UK Government

SEC

ASEAN Low Carbon Energy Programme

Series 1: Implementation of TCFD checklist for listed companies in the nonfinancial sector

10 November 2022

EY Building a better working world

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Program overview

10 November 2022

Series 1: Implementation of Task Force on Climate-related Financial Disclosures (TCFD) checklist for listed companies in the nonfinancial sector

Subtopics:

1. Introduction to TCFD
2. Step-by-step run through of the TCFD checklist
3. Sharing session by Charoen Pokphand Foods Public Company Limited (CPF)

11 November 2022

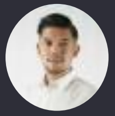
Series 2: Climate scenario analysis and risk management application for listed companies in the nonfinancial sector

Subtopics:

1. Setting the direction and framework
2. Risk management application for listed companies in the nonfinancial sector
3. Scenario analysis

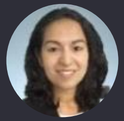
Main speakers

Nithawan Jarernporn
Partner, EY Corporate Services Limited (EY Thailand)



Nattapon Vasasmith
Senior Manager, EY Corporate Services Limited (EY Thailand)

Chayapol Prayoonsin
Manager, EY Corporate Services Limited (EY Thailand)



Sheena Narula
Manager, EY Corporate Advisors Pte. Ltd (EY Singapore)

Pasu Sirisareewan
General Manager, Sustainability Strategy, Disclosure and Global Partnership Division, CPF

What's on for today?

Date and time: 10 November 2022 (2:00p.m. – 4.30 p.m.), 2.5 hours			
Introductions and opening speech	‣ Opening remarks by SEC ‣ Opening remarks by British Embassy Bangkok	10 mins	2:00 p.m. to 2:10 p.m.
Introduction to TCFD	‣ Introduction to the Task Force on Climate Related Financial Disclosure (TCFD) ‣ Core elements of TCFD recommendations ‣ Checklist of practical steps for companies to implement to start to align with the recommendations	10 mins	2:10 p.m. to 2:20 p.m.
Step-by-step run through of the TCFD checklist	‣ Step 1: Form an internal TCFD working group. ‣ Step 2: Conduct a gap analysis of current climate-related processes and disclosure. ‣ Step 3: Integrate climate change into the governance structure. ‣ Step 4: Embed climate change into existing risk management frameworks, accounting for its long-term, geography-specific and systemic nature. ‣ Step 5: Conduct climate scenario analysis and embed climate change into business strategy. Companies may start with qualitative scenario narratives, and as they gain experience, apply quantitative analysis. ‣ Step 6: Assess the financial impact of climate risk on company financials (i.e., on revenues, expenditures, assets, liabilities and capital). ‣ Step 7: Assess the resilience of the business strategy, accounting for the climate scenarios conducted. ‣ Step 8: Engage with investors and regulators to gain feedback on which climate-related financial risks and to what extent they expect disclosure on a regular basis. ‣ Step 9: Disclose progress, which includes deciding how to integrate climate disclosure into the organisation's current disclosure.	90 mins	2:20 p.m. to 3:50 p.m.
Short break		5 mins	3:50 p.m. to 3:55 p.m.
Sharing session by Pasu Sirisareewan	‣ Experience and challenges faced by organisation when implementing TCFD recommendations	20 mins	3:55 p.m. to 4:15 p.m.
Q&A session		15 mins	4:15 p.m. to 4:30 p.m.

Welcome remarks

Ms. Archinee Pattamasukhon
Assistant Secretary-General (Stakeholders Relations),
The Securities and Exchange Commission of Thailand

Welcome remarks

Andrew Beirne

Economic & Prosperity Counsellor, British Embassy Bangkok

Introduction to TCFD

Introducing the TCFD

The challenge

- Investors, lenders and insurers are not able to evaluate which companies will survive or thrive as the climate changes and decarbonization regulations, new technologies and behavioral change emerge.
- There is no standardised approach to disclose climate-related financial information, which prevents financial markets from pricing climate-related risks and opportunities. This may lead to rapid changes in prices and costs as conditions change.

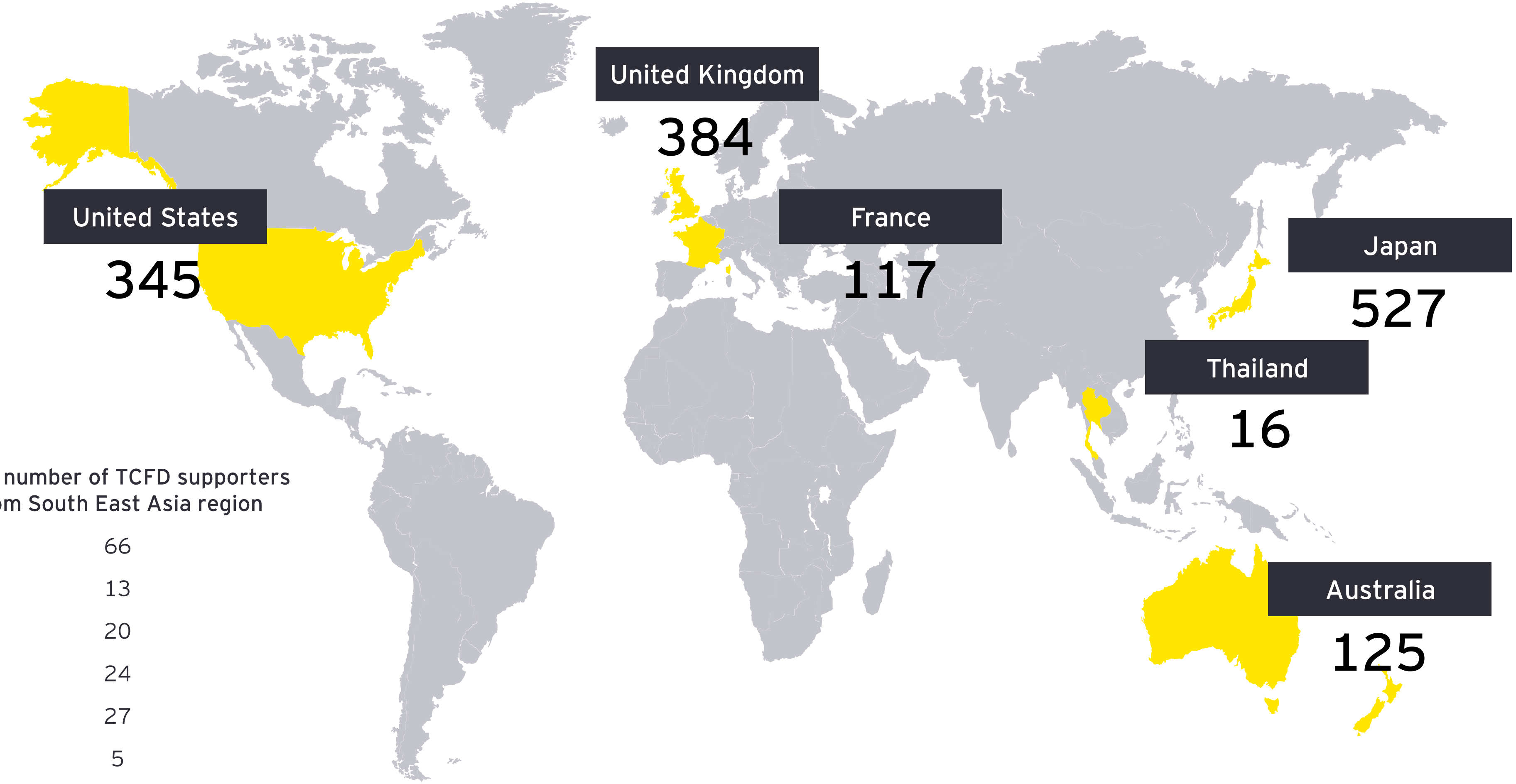
What is the Task Force on Climate-Related Financial Disclosures?

- The Financial Stability Board (FSB) developed TCFD with the goal to drive more informed investment, credit and insurance underwriting decisions and increase stakeholder understanding of climate-related risks.
- The TCFD seeks to develop recommendations for voluntary climate-related financial disclosures that are consistent, comparable, reliable, clear, and efficient, and provide decision-useful information to lenders, insurers and investors.

Source: TCFD website

Organisations supporting TCFD

As of October 2022, support for the TCFD has grown to over **3,400 organisations from 95 jurisdictions**, representing a combined market capitalization of more than **US$25 trillion.** The below map shows the top five countries of TCFD adopters and Thailand.



Country	Total number of TCFD supporters from South East Asia region
Singapore	66
Indonesia	13
Philippines	20
Thailand	24
Malaysia	27
Vietnam	5

Source: TCFD, Task Force on Climate-related Financial Disclosures, Status Report, 2021, TCFD website

Why disclose your climate-related risks in line with TCFD?

"

By firms revealing their preparedness, their impact of these (climate change) changes on their business, that alleviates some of the uncertainties and can actually raise the value of their stocks and bonds.

Richard Cantor
Chief Risk Officer, Moody's

The UK has recently announced its plan to mandate large companies and financial institutions to report their impact on climate by 2025 in line with TCFD.

Why is this important?

- Better access to data will **enhance how climate-related risks are assessed, priced, and managed.** Companies can more effectively measure and evaluate their own risks and those of their suppliers and competitors.
- TCFD represents an opportunity to bring climate-related financial reporting to a **mainstream audience.**
- The TCFD engages extensively with key stakeholders to ensure that it builds on existing work and **produces recommendations that can be used by the private sector, globally.**
- Internationally-recognised sustainability ratings and indices including CDP (formerly Carbon Disclosure Project) and the Dow Jones Sustainability Indices (DJSI) have also revised their assessments to be aligned with the TCFD recommendations. Implementing the recommendations can therefore help a **company to perform better on climate-related aspects.**

Source: TCFD website

Comparisons of TCFD with other international reporting frameworks

	TCFD	Form 56-1 One Report	Global Reporting Initiative (GRI)	Carbon Disclosure Project (CDP)	Dow Jones Sustainability Indices (DJSI)
Year launched	2017	2021	1997	2002	1999
Users	Investors, lenders and insurers	Regulators, investors, lenders and insurers	Broad set of stakeholders	Investors, companies, cities, states and regions	Businesses and investors
Form of Report	Annual financial filings (e.g., annual report)	Annual financial filings	Corporate sustainability reports, annual reports and integrated reports	CDP Questionnaire	Corporate sustainability reports, annual reports, integrated reports and company websites
Purpose	Encouraging firms to align climate-related risk disclosures with investors' needs. TCFD is intended to accompany a chosen framework, not to replace it	Combining the annual registration statement (Form 56-1) and annual report (Form 56-2) to streamline disclosure and promote ESG disclosure for listed companies	Helping organisations report on economic, environmental, and social impacts considering a wide range of interests	Helping companies get ahead of regulatory and policy changes, identify and tackle growing risks	Evaluating the sustainability performance of listed companies and operated under S&P Dow Jones Indices and SAM (Sustainable Asset Management)
Scope	The TCFD disclosures are organised in four broad sections: Governance, Strategy, Risk, and Metrics. As such, TCFD is more of a "top-down" structure – in contrast with CDP (for example) that begins with carbon reporting and expands from there	The One Report requires sustainable management policy and targets, description of how the organisation manages its environmental and social impacts on stakeholders, and disclosure of governance policy, structure and progress	GRI also addresses Governance topics, with special emphasis on governance structures and stakeholder engagement	Scope is limited – growing out of the initial sole focus on carbon or GHG. Even with additions to the CDP scope (e.g., supply chain, forests, water), the scope remains narrowly focused on environment	Only invited companies based on float-adjusted market capitalization can submit the Corporate Sustainability Assessment (CSA) to be considered for index inclusion

Source: ESG Navigator; 'ABCs of ESG Ratings/Reporting'; S&P Global, 'DJSI Index Family', S&P Global; Thai SEC

Core elements of recommended climate-related financial disclosures

Governance

The organisation's governance around climate-related risks and opportunities

Strategy

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

Risk management

The processes used by the organisation 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

Source: TCFD, *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, June 2017*

The TCFD checklist

For companies that are new to the TCFD, below is a checklist of practical steps to implement to start aligning with the recommendations. Although designed to help companies to translate the guidance and prioritise actions for implementation, **this checklist is non-exhaustive. Please refer to the formal TCFD recommendations to ensure compliance.** Note that Step 4 and 5-7 can be conducted in parallel. Nevertheless, they are broken down for reference below.

Step 1 Form an internal TCFD working group.	**Step 2** Conduct a gap analysis of current climate-related processes and disclosure.	**Step 3** Integrate climate change into the governance structure.
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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step-by-step run through of the TCFD checklist

TCFD checklist

Elements of TCFD checklist that we will go through today:

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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

EY

Step 1: Form an internal TCFD working group

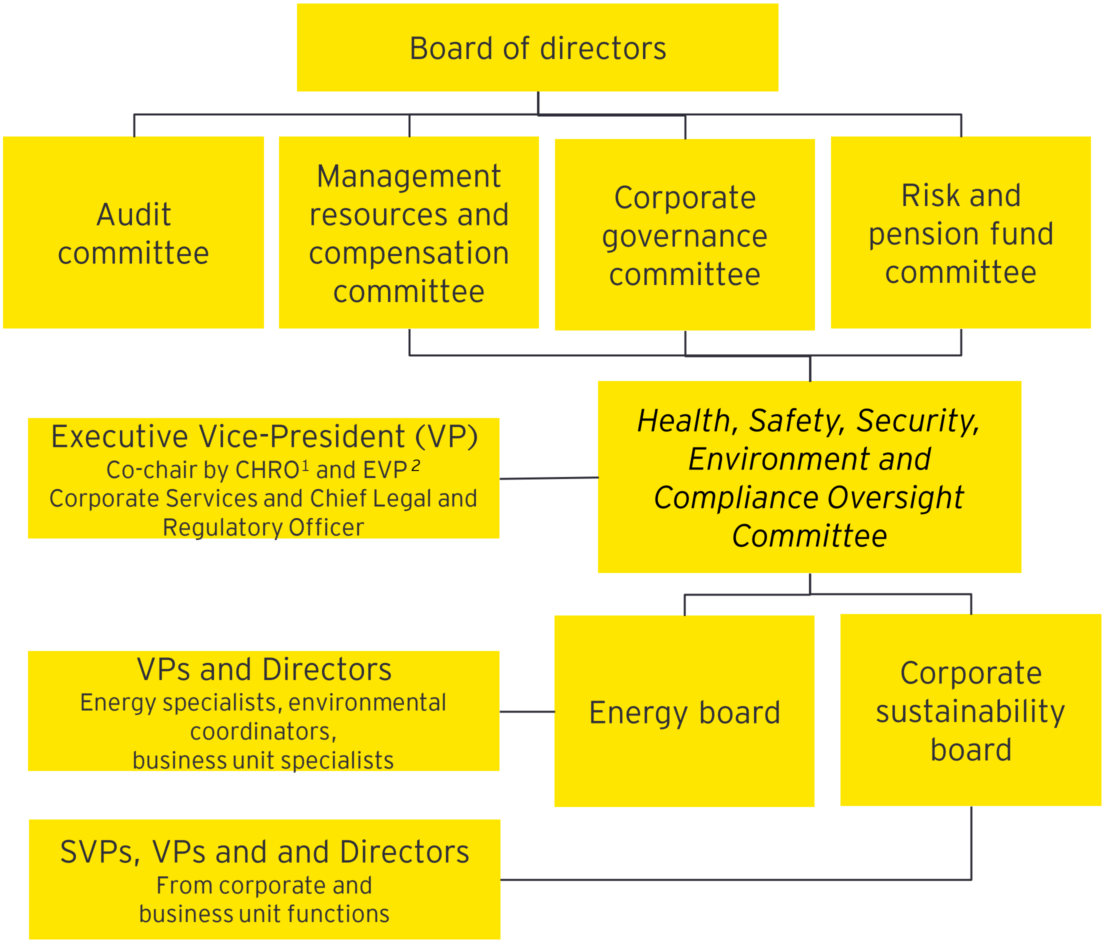
1.1 Designate a climate 'champion', ideally from senior management or the Board, who can lead the team to embed climate change across existing processes and set the strategy.

