating, and operating offices and data centers (typically low or zero emissions)

# Scope 3: Other indirect GHG emissions

Scope 3: All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions



# Scope 3: Potential sources

Scope 3: All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions



## Upstream



Purchased goods and services



Business travel, employee commuting



Waste generated in operations



## Downstream



Processing & use of sold products



End-of-life treatment of sold products



Leased assets, franchises, and outsourced activities



Investments

Some of these activities could be included under scope 1 if the pertinent emission sources are owned or controlled by the company. Since companies have discretion over which categories they choose to report, scope 3 may not lend itself well to comparisons across companies.

Source: WRI GHG protocol



# GHG quantification methods

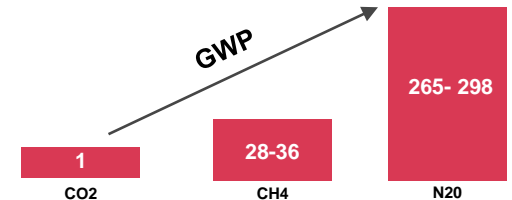
1. Scope 1-3 GHG Emission Sources comprise a company's **Energy Consumption**
2. Environmental agencies publish **Emission Factors (EFs)**
  - a. Indicate the volume and nature of GHGs emitted by a GHG-producing activity
  - b. Ex: Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous Oxide (N<sub>2</sub>O)
3. Each GHG has a different **Global Warming Potential (GWP)**
  - a. GWP measures the severity of the global warming impact based on the specific gas emitted by the activity

**Base Energy Consumption Data x Emission Factor x Global Warming Potential = GHG Emissions (CO<sub>2</sub>e)**



- The activity that generates GHG emissions, such as electricity consumed at a Palantir facility
- Data collected as physical units (gallons) or energy units (kWh)

- Leveraged to calculate the GHG emissions for a given source, relative to units of activity
- Ex: For every MWh of electricity consumed, 563.7 lbs. of CO<sub>2</sub>e are emitted



- The **larger the GWP**, the **more** that a given gas warms the Earth

Source: [WRI GHG Protocol](#) & EPA



What does it mean to be “Net zero” or “Carbon neutral”



# What is Net Zero and why are we talking about it?

To avoid the most dangerous impacts of climate change, planetary warming must be limited to 1.5°C.

51  
Billion  
tons

To do this, the amount of greenhouse gases added to the atmosphere each year must be reduced from **51 billion tons to zero, no later than 2050.**

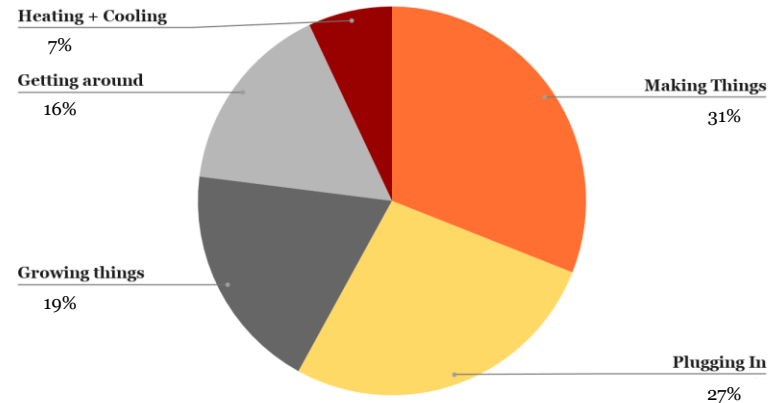
What does  
this mean  
for an  
insurance  
carrier?

**Net Zero** is the balance between emissions produced by and emissions taken out of the atmosphere. Reaching net zero means a company is no longer contributing to planetary warming.

For an insurance company, achieving this means tackling emissions from a company's **entire value chain** including not only operations, but also emissions of investee companies and from the use of sold insurance policies.

Insurers will need to manage emissions from these activities embedded in their investment and underwriting portfolios.

