



## **Green and Sustainable Finance Cross-Agency Steering Group Climate and Environmental Risk Questionnaire for SMEs**

General teach-in on climate risks and terminology

**March 2023**

# How the SME Questionnaire can help

The SME Questionnaire is aligned with the Task Force on Climate-related Financial Disclosures (TCFD) framework.

GSF's SME Questionnaire				Serve as an entry point for companies that have not previously disclosed the sustainability-related issues
		SMEs & Non-listed companies		Prepare sustainability report
				Increase the sustainability visibility to lenders, investors, and supply chain clients
				Provide more company-level data for risk assessment as well as lending and investment decisions
		Financial institutions		More consistent, comparable, and global standard-aligned information
				Support use cases in exposure quantification, climate-related disclosures, scenario analysis and stress testing

# What do we mean by climate change?

Climate Change is the Defining Challenge of Our Time

"**Climate change**" means a change of climate which is attributed directly or indirectly to human activity that **alters the composition** of the global atmosphere and which is in addition to **natural climate variability** observed over comparable time periods<sup>1</sup>

*United Nations Framework Convention on Climate Change*

# Environmental risks are today's key global risks

Published in April 2022, the United Nations' Intergovernmental Panel on Climate Change (IPCC)'s Sixth Assessment Report unveils key findings that emphasise the importance of cutting carbon emissions within the decade to limit catastrophic impacts of climate change.

## 1.3%

Percentage increase each year in **global emissions** during the last decade

The expanded use of renewable energy and improvements in energy efficiency did not go far enough to counteract emissions.

## 3.2°C

**Degree of warming** of the planet if current emissions trajectories go unchanged

Holding warming to within 1.5°C requires **cutting emissions of all greenhouse gases roughly in half** by the 2030s.

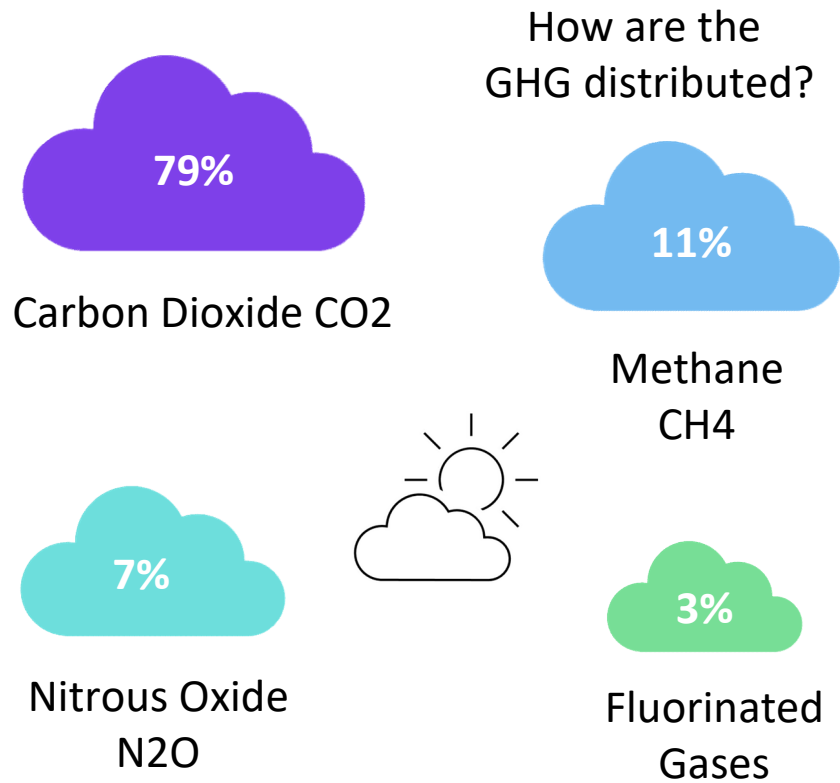
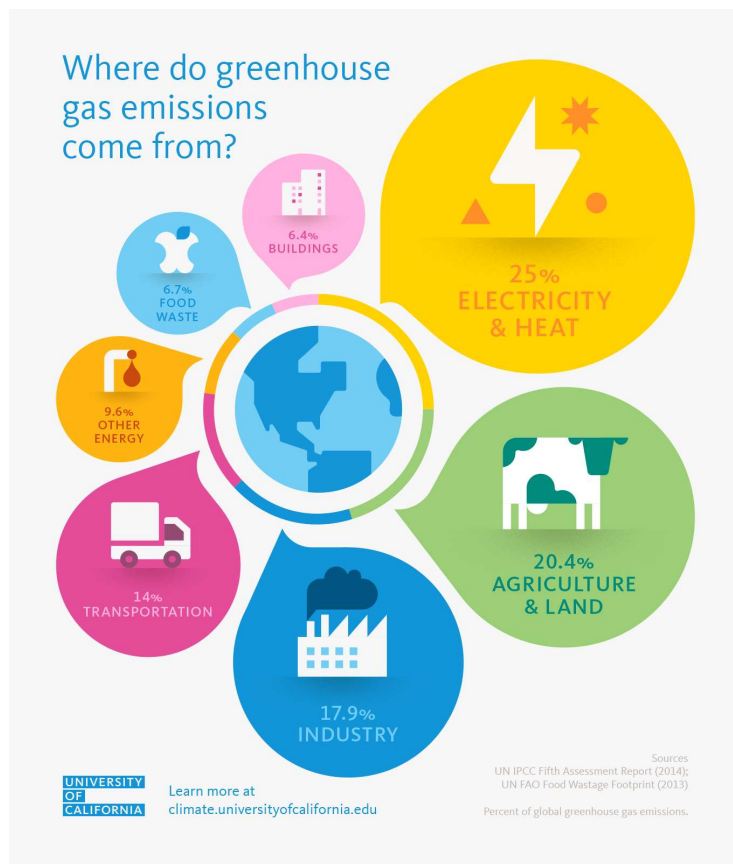
## 2025