1.2 Engage representatives from various business functions and departments (e.g., sustainability, finance, investor relations). If the organisation has different business units, include representatives from each unit.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Climate risk needs to be implemented across the different functions and departments

BCE's governance structure around climate-related risks and opportunities



[1] *Chief Human Resource Officer*

[2] *Executive Vice-President*

BCE's Internal working group

Carbon reduction task force

- Carbon reduction task force is composed of both internal and external key players involved in the governance of corporate climate change mitigation.
- The team is responsible to develop and follow closely with the implementation of mitigation strategy to meet GHG reduction target.
- This working group sends report directly to the energy board.

Carbon innovative working group

- This working group works directly with the energy board business unit members.
- Their role is to foster innovative practices and adoption of new technologies to reduce energy consumption and GHG emissions.

Climate resilience task force

- The climate resilience task force works mainly on Intergovernmental Panel on Climate Change (IPCC) assessment reports.
- The team's goal is to bring together key internal stakeholders that can assist in building strong governance in resilience to address the potential impacts of climate change in the short and medium terms.

Source: BCE TEFD Report, https://www.bce.ca/responsibility/key-documents/2021-bce-tcfd-report-climate-related-risks-opportunities.pdf, accessed on October 21, 2022.

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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 2: Conduct a gap analysis of current climate-related processes and disclosure

2.1 Review whether the company is already collecting climate-related data, and leverage current disclosure (if any), such as Form 56-1, GRI, CDP and DJSI. If yes, assess whether the disclosure can be applied to TCFD.

2.2 Evaluate internal risk management processes and consider whether they can be adapted to incorporate climate-related risks.

In many cases, organisations are not starting from zero and there is existing climate-related work within the company that can be leveraged.

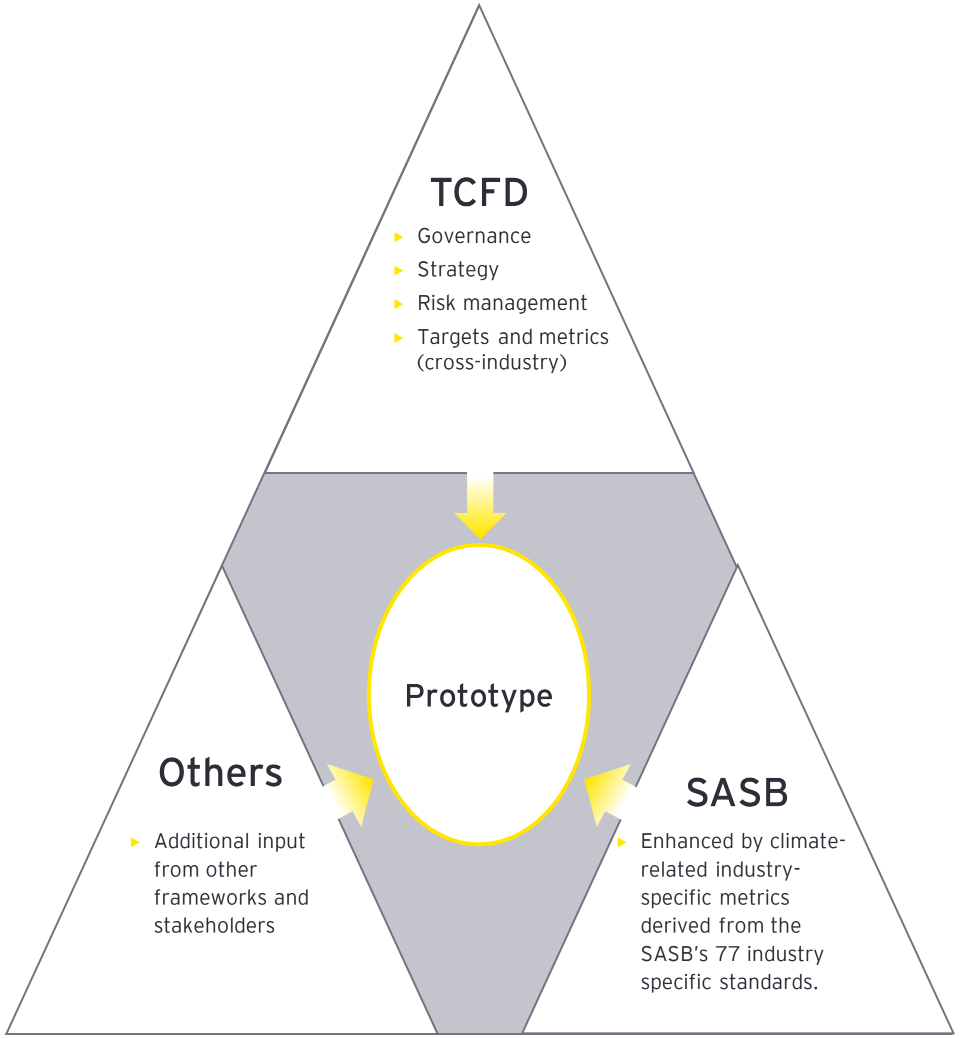
Company's may conduct a gap analysis of existing processes and disclosures which might include the following questions:

- What climate-related data have you been capturing?
- What climate-related information have you been disclosing?
- What risk management processes have your organisation put in place?

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Harmonization of different guidance/ standards

- Demand for more relevant information continues to grow as companies are increasingly exposed to climate and other sustainability-related issues
- In response, the ISSB faces a complex path towards harmonisation of fragmented frameworks
- The intention is for the ISSB to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions
- The progress for harmonisation was initiated back in 2019-2020 when a periodic strategy review was carried out on the International Financial Reporting Standard (IFRS) Foundation strategy. Since then, has evolved in a series of discussion, consultation and announcements made up to COP26 during which is the time the formation of ISSB was formally announced
- As of to-date, a prototype standards on climate-related disclosures and general requirements for sustainability disclosures are now available; they are based on existing frameworks and standards, including Task Force on Climate-Related Financial Disclosures (TCFD) and Sustainability Accounting Standard Board (SASB)
- They provide an indication of the disclosures that may soon be required under IFRS® Sustainability Disclosure Standards (the standards), providing a sense of direction for enterprise value-focused sustainability reporting



Source :IFRS website

Organisational changes and transformation would be required as companies seek to become effective managers of climate risks

Focus on enablers

- Acquire technical skills required to manage climate risk.
- Develop strategic understanding of how physical and transition risks may affect their activities.
- Budget for climate adaptation and mitigation strategies including technology, data and talent.

Get up to speed on stress testing

- Consider the importance of assessing the resilience of strategies'.
- Identify important climate hazards and primary risk drivers by industry to generate physical and transition climate risk scenarios.
- Quantify the impact by counterparty and in aggregate on portfolio basis.

Formulate climate risk governance

- Crucial for top management to set the tone on climate risk governance and nominate a leader responsible for climate risk.
- Set up effective governance structure covering assessment, monitoring to reporting.

Tailor business and credit strategy

- Embed climate considerations in risk frameworks and capital-allocation processes.
- Introduce policies and procedures such as negative screening, sector-specific policies or impose emissions thresholds.

Align risk processes

- Align climate risk exposure with risk appetite and the business strategy.
- Inject climate risk considerations into all risk management processes, including capital allocation, portfolio monitoring and reporting.
- Review and update risk processes periodically to capture latest risks and disruptions.

Source: COSO, WBCSD and EY, Applying Enterprise Risk Management to Environmental, Social and Governance-related Risks ; McKinsey, Banking Imperatives for Managing Climate Risk

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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 3: Integrate climate change into the governance structure

3.1 Delegate climate-related responsibilities to specific executives or board committees and clarify oversight and reporting lines. Responsibilities should cover climate-related risk assessment, monitoring and reporting.

3.2 Engage the Risk and Audit Committees. The Risk Committee evaluates financial impacts of risks to business, while the Audit Committee can ensure the quality assurance of climate-related disclosure with the same rigor as that of financial disclosure.

3.3 Provide climate risk training to the board, senior management and personnel involved.

3.4 Incorporate climate risk into the Board committee's terms of reference.

3.5 Update relevant Board committee(s) regarding progress on implementing climate risk management, and report on risk metrics on a regular basis.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Ensuring understanding, oversight and accountability for risks arising from climate change at all levels

Governing body or audit committee

Senior management

First line of defense

- Management controls
- Internal control measures

- Carry out initial climate risk assessment when onboarding suppliers/consumers or during periodic review of existing consumers
- Engage with suppliers/consumers to understand carbon intensities and their business plans for mitigating climate risk
- Understand, assess and consider uncertainties and developments around timing and channels of climate risk

Second line of defense

- Financial controller
- Security
- Risk management
- Quality
- Inspection
- Compliance

- Set up and own central risk frameworks
- Develop the tools for identifying and assessing climate risks
- Deliver climate risk training
- Develop scenarios and undertake stress testing
- Support first line activity to understand, assess and consider uncertainties and developments around timing and channels of climate risk

Third line of defense

- Internal audit

- Review control design and execution

External audit

Regulators

A potential indicator of the organisation's quality of climate risk governance could be based on **the extent to which climate risk management is integrated effectively into established risk management.**

Source: [1] EY, Being business-minded about climate change: Ten ways to address climate-related risks and opportunities in 2020 and beyond; [2] Chartered Institute of Internal Auditors, 2018, Governance of Three Lines of Defense: [3] Climate Financial Risk Forum Guide 2020, Risk Management Chapter

Question time

What are the first steps that you would take to incorporate climate-related issues into your governance structure?

Please use the whiteboard to give your answer.

Example from TCFD adopter

Energy

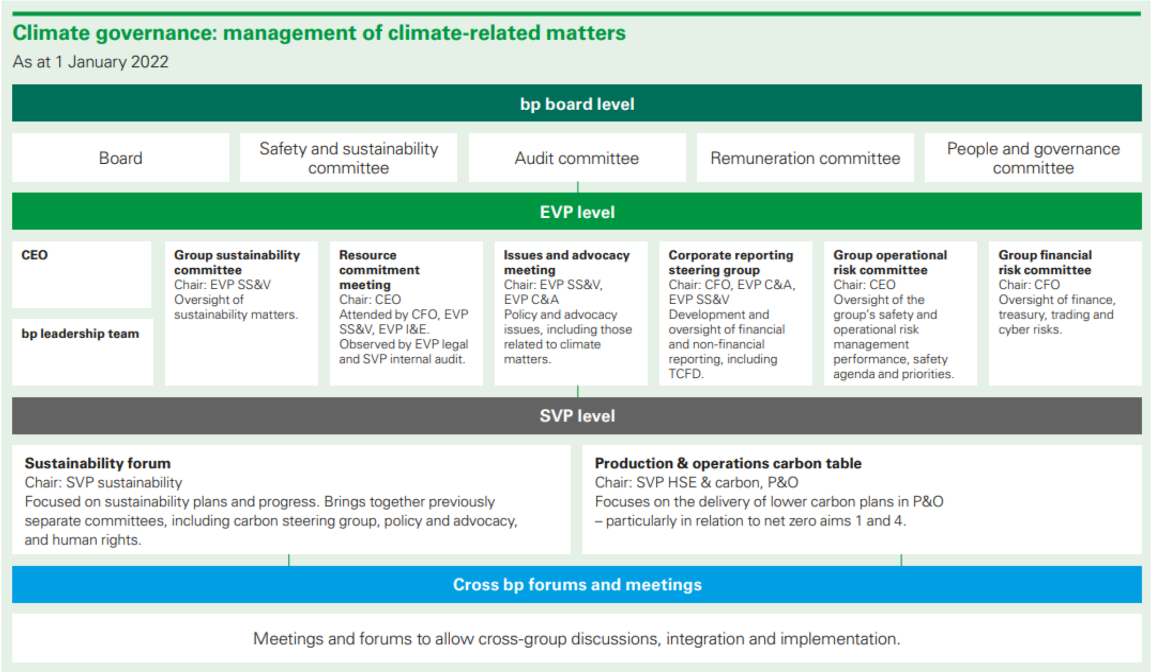
Example: BP Group (BP), United Kingdom

Roles and responsibilities of BP's board committee

"The role of the board is to promote the long-term sustainable success of the company, generating value for our shareholders while having regard to the interests of our other stakeholders, the impact of our operations on the communities where we operate and the environment. In performing this role, the board sets and monitors BP's strategy and is responsible for monitoring BP's management and operations and obtaining assurance about the delivery of its strategy"

Every BP board committee, including safety and sustainability, audit, people and governance, and remuneration, is responsible for overseeing climate-related concerns.

BP's organisation chart shows the SVP level supporting the EVP level and BP leadership team with dedicated business and functional expertise focused on climate-related risks and opportunities.



