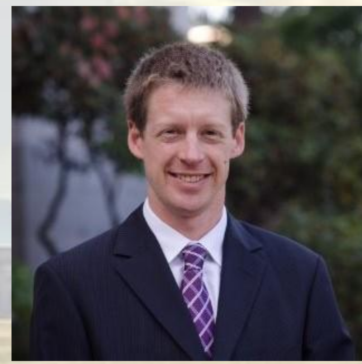
Kathleen A. Birrane,
Commissioner, Maryland Insurance Administration

UN environment programme

Lea Lorkowski,
Project Manager for UNEP FI's Climate Risk and TCFD Programme

David Carlin,
TCFD and Climate Risk Program Lead for United Nations Environment Programme-FI



Michael Peterson,
Deputy Commissioner on Climate Sustainability, CA Department of Insurance

Mike Kreidler,
Commissioner, Washington State Insurance Commission

Steven Rothstein,
Managing Director, Ceres Accelerator for Sustainable Capital Markets

Ricardo Lara,
Commissioner, California Department of Insurance

Mike Kreidler,
Commissioner,
Washington State
Insurance Commission

Kathleen A. Birrane, Commissioner, Maryland Insurance Administration

Ricardo Lara,
Commissioner, California Department of Insurance

CERTIFICATE OF ATTENDENCE

This certifies that

Has attended the complete webinar series sponsored by Ceres on:

TCFD Climate Risk in the Insurance Industry

(July 27, 2022 & September 14, 2022)

2022

Steven M. Rothstein
Ceres Accelerator for
Sustainable Capital Market

There will be computer automated approach to extract the information in the reports and evaluation. For the extraction to work well, we recommend:

- We will not extract any pictures and tables. The reason is that for information in pictures and tables to be meaningful, people usually need additional explanations in the text. Especially to understand better what this means for the institutions' value, as long as climate-related accounting and reporting are not sufficiently standardized. Hence, information that is considered important and material should be (re-)stated in the main body of the text.

- With regards to text boxes, we extract the information if it is not stored as a picture. However, we would strongly encourage you to rather highlight specific important paragraphs within your report, instead of opting for text boxes.

- Format: Simple PDFs – no additional security keys etc. It should be readable with a standard pdf reader (not adobe pro etc.)

- No scans of text because they are treated like pictures and will hence not be processed.

Additional Sessions

September 14 12-2 pm ET
Overview and Review of first Session (10 minutes)
Exploring the TCFD pillars (50 minutes)
Exploring good practices (30 minutes)
Q&A, conclusion and evaluation (30 minutes)

Phase II: Targeted Peer Support Sessions (90 minutes) /Office Hours (30 minutes) for Implementation
October 6 from 12-2 pm ET

October 12 from 12-2 pm ET

October 27 from 12-2 pm ET
Ben Carr, Analytics & Capital Modelling Director, Aviva: Special guest speaker

7

Landing Page (https://www.ceres.org/events/webinar-series-climate-risk-insurance-industry)

Last year's insurance webinar

UN environment programme

Webinar Ceres hosted July 2021 on TCFD

Includes useful context from AIG, Zurich and two important insurance commissioners

Link to webinar

8

Ceres

Climate disclosure training - Day 2

Insurers in the US

14 September 2022

TCFD and Climate Risk Programme
United Nations Environment Programme Finance Initiative

Agenda

1	Overview and review of first session
2	TCFD current practices
3	Exploring the TCFD pillars
4	Q&A, conclusion and evaluation

Section #1

Overview and review of first session

What is the Task Force on Climate-related Financial Disclosures (TCFD)?

TCFD recommendation pillars[1]

Core Elements of Recommended Climate-Related Financial Disclosures

Governance
The organization's governance around climate-related risks and opportunities

Strategy
The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management
The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

- The TCFD was created in 2015 to enable financial markets to better assess and price climate risk

1 FSB, 2017

TCFD recommended disclosures

There are 11 disclosures across 4 pillars that cover climate risks and opportunities throughout an organization

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures			
a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risks. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Recap question 1

Which statement about climate related risks for insurers is accurate?

a) Acute physical risks are related to longer-term shifts in climate patterns

b) Insurers will not be affected by Technology risks

c) Insurers are faced with Market risk from the development of new climate-focused insurance products.

d) Changes to the behavior of clients is an example of a potential physical risk

Recap answer 1

Which statement about climate related risks for insurers is accurate?

a) Acute physical risks are related to longer-term shifts in climate patterns

b) Insurers will not be affected by Technology risks

c) Insurers are faced with Market risk from the development of new climate-focused insurance products.

d) Changes to the behavior of clients is an example of a potential physical risk

Recap question 2

Which statements about TCFD recommended disclosures is correct?

a) There are 11 disclosures across 4 pillars recommended by TCFD, covering how an organization addresses climate risks and opportunities.

b) TCFD provides universal guidance for all financial sectors without supplemental guidance for insurers.

c) The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning should appear in the Governance pillar of climate related finance disclosure.

d) Climate-related transition plans don't need to consider related metrics and targets

Recap answer 2

Which statement about TCFD recommended disclosures is correct?

a) There are 11 disclosures across 4 pillars recommended by TCFD, covering how an organization addresses climate risks and opportunities.

b) TCFD provides universal guidance for all financial sectors without supplemental guidance for insurers.

c) The actual and potential impacts of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning should appear in the Governance pillar of climate related finance disclosure.

d) Climate-related transition plans don’t need to consider related metrics and targets

Recap question 3

Which statements about US Securities and Exchange Commission's action on climate-related financial disclosure reporting is accurate? Please select multiple:

a) The SEC hasn't developed any climate-related disclosure rules that would apply to public companies

b) The SEC proposal was developed primarily based on the TCFD framework

c) The SEC rule went beyond the TCFD guidance in a few areas to reflect US and SEC considerations

d) The SEC is totally consistent with TCFD recommended disclosures and doesn't omit any subset of TCFD guidance

Recap answer 3

Which statement about US Securities and Exchange Commission's action on climate-related financial disclosure reporting is accurate? Please select multiple:

a) The SEC hasn't developed any climate-related disclosure rules that would apply to public companies

b) The SEC proposal was developed primarily based on the TCFD framework

c) The SEC rule went beyond the TCFD guidance in a few areas to reflect US and SEC considerations

d) The SEC is totally consistent with TCFD recommended disclosures and doesn't omit any subset of TCFD guidance

Recap question 4

In the next sessions, which perspectives about TCFD recommended disclosures do you need more guidance on?

Section #2

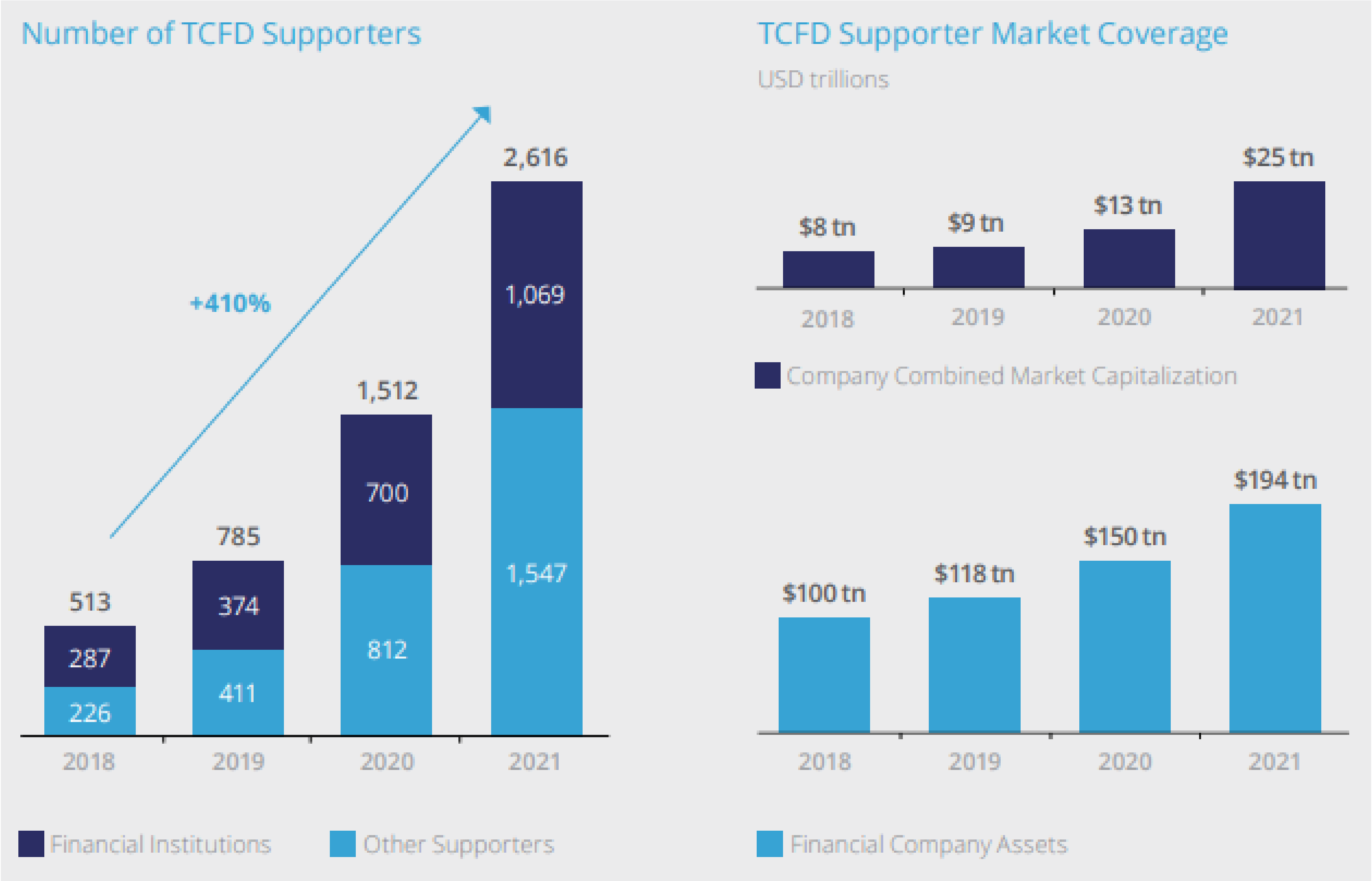
TCFD current practices

Introduction to TCFD

"The TCFD is helping to bring climate risks and resilience into the heart of financial decision-making, making climate disclosure more comprehensive and comparable and helping investment for a two-degree world go mainstream."