## Main Drivers of GHGs



# PwC's perspective on Net Zero

The world needs to act with **urgency**

The world **has 9 years to halve global greenhouse gas emissions** and avoid global warming of above 1.5°C

The current **pace of change is far behind** the pace we need

**Companies have a pivotal role to play** closing this gap



**Drivers** for company action are clear

**Capital markets** are requiring disclosure and encouraging action

**Customers (B2B & B2C)** are requiring suppliers to act

**War for talent** will hinge on companies aligning to Net Zero

**Governments** are aggressively focusing on Net Zero with taxes and regulations

**Ambitious action** is needed

**Bold moves will help companies** minimize risk and maximize value creation

Companies will need to **work together to address emissions across their supply chain** and from products & services

Many companies will need to undertake **end-to-end business transformation** to deliver their goals

As of early 2021, **8% of the Global Fortune 500 have pledged to become Net Zero** with that figure growing rapidly (per PwC analysis)

**Do not let your competitors leave you behind**

# Net Zero: Diving deeper into the reasons for action

## Drivers for company action are clear

### Capital markets are **requiring disclosure and encouraging action**

Investor initiatives for climate action are growing.

- **Climate Action 100+ involves over 500 global investors with over \$54 tn AUM**, assessing company progress in line with net-zero transition.
- **30 institutional investors are committed to net zero portfolios by 2050** under the UN-convened Net Zero Asset Owner Alliance, representing over \$ 5.7 tn AUM.
- This is the tip of the iceberg, with a much larger number of financial institutions committing to green financing and partial decarbonisation targets.
- Perception that net zero helps reduce the transition risks from climate change

### Customers (B2B & B2C) are requiring suppliers to act

#### Business to business motivation

- 1000+ companies have science based targets. 300+ companies have net zero targets.
- As a result, **procurement policies requiring disclosure and action on carbon or Net Zero targets** are becoming more common<sup>2</sup>

#### Business to consumer motivation

- **55% of consumers** surveyed indicated that they buy from companies that are conscious and supportive of protecting the environment<sup>1</sup>

### War for talent will hinge on companies aligning to Net Zero

#### Millennial and Gen Z

- **64% of millennials consider sustainability** when deciding where to work<sup>3</sup>
- Millennials and Gen Z want organizations that provide meaningful work that is aligned to their values<sup>4</sup>
- By 2025, these two population groups will comprise **75% of the workforce**

### Governments are aggressively focusing on Net Zero with **taxes and regulations**

#### Government targets

- **59 countries** have Net Zero targets

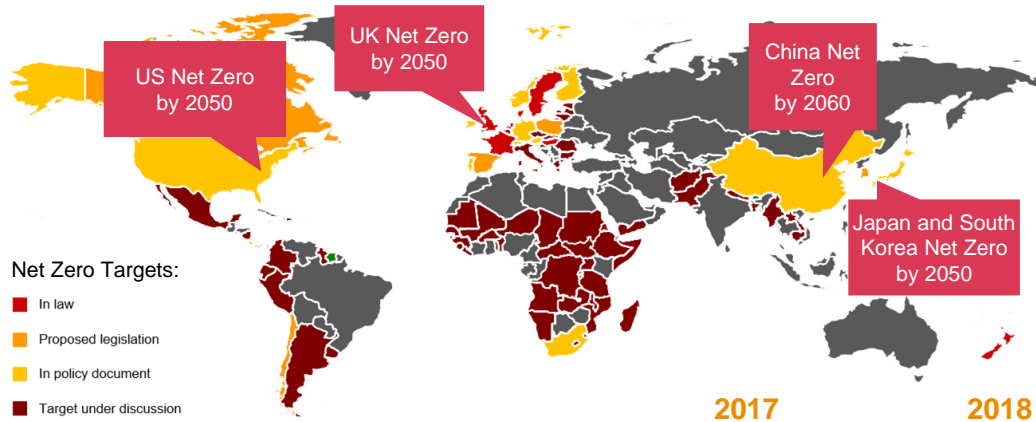
#### Mandatory Carbon Pricing

- **46+ countries** have mandatory carbon pricing
- **73% of Americans** approve of taxing corporate carbon emissions<sup>5</sup>
- Potential average price/tax of **\$100+ per ton CO2e by 2030**