Source: *Annual Report and Form 20-F 2021, BP Group*

Example from TCFD adopter

Technology | Example: Eizo Corporation, Japan

Eizo disclose on their board of director role and responsibility following based line disclosure

Organization Name	Role	Members	Frequency
Board of Directors	Receives reports from the Sustainability Committee on sustainability matters and regularly oversees progress	All Directors	4 times/Y
Sustainability Committee	- Develop a sustainability policy - Identify Materiality - Develop mid-term sustainability goals - Monitor, evaluate, and verify the progress of sustainability activities - Identify issues and problems in sustainability activities and make suggestions and proposals if any - Formulate climate change-related strategies for our business activities and manage the progress of such strategies and disclose information on climate change-related issues	Chairperson: Director responsible for Sustainability (President & CEO) Members: All executive officers and presidents of Group companies	4 times/Y
Sustainability Promotion Subcommittee	- Gather information on sustainability - Analyze and evaluate Materiality - Develop sustainability targets and monitor their progress - Report on the above to the Sustainability Committee	Selected by the Sustainability Committee Secretariat from among the members of each department and group company and appointed by the Sustainability Committee	
Climate Change Response Subcommittee	- Gather information in accordance with TCFD recommendations - Assess risks and opportunities related to climate change, analyze the impact on business strategies and develop response plans - Report the above to the Sustainability Committee	Same as above	
Risk Management Committee	- Select, confirm, and verify critical risks from among the risks and opportunities identified by company-wide risk management - Develop an annual action plan for the company-wide risk management - Identify and validate response measures for critical risks	Chairperson: Director responsible for Risk Management (President & CEO or a person appointed by the President & CEO) Members: All executive officers and presidents of Group companies	2 times/Y

Eizo explained roles and responsibilities for each function, including members for each committee/sub-committee and the frequency of reporting.

Climate Change Response Committee which is under the Sustainability Committee is responsible to (1) gather specific information aligned with TCFD recommendations (2) assess risks and opportunities related to climate change.

Source: Eizo TCFD disclosure, https://www.eizoglobal.com/company/csr/promise2/tcfd/, accessed on October 10, 2022

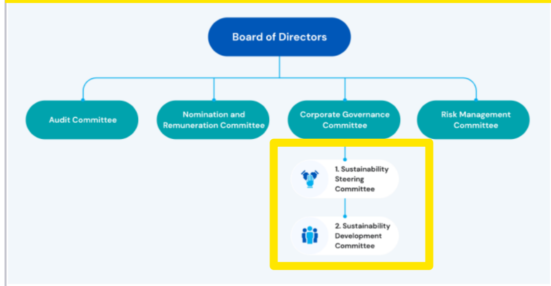
EY

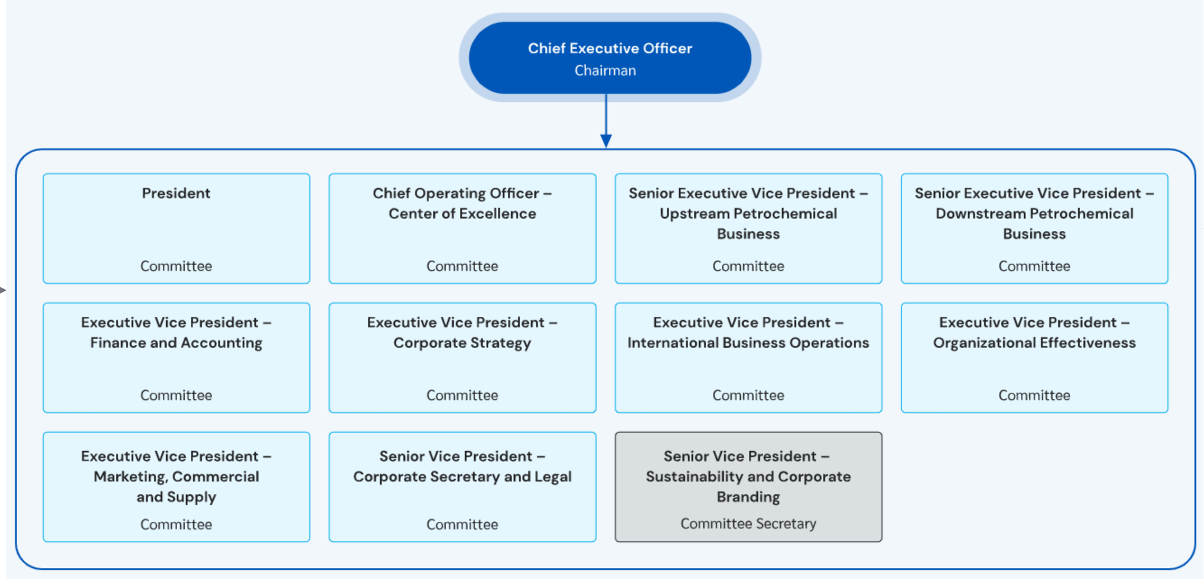
Example from TCFD adopter

Chemicals

Example: PTT Global Chemical Public Company Limited, Thailand

List of management level committees or functions related to climate change management





Sustainability Steering Committee (SSC)

The SSC, whose Chairman is the CEO, reports to the Corporate Governance Committee.

Sustainable Development Committee (SDC)

The SDC reports to the SSC and is established to govern the strategic direction of the mitigation of climate change-related issues e.g., GHG reduction target setting and refinement of project investment plans.

Source: PTT Global Chemical, TCFD Report 2021

Question time

What is the current level of maturity of your organisation's governance approach in managing climate-related risks?

Please use the poll to give your answer.

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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 4: Embed climate change into existing risk management frameworks, accounting for its long-term, geography-specific and systemic nature

4.1 Identify and assess climate-related risks: conduct a materiality analysis to determine business exposure to sectors and geographies that are vulnerable to physical and transition risks, respectively.

4.2 Re-evaluate own risk taxonomies and identify existing risk types that are affected by climate change (e.g., financial, strategic and operational). A risk taxonomy is a categorization of risks in a hierarchical manner and is broken down into 3 levels (level 1 are key risks, such as strategic, financial and operational; level 2 are sub-risks that fall under level 1, such as credit and liquidity risks; level 3 are risk drivers – emerging trends that may affect level 1 or 2 risks).

4.3 Decide whether to treat climate risk as a standalone or cross-cutting risk type. Once confirmed, develop the climate risk appetite statement or update existing risk appetite statement and develop the climate-related metrics to track those risks under an agreed-upon threshold.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 4: Embed climate change into existing risk management frameworks, accounting for its long-term, geography-specific and systemic nature

4.4 Report on climate-related risk metrics to the Board and senior management.

4.5 Address climate risk by aligning the exposure with risk appetite and business strategy (e.g., through mitigation, adaptation, resilience, or transfer or hedging).

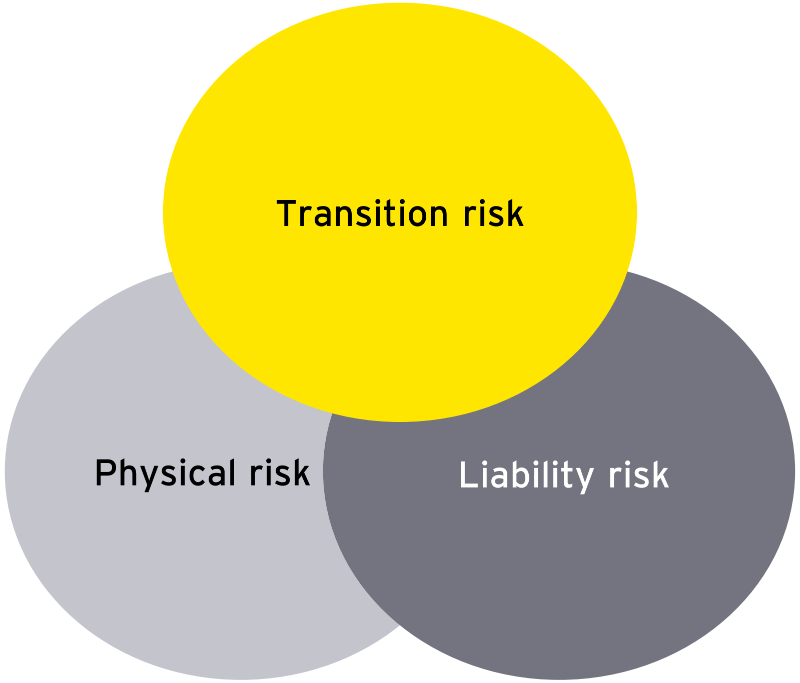
4.6 Review and update existing processes regularly to stay on top of emerging risks.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Risks arising from climate change

- Transition risk is the lack of preparedness to deal with the physical risk of climate change[1].
- It relates to adjustment to low-carbon economy due to regulatory reforms, technological advancement, shift in market sentiment and reputational risks due to social activism[2].

- Physical risk is the threat to tangible assets, which would in turn affect intangible assets[1].
- It directly impacts assets, financials, earnings or reputation due to the increased frequency or severity of adverse climate-related events[2].



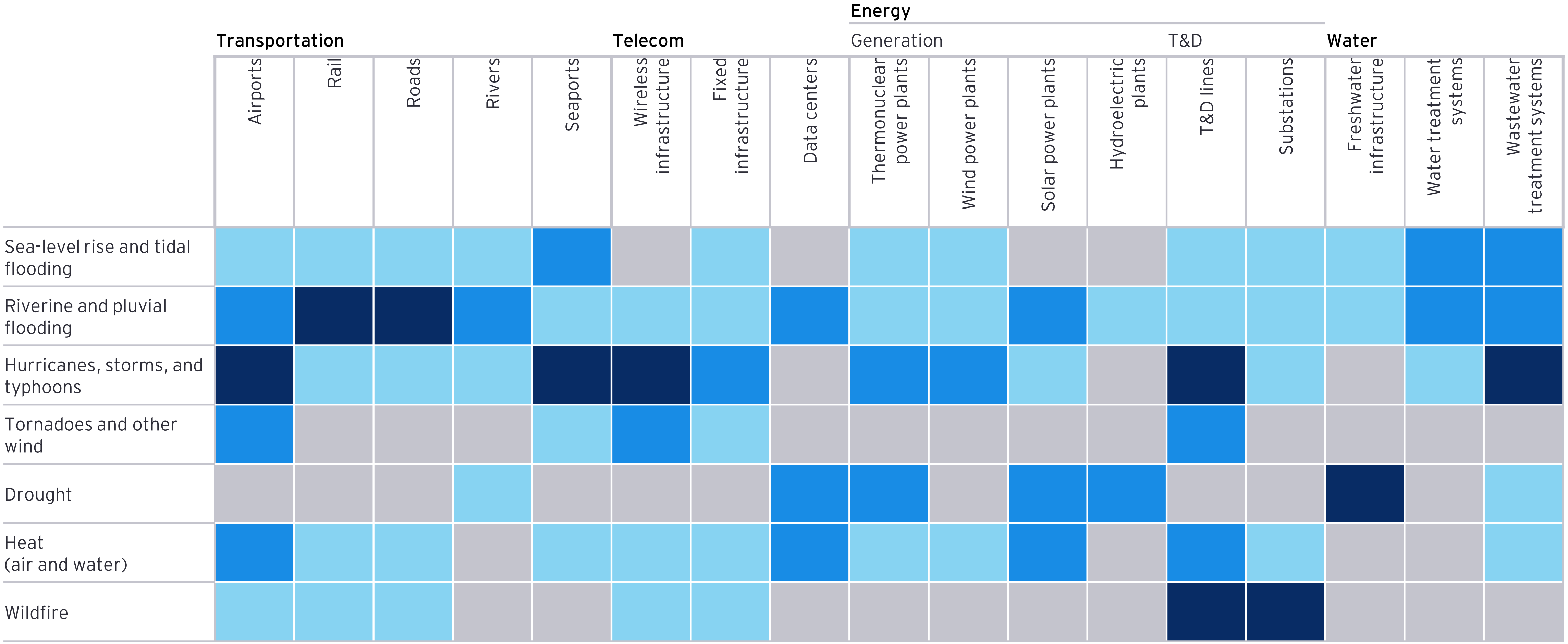
- Liability risks relate to climate-related insurance claims under liability insurance policies and direct legal claims against the insured for failing to manage climate risks[2].
- The risks impact financial institutions, particularly the insurance sectors[2].

Sources: [1]TCFD, Final Report: Recommendations of the Task Force on Climate-Related Financial Disclosures, June 2017; [2]Bank Negara Malaysia, Climate Change and Principle Based Taxonomy, 27 December 2019 and 3Grantham Research Institute on Climate Change, Global trends in climate change litigation, 4 July 2019

Global infrastructure assets are vulnerable to physical risks

Risk **Defined as potential future losses as a result of exposure to climate hazards by 2030**

Little to no risk Increased risk

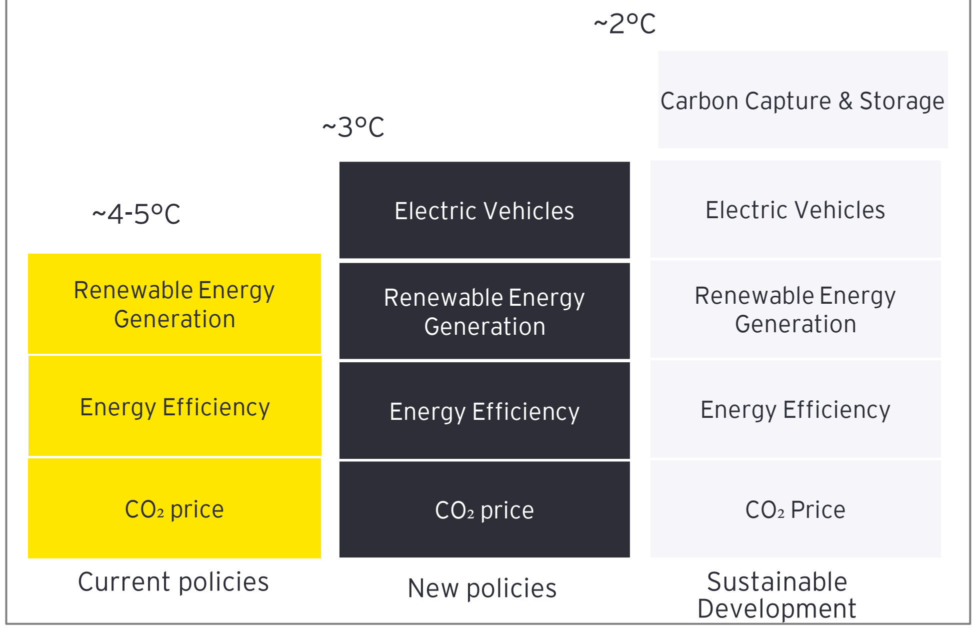


Source: Climate risk and response: Physical hazards and socioeconomic impacts, McKinsey Global Institute (2020)