The year that **carbon emissions must peak by**, to stay under the 1.5°C benchmark.

After 2025, emissions must decrease rapidly and reach net-zero by 2050.

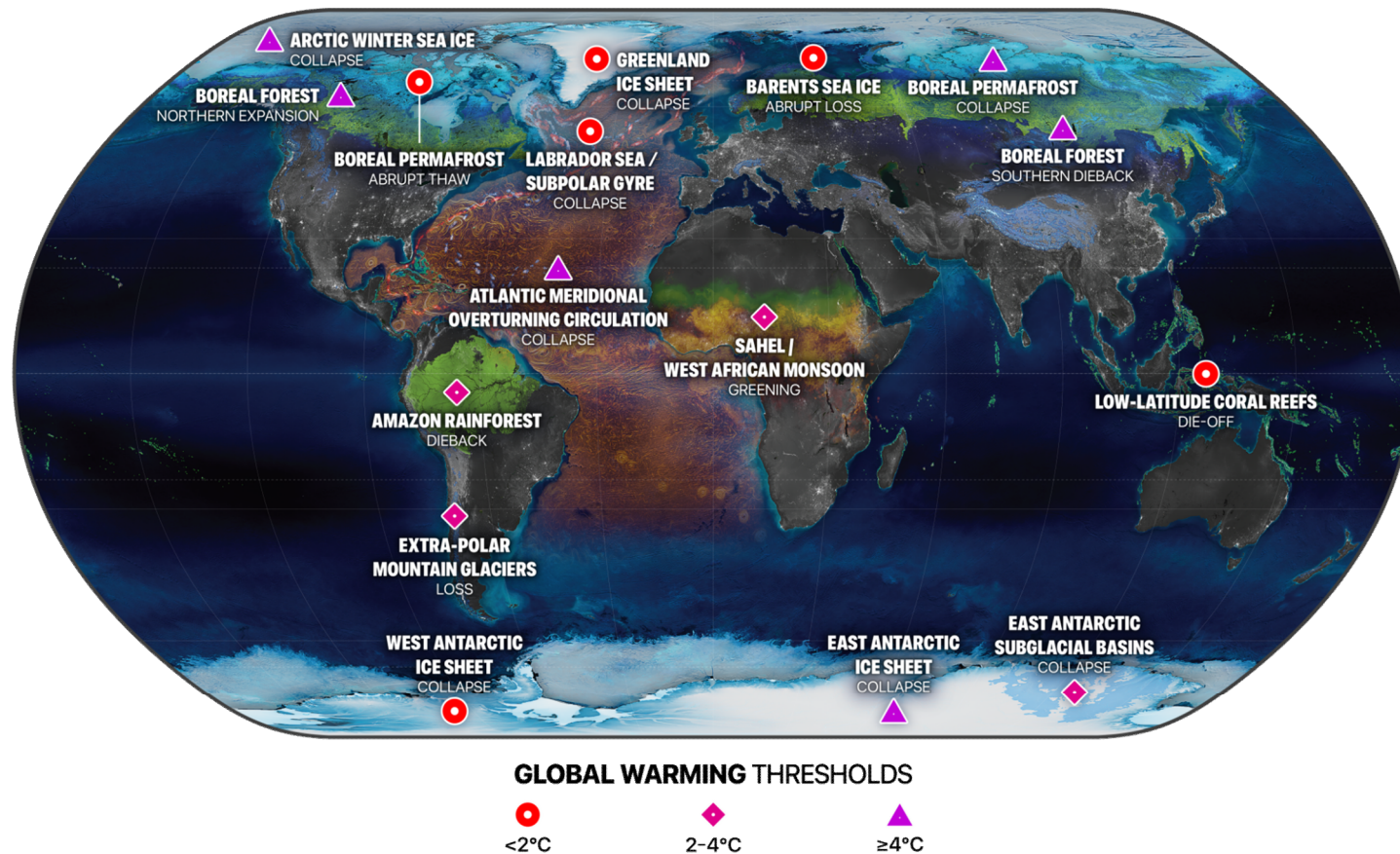
# Where do the emissions come from?

When completing the questionnaire you need to consider how, and if, your business creates these emissions



# What will increasing temperatures mean?

If the world continues to warm there will be significant global impacts, that will further increase temperature rises, these are often known as “tipping points”



# Scenarios: How are we doing today?

There are different scenarios of how warm the world will be, and many companies plan for multiple scenarios

## Global greenhouse gas emissions and warming scenarios

Our World  
in Data

- Each pathway comes with uncertainty, marked by the shading from low to high emissions under each scenario.
- Warming refers to the expected global temperature rise by 2100, relative to pre-industrial temperatures.

Annual global greenhouse gas emissions  
in gigatonnes of carbon dioxide-equivalents

150 Gt

100 Gt

50 Gt

Greenhouse gas emissions  
up to the present

0

1990 2000 2010 2020 2030 2040 2050 2060 2070 2080 2090 2100

### No climate policies

4.1 – 4.8 °C

→ expected emissions in a baseline scenario if countries had not implemented climate reduction policies.

### Current policies

2.5 – 2.9 °C

→ emissions with current climate policies in place result in warming of 2.5 to 2.9°C by 2100.

### Pledges & targets (2.1 °C)

→ emissions if all countries delivered on reduction pledges result in warming of 2.1°C by 2100.