-Mark Carney, FSB Chair 2011-2018

Continued Growth in Support for the TCFD



Source: TCFD Status Report 2021, https://assets.bbhub.io/company/sites/60/2022/02/TCFD-Strategy-Workshop.pdf

Assessing the quality of TCFD reports

By The Financial Reporting Council (FRC) and the Financial Conduct Authority (FCA) of premium listed companies that had publications by end-April 2022

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Areas of progress

- The number of companies making disclosures that were either partially or mostly consistent with the TCFD framework increased significantly compared with 2020.
- Over 90% of companies self-reported that they had made disclosures consistent with the TCFD's Governance and Risk Management pillars, but this dropped to below 90% for the Strategy and Metrics and Targets pillars.
- Companies that had identified climate change as a principal or emerging risk in their AFR reported higher levels of consistency against each of the recommended disclosures. Further, those companies that were primarily engaged in FCA-regulated activity indicated higher levels of consistency for each of the recommended disclosures.

Areas of further enhancement

- The most common reporting gaps were in respect of the more quantitative elements of the TCFD's recommendations eg scenario analysis and metrics and targets.
- Useful in respect of the net zero commitments that companies are making. Where you are making net zero commitments, we encourage you to consider the TCFD's guidance on Metrics, Targets and Transition Plans, and to ensure that your disclosures are not misleading.
- To ensure readiness to disclose effectively against the ISSB's standards once finalised and adopted in the UK.

Question 1

The TCFD recommendations aim to make a connection between (select only one):

1. Climate and risk
2. Strategy and implementation
3. Climate and finance
4. Emissions and targets

Answer 1

The TCFD recommendations aim to make a connection between (select only one):

1. Climate and risk

2. Strategy and implementation

3. Climate and finance

4. Emissions and targets

Question 2

Has your organization started to use the TCFD recommendations (select only one)?

1. Yes, for a couple of years now
2. Yes, but we are still figuring it out
3. No, but we plan to this year
4. No, our leadership is not convinced

Section #3

Exploring the TCFD pillars

Focus on the implementation guidance

Comparison across finance and real economy sectors

		Governance		Strategy			Risk Management			Metrics and Targets		
		a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Guidance for All Sectors												
	All	■	■	■	■	■	■	■	■	■	■	■
Supplemental Guidance												
Financial Industries	Banks			■			■			■	■	
Financial Industries	Insurance Companies				■	■	■	■		■	■	
Financial Industries	Asset Owners				■	■	■	■		■	■	
Financial Industries	Asset Managers				■		■	■		■	■	
Non-Financial Groups	Energy				■	■				■		
Non-Financial Groups	Transportation				■	■				■		
Non-Financial Groups	Materials and Buildings				■	■				■		
Non-Financial Groups	Ag., Food, and Forest Products				■	■				■		

1) https://www.fsb.org/wp-content/uploads/P141021-4.pdf, page 7.

Disclosure varies across recommendations

The strategy recommendation includes both the most and the least disclosed recommended disclosure

Recommendation	Recommended Disclosure	% Point Change '18–'20	% of Companies Disclosing Information Aligned with TCFD Recommended Disclosures: FY 2018	FY 2019	FY 2020
Governance	a) Board Oversight	16	9%	13%	25%
	b) Management's Role	9	9%	11%	18%
Strategy	a) Climate-Related Risks and Opportunities	14	38%	42%	52%
	b) Impact on Company	13	26%	30%	39%
	c) Resilience of Strategy	8	5%	7%	13%
Risk Management	a) Risk Identification and Assessment Processes	14	16%	20%	30%
	b) Risk Management Processes	15	14%	17%	29%
	c) Integration into Overall Risk Management	17	10%	17%	27%
Metrics and Targets	a) Climate-Related Metrics	10	34%	40%	44%
	b) Scope 1, Scope 2, and Scope 3 GHG Emissions	10	27%	31%	37%
	c) Climate-Related Targets	13	21%	24%	34%

Source: TCFD Status Report 2021, https://assets.bbhub.io/company/sites/60/2022/02/TCFD-Strategy-Workshop.pdf

TCFD

Governance Pillar

TCFD disclosure Pillar 1: Governance

The Governance recommendation is supported by two recommended disclosures

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Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risks. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Expanded TCFD guidance on board oversight

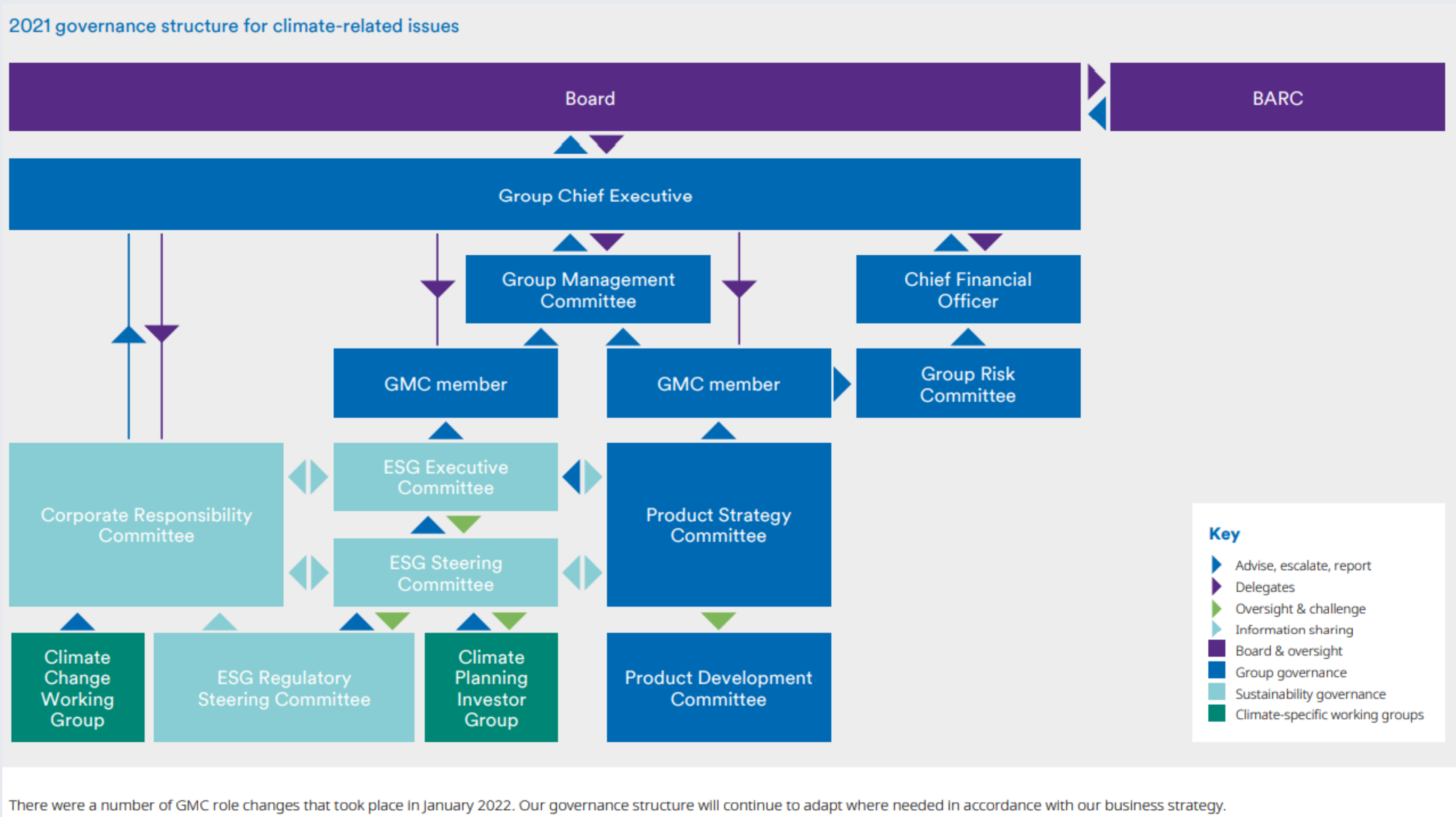
Recommended Disclosure a)

In describing the board's oversight of climate-related issues, organizations should consider including:

- Processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues
- Whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans, as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures; and
- How the board monitors and oversees progress against goals and targets for addressing climate-related issues.

Example for governance disclosure a)

Schroders, TCFD report 2021



- Color-coded and included an agenda with responsibilities.

Example for governance disclosure a)

Schroders, TCFD report 2021

Governance continued

Committee	Committee information for 2021	Description	
Board Audit and Risk Committee (BARC)	**Chair**: Schroders plc independent non-executive Director **Membership**: Independent non-executive directors of Schroders plc **Meetings**: 5	The BARC is responsible for overseeing financial reporting, risk management and internal controls, internal and external audit. The BARC receives reports from management on key risks to ensure they are considered at Board level. Oversight of key risks is essential to the delivery of the Group's overall strategy, and the BARC provides an update to the Board quarterly.	Climate activities during 2021: • As 'Environmental, social and governance (ESG) risk including climate change' is identified as a key business risk, the BARC received information quarterly in order to assess how it is being managed

Expanded TCFD guidance on management role

Recommended Disclosure b)

In describing management's role related to the assessment and management of climate-related issues, organizations should consider including:

- Whether the company has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues
- A description of the associated organizational structure(s)
- Processes by which management is informed about climate-related issues; and
- How management (through specific positions and/or management committees) monitors climate-related issues.