Transition risks affect all sectors

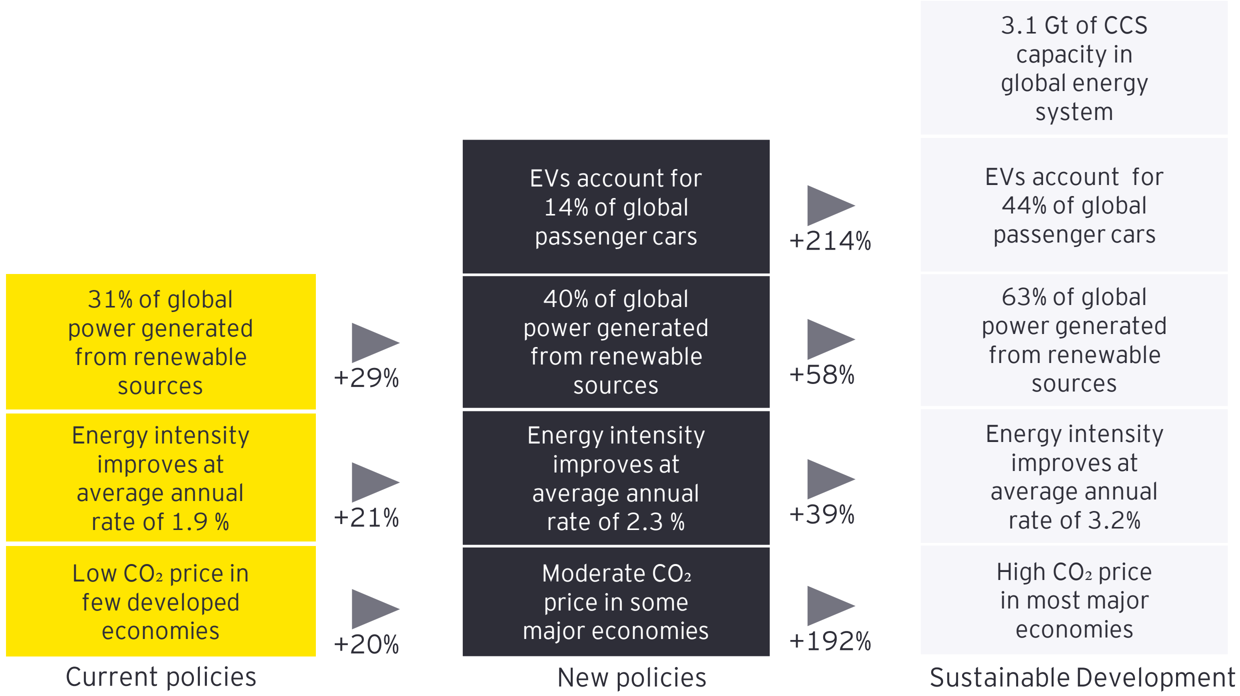
Due to the changes needed to meet the climate targets under the New Policies and Sustainable Development scenarios, transition risk affects all sectors

The World Energy Outlook (WEO) scenarios by the International Energy Agency are the most widely used scenarios to assess transition risk across various industries. The WEO includes three scenarios: Current Policies scenario (CPS); New Policies scenario (NPS); and Sustainable Development scenario (SDS)



Source: Climate Scenarios Demystified, Cicero

The figure below describes each building block in the year 2040 to reach 2°C, including the increase that is needed to move from one scenario to the next



Examples of risks related to climate change

	Credit risk	Operational risk	Business risk	Liquidity risk	Underwriting risk
Physical risk	• Increase in probability of default of certain exposures (e.g., severe droughts causing defaults in agriculture) • Lower collateral values (e.g., lower value of real estate due to higher flood risk) • Increase in country or sovereign risk through lower productivity and economic disruption • Lower debt repayment capacity of borrowers	• Destruction of a financial institution's operations (e.g., buildings, Information communication technology (ICT) and ATM network)	• Impact on institution's capacity to generate sustainable profits (exposures to certain countries or activities become less profitable)	• Assets becoming less liquid due to increased credit risk	• Changing risk profile (frequency and severity) • Certain risks becoming uninsurable

Transition risk	• Increase in probability of default of:
	  • Carbon-intensive industries (stranded assets)
	  • Assets that turn out to be less green as initially expected (greenwashing)
	• Lower collateral values (lower value of real estate due to policy changes)
		• Business models reliant on carbon-intensive activities may no longer be profitable
		• Risk of lagging behind regarding new green activities and technologies vs risk of new technologies being less promising than expected
			• Reputational risk if an institution does not manage to adapt its own business models
			• Reputational risk if an offered product does not turn out to be as green as initially expected
			• Liability risk resulting from (e.g., greenwashing)
				• Increased credit risk
				• Funding risk: ensuring investor base remains broad, investors or deposit holders becoming more green finance focused (change market sentiment)
					• Lack of shared understanding of risk exposures and their pricing

Source: *NGFS Call for Action Report 2019*

Example from TCFD adopter

Health Care

Example: Grape King Bio, Taiwan

Grape King identified three significant risks including governance, social, and economic

Risk Management

Key issues: Risk Management

Risks identified by Grape King Bio for 2021 are shown in the following table:

Governance Aspect

I. Credit risks

Credit risks mainly stem from inability to recover receivables. Grape King Bio categorizes clients according to financial conditions, past transactions, internal ratings, and accounts receivable aging reports; where appropriate, collateral is collected to reduce credit risks from receivables.

II. Procurement risks

We have many principles and regulations in place to screen and inspect raw materials starting from the procurement stages, and additional assurance is provided through international and domestic accreditation. Batch management is implemented for purchased materials to provide comprehensive information on the quality of all raw materials.

III. Supply chain risks

We track raw material traceability and have established supplier evaluation procedures. We not only inspect raw materials, but also compile basic information and relevant quality records for suppliers and manufacturers to serve as a reference when making purchases. We implement a two-supplier policy to ensure that we can make timely adjustments if supply becomes unstable and to guarantee smooth delivery of supplies.

IV. Ethics and integrity risks

We have established an Ethical Code of Conduct and formulated the "Procedures for Investigation of Grievance Reports" in October 2021 to regulate and appropriately handle grievance reports.

V. Legal compliance risks

We have established a Legal Office and Audit Office to ensure implementation of legal compliance and internal control systems, and our independent directors and Audit Committee are responsible for enhancing Board effectiveness and implementing supervisory actions.Food safety risks

We adhere to the Act Governing Food Safety and Sanitation and the regulations

VI. Food safety risks

We adhere to the Act Governing Food Safety and Sanitation and the regulations set out in international food safety management system standards as potential risks may arise from non-compliance with these requirements.Employee safety risks Grape King Bio hopes to achieve control of related risks through execution

Social Aspect

of multiple projects and improvement plans. We began conducting assessment and identification processes for occupational safety risks in 2017, and we will design corresponding response measures for identified high-risk occupational safety items.

VII. Customer interest risks

1.We have established a Personal Data Committee. We incurred no major violations of customer privacy or data breaches in 2021, and we hold valid ISO/IEC 27001:2013 certification. In response to the COVID-19 pandemic, we tested alternate work schedules and work-from-home mechanisms, and also initiated plans for continued operation to reduce infection risks.

2.We implement risk management and information security control measures for the personal information and related information assets held by our Virtual Channel Department to ensure the effectiveness and continued improvement of our information security management system.

3.We have established comprehensive handling procedures targeted to food safety, quality control, and other issues relating to consumer interests.

VIII. Employee safety risks

- e risks of poor sales performance and product recalls:
  (1) Conducted comprehensive market surveys prior to product development to better understand market trends and consumer habits.
  (2) Tracked market conditions after product launches to understand changes in product trends and develop strategies for future product development.

IX. Employee health risks

We distribute questionnaires to all company employees at the end of each year to survey their lifestyles, health needs, and demands for health promotion activities to identify their health problems and health needs.

X. Talent recruitment and training risks

In order to promote flow of talent within our organization, we provide multiple channels for development (such as overseas job opportunities, opportunities to execute critical projects, training, and a variety of other opportunities and platforms) while respecting the career development plans of our employees and the business needs of our company, giving our employees cross-cultural and cross-domain learning opportunities, encouraging them to realize their potential, learn new knowledge and skills, develop a broader outlook, and build connections.

Economic

XI. Product development and launch risks.

• Internal:

Product designs face risks of discrepancy or failure during on-site batch production trial runs. We used the following methods to reduce risks stemming from this problem:

(1) Purchased testing equipment (for example texture analyzers) and established a product parameter database to confirm product parameters.

(2) Conduct medium-scale trial runs in our laboratory to confirm product formulations, filling properties, and applicability prior to on-site batch production trial runs.

• External (sales related):

We took the following actions in collaboration with our sales units to reduce risks of poor sales performance and product recalls:

(1) Conducted comprehensive market surveys prior to product development to better understand market trends and consumer habits.

(2) Tracked market conditions after product launches to understand changes in product trends and develop strategies for future product development.

XII. Marketing and market risks

We constantly monitor and compile monthly reports on all news, media, and feedback from social networks. We assess risks posed by negative news coverage and issue unified statements in a question-and-answer format to provide information required by the general public, thereby avoiding confusion from ambiguous information.

XIII. Review of advertising copy

In conjunction with food safety promotion activities hosted by our Quality Assurance Department, our Legal Office collaborated with our Information Office to set up the "EIP Inquiry System for Advertising Violations" and the "T9 Copy Review Procedure Request Form." The "EIP Inquiry System for Advertising Violations" compiles all advertising infractions and penalties issued by the Taipei City Government Department of Health into a database so that all company units can keep abreast of inappropriate words and phrases identified by the administrative authorities when creating or reviewing advertising copy.

- Grape King also form "Risk Management Committee" to manage responses to climate risks. In terms of processes for identifying and assessing risks.
- Grape King currently use a bottom-up approach where frontline units report on-site climate issues (such as water shortages) and formulate related strategies.

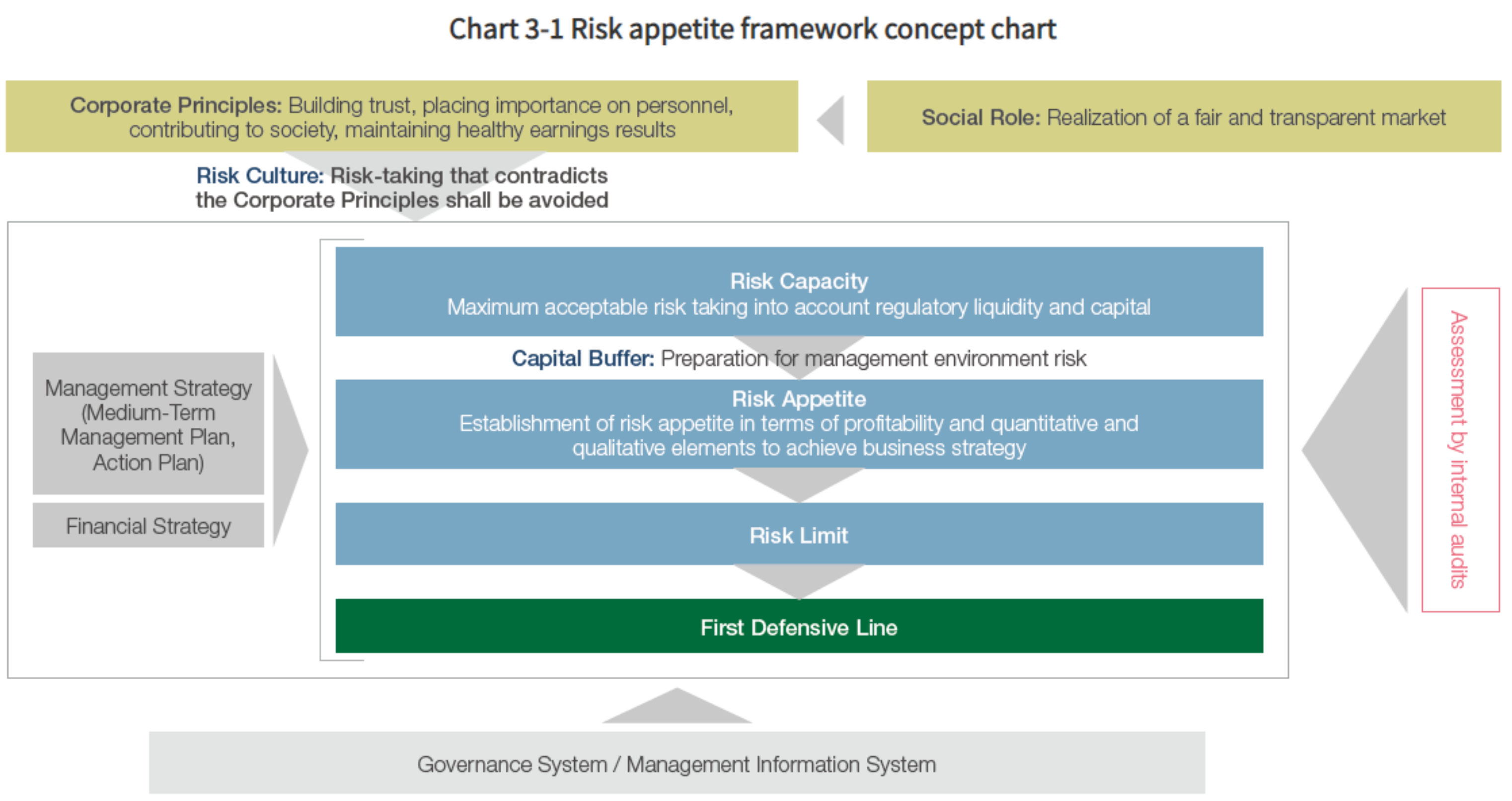
Source: Grape King Bio ESG Report 2021, https://www.grapeking.com.tw/en/csr/interactive/report/file/ARm8pgR7oyD4/2021%20Grape%20King%20Bio%20ESG%20Report_EN_S0622.pdf, accessed on October 11, 2022.

Example from TCFD adopter

Investment Bank

Example: Daiwa, Japan

Daiwa's risk appetite framework



- Daiwa's risk appetite framework show how many risk the company should be accepted as risk appetite to achieve their profit targets and business strategies.
- This framework will be reviewed twice a year by the Board of Directors.
- In FY 2021, Daiwa added climate change risk into the Risk appetite statement to identify, assess, and effectively manage climate-related risk based on company's risk profiles.

Source: Daiwa Risk Management, https://www.daiwa-grp.jp/english/sdgs/environment/tcfd_riskmanagement.html, accessed on October 27, 2022.

Question time

What are the first steps that you would take to identify climate-related risks in the short, medium and long term?