2°C pathways  
1.5°C pathways

Businesses are often using these as their scenarios for business planning

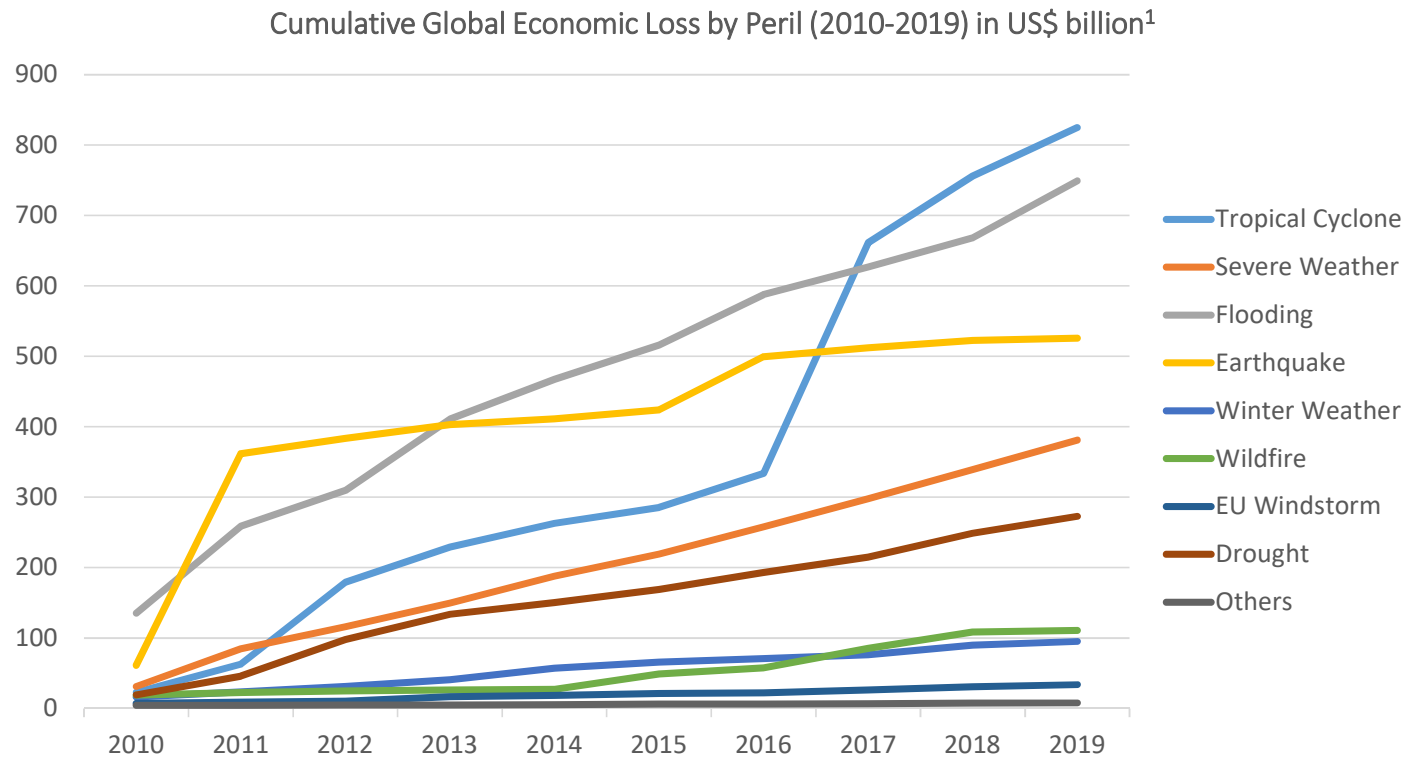
Data source: Climate Action Tracker (based on national policies and pledges as of November 2021).  
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Last updated: April 2022.  
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Source: <sup>1</sup>Our world in data, <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>

# And we are already seeing these losses

There is an increasing trend of economic loss over the years



18%

Reduction of global GDP by 2050 if global temperatures rise by 3.2°C

Source:  
<sup>1</sup>Catastrophe Insights, AON <http://catastropheinsight.aon.com/pages/regionschart.aspx?region=Global&losstype=Economic> ;  
<sup>2</sup>Swiss Re