#### Regulation

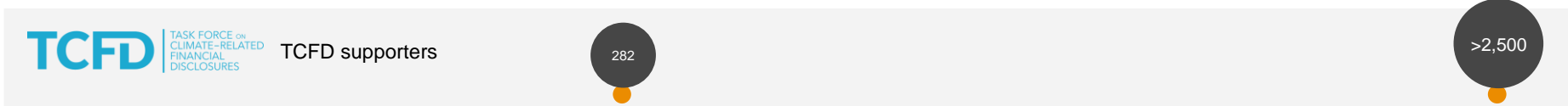
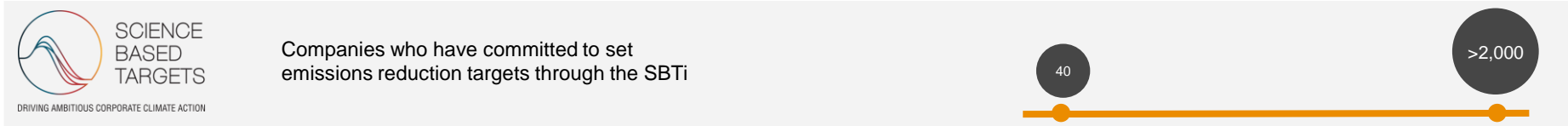
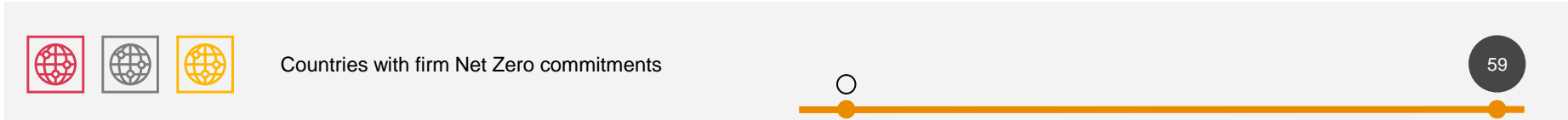
- Phase out of gasoline and diesel car sales<sup>6</sup>
- Mandatory climate risk and sustainable finance disclosures

# Net Zero: The rapidly growing pace of commitments



**59 countries** have Net Zero targets and a further 101 countries have a Net Zero target under discussion.

Net Zero commitments have skyrocketed over the past few years and we expect to see this trend continuing



# The types of GHG commitments in the market

## Carbon neutral targets

Achieve neutrality by **purchasing the equivalent offsets**

- No imposed scope or timeline
- Offsets used to compensate for emissions
- No GHG reduction target required
- Unregulated offsetting purchase scheme

- ✗ Questionable long term credibility
- ✗ Does not address value and requires annual offset payments
- ✓ Short term quick win

## Science based targets

5-15 years reduction targets in line with climate science.

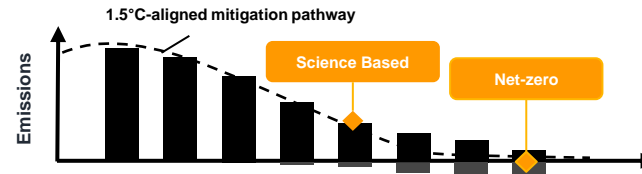
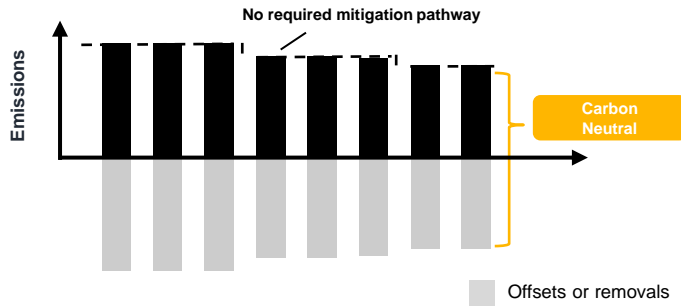
- Operational and some material value chain emissions
- Removals used to neutralize residual emissions
- Set reductions year on year in line with 1.5C
- Targets are validated by an independent body

- ✓ Long term credibility
- ✓ Addresses value from avoided risk and opportunities
- ✗ Often requires significant resources to achieve

## Net-zero targets

Long term reduction targets in line with climate science to meet Net Zero by 2050.

- Operational and material value chain emissions
- Removals used to neutralize residual emissions
- Set reductions year on year in line with 1.5C
- Targets are validated by an independent body  
(guidance to be published in 2021)



### PwC POV:

- Current practice shows confusion with the term “Net Zero.” Some companies have committed to “Net Zero” but are only focusing on Operations and may even be planning to use offsets. While in the short term this may work....investors and customers are wising up and demanding more
- Final definition by [SBTi of Net Zero](#) was issued recently in Spring 2021. We expect a greenwashing list (of whose targets aren't real) to be published soon.