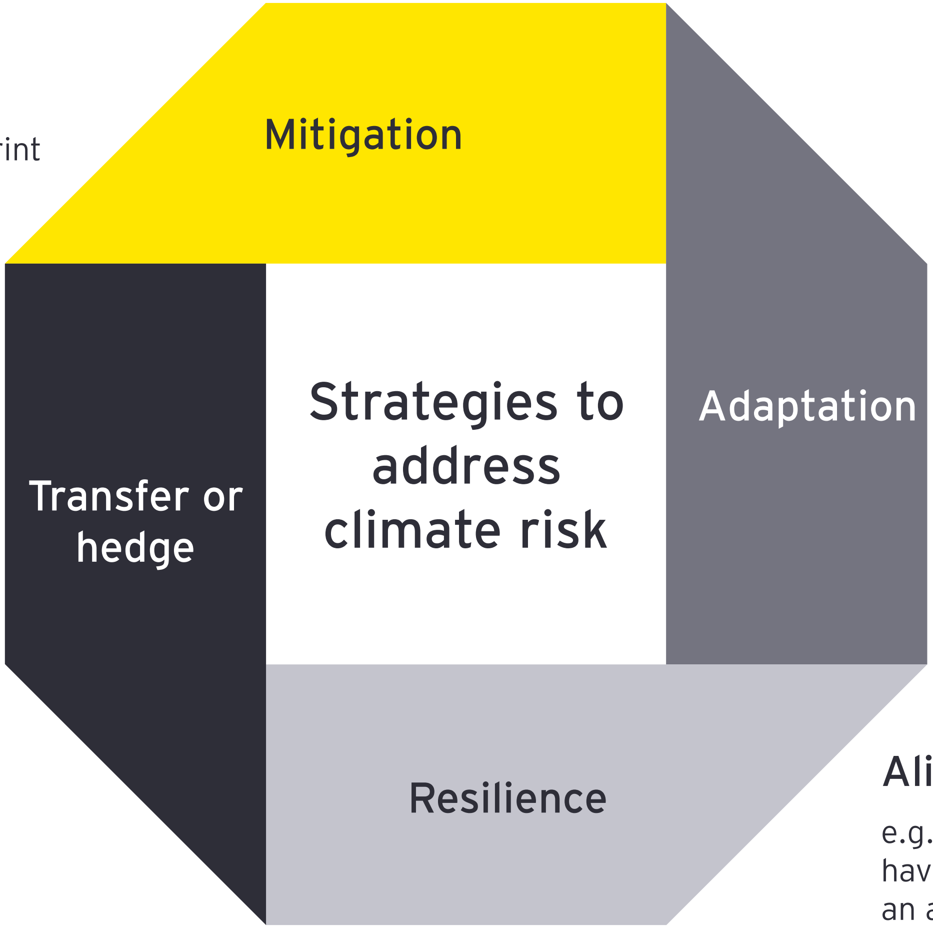
Please use the whiteboard to give your answer.

Types of strategies to address climate risk

Reducing exposure to risk
e.g., reducing the FI's own carbon footprint

Transferring or hedging the risk to third parties
Insurance is the common practice to transfer risk.

e.g., insurance for renewable energy solutions, to provide natural hedge to the business growth



Reducing damage or cost after exposure
e.g., encouraging all residential mortgage holders to buy property insurance to prepare for severe weather impacts

Aligning companies business plan
e.g., in order to withstand severe weather events that have flow-on financial impacts, FIs can consider to hold an additional capital buffer

Source: TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, 2017

Example from TCFD adopter

Materials

Example: CEMEX SAB de CV, Mexico

Cemex's management of identifying, assessing, monitoring and mitigating risks and opportunities, including those related to climate

Cemex discloses its risk management process, which is based on international best practices from the Risk Management Society (RIMS) and Business Continuity Institute (BCI).

This management process helps Cemex to identify its main risks. The risk discussion is emphasised by the decision-makers and risk oversight by the Board of Directors.

Source: Cemex, Integrated report, 2020

TCFD checklist

Elements of TCFD checklist that we will go through today:

Step 1 Form an internal TCFD working group.	**Step 2** Conduct a gap analysis of current climate-related processes and disclosure.	**Step 3** Integrate climate change into the governance structure.
Step 4 Embed climate change into existing risk management frameworks, accounting for its long-term, geography-specific and systemic nature.	**Step 5** Conduct climate scenario analysis and embed climate change into business strategy. Companies may start with qualitative scenario narratives, and as they gain experience, apply quantitative analysis.	**Step 6** Assess the financial impact of climate risk on company financials (i.e., on revenues, expenditures, assets, liabilities and capital).
Step 7 Assess the resilience of the business strategy, accounting for the climate scenarios conducted.	**Step 8** Engage with investors and regulators to gain feedback on which climate-related financial risks and to what extent they expect disclosure on a regular basis.	**Step 9** Disclose progress, which includes deciding how to integrate climate disclosure into the organisation's current disclosure.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 5 and 6: Conduct climate scenario analysis, embed climate change into business strategy and assess financial impact of climate risk on company financials

5.1 Identify possible business exposures to climate-related risks (using the outputs of Step 4 as a starting point): examine transmission channels, identify climate-related risks and conduct an exposure analysis.

5.2 Develop climate-related scenarios, by selecting the appropriate socio-economic, technological and climate policy contexts and emission and temperature pathways.

5.3 Review at least two different scenarios to compare and prepare for varying degrees of severity.

6.1 Choose the appropriate impact assessment tools to determine the change in the selected risk metrics for each scenario. The tool can assess the extent to which the business model can withstand macro-economic stresses, or be asset- or company-specific, which may vary by sector and firm.

6.2 Assess the potential impact of climate issues on the selected financial metrics.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Climate risks could affect the economy through a range of different transmission channels

Examine both physical and transition transmission channels

Climate risks

Transition risks

- Policy and regulation
- Technology development
- Consumer preferences

Physical risks

- Chronic (e.g., temperature, precipitation, agricultural productivity, sea levels)
- Acute (e.g., heatwaves, floods, cyclones and wildfires)

Economic transmission channels

Micro
Affecting individual businesses and households

Businesses

- Property damage and business disruption from severe weather
- Stranded assets and new capital expenditure due to transition
- Changing demand and costs
- Legal liability (from failure to act)

Households

- Loss of income due to disruptions
- Property damage (from severe weather) or restrictions (from low-carbon policies) increasing costs and affecting valuations

Macro
Aggregate impacts on the macroeconomy

- Capital depreciation and increased investment
- Shifts in prices (from structural changes, supply shocks)
- Productivity changes (from severe heat, diversion of investment to mitigation and adaptation, higher risk aversion)
- Labour market frictions (from physical and transition risks)
- Socioeconomic changes (from changing consumption patterns, migration, conflict)
- Other impacts on international trade, government revenues, fiscal space, output, interest rates and exchange rates

Financial risks

Credit risks

- Defaults by businesses and households
- Collateral depreciation

Market risk

- Repricing of equities, fixed income, commodities etc.

Underwriting risk

- Increased insured losses
- Increased insurance gap

Operational risk

- Supply chain disruption
- Forced facility closure

Liquidity risk

- Increased demand for liquidity
- Refinancing risk

Financial system contagion

Climate and economy feedback effects

Economy and financial system feedback effects

Source: NGFS Climate Scenario for Central Banks and Supervisors

Examples of climate related transition risks and potential financial impacts

Type	Climate-Related Risks	Potential Financial Impacts
Transition risks	**Policy and legal**	
	▸ Increased pricing of GHG emissions ▸ Enhanced emissions reporting obligations ▸ Mandates on and regulation of existing products and services ▸ Exposure to litigation	▸ Increased operating costs (e.g., higher compliance costs, increased insurance premiums) ▸ Write-offs, asset impairment, and early retirement of existing assets due to policy changes ▸ Increased costs and/or reduced demand for products and services resulting from fines and judgments
	Technology	
	▸ Substitution of existing products and services with lower emissions options ▸ Unsuccessful investment in new technologies ▸ Costs to transition to lower emission technology	▸ Write-offs and early retirement of existing assets ▸ Reduced demand for products and services ▸ Research and development expenditure in new and alternative technologies
	Market	
	▸ Changing customer behavior ▸ Uncertainty in market signals ▸ Increased cost of raw materials	▸ Reduced demand for goods and services due to shift in consumer preferences ▸ Increased production costs due to changing input prices (e.g., energy, water) and output requirements (e.g., waste treatment) ▸ Abrupt and unexpected shifts in energy costs ▸ Change in revenue mix and sources, resulting in decreased revenues ▸ Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)
	Reputation	
	▸ Shift in consumer preferences ▸ Stigmatization of sector ▸ Increased stakeholder concern or negative stakeholder feedback	▸ Reduced revenue from decreased demand for goods and services ▸ Reduced revenue from decreased production capacity ▸ Reduced revenue from negative impacts on workforce management and planning (e.g., employee attraction and retention) ▸ Reduction in capacity availability

Source: *TCFD climate scenario analysis, A4S Leadership Network*

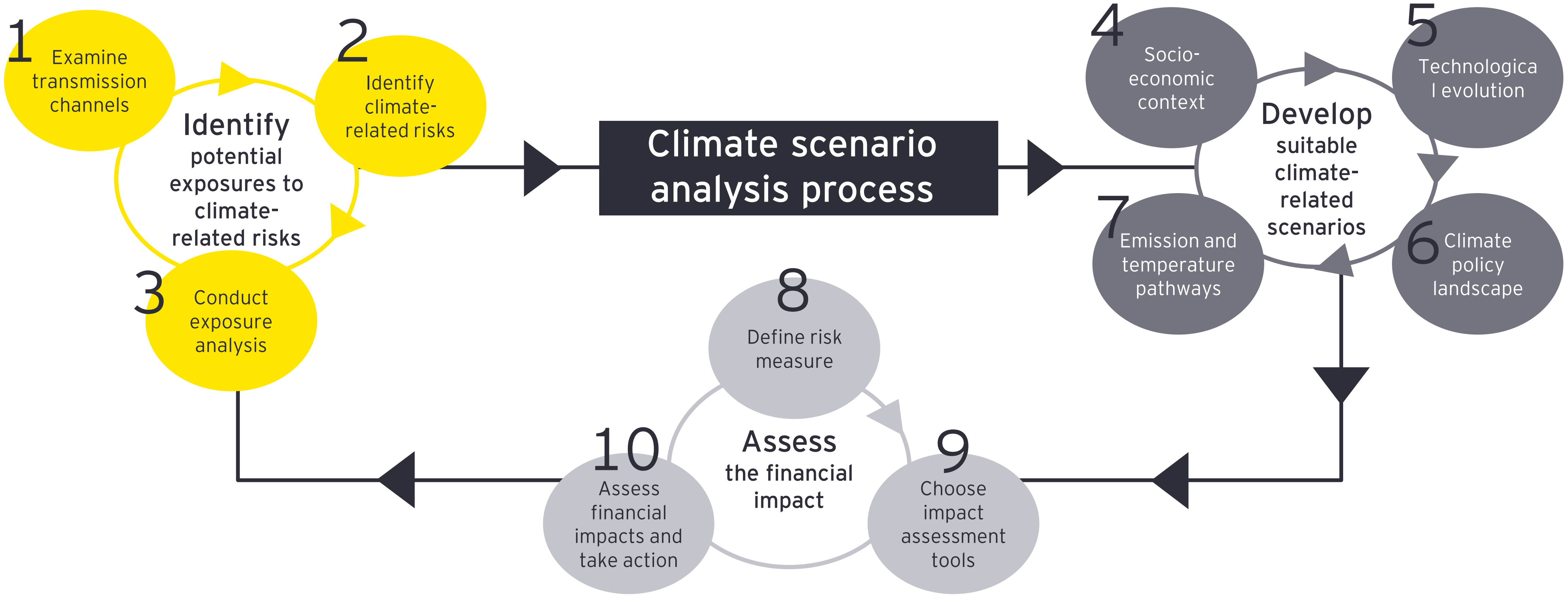
Examples of climate related physical risks and potential financial impacts

Type	Climate-Related Risks	Potential Financial Impacts
Physical risks	**Acute** ▸ Increased severity of extreme weather events such as cyclones and floods **Chronic** ▸ Changes in precipitation patterns and extreme variability in weather patterns ▸ Rising mean temperatures ▸ Rising sea levels	▸ Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions) ▸ Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism) ▸ Write-offs and early retirement of existing assets (e.g., damage to property and assets in "high risk" locations) ▸ Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants) ▸ Increased capital costs (e.g., damage to facilities) ▸ Reduced revenues from lower sales or output ▸ Increased insurance premiums and potential for reduced availability of insurance on assets in "high-risk" locations

Source: TCFD climate scenario analysis, A4S Leadership Network

Climate scenario analysis process

In the context of climate change, the TCFD recommends the use of climate scenario analysis to help firms to explore the potential range of climate-related outcomes and analyse the impact of these alternative states of the world on the business in a structured manner, as well as how the business may respond in these circumstances.

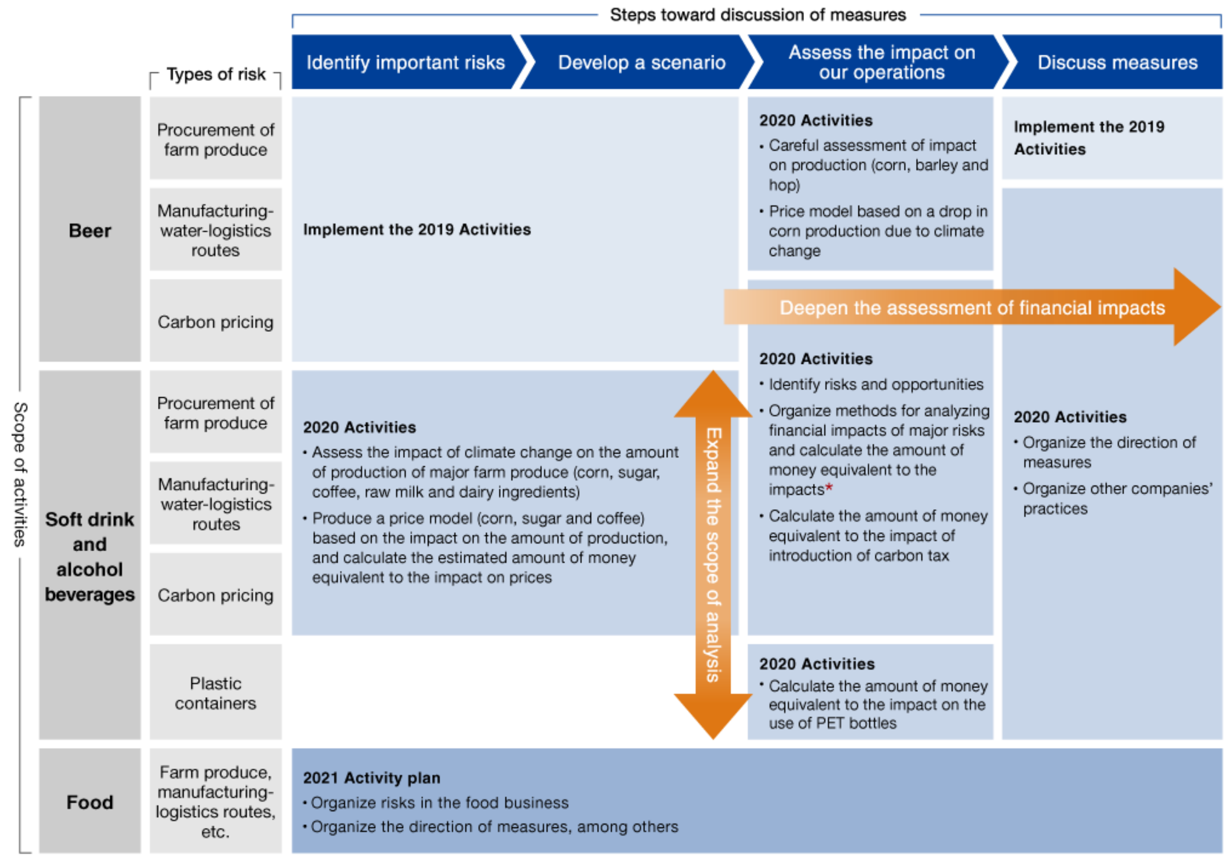


Source: *Climate Financial Risk Forum Guide 2020, Scenario Analysis Chapter*

Example from TCFD adopter
Consumer Staples

Example: Asahi Group Holdings, Japan

Overview of Asahi's 2020 scenario analysis



*Calculation of the amount of money equivalent to the impact of carbon pricing (Scope1 and 2+Impact on container purchase prices) and trial calculation of impact on production locations and logistics locations based on the primary water risk screening