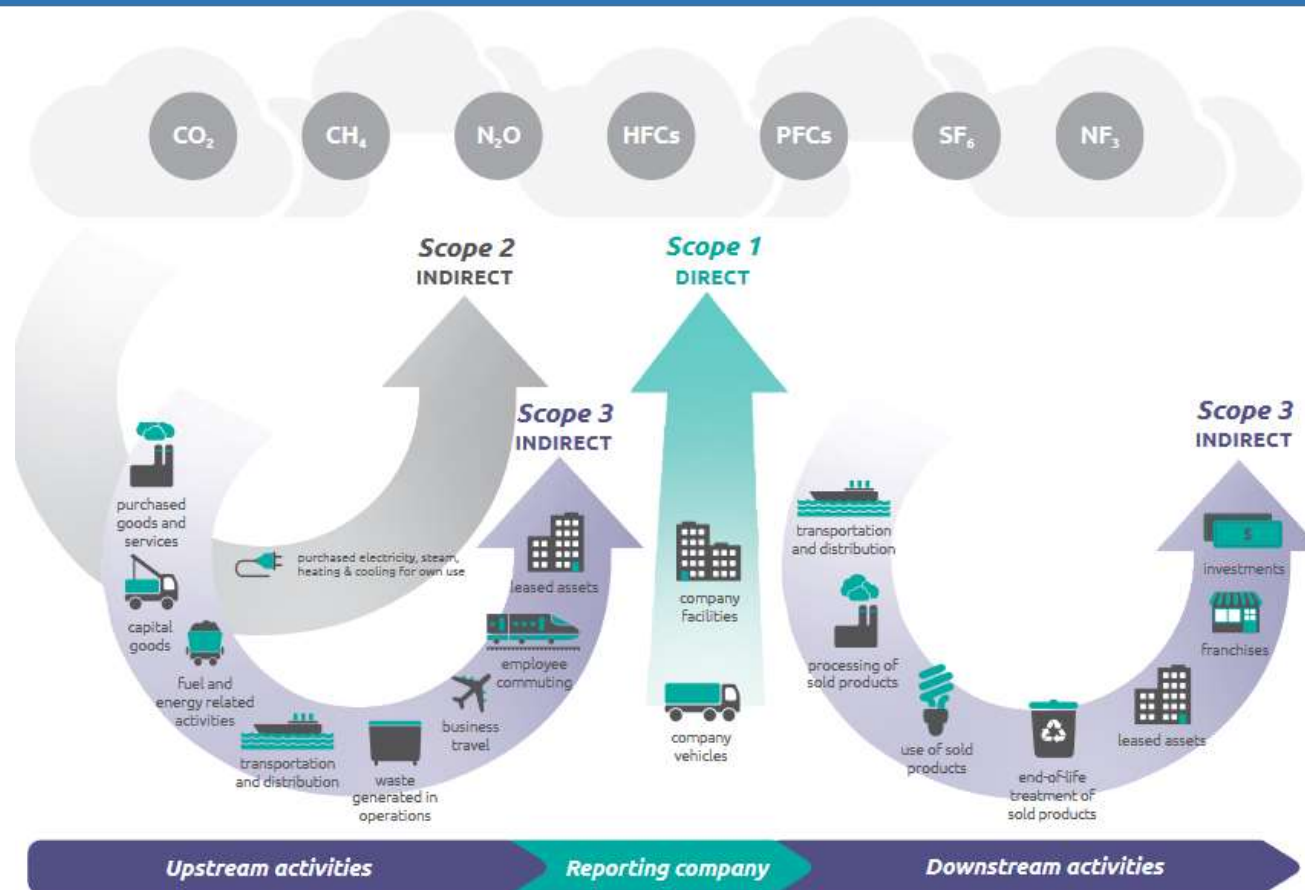




# **Key concepts**

# What are scope 1,2 & 3 emissions?

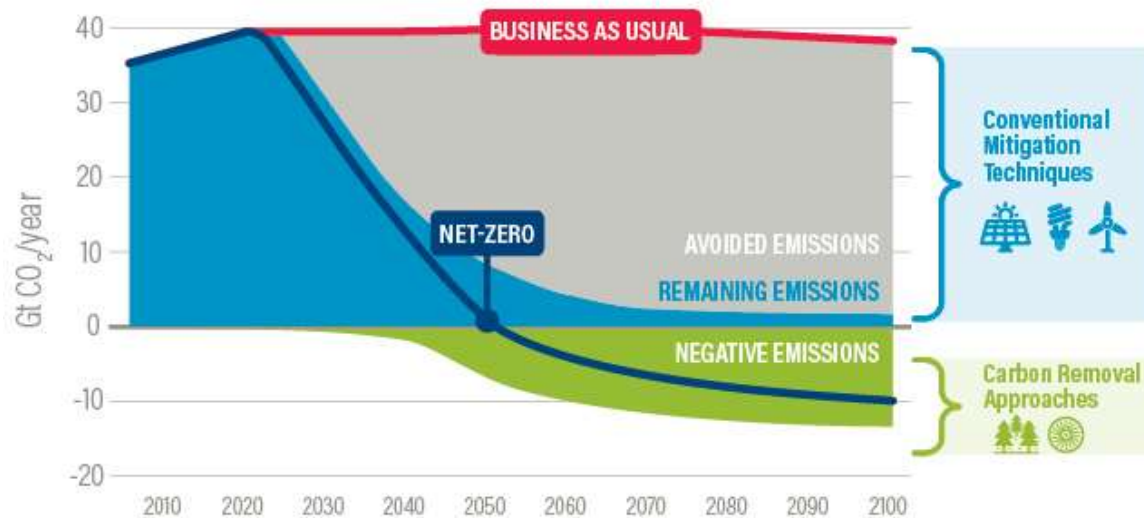
Why your supply chain matters in climate change reporting: Most of your emissions are likely to come from it



# What is net zero?











Achieving net zero requires ten key solutions

## Staying Below 1.5 Degrees of Global Warming



Source: Adapted from IPCC 2018.  
20.05.28



- |  |   |
|--|---|
| 1.  Phase out coal              | 6.  Public transport                     |