## Polling Question 1: What is your organization's current status in relation to net zero and target setting?

1. Not yet started considering
2. Baselined scope 1 and 2 GHGs
3. Baselined scope 1, 2 and 3 GHGs
4. Set an informal GHG reduction target
5. Set a formal GHG reduction target through the SBTi
6. Don't know





## Target setting, the SBTi, financed emissions and the implications for insurers



# What is the Science Based Targets initiative (“SBTi”)?



A validated science based target is a prerequisite for a credible climate ambition, both internally and from a broader market perspective. The objective is to ensure that the targets will achieve our stated ambition as well as position us strongly in the market.

It is also clear that the expectations in relation to climate are moving rapidly - governments are moving quickly to set ambitious goals, expectations of businesses are increasing, and this will likely accelerate in the run up to COP26. It is already clear that even participation in leading events (including COP26 and the WEF’s Climate Leaders Group) will only continue to be available to those with ambitious science-based targets validated by the SBTi.

## About the SBTi

The SBTi defines and promotes best practice in science-based target setting. The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). It independently assesses and approves company targets in line with strict criteria that evolve in line with emerging climate science.

Having an SBTi validated target is widely considered best practice in setting a credible Net Zero commitment.

## How are the scopes of emissions defined?

The SBTi framework requires companies to set a SBT across each of the emissions scopes. These scopes relate to the different sources of emissions from our business assets and activities.

### Scopes 1 and 2

- Scope 1 emissions arise directly from sources that are owned or controlled by the insurer e.g. from car fleets, generators and boilers.
- Scope 2 emissions arise indirectly from purchased energy, namely the emissions associated with the production of heat and electricity for your buildings from assets not owned by the insurer.

### Scope 3

- Scope 3 emissions are those that arise indirectly as a result of activities from assets that are not owned or controlled by the insurer as part of your value chain including e.g. air travel and commuting.

# How SBTi assess alternatives for Net Zero in financial services



	Ambition metric	Offset treatment	Decarbonization & New Solutions	Validation
<b>SBTi</b>	Emissions targets and engagement targets	Offsets not included for any SBTs	Decarbonization	Assessment by SBTi
<b>Net Zero Asset Owners Alliance</b>	Engagement, sector, sub-portfolio emissions and/or financing transition targets	Unspecified	Decarbonization & New Solutions	Unspecified
<b>Net Zero Banking Alliance</b>	Absolute emissions and/ or sector specific emissions intensity targets	Offsets allowed	Decarbonization	Unspecified
<b>Institutional Investors Group on Climate Change</b>	Emissions target and engagement (asset level) targets	Offsets allowed	Decarbonization & New Solutions	Unspecified
<b>Net Zero Asset Managers</b>	Emissions targets	Offsets allowed	Decarbonization & New Solutions	Unspecified

Source: Science Based Targets initiative

# Illustration – net zero financed emissions - what the journey looks like

The lifecycle of a net zero financed emissions commitment promotes transparency and stakeholder awareness of progress. The following illustrates a leading practice example of how goals are established and reporting is developed:



★ Prior to making a public commitment, a key first step is to baseline your current financed emissions