Source: Asahi, Scenario Analysis, 2020

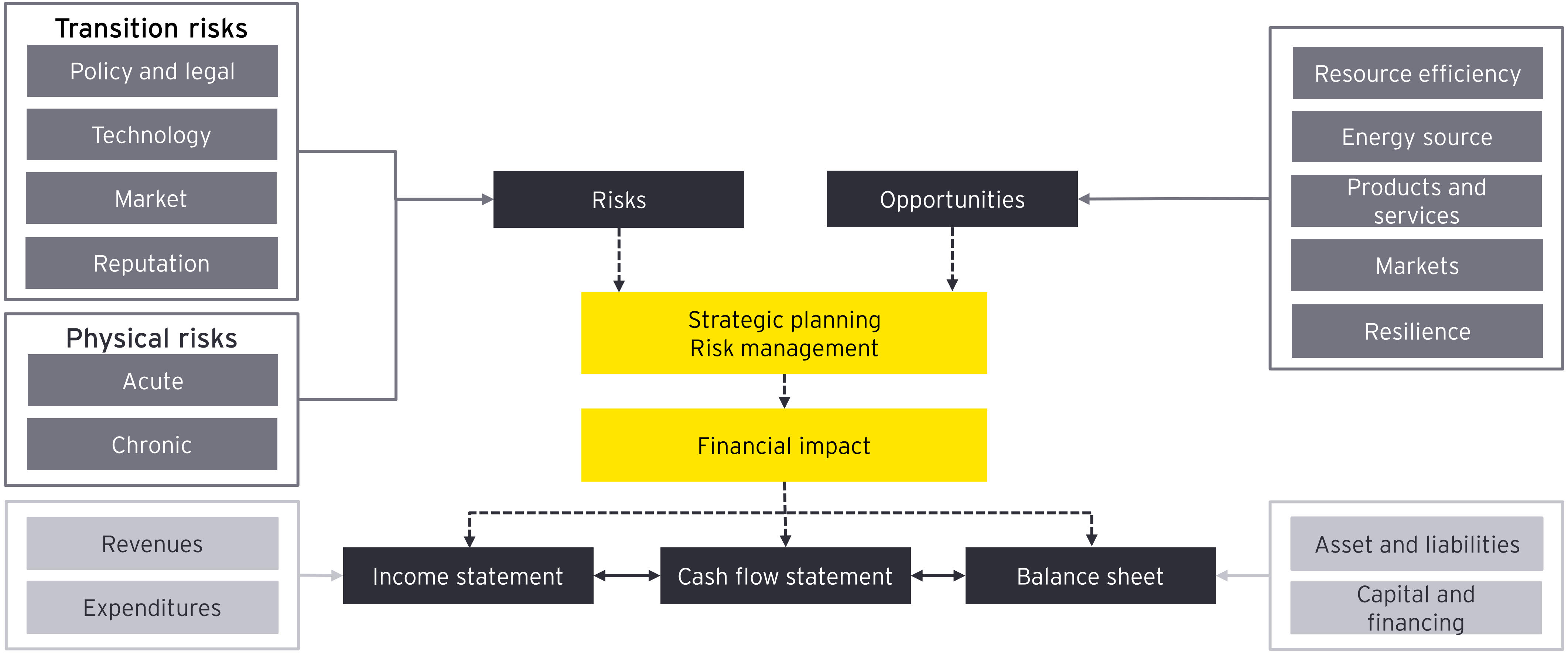
The Asahi Group conducted a scenario analysis on its Beer Business in 2019. In 2020, a similar analysis was also performed on the Soft Drinks and all Alcohol Beverages Businesses, including the Beer Business.

The objective of these analyses is to determine the impact of climate change risks and opportunities on business operations and to discuss measures.

The analyses refer to RCP2.6 (under 2℃) and RCP8.5 (4℃) scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) and the scenario created by the International Energy Agency (IEA).

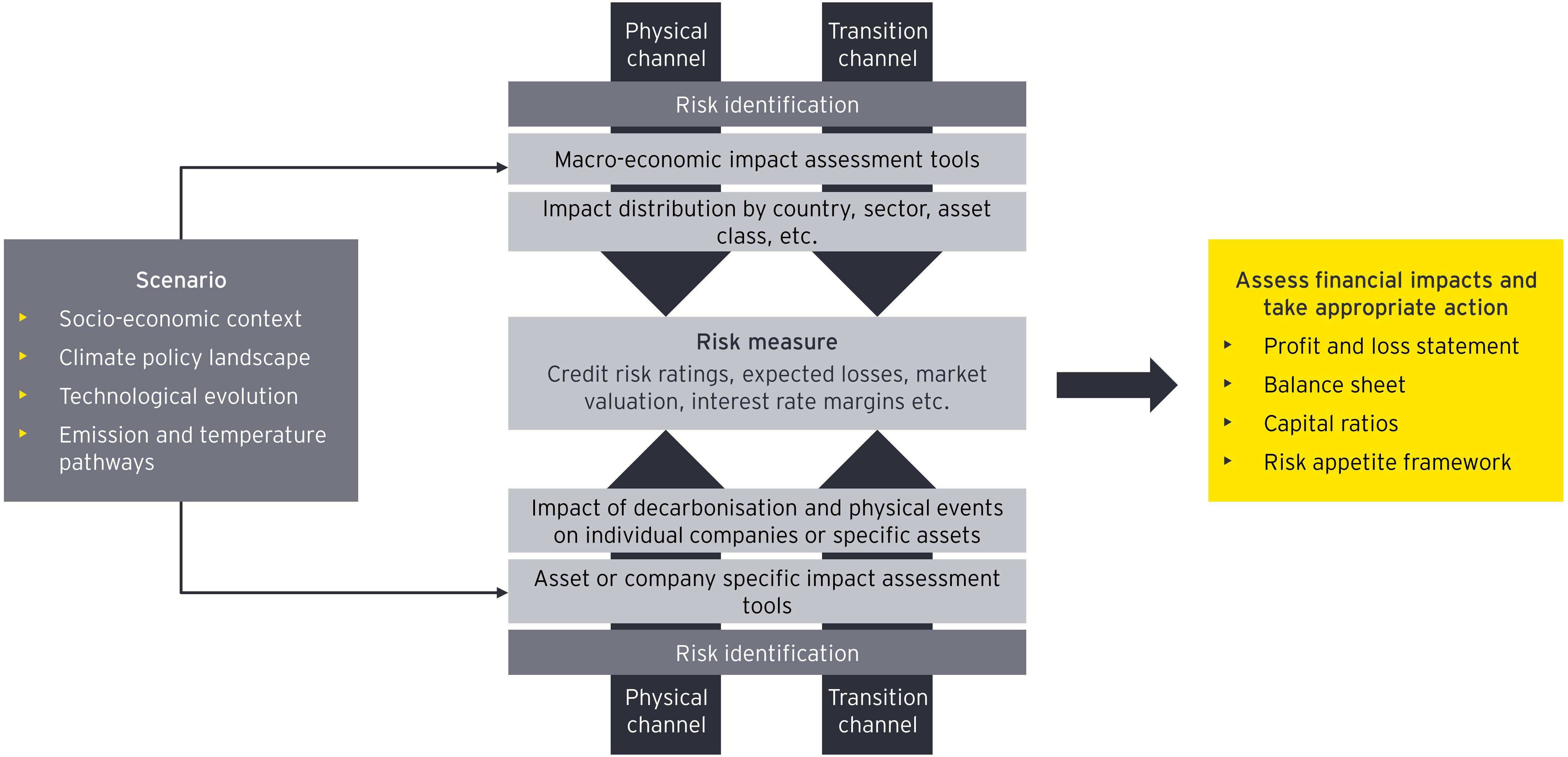
TCFD focuses on the financial impact of climate-related risks and opportunities

TCFD focuses on the financial impact of climate-related risks and opportunities on an organisation, rather than the impact of an organisation on the environment.



Source: TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures pg. 8, June 2017

Conducting climate scenario assessment to measure financial impacts



Source: Climate Financial Risk Forum Guide 2020, Scenario Analysis Chapter

Disclosure on financial impact

TCFD suggested that organisations may use scenario analysis to supplement understanding of potential financial impacts of any climate-related risks and opportunities to help the organisation to perform on their strategies.

Organisation's scenario analysis

Type of disclosure on financial impact

- Qualitative
- Quantitative

Example Range of Quantification

More qualitative → More quantitative

High-level descriptions of qualitative impacts	Qualitative impacts broken down by business line or asset	High-level quantification	Quantitative impacts broken down by business line or asset
Explanation of ▸ Risk exposures ▸ Expected impacts from tested scenario on company financial ▸ Management actions to mitigate risks	Assessment of risk exposures and materiality by climate risk across sectors or portfolios	Illustrate of range of quality of impacts and estimates at organizational level	Provide specific quantity or quantities ▸ E.g., assumptions of company financial impact

Source: *Task Force on Climate-related Financial Disclosure 2021 Status Report*

Question time

How would your organisation attempt to identify and quantify the financial impact from your climate risks and opportunities?

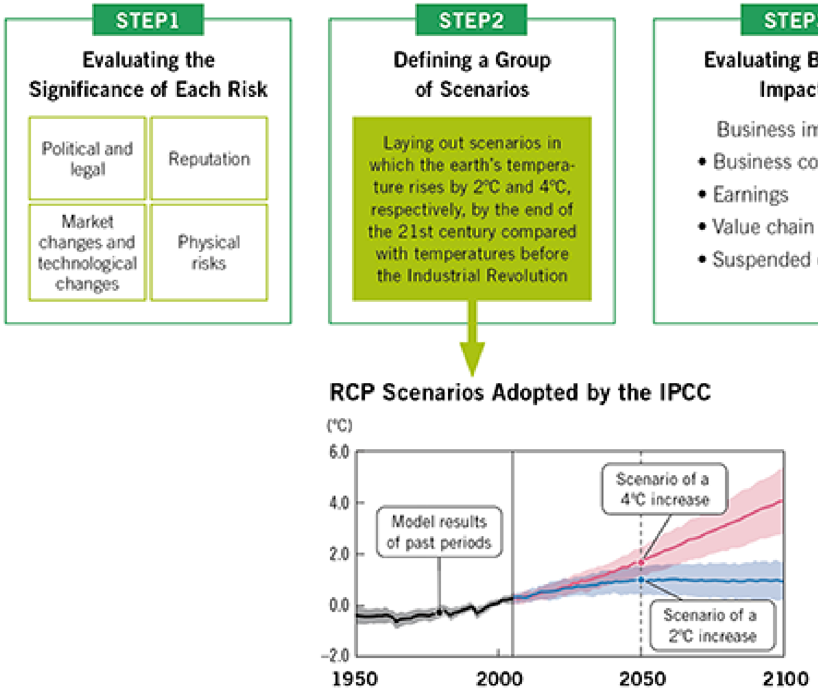
Please use the whiteboard to give your answer.

Example from TCFD adopter

Consumer Staples

Example: Asahi Group Holdings, Japan

Assess the financial impact of climate risk on company financials



Step 1: Evaluating the significance of each risk

- Asahi evaluates each risk and opportunities on each risk based on category such as transition risks and physical risks.

Step 2: Defining a group of scenarios

- Defining scenarios based on the temperature rise, referencing IPCC RCP2.6 (2°C), RCP8.5 (4°C) scenarios and IEA scenarios.

Step 3: Evaluating the business impact

- Asahi group implemented analysis and business impact evaluation according to the following:
  - Research of effects on agricultural material
  - Experimental calculations of financial impact of the introduction of a carbon tax on the Asahi Group's financial position

Step 4: Examining response measures

- Direction of measures to address agricultural material harvest yields
- Direction of response measures for increased production costs due to carbon tax introduction
- Direction of response measures for fluctuating PET bottle prices due to carbon tax introduction

Source: Asahi, Scenario Analysis, 2020

Example from TCFD adopter

Technology | Example: Cisco, United States

Cisco's disclosure on climate-related opportunities and potential financial impact

Cisco disclosed climate-related opportunity and its potential impact by following the guideline from final report on recommendation of TCFD.

Cisco divided their organisation's opportunities into five categories: resource efficiency, energy resource, products and services, markets, and resilience.

Opportunities	Climate-Related Opportunity	Potential Impact
Resource Efficiency	Reduced use of virgin material; increased use of recycled material.	Improved material resource efficiency through implementation of circular economy principles may reduce costs and provide alternative sources of supply.
	Improved energy efficiency in operations and extended operations (supply chain).	Investments to meet Cisco Scope 1 and 2 reduction goals have averaged about 3-1/2 years payback, ranging from <1 year to as long as 5 years. Improved energy efficiency in the supply chain to meet our absolute GHG reduction goal may similarly reduce cost.
Energy Source	Low-carbon/renewable sources of electricity.	Reduced operating costs and less exposure to future fossil fuel price increases. Circumstances can vary in regulated vs. unregulated markets.
Products and Services	More energy-efficient products.	Substantially more efficient products, such as the new 8000-series routers, may provide an incentive for customers to upgrade and retire legacy network gear. This incentive may be higher for a customer that has adopted carbon neutrality, although many such customers have also committed to 100% renewables, which could reduce the GHG-emissions impact of higher energy consumption.
	Cisco solutions that facilitate improved resource buildings, reduced business travel, and teleworking.	Substantial working-from-home during COVID-19 demonstrated the power of remote collaboration technologies, with the same technologies applied to telemedicine, fitness, retail, food service, and entertainment, all at the expense of physical travel and physical presence.
Markets	Acceleration or step change in cultural norms virtualizing many aspects of life.	Refer to the row directly above (the opportunity starting with "Cisco solutions.")
Resilience	Use renewable energy and adopt energy efficiency measures.	Cisco has set FY22 goals to (1) use electricity from renewable sources for 85% of our worldwide electricity and (2) reduce GHG emissions 60% (FY07 baseline) by investing more than $45 million from FY18-22 in energy efficiency and renewable energy.
	Resource substitution.	Increased revenue through collaboration products that facilitate transport substitution.