| 2.  Clean energy & efficiency   | 7.  Decarbonise aviation & shipping      |
| 3.  Retrofit buildings          | 8.  No deforestation, nature restoration |
| 4.  Decarbonise heavy industry | 9.  Reduce food loss & waste            |
| 5.  Shift to EVs              | 10.  Eat more plants & less meat       |

World Resources Institute 10 key solutions needed for Net Zero

# Climate risk drivers

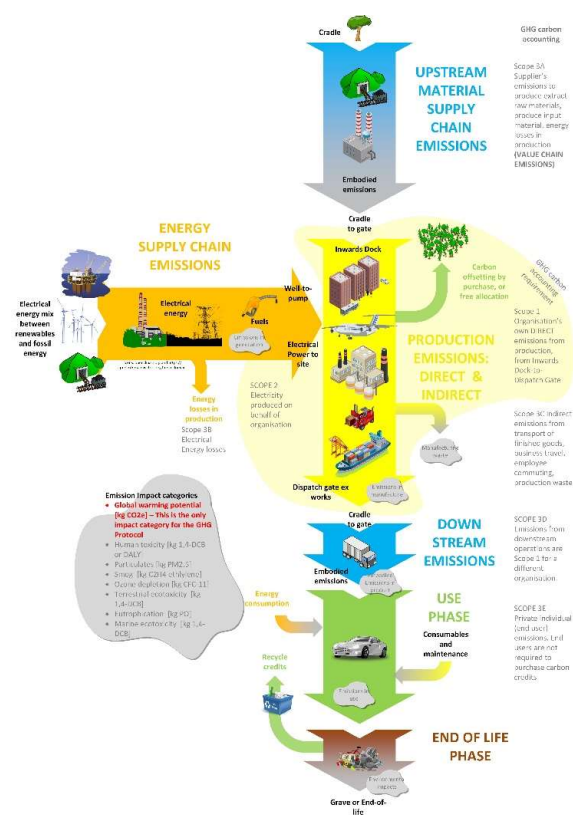
Climate risk drivers have a number of features that makes their evolution highly uncertain