# Approaches to GHG emissions assessments / baselining

	Method	Benefits	Limitations	Data required
Accuracy and Level of Effort ↑	Life cycle assessment method, using product level data	<ul style="list-style-type: none"> <li>Bottom up approach that provides a relatively high level of confidence in the carbon footprint</li> </ul>	<ul style="list-style-type: none"> <li>Takes a relatively large amount of resources to complete</li> <li>Requires access to relevant databases</li> </ul>	<ul style="list-style-type: none"> <li>Bill of materials, incl. volume, for each product</li> </ul>
	Corporate footprint, using company data	<ul style="list-style-type: none"> <li>Data is disclosed by the companies and can be verified</li> </ul>	<ul style="list-style-type: none"> <li>Can require a significant amount of resources to collect, verify and analyse the data from the companies</li> </ul>	<ul style="list-style-type: none"> <li>Company data such as energy and fuel consumption (kWh, litres), business travel (km per travel mode) or calculated carbon footprints, including scope of assessment</li> </ul>
	Corporate footprint, using data disclosed to CDP	<ul style="list-style-type: none"> <li>Data is disclosed by companies, together with additional information on the methodology, assumptions etc</li> </ul>	<ul style="list-style-type: none"> <li>Limited ability to verify the data disclosed</li> <li>Additional cost to purchase the data from CDP</li> <li>Relative level of effort to standardise / analyse the data</li> </ul>	<ul style="list-style-type: none"> <li>List of supplier names and spend</li> <li>Access to the CDP database and the relevant company records</li> </ul>
	Environmentally-extended input-output model (EEIO), using sector averages	<ul style="list-style-type: none"> <li>Relatively reduced level of effort required</li> <li>Good for identifying hotspots across the portfolio</li> </ul>	<ul style="list-style-type: none"> <li>Only upstream scope 3 categories related to the purchasing can be estimated.</li> <li>Sector level analysis, does not enable review of progress y-o-y</li> </ul>	<ul style="list-style-type: none"> <li>Sector, geographies and revenue for each supplier</li> </ul>

# Lessons from the trenches on financed emissions



## Immature Standards

The standards across financed emissions inventories, target setting, executing against targets and reporting results are emerging and are generally in pilot. This makes adaptability and comfort with some ambiguity key success factors for establishing suitable baseline, setting targets and integrating those targets into your investment operations.



## Baselining Challenges

Many financed emissions baselines are not fit for purpose for target setting and execution because they rely too heavily on estimates. This restricts options for reducing financed emissions when executing against the targets.



## Data Availability and Limitations

The data sets available for financed emissions are as good as they can be today, but our financial services clients have found that the coverage with real data versus modeled data is in the 50% range, although this will vary by portfolio. A greater reliance on modeled data can constrain the options for achieving the targets and distort the integration of the targets into investment decision making.



## Science Based Targets Require Comprehensive Portfolio Coverage

Under the pilot guidance for financial services, SBTi has been strict about requiring targets to cover the entire portfolio from the outset, despite receiving industry push back in favor of step-wise approaches moving sector by sector and/or asset class by asset class. Therefore, companies may need to consider broadening the scope of net-zero pathways to include all asset classes (such as mortgages and government bonds) prior to submitting a plan to the SBTi for approval.



## Engagement With Key Investment Teams Is Essential

Investment teams should be engaged at the outset of a net zero project and a series of workshops should be conducted with those teams at critical points in the project. This requires a modest commitment of time from the investment teams, but it is essential to building buy in and developing a target setting and execution framework that will meet the long-term goal.

In our past experience, we have found that investment teams gladly get engaged once the plan is laid out.

In our experience, our financed emissions clients have either purchased data, developed their own data, or have worked collaboratively with us to develop data that is fit for purpose when executing against the targets. The data development methodology has generally been a function of internal system capabilities and budget.



Net zero underwriting



# Overview of considerations in relation to Net Zero underwriting

There are a number of factors for insurers to consider when establishing how to integrate emissions profiles into their underwriting and portfolio construction:

- Underwriting rules in relation to specific industries, e.g. reducing exposure to Coal and Oil sands or Aviation
- Quantification of greenhouse gas emissions associated with individual insurance policies or books of business - appropriate metrics, calculation methodologies and emissions factors
- Data challenges - what existing policyholder data can be utilized and what additional information must be collected?
- Incorporation of emissions into the underwriting process - impact on pricing?
- Limits and thresholds - how can an insurer set specific limits around emissions of individual policies or portfolios?



# Net Zero Insurance Alliance

Program to develop methodologies to support the transition of underwriting portfolios to net-zero greenhouse gas (GHG) emissions by 2050, consistent with a maximum temperature rise of 1.5°C above pre-industrial levels by 2100.

The founding members of the NZIA are:

- AXA (Chair)
- Allianz
- Aviva
- Generali
- Munich Re
- SCOR
- Swiss Re
- Zurich

There are multiple work streams covering metrics and targets for core lines of business, policy and regulation, life and health.





## Polling Question 2: What approach is your company taking to integrating emissions considerations into underwriting operations?

1. Nothing yet - still exploring
2. Setting specific rules in relation to underwriting in certain industries
3. Quantifying emissions in insurance products and underwriting portfolios
4. Setting emissions thresholds for individual underwriters
5. Don't know



# Thank you



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