Example for governance disclosure b)

Standard Chartered, TCFD report 2021

Governance body	Chair	Climate-related agenda frequency	Purpose and responsibilities related to climate-related issues	Climate-related topic 2021
Board	Standard Chartered PLC Group Chairman	Ad hoc.	• Oversee the Group's overall net-zero approach. • Responsible for the net-zero pathway shareholder advisory vote proposal.	• Approved the Group's approach to net zero. • Discussed and reviewed the Group's net-zero pathway. • Discussed and reviewed the progress on delivery and methodology of the Group's approach to reach net zero by 2050. • Took part in Climate Risk training and guest speaker analysis on climate-related matters.
Board Risk Committee (BRC)	Independent non-Executive Director	Three times a year. Climate Risk updates to BRC in Group reports 11 times a year.	• Provide oversight of the Group's key risks on behalf of the Board and is the primary Risk Committee at the Board level that oversees Climate Risk. • Consider the Group's Risk Appetite (RA) and make recommendations to the Board on the Risk Appetite Statement (RAS). • Assess risk types (including Climate Risk) and the effectiveness of risk management frameworks and policies. • Provide oversight and challenge of the design and execution of climate-related stress testing.	• Reviewed and approved the Group's Climate RAS. • The Committee reviewed, discussed and challenged the Group's CBES stress test results, ahead of submission to the BoE. • Reviewed and approved Climate Risk-related management actions. • Review and recommend to the Board Climate RAS.

Question 3

What steps have you taken to ensure your board is informed about climate risks and opportunities? Please select multiple:

1. Implementation of mandatory trainings
2. Specific skillsets required for the boards
3. Adjusted internal reporting processes
4. Any other actions
5. We have not taken any steps yet

Question 4

Are processes in place for relevant senior managers and/or management committees to monitor climate-related issues and information?

1. Yes, comprehensive governance in place
2. Some governance in place
3. No, but working on it
4. No, and it is not planned

TCFD

Strategy Pillar

TCFD disclosure Pillar 2: Strategy

The strategy recommendation is supported by three recommended disclosures

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risks. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Expanded TCFD guidance on strategy a)

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material

Recommended Disclosure a)

Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

Organizations should provide the following information:

- A description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms

- A description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization

- A description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization

- Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to Tables A1.1 and A1.2 (pp. 75–76)

Example for strategy disclosures a)

Barclays TCFD report, 2021

Examples of identified climate physical risks and their potential financial impacts	
Acute physical risk (event-driven) S, M, L	▪ These will impact on credit and market risk associated with counterparties and clients. ▪ Barclays' own operational resilience will mitigate against business disruption and damage to assets. ▪ Acute physical events are already happening in the short term but will likely continue to occur and become more widespread.
Chronic physical risk (shifts in climate pattern) M, L	▪ These risks could impact on entire sectors and geographic regions that the bank supports, as well as potentially impacting on the bank's own infrastructure. ▪ These shifts in climate pattern are expected to manifest in the longer term.

Examples of identified climate transition risks and their potential financial impacts	
Policy and Regulatory risk S, M, L	▪ Rapid policy or regulatory changes (e.g. carbon taxes, tightening of energy efficiency standards) could lead to increased credit risk of clients and counterparties and could alter the definitions of green and sustainable products. ▪ In certain jurisdictions, legislators and policymakers are increasingly focused on building a regulatory framework for the management of the financial risks arising from climate change. These include, among other things, regulations and/or policies on climate risk management, climate stress testing, taxonomy and disclosure. Compliance with these requirements may increase the costs as well as operational and reputational risk on firms with cross-border businesses (as well as the bank), where there is a material divergence in climate regulations and policies in the different jurisdictions in which impacted firms operate.
Technology risk S, M, L	▪ New evolving and disruptive technologies could lead to substantial and rapid changes in costs of production and operation, competitiveness, supply and demand in certain sectors – which could impact on credit risk of clients and counterparties. ▪ The risk of this occurring exists now and in the future.
Legal risk S, M, L	▪ Clients could face potential litigation as a result of the environmental impact of their business activities or their approach to addressing climate change, which could lead to credit risk for the bank where we have exposure to them and the Group could similarly face climate-related litigation or enforcement action in relation to how climate change related risks are addressed. ▪ There is some evidence that this is an emerging risk which could continue into the future.

- Identifies climate-related risks in the short, medium, and long term and groups them into three categories.

Expanded TCFD guidance on strategy b)

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material

Recommended Disclosure b)

Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

Organizations should consider:

- Including the impact on their businesses, strategy, and financial planning in the following areas: (1) Products and services, (2) Supply chain and/or value chain, (3) Adaptation and mitigation activities, (4) Investment in research and development, (5) Operations including types of operations and location of facilities, (6) Acquisitions or divestments and, (7) Access to capital

- Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time.

- Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities). If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.

- Organizations that have made GHG emissions reduction commitments, operate in jurisdictions that have made such commitments, or have agreed to meet investor expectations regarding GHG emissions reductions should describe their plans for transitioning to a low-carbon economy, which could include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain or to otherwise support the transition.

Supplemental Guidance for Insurance Companies

Recommended Disclosure b)

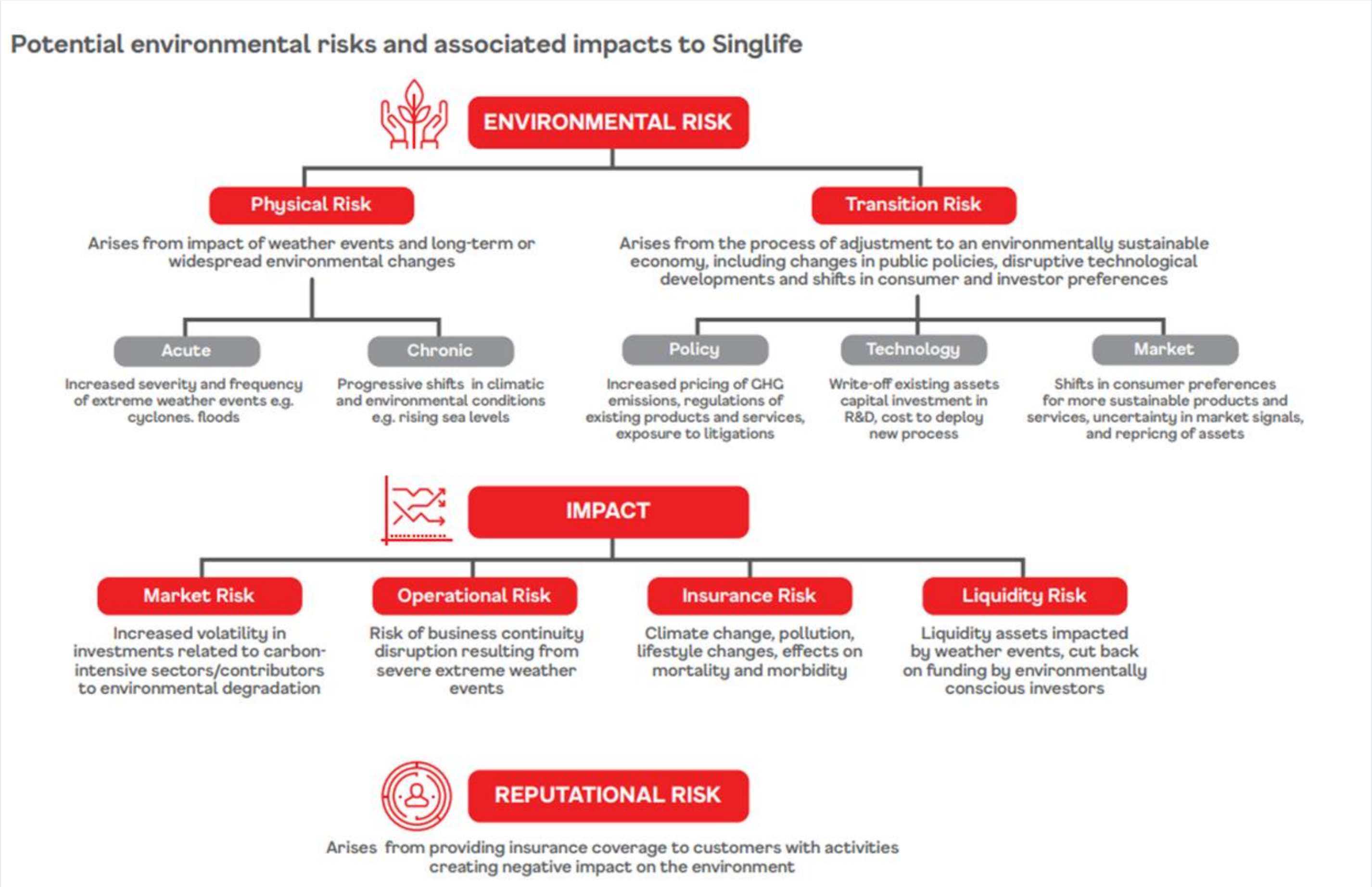
Insurance companies should describe the potential impacts of climate-related risks and opportunities as well as provide supporting quantitative information where available, on their core business, products, and services.

Including:

- Information at the business division, sector, or geography levels
- How the potential impacts influence client or broker selection; and
- Whether specific climate-related products or competencies are under development, such as insurance of green infrastructure, specialty climate-related risk advisory services, and climate-related client engagement

Example for strategy disclosures b)

Singlife Climate-related Financial Disclosure, 2021



- Singlife illustrated the potential impacts of climate-related risks and opportunities on their core businesses, products, and services,.

Example for strategy disclosures b)

Citi Group TCFD report, 2021

Expanded TCFD guidance on strategy c)

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material

Recommended Disclosure c)

Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios including a 2°C or lower scenario.

Organizations should consider discussing:

- Where they believe their strategies may be affected by climate-related risks and opportunities
- How their strategies might change to address such potential risks and opportunities
- The potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities); and
- The climate-related scenarios and associated time horizon(s) considered.

Supplemental Guidance for Insurance Companies

Recommended Disclosure c)

Insurance companies that perform climate-related scenario analysis on their underwriting activities should provide the following information:

- Description of the climate-related scenarios used, including the critical input parameters, assumptions and considerations, and analytical choices. In addition to a 2°C scenario, insurance companies with substantial exposure to weather-related perils should consider using a greater than 2°C scenario to account for physical effects of climate change and

- Time frames used for the climate-related scenarios, including short-, medium-, and long-term milestones.