Category	Climate risk drivers	
<b>Transition risk</b>  Risks which arise from the transition to a low-carbon economy. Transition risk drivers are global, although the specific nature of the risk driver will vary by economy.	<i>Climate policies</i>	Policy / regulatory changes such as pollution control regulation, policies on resource conservation, and public subsidies
	<i>Technology</i>	Technological change relating to energy-saving, low-carbon transportation, and increasing use of non-fossil fuels or other technologies
	<i>Investor sentiment</i>	Equity and debt investor awareness with respect to climate change are incorporating climate risk considerations into their investment decisions
	<i>Consumer sentiment</i>	Change in consumer behavior to transition to an economy with lower carbon emissions
<b>Physical risk</b>  Risks which arise from the changes in weather and climate that impact the economy. The impact to economies will vary depending on geographical location.	<i>Acute risk</i>	Acute physical risks are generally considered to consist of: lethal heatwaves, floods, wildfires and storms, including hurricanes, cyclones and typhoons as well as extreme precipitation
	<i>Chronic risk</i>	Chronic physical risks are generally considered to include: rising sea levels, rising average temperatures, and ocean acidification



# Life cycle analysis to measure climate impacts

Life cycle assessment or LCA (also known as life cycle analysis) is a methodology for assessing environmental impacts associated with all the stages of the life cycle of a commercial product, process, or service



LCA studies the **environmental aspects** and **potential impacts** throughout a product's life cycle (i.e. **cradle-to-grave**) from raw materials acquisition through production, use and disposal. The general categories of environmental impacts needing consideration include resource use, human health, and ecological consequences.

Widely recognized procedures for conducting LCAs are included in the 14000 series of environmental management standards of the International Organization for Standardization (ISO), in particular, in ISO 14040 and ISO 14044. ISO 14040 provides the 'principles and framework' of the Standard, while ISO 14044 provides an outline of the 'requirements and guidelines'.

## Slide 13

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**CB4**

Added to cover new UST questions, if we decide to add. Would benefit from UST inputs in terms of guidance

Chris Barford, 05/12/2022



# **Glossary of key terms**

# Key terms – Types of risk

## Glossary

Term / Acronym	Definition
Climate Risk	The potential risks that may arise from climate change or from efforts to mitigate climate change, their related impacts and their economic and financial consequences
Physical Risk	Economic costs and financial losses resulting from the increasing severity and frequency of: <ul style="list-style-type: none"> <li>• extreme climate change-related weather events (or extreme weather events) such as heatwaves, landslides, floods, wildfires and storms (i.e. acute physical risks);</li> <li>• longer-term gradual shifts of the climate such as changes in precipitation, extreme weather variability, ocean acidification, and rising sea levels and average temperatures (i.e. chronic physical risks or chronic risks); and</li> <li>• indirect effects of climate change such as loss of ecosystem services (e.g. desertification, water shortage, degradation of soil quality or marine ecology).</li> </ul>
Acute Physical Risk	Physical risk arising from extreme events that occur at a point of time, such as droughts, floods and storms
Chronic Physical Risk	Physical risk arising from arises from progressive shifts, such as increasing temperatures, sea-level rises, water stress, biodiversity loss, land use change, habitat destruction and resource scarcity
Transition Risk	The risks related to the process of adjustment towards a low-carbon economy. The financial impact that can result, directly or indirectly, from the process of adjustment towards a lower-carbon and more environmentally sustainable economy. This could be triggered, for example, by a relatively abrupt adoption of climate and environmental policies, technological progress or changes in market sentiment and preferences



# Key terms – Emissions

## Glossary

Term / Acronym	Definition
Greenhouse gases (GHGs)	Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of thermal infrared radiation emitted by the Earth's surface, by the atmosphere itself, and by clouds. This property causes the greenhouse effect. Water vapour (H <sub>2</sub> O), carbon dioxide (CO <sub>2</sub> ), nitrous oxide (N <sub>2</sub> O), methane (CH <sub>4</sub> ) and ozone (O <sub>3</sub> ) are the primary greenhouse gases in the Earth's atmosphere.
Emissions:	Emissions responsibility as defined by the GHG Protocol, a private sector initiative (WBCSD and WRI, 2004).
Scope 1 Emissions	Indicates direct greenhouse gas (GHG) emissions that are from sources owned or controlled by the reporting entity.
Scope 2 Emissions	'Scope 2' indicates indirect GHG emissions associated with the production of electricity, heat, or steam purchased by the reporting entity.
Scope 3 Emissions	'Scope 3' indicates all other indirect emissions, i. e., emissions associated with the extraction and production of purchased materials, fuels, and services, including transport in vehicles not owned or controlled by the reporting entity, outsourced activities, waste disposal, etc.