Source: Cisco 2021 Taskforce on Climate-Related Financial Disclosure (TCFD) Response, https://www.cisco.com/c/dam/m/en_us/about/csr/esg-hub/_pdf/2021-tcfd.pdf, accessed on October 8, 2022

Example from TCFD adopter

Materials and buildings

Example: Lendlease, Australia

Lendlease has disclosed its climate scenario used

Scenario	Climate Related Impact	Residual Sensitivity: Development	Residual Sensitivity: Construction	Residual Sensitivity: Investment
Polarisation scenario (>3°C) Our Polarisation Scenario sees a world where climate action is delayed by the polarisation of climate action. This delay results in a world where physical climate change risks are the greatest across our three scenarios. The integration of 'Leadership in Sustainability' as a strategic priority and our Net and Absolute Zero Carbon targets sees high levels of positive sensitivity in both leadership in decarbonisation and a shift in consumer preference to secure and create resilient communities. Continued integration of physical climate risk assessments into our investment and business processes is essential to reducing negative sensitivities and building resilience to physical climate change risk.	Impact of climate change on assets and communities			
	Impact of climate change on the way we work			
	Shift in consumer preference toward secure and resilient communities			
	Industry leadership in decarbonisation valued			
	Impact of climate change on cities			
Paris Alignment scenario (2–3°C) Our Paris Alignment Scenario sees a market led transition to a lower carbon future through global government commitments to the Paris Agreement, resulting in higher regulation to climate action and with lower physical impacts of climate change compared to our Polarisation scenario. There are many 'difficult to decarbonise' products and materials in our supply chain, including cement, steel and aluminium. The cost of decarbonisation in our supply chain creates negative sensitivities for future development opportunities. Our commitment to Absolute Zero Scope 3 emissions will drive action in our supply chain, creating resilience in our strategy. Our leadership in sustainability and carbon targets creates similar positive sensitivities to decarbonisation as per our Polarisation scenario.	Increase speed of change in climate related impacts			
	Increase cost of carbon			
	Demand for decarbonisation of supply chain			
	Increased scrutiny over actions versus branding			
	Industry leadership in decarbonisation valued			

Lendlease discloses the climate scenarios used, including the climate related impact and sensitivity in three areas (i.e., development construction and investment).

The integrated climate risk assessment will be combined with the investment decision-making process of **Lendlease.**

Source: Lendlease, annual report 2021

EY

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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 7: Assess the resilience of the business strategy, accounting for the climate scenarios conducted

7.1

Explore risks and opportunities on climate-related issues which impact on the business, strategy and financial planning in the areas including products and services, supply chain, investment in research and development, and operations.

7.2

Incorporate climate-related issues into the financial planning process (i.e., capital planning and allocation).

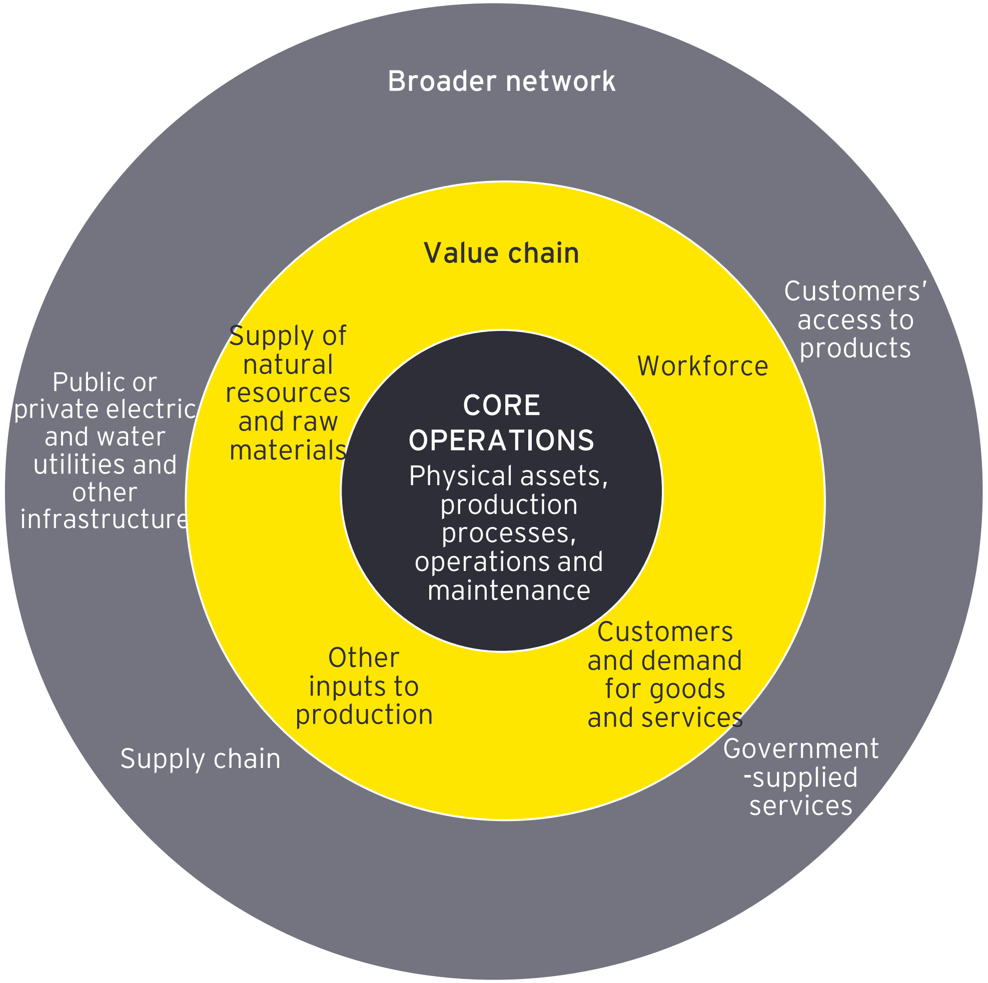
Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Impacts of climate change on businesses and wider economy

Climate change can exacerbate threats to an organisation's core operations, supply and distribution chains, workforce and customers, but the key question is

"

How do we build business resilience to mitigate or reduce the magnitude of disruption to these business processes?



Incorporating climate-related issues into financial planning

Financial planning elements that can be influenced owing to climate-related risks (non-exhaustive)

Income statement

1. Revenue
2. Direct costs
3. Indirect costs
4. Capital expenditures
5. Capital allocation
6. Acquisition and divestments
7. Access to capital

Balance sheet

8. Assets
9. Liability

Example of financial element – Capital Expenditure

1. Introduce internal price on carbon into capital expenditure
2. Conduct a benchmark study
3. Assess return on investment with the impact of carbon implication
4. Set carbon price at high level
5. Periodically review the price and long-term measure
6. Clean technologies and lower-carbon solution

Source: CDP Climate Change 2022 Reporting Guidance

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Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Step 8 and 9: Communication and reporting on climate disclosures

8.1 Regularly communicate with the investors to ensure that the disclosure meet investors' requirements.

9.1 Confirm which report(s) the climate risk disclosures will be incorporated into, taking into account TCFD recommendations (e.g., in annual financial filings, integrated report, annual report or sustainability report).

9.2 Ensure that all four elements of the TCFD recommendations (i.e., Governance, Strategy, Risk Management, Metrics and Targets) are addressed.

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

Core elements of the TCFD recommendations

Governance

Disclose the organisation's governance around climate-related risks and opportunities

Recommended Disclosures

a) Describe the board's oversight of climate-related risks and opportunities

b) Describe the management's role in assessing and managing climate-related risks and opportunities

Strategy

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

Recommended Disclosures

a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term

b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning

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

Risk management

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

Recommended Disclosures

a) Describe the organisation's processes for identifying and assessing climate-related risks

b) Describe the organisation's processes for managing climate-related risks

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

Metrics and targets

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

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

c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets

Source: TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, June 2017

Step 8 and 9 forms the overarching communication and reporting on climate disclosures as a result of the implementation from steps 1 to 7

TCFD Good Practice Handbook highlights top tips for achieving good practice in TCFD disclosures with respect to the 4 core elements

1 Governance

- Ensure that the difference between board and management-level accountabilities is efficiently differentiated and the connection between the two levels is addressed
- Clarify which areas of climate-related risk and opportunity each governing body has authority over, and how this authority is exercised
- Specify how often each body reviews the climate-related information

2 Strategy

- Provide a summary table of the organisation's key climate-related financial risks and opportunities, including the expected impacts and time frames for such concerns
- Describe how these risks and opportunities influence strategic and financial planning processes, taking note of any major choices taken as a result of the evaluation
- Share ongoing progress for scenario analysis, noting initial findings, any data gaps and plans for future improvement
- Provide assumptions made (i.e., the quantified input for the scenario) as well as the outcome of the scenarios on the result, cash flow, and total balance
- Accompany the results of the scenario analysis with a clear conclusion on the organisation's strategic resilience to the potential outcomes

Source: Climate Disclosure Standards Board (CDSB), TCFD Good Practice Handbook

EY

Step 8 and 9 forms the overarching communication and reporting on climate disclosures as a result of the implementation from steps 1 to 7

TCFD Good Practice Handbook highlights top tips for achieving good practice in TCFD disclosures with respect to the 4 core elements

3 Risk Management

- To demonstrate mitigations, include business- and context-specific actions along with the disclosure of material climate-related risks
- Explain how the relative significance of climate-related risks is assessed, relative to wider business risks, and how risk management actions are prioritised
- Describe the connection and integration between climate risk assessment processes, and wider risk management, including cross referencing between relevant report sections, if necessary

4 Metrics and Targets

- Consider how the climate-related metrics disclosed are connected to the material climate-related risks and opportunities highlighted by the organisation
- Ensure GHG emissions reporting is aligned to the Greenhouse Gas Protocol requirement
- Explain how climate-related targets are included into capital allocation planning, as well as how targets over different period are connected

Source: Climate Disclosure Standards Board (CDSB), TCFD Good Practice Handbook

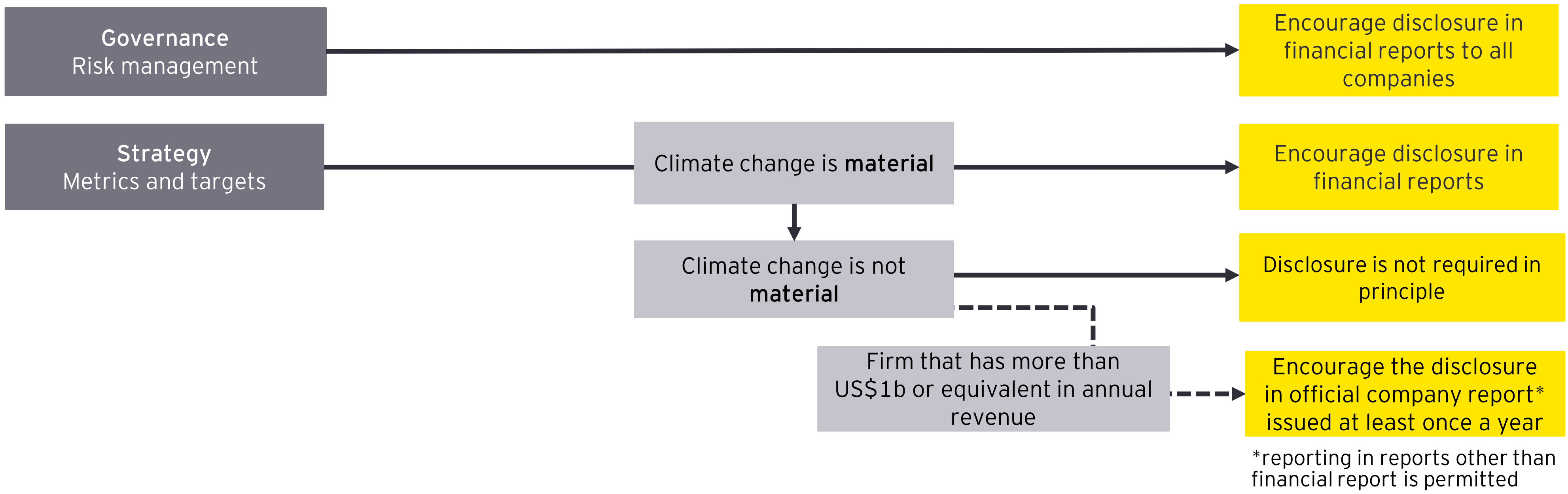
Climate Disclosure Standards Board (CDSB)'s Guiding Principles

Additionally, organisation can consider to apply CDSB's Guiding Principles, which were introduced in the CDSB Framework and align heavily with the TCFD's Principles for Effective Disclosure, to ensure that climate- and environmental-related information in the mainstream report is **decision-useful**, **accurate**, and **complete**.

1. Environmental information shall be prepared applying the principles of **relevance** and materiality
2. Disclosures shall be **faithfully represented**
3. Disclosures shall be connected with each other information in the mainstream report
4. Disclosures shall be **consistent** and **comparable**
5. Disclosures shall be clear and **understandable**
6. Disclosures shall be **verifiable**
7. Disclosures shall be forward looking

Source: CDSB TCFD Good Practice Handbook, CDSB webinar

When and how do firms disclose their TCFD commitments?



Other possible ways of disclosure	
1 Integrated report, annual report	Reports that compile both financial information and nonfinancial information including sustainability-related information of companies
2 Environmental report, sustainability report, CSR report, etc.	Voluntary disclosure mediums for non-financial information

Sources: TCFD, *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures*, June 2017; Ministry of Trade, Economy and Industry of Japan, *TCFD Guidance*, 2018

Question time

What are your business drivers to align your disclosure with TCFD?

Please use the poll to give your answer.

EY

Question time

Within what timeline do you think your organisation will adopt TCFD?

Please use the poll to give your answer.

Example from TCFD adopter

Manufacturing | Example: Universal Robina, Phillippines

Providing a transparent roadmap

Year	Our Approach in adopting TCFD Recommendations			
	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.
2021	Highlight how our management is proactive towards ESG particularly on managing climate change risks and opportunities	Discuss how we incorporate climate actions in URC strategies	Highlight how our sustainability risk program is embedded in our ERM framework	GHG reporting and its targets
2022-2025	Set up Board oversight of climate-related risks and opportunities	Conduct Scenario Analysis (30% of the sites) to identify and describe the climate related risks and opportunities	Develop processes for identifying, assessing, and managing climate related risks	Completion of Scope 1 and Scope 2
2026-2030	Evaluate and strengthen Board oversight of climate-related risks and opportunities	Conduct Scenario Analysis (80% of the sites) to identify and describe the climate related risks and opportunities	Integrate into organization's overall risk mitigation plan	Completion of Scope 3
2050		All sites assessed and managed for Climate Risks	Strengthen risk mitigation plans	Net Zero

For many organisations, full implementation of the TCFD recommendations will be an iterative process, with continuous improvement for disclosures, across reporting cycles. To provide transparency to investors on the organisation's plans to enhance its TCFD reporting, inclusion of a clear roadmap is recommended.

Universal Robina have included their approach in adopting TCFD framework on their sustainability report. Thus, this clear roadmap in implementing TCFD framework would increase investors' interest for the company.

Source: CDSB TCFD Good Practice Handbook, BP 2021 Annual Report

Example from TCFD adopter

Oil and Gas | Example: BP, United Kingdom

Integrating disclosure into the mainstream financial report

TCFD index table

Our expanded TCFD disclosures can be found on the following pages.

TCFD Recommendation	TCFD Recommended Disclosure	Where reported
Governance Disclose the organization's governance around climate-related issues and opportunities.	a. Describe the board's oversight of climate-related risks and opportunities.	• Pages 55-57.
	b. Describe the management's role in assessing and managing climate-related risks and opportunities.	• Page 57-58.
Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material.	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	• Pursuing a strategy that is consistent with the Paris goals, page 30. • Strategy – page 58-60. • Risk factors, page 76.
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	• Risk factors, page 76 – description of principal risks. • Strategy – page 58-60.
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	• Strategy, page 58-60. • Pursuing a strategy that is consistent with the Paris goals, page 30.
Risk management Disclose how the organization identifies, assesses and manages climate-related risks.	a. Describe the organization's processes for identifying and assessing climate-related risks.	• Risk management – page 65. • How we manage risk, pages 73. • Risk factors – page 76.
	b. Describe the organization's processes for managing climate-related risks.	• Risk management, pages 65. • How we manage risk, page 73.
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	• Risk management, pages 65. • How we manage risk, page 73. • Risk factors – pages 76.
Metrics and targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	• Our strategic focus areas and metrics, page 16. • Our group-wide principal metrics and relevant targets – page 66.
	b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks.	• GHG emissions data – pages 51-54.
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	• Our net zero targets and aims at a glance – pages 51.

The TCFD recommendations advocate for the disclosure of material information on climate-related risks and opportunities to be integrated with companies' mainstream financial filings. However, for many companies, it can be challenging to determine the best approach to done this.

BP have included a TCFD index table in their Annual Report and Form 20-F 2021 which illustrates where relevant information for each TCFD recommended disclosure can be located across the document. It also provides cross-references to supplementary information, where necessary, to disclosure outside of the mainstream financial report.

Source: CDSB TCFD Good Practice Handbook, BP 2021 Annual Report

Example from TCFD adopter

Electricity

Example: National Grid, United Kingdom

Integrating disclosure into the mainstream financial report

(c) Gas asset lives

The role that gas networks play in the pathway to achieving the greenhouse gas emissions reductions targets set in the jurisdictions in which we operate is currently uncertain. However, we believe the gas assets which we own and operate today will continue to have a crucial role in maintaining security, reliability and affordability of energy beyond 2050, although the scale and purpose for which the networks will be used is dependent on technological developments and policy choices of governments and regulators.

With respect to our US gas distribution assets, asset lives are assessed as part of detailed depreciation studies completed as part of each separate rate proceeding. Depreciation studies consider the physical condition of assets and the expected operational life of an asset. We believe these assessments are our best estimate of the UEL of our gas network assets in the US.

The weighted average remaining UEL for our US gas distribution fixed asset base is circa 58 years, however a sizeable proportion of our assets are assumed to have UELs which extend beyond 2080. We continue to believe the lives identified by rate proceedings are the best estimate of the assets' UELs, although we continue to keep this assumption under review as we learn more about possible future pathways towards net zero. Whilst the targets, goals and ambitions have now been formalised in legislation in the states in which we operate, there is widespread recognition that work needs to be done to define the possible future decarbonisation pathways. We continue to actively engage and support our regulators to enable the clean energy transition in a safe, reliable and affordable way.

Asset depreciation lives feed directly into our US regulatory recovery mechanisms, such that any shortening of asset lives and regulatory recovery periods as agreed with regulators should be recoverable through future rates, subject to agreement, over future periods, as part of wider considerations around ensuring the continuing affordability of gas in our service territories.

Given the uncertainty described relating to the UELs of our gas assets, below we provide a sensitivity on the depreciation charge for our New York and New England segments were a shorter UEL presumed:

	Increase in depreciation expense for the year ended 31 March 2022		Increase in depreciation expense for the year ended 31 March 2021[1]	
	New York £m	**New England £m**	New York £m	New England £m
UELs limited to 2050	**140**	**40**	125	35
UELs limited to 2060	**67**	**15**	57	13
UELs limited to 2070	**31**	**1**	26	2

1. Comparative amounts have been re-presented to reflect the new operating segments and the classification of the UK Gas Transmission business as a discontinued operation. See notes 1, 2 and 10 for further information.

In addition to providing TCFD-aligned narrative disclosure, organisations' should take steps to integrate climate-related financial information into their financial statements.

National Grid provide a useful example of adopting this approach, by providing information on the potential implications of the UK's net-zero target for the useful economic life (UEL) of their gas assets, in note 13 on "Property, plant and equipment" to their financial statements.

Source: CDSB TCFD Good Practice Handbook, National Grid PLC 2021 Annual Report

Short break (5 mins)

Sharing session by Khun Pasu Sirisareewan

Q&A

The Task Force on Climate-related Financial Disclosures (TCFD) Checklist

For companies that are new to the TCFD, below is a checklist of practical steps to implement to start to align with the recommendations. Although designed to help companies to translate the guidance and prioritise actions for implementation, **this checklist is non-exhaustive. Please refer to the formal TCFD recommendations to ensure compliance.**

1. Form an internal TCFD working group.

1.1 Designate a climate 'champion', ideally from senior management or the Board, who can lead the team to embed climate change across existing processes and set the strategy

1.2 Engage representatives from various business functions and departments (e.g., sustainability, finance, investor relations). If the organisation has different business units, include representatives from each

2. Conduct a gap analysis of current climate-related processes and disclosure.

2.1 Review whether the company is already collecting climate-related data, and leverage current disclosure (if any), such as Form 56-1, GRI, CDP and DJSI. If yes, assess whether the disclosure can be applied to TCFD

2.2 Evaluate internal risk management processes and consider whether they can be adapted to incorporate climate-related risks

3. Integrate climate change into the governance structure. Refer to the Series 1 presentation, pages 36-38 and 42-44 for real-life examples.

3.1 Delegate climate-related responsibilities to specific executives or board committees and clarify oversight and reporting lines. Responsibilities should cover climate-related risk assessment, monitoring and reporting

3.2 Engage the Risk and Audit Committees. The Risk Committee evaluates financial impacts of risks to business, while the Audit Committee can ensure the quality assurance of climate-related disclosure with the same rigor as that of financial disclosure

3.3 Provide climate risk training to the board, senior management and personnel involved

3.4 Incorporate climate risk into the Board committee's terms of reference

3.5 Update relevant Board committee(s) regarding progress on implementing climate risk management, and report on risk metrics on a regular basis

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

The Task Force on Climate-related Financial Disclosures (TCFD) Checklist

Note that Steps 4 and 5-7 can be conducted in parallel. Nevertheless, they are broken down for reference below.

4. Embed climate change into existing risk management frameworks, accounting for its long-term, geography-specific and systemic nature.

4.1	Identify and assess climate-related risks: conduct a materiality analysis to determine business exposure to sectors and geographies that are vulnerable to physical and transition risks, respectively
4.2	Re-evaluate own risk taxonomies and identify existing risk types that are affected by climate change (e.g., financial, strategic and operational). A risk taxonomy is a categorization of risks in a hierarchical manner and is broken down into 3 levels (level 1 are key risks, such as strategic, financial and operational; level 2 are sub-risks that fall under level 1, such as credit and liquidity risks; level 3 are risk drivers – emerging trends that may affect level 1 or 2 risks)
4.3	Decide whether to treat climate risk as a standalone or cross-cutting risk type. Once confirmed, develop the climate risk appetite statement or update existing risk appetite statement and develop the climate-related metrics to track those risks under an agreed-upon threshold
4.4	Report on climate-related risk metrics to the Board and senior management
4.5	Address climate risk by aligning the exposure with risk appetite and business strategy (e.g., through mitigation, adaptation, resilience, or transfer or hedging)
4.6	Review and update existing processes regularly to stay on top of emerging risks

5. Conduct climate scenario analysis and embed climate change into business strategy. Companies may start with qualitative scenario narratives, and as they gain experience, apply quantitative analysis.

5.1	Identify possible business exposures to climate-related risks (using the outputs of Step 4 as a starting point): examine transmission channels, identify climate-related risks and conduct an exposure analysis
5.2	Develop climate-related scenarios, by selecting the appropriate socio-economic, technological and climate policy contexts and emission and temperature pathways. Decide whether to build a bespoke, in-house climate risk model or purchase from a vendor. Choose appropriate parameters, assumptions (e.g., discount rate, carbon price and energy demand and mix), analytical choices (e.g., timing of implications and scope of analysis), and business impacts or effects (e.g., on earnings or costs)
5.3	Review at least two different scenarios to compare and prepare for varying degrees of severity

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

The Task Force on Climate-related Financial Disclosures (TCFD) Checklist

6. Assess the financial impact of climate risk on company financials (i.e., on revenues, expenditures, assets, liabilities and capital).

6.1	Choose the appropriate impact assessment tools to determine the change in the selected risk metrics for each scenario. The tool can assess the extent to which the business model can withstand macro-economic stresses, or be asset- or company-specific, which may vary by sector and firm
6.2	Assess the potential impact of climate issues on the selected financial metrics

7. Assess the resilience of the business strategy, accounting for the climate scenarios conducted.

7.1	Evaluate the impact of climate-related issues on the business, strategy and financial planning in the areas including products and services, supply chain, investment in research and development, and operations
7.2	Incorporate climate-related issues into the financial planning process (i.e., capital planning and allocation)

8. Engage with investors and regulators to gain feedback on which climate-related financial risks and to what extent they expect disclosure on a regular basis.

8.1	Regularly communicate with the investors to ensure that the disclosure meet investors' requirements

9. Disclose progress, which includes deciding how to integrate climate disclosure into the organisation's current disclosure.

9.1	Confirm which report(s) the climate risk disclosures will be incorporated into, taking into account TCFD recommendations (e.g., in annual financial filings, integrated report, annual report or sustainability report)
9.2	Ensure that all four elements of the TCFD recommendations (i.e., Governance, Strategy, Risk Management, Metrics and Targets) are addressed

Source: TCFD website, Climate Disclosure Standards Board (CDSB) and EY

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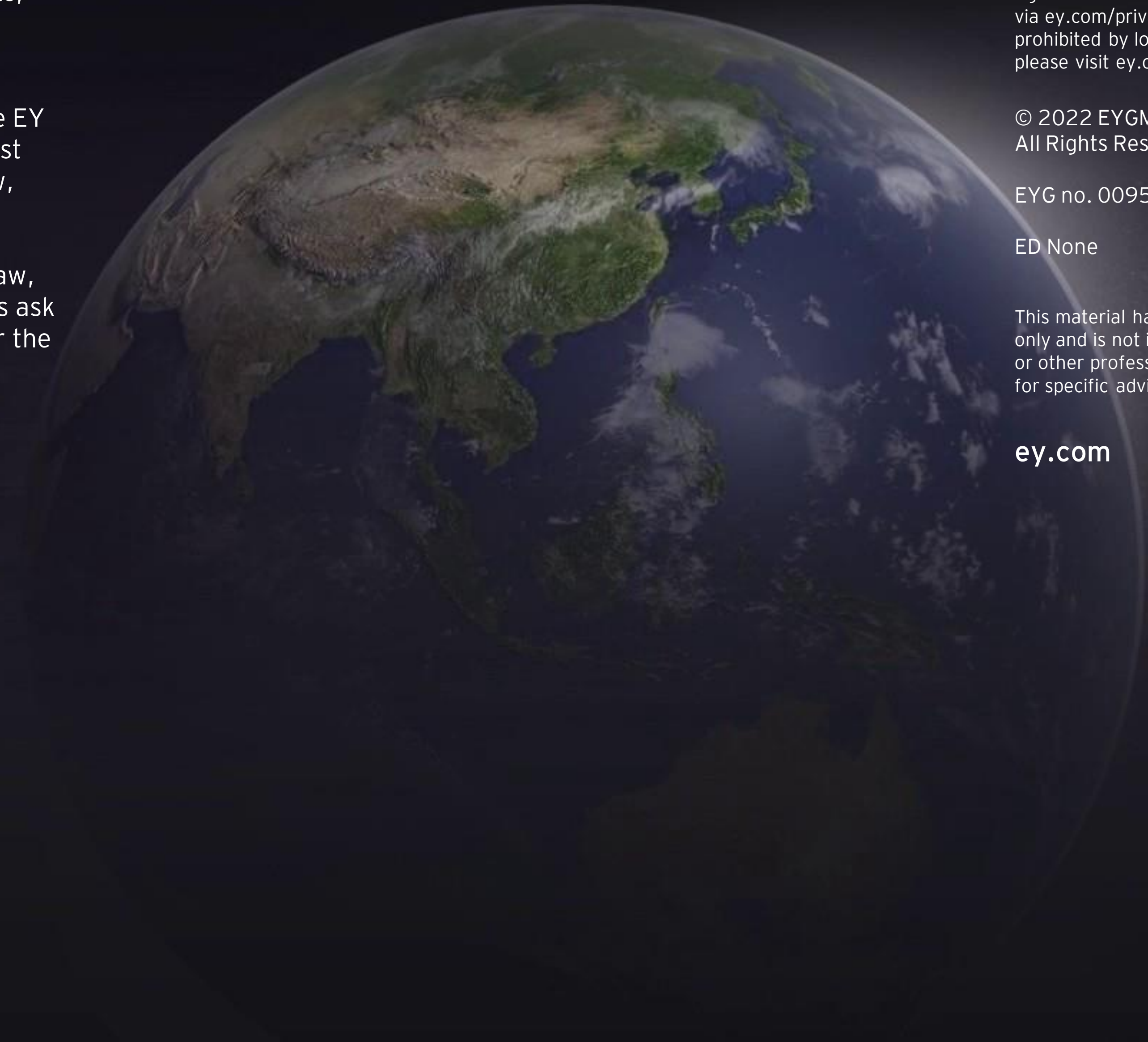

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