Example for strategy disclosures c)

Allianz Group Sustainability Report 2021

Aspects covered	Scenarios used	Scenario provider
Transition and physical	• Climate Biennial Exploratory Scenario • General Insurance Stress-test 2019	Bank of England
Transition and physical	• Orderly • Disorderly • Hot-house (for physical)	Network for Greening the Financial System
Transition	• 53 scenarios used for Special Report on Global Warming of 1.5°C (no and low overshoot)	Intergovernmental Panel on Climate Change (IPCC) (building on a multitude of scenario providers)
Transition	• Net-zero by 2050 • Sustainable Development Scenario • Beyond 2° Scenario • Stated Policies Scenario • 2° Scenario	International Energy Agency
Transition	• One Earth Climate Model	University of Technology Sydney
Transition	• RPS • FPS	Inevitable Policy Response
Physical	• RCP[1] 4.5 • RCP[1] 8.5 • RCP[1] 2.6 will be implemented in the course of 2022	IPCC

Short-term	Medium-term	Long-term
Up to three years	**Three – ten years**	**Ten+ years**
As defined, for instance, in our standard Top Risk Assessment process.	Needed for establishing solvency considerations and capital adequacy.	As, for instance, required for strategic decisions and transactions with investment horizons of several decades like real estate and infrastructure.

- Allianz Group elaborated how insurance company performed climate-related scenario analysis on their underwriting activities with time frames used for the climate-related scenarios.

Example for strategy disclosures c)

HSBC TCFD Update 2020

Wholesale loan exposure to transition risk sectors and customer questionnaire responses

	Automotive	Building and construction	Chemicals	Metals and mining	Oil and gas	Power and utilities	Total
Wholesale loan exposure as % of total wholesale loans and advances to customers and banks[1,2,3]	≤3.1%	≤4.0%	≤3.4%	≤2.5%	≤3.4%	≤3.2%	≤19.6%
Proportion of sector for which questionnaires were completed[1]	42%	44%	32%	45%	42%	40%	41%
Proportion of questionnaire responses that reported either having a board policy or a management plan[4]	68%	81%	77%	54%	84%	93%	77%
Sector weight as proportion of high transition risk sector[4]	16%	20%	18%	13%	17%	16%	100%

Use of climate stress testing and scenario analysis to answer strategic questions

Guiding questions

- How will our clients be impacted under different climate scenarios?
- How should we advise our clients to mitigate their climate risk exposure?
- How do we accurately track and monitor impact of climate risk on performace?

- What is the impact of climate risk on our business plan?
- Do we have sufficient financial resources given the potential climate scenarios?
- Does our financial resource allocation approach reflect the climate risks facing the business?

- Where are the key pockets of climate risk in the portfolio?
- Is this climate risk exposure within risk appetite?
- What is the impact of potential mitigation actions?

Embedding into core processes

Client advisory and decision making	Product design	Strategic planning
	Risk management	Regulatory reporting
Performance metrics	Capital planning	Public disclosures

- Sections focus only on the resilience of the companies strategy, which is in line with c) of the strategy pillar.

Question 5

How would you rate the level of development of your strategy processes around climate?

1. Not started climate risk and opportunity assessment on our strategy
2. Little process so far
3. In progress
4. Highly developed

Question 6

What time periods does the TCFD ask you to consider?

1. 10 – 20 years
2. Until 2050
3. Until 2030
4. Short-, medium-, long term horizon

Answer 6

What time periods does the TCFD ask you to consider?

1. 10 – 20 years
2. Until 2050
3. Until 2030
4. Short-, medium-, long term horizon

TCFD

Risk Management Pillar

TCFD disclosure Pillar 3: Risk Management

The risk management recommendation is supported by three recommended disclosures

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures			
a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risks. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Expanded TCFD guidance on risk management a)

Disclose how the organization identifies, assesses, and manages climate-related risks

UN environment programme

Recommended Disclosure a)

Describe the organization's processes for identifying and assessing climate-related risks.

Organizations should provide the following information:

- A description of their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks.
- A description of whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered
- Processes for assessing the potential size and scope of identified climate-related risks and
- Definitions of risk terminology used or references to existing risk classification frameworks used

Supplemental Guidance for Insurance Companies

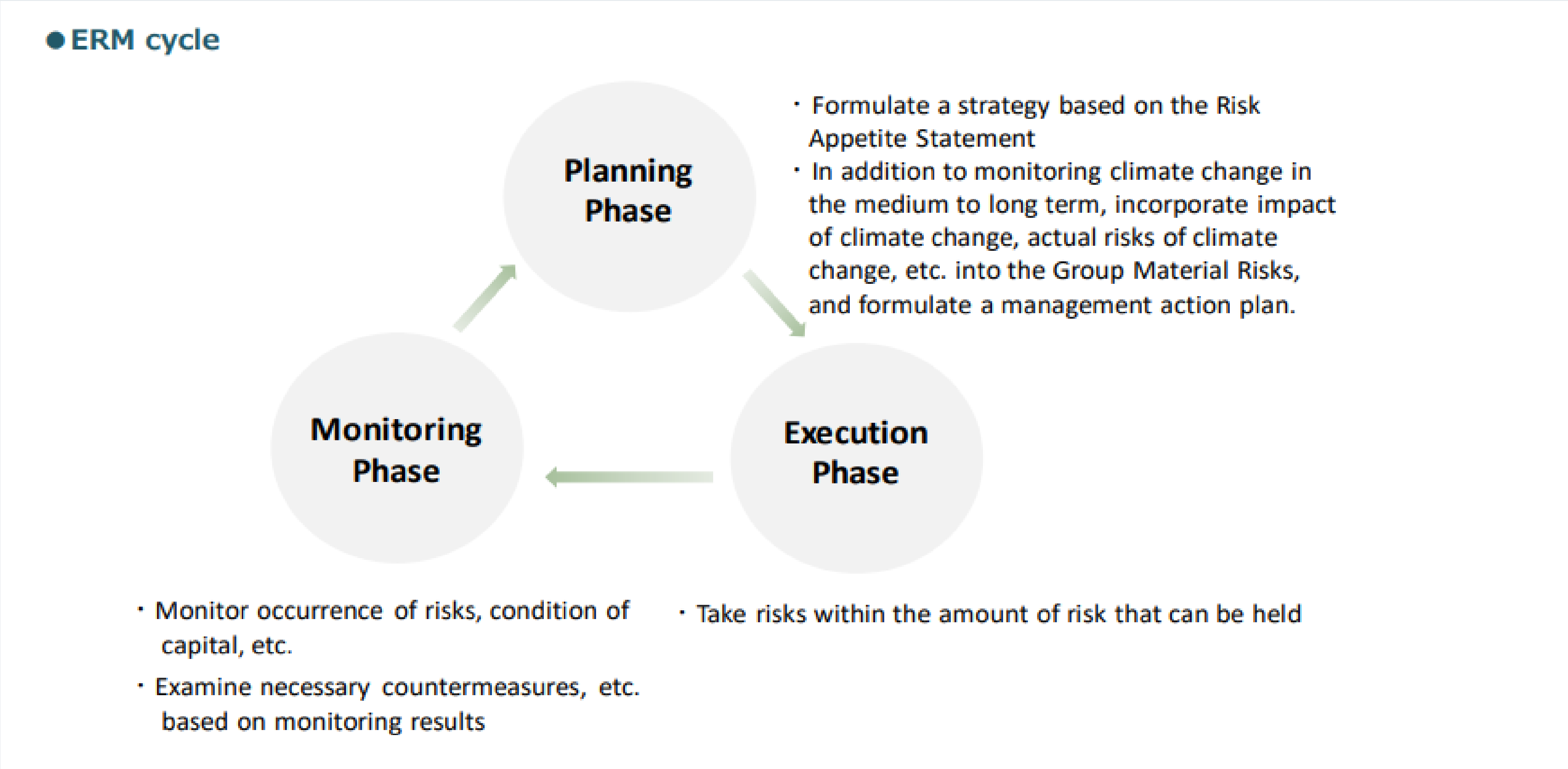
Recommended Disclosure a)

Insurance companies should describe the processes for identifying and assessing climate-related risks on re /insurance portfolios by geography, business division, or product segments, including the following risks:

- Physical risks from changing frequencies and intensities of weather-related perils;
- Transition risks resulting from a reduction in insurable interest due to a decline in value, changing energy costs, or implementation of carbon regulation; and
- Liability risks that could intensify due to a possible increase in litigation.

Example for risk management disclosure a)

MS & AD Insurance Group TCFD Report 2021



- MS & AD group identifies Group Material Risks, including climate-related risks to be controlled by management, formulates a Management Action Plan and regularly monitors the status.

Example for risk management disclosure a)

Santander, TCFD Report 2021

Key processes

- **I Planning:** setting business objectives and considering business environment
- **II Identification:** ensuring effective categorization and control
- **III Assessment:** determining the likelihood, impact and materiality of risk
- **IV Execution:** managing risk profile within the limits agreed in the planning
- **V Monitoring:** comparing perfomance against agreed plans
- **VI Mitigation:** bringing perfomance back within or towards acceptable levels
- **VII Reporting:** production and submission of accurate and relevant management information

- Santander disclose the organization key processes and has a detailed description for each of the steps. Risk Management Recommendation a).

Expanded TCFD guidance on risk management b)

Disclose how the organization identifies, assesses, and manages climate-related risks

Recommended Disclosure b)

Describe the organization's processes for managing climate-related risks.

Organizations should provide the following information:

- A description of their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate-related risks, including how materiality determinations are made within their organizations.

- In describing their processes for managing climate-related risks, organizations should address the risks included in Tables A1.1 and A1.2 (pp. 75–76), as appropriate.

Supplemental Guidance for Insurance Companies

Recommended Disclosure b)

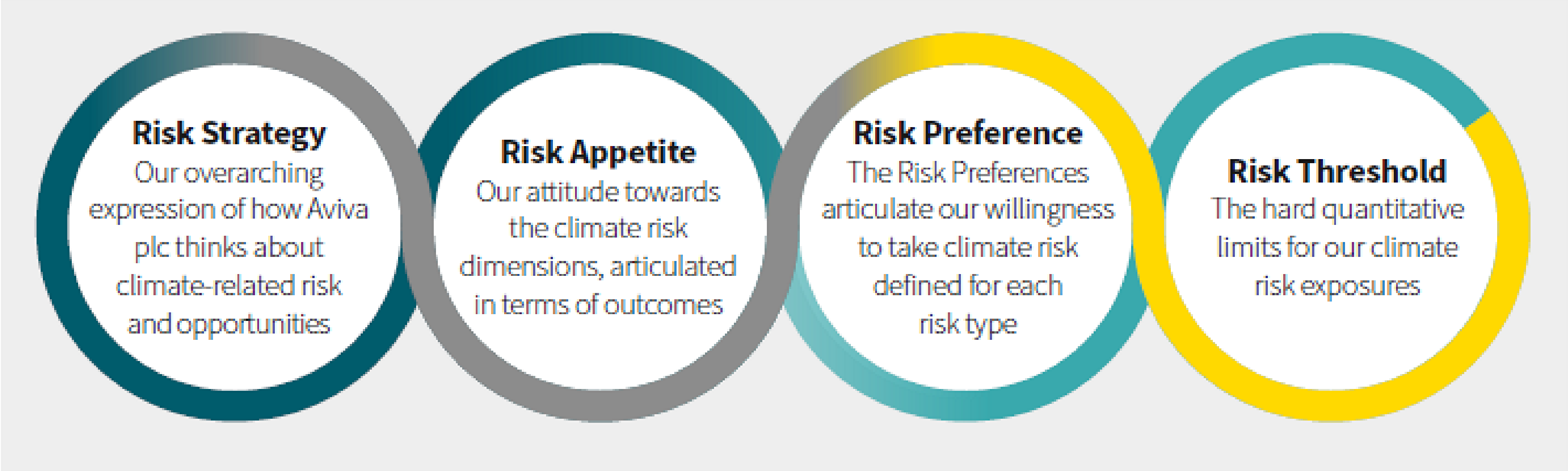
Insurance companies should describe:

- Key tools or instruments, such as risk models, used to manage climate-related risks in relation to product development and pricing.
- The range of climate-related events considered and how the risks generated by the rising propensity and severity of such events are managed.

Example for risk management disclosure b)

Aviva plc, TCFD report 2021

Figure 17: key components within Aviva's Climate Risk Appetite. Source: Aviva



- Aviva uses risk management and risk appetite frameworks to ensure their climate risk appetite (supported by a dashboard of metrics) is aligned with their Sustainability Ambition, Senior Management Long-Term Incentive Plan and their external commitments.

Expanded TCFD guidance on risk management c)

Disclose how the organization identifies, assesses, and manages climate-related risks

Recommended Disclosure c)

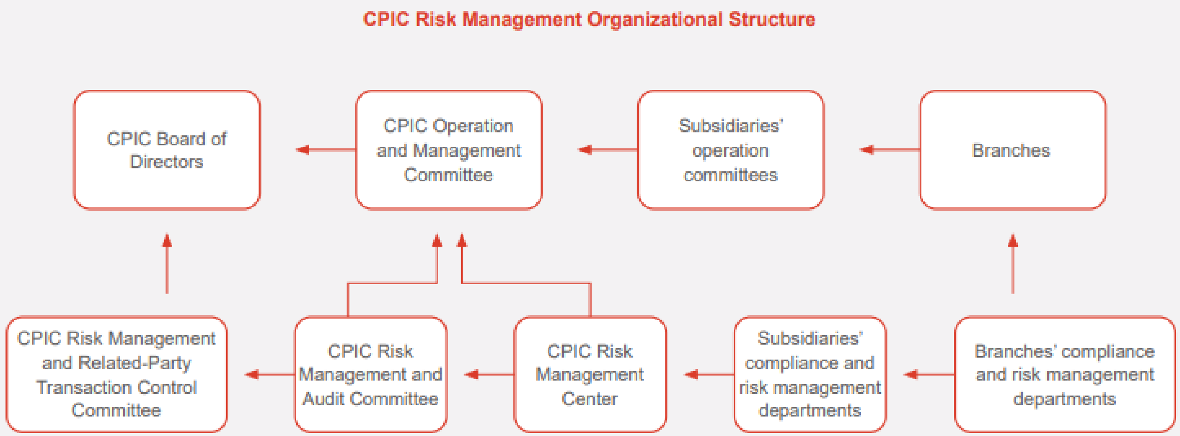
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

Organizations should provide the following information:

- A description of how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

Example for risk management disclosure c)

China Pacific Insurance Sustainability Report, 2021



Impact of ESG risks on CPIC	CPIC's approach to ESG risk

Insurance Aspect

Insurance development is closely related to the external environment such as natural, economic and social conditions. Changes in the external environment, such as a sudden epidemic, may affect economic development, wealth income, and risk perception, which in turn may pose risks to the development of insurance operations.

- Establishing response plans and training mechanisms for climate risks
- Developing catastrophe insurance, index insurance
- Applying advanced catastrophe risk assessment techniques and tools
- Promoting the construction of the three pillars of old-age care and developing special products and services such as old-age communities and medical care for major diseases
- Practicing sustainable insurance principles

- CPIC has achieved integrated risk management to guide and supervise various departments and subsidiaries, ensuring that risk management is implemented in line with CPIC's risk management goals and policies.

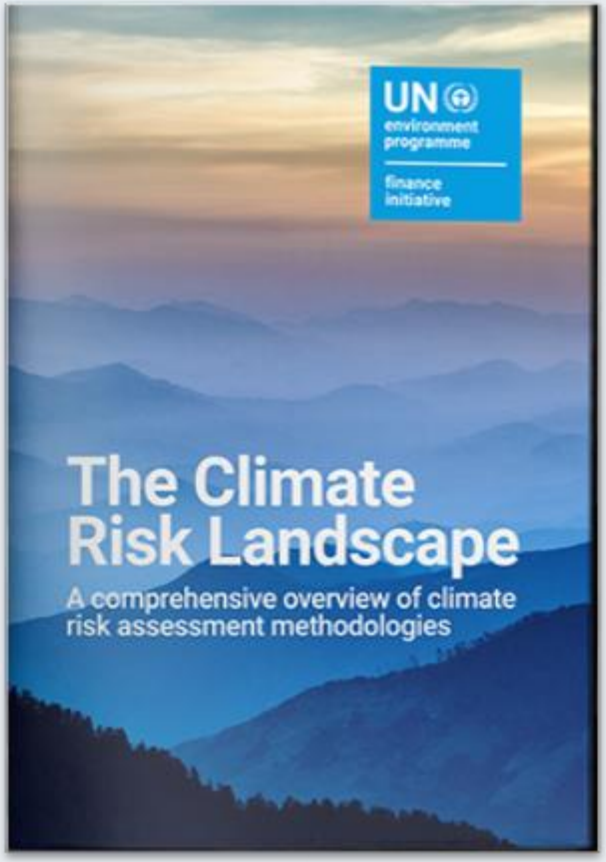
The Climate Risk Landscape: Tools and Providers

Methodologies and applications of climate risk tools continue to advance

Key conclusions[1]

- Increasing mandatory policy and regulation driving tool use
- Standardization in climate risk inputs: NGFS reference scenarios
- Most tools are using more than one scenario provider
- Combination of transition and physical risk methodologies
- New applications of artificial intelligence
- Increasing data availability and usability
- Abundance and consolidation of service providers

Report freely available online



1. UNEP FI, 2021

Areas requiring further enhancement

Climate risk tools continue to improve, but there are still important gaps (that vary by tool) that users should appreciate

Topic	Key issues
Physical asset locations and other characteristics	■ Some tools incorporate datasets on locations of physical assets for listed companies ■ But they do not take account of asset design, age and condition ■ Data are lacking for unlisted companies / SMEs
Supply chains and market demand	■ Tools use sector- or country-level trade data and input-output tables ■ Data are lacking on suppliers and customers at counterparty level
Unlisted companies and SME counterparties	■ Climate risks facing unlisted companies / SME counterparties are unknown
Counterparties' adaptation and resilience measures	■ Ability of counterparties to adapt / cope with physical risk is not captured (except sovereigns)
Intangible assets	■ Lack of research on climate impacts on intangible assets (e.g. brand value, social license to operate, environmental performance)
Engagement	■ Engagement with counterparties is typically not modelled

2022 Tool demonstration working group

17 vendors are participating, which demonstrate their functions and methodologies

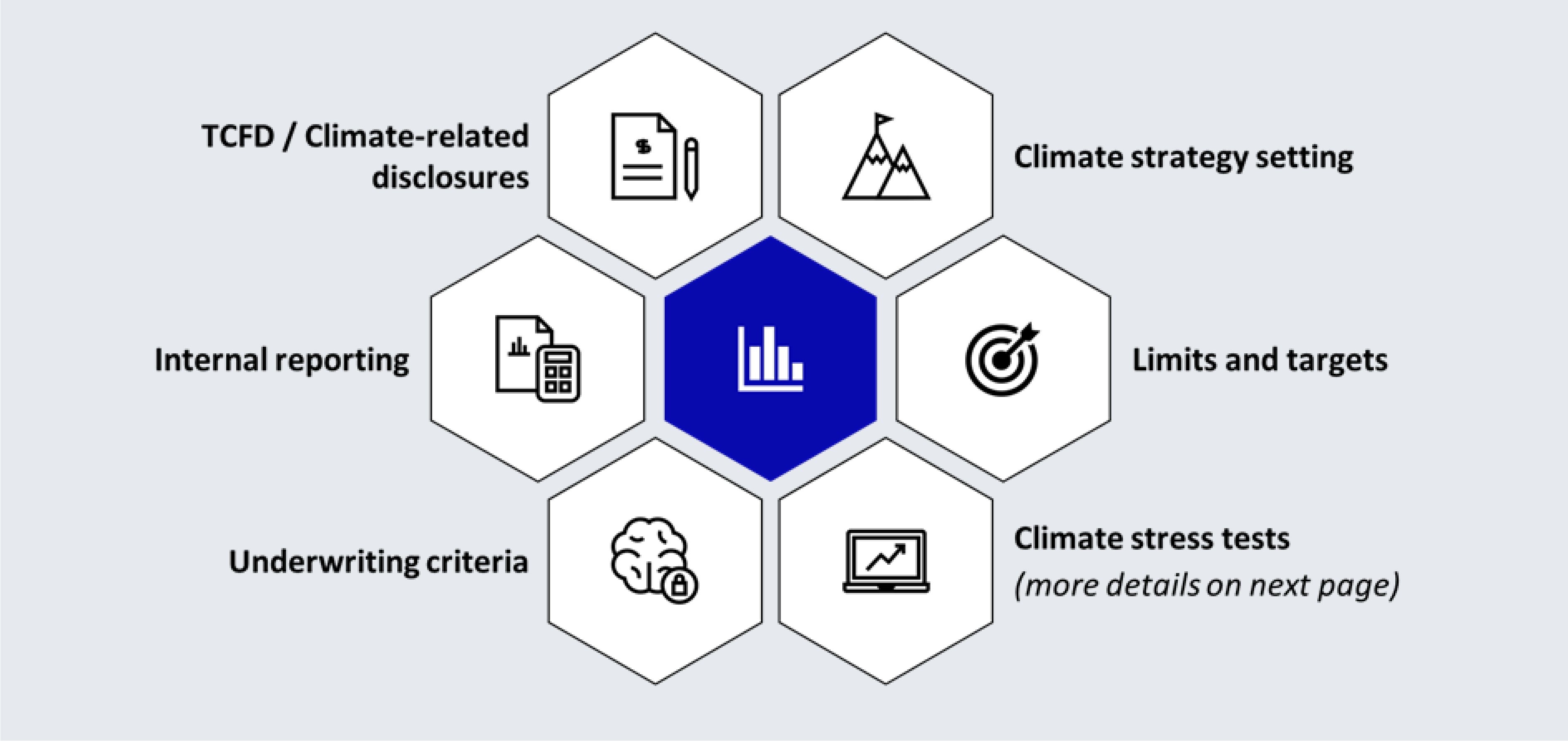
UN environment programme

- Baringa – Brighter together
- BlackRock
- entelligent
- Moody's Analytics
- MSCI
- Climate Finance Alpha (CLIMAFIN)
- Munich RE
- planetrics – a vivid economics company
- McKinsey & Company
- XDI Cross Dependency Initiative
- URGENTEM
- ORTEC Finance
- Willis Towers Watson
- Oliver Wyman
- pwc
- RMS
- S&P Global Market Intelligence
- The Climate Service (TCS)
- ISS ESG
- JBA risk management

Applications of climate scenarios

Climate scenarios will become an indispensable part of the analytical toolkit for firms in the coming years

Applications for risk managers, businesses, and strategy setters



Question 7

What do the governance and risk management recommendations have in common?

1. They both address internal processes that drives continuity
2. They both require only quantitative metrics
3. They should both be included in all organizations mainstream reports
4. Neither are required by banks

Answer 7

What do the governance and risk management recommendations have in common?

1. They both address internal processes that drives continuity

2. They both require only quantitative metrics

3. They should both be included in all organizations mainstream reports

4. Neither are required by banks

TCFD

Metrics and Targets Pillar

TCFD disclosure Pillar 4: Metrics and Targets

The metrics and targets recommendation is supported by three recommended disclosures

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risks. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Expanded TCFD guidance on metrics and targets a)

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

Recommended Disclosure a)

Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

Organizations should provide the following information:

- A description of their key metrics used to measure and manage climate-related risks and opportunities as well as metrics consistent with the cross-industry, climate-related metric categories described in Table A2.1 (p. 79).

- A description on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable.

- Description whether and how related performance metrics are incorporated into remuneration policies. Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a low-carbon economy.

- Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in Table A2.1 (p. 79), consistent with their business or strategic planning time horizons. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.

Supplemental Guidance for Insurance Companies

Recommended Disclosure a)

Insurance companies should:

- Provide aggregated risk exposure to weather-related catastrophes of their property business (i.e., annual aggregated expected losses from weather-related catastrophes) by relevant jurisdiction.
- Describe the extent to which their insurance underwriting activities, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.
- Indicate which insurance underwriting activities (e.g., lines of business) are included.

Example for metrics and targets disclosure a)

Swiss Re Annual Report 2021

Gross AEL for weather-related perils by region and for peak exposures, Swiss Re Group (2019–2021, USD million)

	2019	2020	2021
Total	**1 915**	**2 170**	**2 010**
North America	890	1 005	1 000
Latin America	175	220	185
EMEA	305	355	295
Asia	310	415	360
Oceania	225	175	175
Tropical cyclone	**980**	**1 150**	**1 055**
North America	550	615	580
Latin America	145	180	160
EMEA	0	0	0
Asia	235	310	280
Oceania	50	45	35
Convective storms	**300**	**330**	**360**
North America	220	240	255
Latin America	0	0	0
EMEA	45	45	40
Asia	0	0	0
Oceania	35	45	65

- Swiss Re uses Annual expected losses (AEL) as an indicator for our average current climate-related risk exposure, given result of expected weather activities, the vulnerability of insured assets and operations, their values and the volume and structure of our insurance products.

Expanded TCFD guidance on metrics and targets b)

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

Recommended Disclosure b)

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Organizations should provide the following information:

- A description of their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks.
- All organizations should consider disclosing Scope 3 GHG emissions.
- GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.
- As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.
- GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.

Supplemental Guidance for Insurance Companies

Recommended Disclosure b)

- Insurance companies should disclose weighted average carbon intensity or GHG emissions associated with commercial property and specialty lines of business where data and methodologies allow.

Example for metrics and targets disclosure b)

Zurich Stand-alone Integrated Sustainability Disclosure 2021

Key performance indicator	Unit of measurement	2019 (base year)[1]	2020	2020 change relative to base year	Target reduction 2025	Target reduction 2029
Absolute carbon emissions Absolute reduction in all operational emissions	CO_2e (metric tons)	164,346	66,708	(59%)	50%	70%
Scope 1 + 2 emissions Reduction in emissions from the vehicle fleet and onsite heating as well as from purchased electricity, heat and steam (e.g., district heating)	CO_2e (metric tons)	49,042	27,714	(43%)	55%	80%
Scope 3 emissions Reduction in operational emissions resulting from air, rental and rail business travel, employee commuting, strategic data centers, printed paper and waste, as well as indirect energy impacts	CO_2e (metric tons)	115,304	38,994	(66%)	50%	65%

1 Operational emissions include extrapolations to ensure 100 percent data coverage while details by categories are explained here: www.zurich.com/sustainability/sustainable-operations/our-environmental-kpis

- Zurich has disclosed their Scope 1, Scope 2 and Scope 3 GHG emissions associated with operational activities and lines of business.

Example for metrics and targets disclosure b)

Citi Group, TCFD report 2021

Design Decisions	Power	Energy
Scope and Boundaries	Scope 1 GHG emissions from power generation clients with available power generation data	Scope 1, 2 & 3 GHG emissions
Target Metric	Intensity (kg CO_2e/MWh)	Absolute (% reduction from baseline)
Scenario Selection	IEA SDS OECD	IEA NZE 2050
Committed vs. Outstanding Exposure	Committed exposure	Committed exposure

Scope	Power	Energy
Scope 1	4,261,747	17,308,063
Scope 2	164,059	518,594
Scope 3	N/A[10]	40,113,950[11]
Total	**4,425,806**	**57,940,607**

2020 ABSOLUTE FINANCED EMISSIONS: COMMITTED EXPOSURE (mt CO_2e)

Scope	Power	Energy
Scope 1	11,464,654	33,847,434
Scope 2	485,784	1,434,241
Scope 3	N/A[10]	108,478,743
Total	**11,950,438**	**143,760,418**

Expanded TCFD guidance on metrics and targets c)

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

Recommended Disclosure c)

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Organizations should provide the following information:

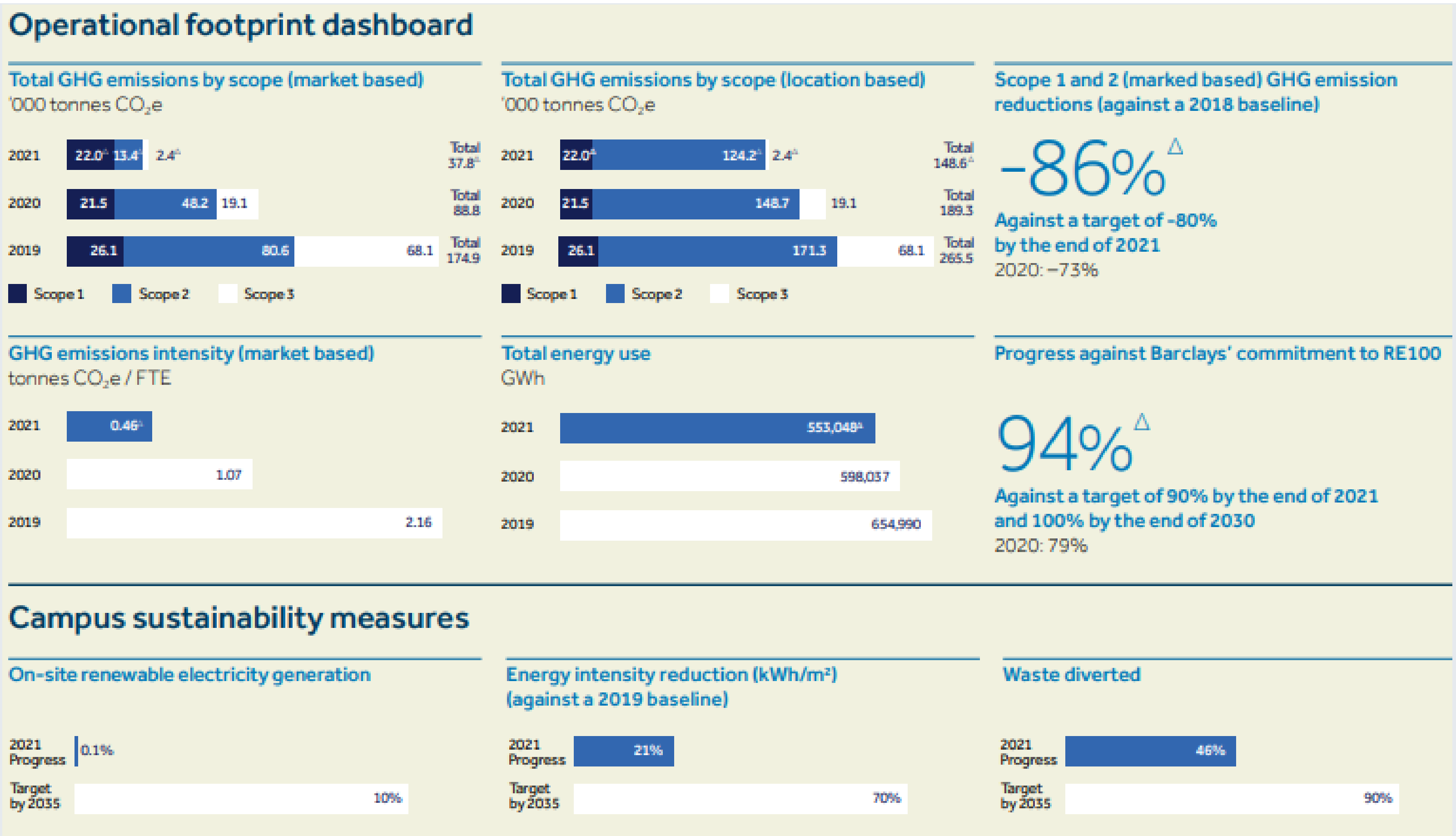
- A description of their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., in line with the cross-industry, climate-related metric categories in Table A2.1 (p. 79).

- In describing their targets, organizations should consider including the following:
  - whether the target is absolute, or intensity based
  - time frames over which the target applies
  - base year from which progress is measured; and
  - key performance indicators used to assess progress against targets

- Organizations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available. Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures

Example for metrics and targets disclosure c)

Barclays, TCFD report 2021



- Clear statement of metrics used in assessing climate-related risks, including total emissions and GHG emissions intensity. Barclays also mentioned the associate impact on energy, water and waste.

Example for metrics and targets disclosure c)

Barclays, TCFD report 2021

Carbon-related assets (including sub-sector breakdown)

	2021 £m	2020 £m	% change
Agriculture, Food and Forest Products	**14,719**	14,627	0.63%
Agriculture	**5,043**	5,802	
Food, Bev and Tobacco	**8,800**	8,129	
Paper and Forest Products	**875**	696	
Energy	**25,646**	27,981	-8.34%
Coal Mining and Coal Terminals†	**45**	29	
Oil & Gas	**12,869**	15,613	
Power Utilities	**12,732**	12,339	
Materials and Building	**51,960**	51,804	0.30%
Cement	**324**	358	
Chemicals	**4,308**	4,926	
Construction and Materials	**2,919**	3,201	
Homebuilding and Property Development	**5,774**	6,035	
Manufacturing	**14,385**	14,110	
Metals	**742**	936	
Mining (incl. diversified miners)‡	**1,408**	1,608	
Packaging Manufacturers: Metal, Glass and Plastics	**370**	254	
Real Estate	**21,493**	20,084	
Steel	**236**	292	
Transport	**11,422**	11,305	1.04%
Automotive	**5,568**	5,530	
Aviation	**2,049**	1,991	
Other Transport Services	**1,663**	1,495	
Ports	**189**	239	
Road Haulage	**1,026**	1,137	
Shipping	**927**	912	
Subtotal (elevated risk sectors)	**46,535**	**50,537**	-7.92%
Grand Total	**103,747**	**105,717**	-1.86%

- In line with the supplement guidance for banks, as Barclays shows the amount and percentage of carbon-related assets relative to total assets.

Question 8

What do the Strategy and Metrics and Targets recommendations have in common?

1. They describe the “how” aspect of climate resilience
2. They should address the risks and opportunities that are expected to be financially material
3. A scenario analysis can inform both of these pillars
4. Neither are required by banks

Answer 8

What do the Strategy and Metrics and Targets recommendations have in common?

1. They describe the “how” aspect of climate resilience
2. They should address the risks and opportunities that are expected to be financially material
3. A scenario analysis can inform both of these pillars
4. Neither are required by banks

Common challenges

TCFD Pillars

Common challenges

That companies face when implementing TCFD recommendations and how to overcome potential roadblocks

Overcoming the 5 most common issues when implementing TCFD recommendations

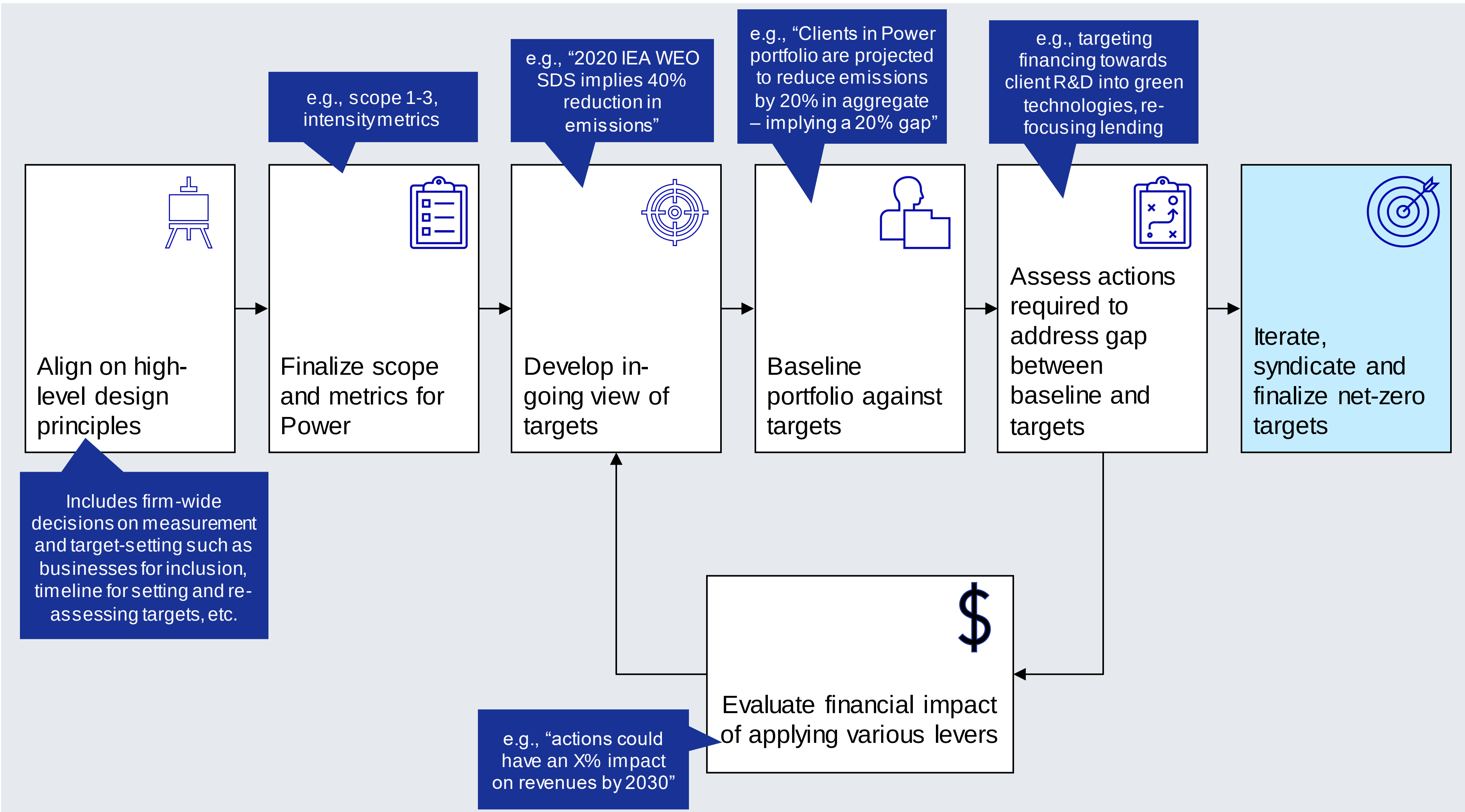
- Climate change is still considered a CSR issue
- Integrating into mainstream reporting
- Understanding the next steps
- Limited experience with scenario analysis
- Data availability

Target-setting, emissions data, and alignment measurement

TCFD recommendations

Overview of the target-setting process and the key decision points

Potential process for setting feasible net-zero targets



Target-setting guidance provided by the TCFD

In this example, the key elements of the firm's target are explained in accordance with the characteristics noted on the left-hand side of the page

UN environment programme

Characteristics of Effective Climate-Related Targets

Aligned with Strategy and Risk Management Goals

Linked to Relevant Metrics

Quantified and Measurable

Clearly Specified over Time

- Baseline
- Time horizon
- Interim targets

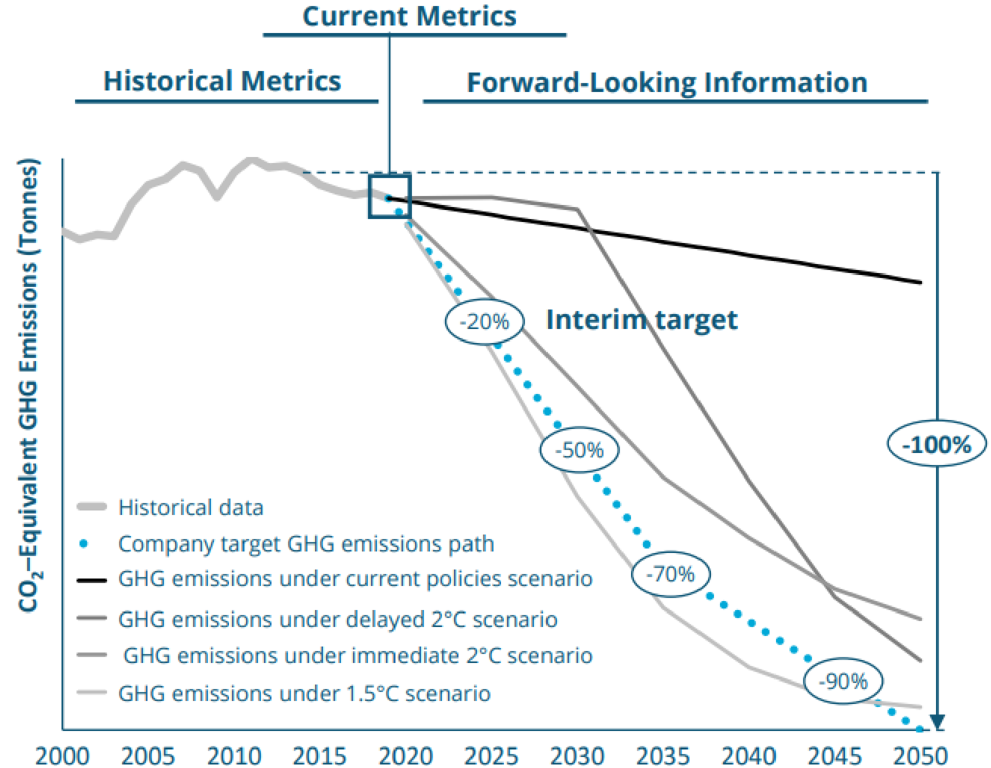
Understandable and Contextualized

Periodically Reviewed and Updated

Reported Annually

Example Relationship between Metrics and Targets (Hypothetical Firm)

Target: Our firm commits to reducing net Scope 1 and 2 GHG emissions—as defined by the GHG Protocol—to zero by 2050, with an interim target to cut Scope 1 and 2 GHG emissions by 50% relative to a 2015 baseline by 2030. We are working with suppliers to reduce Scope 3 GHG emissions.



Three methods of target-setting: absolute financed emissions, physical emissions intensity and "FELI"

UN environment programme

Metric	Equation	Advantages	Watchpoints
1. Absolute financed emissions *PCAF-aligned*	$\sum \frac{Financing\ to\ client}{Company\ EVIC} \times Company\ emissions$ *- Calculate for each company and then sum up*	• Allows inclusion of all sub-sectors • Allows aggregation across various sectors • A focus for most NGOs/activists	• Restricts portfolio growth, even if growing in emissions efficient holdings • More challenging to compare across clients of different sizes
2. Physical emissions intensity *Midstream cannot be included in scope*	$\sum \frac{Company\ emissions}{Company\ production} \times \frac{Financing\ to\ client}{Total\ sector\ financing}$ *- Calculate for each company and then sum up*	• Allows growth in emissions efficient companies • Normalizes allows comparison across companies of different sizes	• More complex to source data / compute given sector-specific production data • Excludes sub-sectors that do not directly generate output (e.g., Midstream, Oil Services) • Cannot be aggregated across sectors
3. Financed emissions lending intensity ("FELI")	$\frac{\sum \frac{Financing\ to\ client}{Company EVIC} \times Company\ emissions}{Total\ Sector\ Financing}$ ▼ $\sum \frac{Company\ emissions}{Company\ EVIC} \times \frac{Financing\ to\ client}{Total\ sector\ financing}$ *-Calculate for each company and then sum up*	• Allows growth in companies with low emissions relative to their size • Allows inclusion of all sub-sectors • Allows aggregation across various sectors • Easier to source financial data for denominator relative to physical emissions intensity	• Relationship between emissions and financial metric is less concrete than physical emissions intensity • Harder to benchmark relative to an absolute emissions pathway

Case study 1

Explore the following case studies of two banks that have set targets under guidance of the Net Zero Banking Alliance:

1. What metrics are used for each sector? Why might those selected metrics be appropriate for the sector in question?

2. Discuss the process followed in setting a target (Citibank)

3. Discuss the goals reported on related to targets (Barclays)

4. What sectors do you think it would be easiest to set targets for? Which would be hardest? Why?

Net-zero target-setting example: Citibank

#	Steps	Description
1.	Calculate Emissions	Calculate baseline financed emissions for each carbon-intensive sector
2.	Transition Pathway	Identify the appropriate climate scenario transition pathway
3.	Target Setting	Establish emissions reduction targets for 2030 and beyond
4.	Implementation Strategy	Engage with and assess clients to determine transition opportunities
5.	External Engagement	Solicit feedback from clients, investors and other stakeholders as this work continues to evolve and we collectively define net zero for the banking sector.

Sector	2020 Baseline[1]	Climate Scenario	2030 Targets
Energy (Scope 1, 2, 3)	143.8 million mt CO_2e	IEA NZE 2050	29% reduction from 2020 baseline 102.1 million mt CO_2e
Power (Scope 1)	313.5 kg CO_2e /MWh	IEA SDS OECD	63% reduction in Scope 1 intensity per MWh 115 kg CO_2e /MWh

[1] Baseline based on available data as of September 2021. Further updates to improve data quality of the baseline numbers may result in changes to both the 2020 baseline numbers and the 2030 targets.

Source: Citibank

Net-zero target-setting example: Barclays

Strategic pillar		Previously announced target/policy	Progress	New announcement
1. Achieving net zero operations		By the end of 2021	2021 Performance	
		- -80% GHG emission reduction Scope 1 and 2 (market-based) against a 2018 baseline - Source 90% renewable electricity for our global operations	- -86% GHG emission reduction - 94% renewable electricity - Carbon neutral for Scope 1, Scope 2 and Scope 3 business travel emissions since 2020	- 90% GHG emission reduction in Scope 1 and 2 (market-based) by the end of 2025 against a 2018 baseline - Source 100% renewable electricity for our global operations by end of 2025
2. Reducing our financed emissions		By the end of 2025	2021 Performance	By the end of 2030
Portfolio reduction targets	Energy	- -15% absolute CO_2 emission reduction against a 2020 baseline (Scopes 1, 2 and 3)	- -22% absolute CO_2 emission reduction	- -40% absolute CO_2 e7 emission reduction against a 2020 baseline of 78.5 $MtCO_2$ e (Scopes 1, 2 and 3)
	Power	- -30% CO_2 emission intensity reduction against a 2020 baseline (Scope 1)	- -8% CO_2 emission intensity reduction	- -50% to -69% CO_2 emission intensity reduction against a 2020 baseline of 320 kgCO2 /MWh (Scope 1)
	Cement	n/a	- n/a	- -20% to -26% CO_2 e emission intensity reduction against a 2021 baseline of 0.620 MtCO2 e/Mt (Scopes 1 and 2)
	Steel	n/a	- n/a	- -20% to -40% CO_2e emission intensity reduction against a 2021 baseline of 1.926 $MtCO_2$ e/Mt (Scopes 1 and 2)

Source: Barclays

Section #4

Q&A, conclusion and evaluation

Survey

https://survey.alchemer.com/s3/7020062/Exploring-the-TCFD-Pillars-and-Good-Practices


QUESTIONS
ANSWERS

Appendix

Introduction to the Strategy Recommendations

Various TCFD publications offer guidance on the Strategy recommendation

Legend: Publication includes guidance on Strategy recommendation

Final Recommendations and Recommended Disclosures

2017 Report

Provides details on the following:

- Context and background on the need for climate-related financial disclosures
- The Task Force's remit from the Financial Stability Board
- TCFD general framework, including recommendations and recommended disclosures

Implementation Guidance

2021 Implementation Guidance (Annex)

Provides guidance on the application of the recommendations as well as implementation guidance for the following:

- All sectors
- Four financial industries
- Four groups of non-financial companies the Task Force considers more likely to be affected financially than others given their exposure to certain transition and physical risks

Additional Supporting Materials

2017 Scenario Analysis Technical Supplement

2020 Guidance on Risk Management Integration and Disclosure

2020 Guidance on Scenario Analysis for Non-Financial Companies

2021 Guidance on Metrics, Targets, and Transition Plans

Disclosure varies across recommendations

The strategy recommendation includes both the most and the least disclosed recommended disclosure

Recommendation	Recommended Disclosure	% Point Change '18–'20	% of Companies Disclosing Information Aligned with TCFD Recommended Disclosures: FY 2018	FY 2019	FY 2020
Governance	a) Board Oversight	16	9%	13%	25%
	b) Management's Role	9	9%	11%	18%
Strategy	a) Climate-Related Risks and Opportunities	14	38%	42%	52%
	b) Impact on Company	13	26%	30%	39%
	c) Resilience of Strategy	8	5%	7%	13%
Risk Management	a) Risk Identification and Assessment Processes	14	16%	20%	30%
	b) Risk Management Processes	15	14%	17%	29%
	c) Integration into Overall Risk Management	17	10%	17%	27%
Metrics and Targets	a) Climate-Related Metrics	10	34%	40%	44%
	b) Scope 1, Scope 2, and Scope 3 GHG Emissions	10	27%	31%	37%
	c) Climate-Related Targets	13	21%	24%	34%

Source: TCFD Status Report 2021, https://assets.bbhub.io/company/sites/60/2022/02/TCFD-Strategy-Workshop.pdf

Assessing the quality of TCFD reports

By The Financial Reporting Council (FRC) and the Financial Conduct Authority (FCA)

Findings from the FRC

1. Granularity and specificity: We expect the specificity and granularity of companies' climate-related disclosures to improve as their processes to manage climate-related risks.

2. Balance: We expect companies to ensure that the discussion of climate-related risks and opportunities is balanced, and to consider linking the description of climate-related opportunities to any technological dependencies.

3. Interlinkage with other narrative disclosures: We expect companies to consider the interlinkages of TCFD disclosures with other narrative disclosures in the annual report.

4. Materiality: Companies did not always explain how they had applied materiality to their TCFD disclosures, and many did not make it clear how they had taken into account the TCFD all-sector guidance and supplemental guidance for financial and non-financial companies.

5. Connectivity between TCFD and financial statements disclosures: Some companies' discussion of the impact of climate on the financial statements was generic in nature and hence not very helpful in understanding the relationship between climate-related risks and amounts in the financial statements.