# Key terms – Plans & Scenarios

## Glossary

Term / Acronym	Definition
Climate Scenario	A plausible description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces (e.g. rate of technological change, prices) and relationships. Scenarios are neither predictions nor forecasts, but are used to provide a view of the implications of developments and actions.
Transition Plan	Aspect of an organization's business strategy that lays out how an organization aims to minimize climate-related risks and increase opportunities as the world transitions toward a low-carbon economy, including by reducing emissions of its own balance sheet and that of its value chain
Stress test	The evaluation of a financial institution's financial position under a severe but plausible scenario. The term "stress testing" is also used to refer to the mechanics of applying specific individual tests and to the wider environment within which the tests are developed, evaluated and used within the decision-making process.

# Key terms – Miscellaneous

## Glossary

Term / Acronym	Definition
Tipping point	A level of change in system properties beyond which a system reorganizes, often abruptly, and does not return to the initial state even if the drivers of the change are abated. For the climate system, it refers to a critical threshold when the global or regional climate changes from one stable state to another stable state.
ESG	ESG (environmental, social and governance) refers to a set of criteria that play a role in the investment decision-making process or in a company's operations. Environmental factors consider how an investment or a company contributes to environmental issues such as climate change and sustainability. Social factors examine the social impacts of an investment or a company on communities. Governance relates to transparency and legal compliance of an investment or a company's operations, for instance in terms of accounting and shareholders' rights.
Stranded asset	Asset that at some time prior to the end of its economic life is no longer able to earn an economic return as a result of changes associated with the transition to a low-carbon economy (adapted from Carbon Tracker).
Carbon taxation (carbon tax)	A carbon tax (or energy tax) generally refers to a tax levied on the carbon content of some goods and services, typically in the transport and/or energy sectors. The purpose is to reduce CO <sub>2</sub> emissions by increasing the price of these goods and services. It is one of the main types of tools used in climate change policies around the world.

# Key terms – Primary bodies and standards

## Glossary

Term / Acronym	Definition
TCFD	Task Force on Climate-Related Financial Disclosures, develops consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders
IPCC	Intergovernmental Panel on Climate Change, created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options
NGFS	Network for Greening the Financial System, group of Central Banks & Supervisors that share best practices and contribute to the development of climate risk management in the financial sector. Developed climate scenarios which form the basis of most regulatory stress testing to date
COP 26	The United Nations Climate Change Conferences are yearly conferences held in the framework of the United Nations Framework Convention on Climate Change. The 26th United Nations Climate Change conference was held in Glasgow (1-12 Nov 2021), and the 27 <sup>th</sup> was held in Sharm El Sheik (6-18 Nov)
PCAF	Partnership for Carbon Accounting Financials. An industry-led partnership to facilitate transparency and accountability of the financial industry to the Paris Agreement
NZBA	The industry-led, UN-convened Net-Zero Banking Alliance brings together 53 banks from 27 countries representing almost a quarter of global banking assets (over US\$37 trillion), which are committed to aligning their lending and investment portfolios with net-zero emissions by 2050
PACTA	The Paris Agreement Capital Transition Assessment is a free, open-source methodology and tool, which measures financial portfolios' alignment with various climate scenarios consistent with the Paris Agreement

Source: <sup>1</sup>Basel Committee on Banking Supervision, *Climate-related financial risks – measurement methodologies*; <https://www.bis.org/bcbs/publ/d518.pdf> ; IPCC; [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_annex-i.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf)