GREEN COUNCIL
環保促進會

Training Workshop:

"Climate-related Disclosure with GRI standards"

Instructor:

Mr. Tony Wong

Founder, Alaya Consulting

Remarks: This material/event is funded by the Professional Services Advancement Support Scheme of the Government of the Hong Kong Special Administrative Region. Any opinions, findings, conclusions or recommendations expressed in this material/any event organised under this project do not reflect the views of the Government of the Hong Kong Special Administrative Region or the Vetting Committee of the Professional Services Advancement Support Scheme.

Alaya Consulting
本識顧問

Climate-related Disclosure (with GRI Standards)

10 July 2025

Alaya Consulting
本识咨询

Opening and Welcome Remarks

Alaya has been contributing to the achievement of UN SDG target 12.6.1

Founder

Tony Wong

Tel/WeChat：

66383298

- In 2014, Tony founded Alaya Consulting, a specialist ESG advisory firm based in Hong Kong, later expanding operations to Shenzhen in 2019. The firm supports public and private corporations in enhancing their ESG disclosure practices and management strategies. Since its inception, Alaya has successfully completed nearly 1,000 ESG-related projects.
- Alaya is the GRI Training Partner in Asia and the first online Training Partner in China, demonstrating its leadership in ESG education. In 2019, Tony launched the Hong Kong ESG Reporting Awards—the first ESG awards in Hong Kong to receive recognition from UNCTAD's ISAR—to promote industry-leading practices. Alaya is also the first ESG advisory firm in the region to secure approval for its own Science-Based Target (SBT), committing to a 43% reduction in total carbon emissions by 2030.
- Tony brings over 20 years of experience advising C-suite executives. He is a GRI Nominated Trainer. His professional credentials include being a Carbon Audit Professional certified by the Association of Energy Engineers and a Chartered Governance Professional.
- Tony holds an EMBA from Peking University HSBC Business School (PHBS) in Shenzhen, a master's degree in Corporate Governance from Hong Kong Polytechnic University, and a bachelor's degree from The Chinese University of Hong Kong. He serves as a senior advisor to the EFC Sustainability Committee and the Bohan Sustainability Centre in Shanghai and is the vice chairman of the PHBS EMBA Hong Kong Alumni Association.

Client-oriented

With over a decade of expertise in the ESG industry, we are approaching 1,000 completed projects

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Pioneer in ESG Advisory

2014
Established Hong Kong Headquarters

2015
GRI Certified Training Partner Hong Kong's First ESG Consultancy Firm Accredited for AA1000 Assurance Services

2018
Founded the Hong Kong ESG Reporting Awards（HERA）

2019
Established Shenzhen Headquarters

2023
HERA has become the world's first ESG awards to receive a special nomination for the ISAR Honors, organized by the United Nations Conference on Trade and Development (UNCTAD).

2024
As we celebrate our tenth anniversary, we remain steadfast in our belief that sustainable development is essential for future progress, driving the robust growth of our nation's economy.

2025
Alaya has partnered with Professor Wayne Huang, Chair Professor at Southern Technology University, to develop AI applications for ESG

ESG-related Disclosure

Our expertise spans ESG Reporting, Rating Enhancement, SBTs Setting, and System Establishment, covering industries such as Renewable Energy, Healthcare & Pharmaceuticals, FinTech, Real Estate, Textile & Garment, Intelligent Manufacturing, and Environmental Services

600+

Investment-grade Report

With a deep understanding of the information needs of institutional investors, we have successfully completed over 60 disclosure projects for our clients, earning industry respect and contributing to rating upgrades

60+

Client Average Service Year

We foster long-term partnerships with our clients, delving deeply into the value of ESG

6+

Collaborate with IFRS Sustainability

We stay up-to-date with IFRS changes and provide guidance to clients on the latest disclosure requirement

IFRS Sustainability Alliance

Consultant Content Programme

GRI Training Partner

We are a GRI Certified Training Partner in the Asia-Pacific region

GRI TRAINING PARTNER 2024

Licensed Assurance Provider

Licensed assurance provider for the UK AA1000 Standard

AA1000 Licensed Assurance Provider 000-180

Carbon Audit Professional

As an accredited verification body for Hong Kong Carbon Reduction Certificates, our team members hold specialized qualifications in carbon emissions auditing

C·A·P

Full-fledged ESG Advisory

Unlock ESG Value

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ESG Due Diligence

Identify gaps and continuously enhance ESG-related risk management practices

ESG Governance, Risk Control, and Compliance

We empower boards to take an active role in ESG monitoring, ensure adherence to relevant regulations, and unlock their company's unique ESG potential

Climate-related Disclosure

We enable businesses to disclose Scope 3 emissions, set science-based carbon reduction targets, conduct scenario analyses on climate-related risks, and assess and disclose their impact on business models by leveraging advanced technology platforms

ESG Disclosure

Conduct benchmarking against domestic and international standards, including stock exchange guidelines, ISSB, GRI, and others, to assist clients in progressively adopting best practices

ESG Awards

Highlight the company's ESG value by securing awards and recognition

Strategy and Management

Develop a framework that empowers leadership to strategically implement the company's ESG policy and translate plans into actionable outcomes

Report Assurance

We perform internal data reviews and provide external report assurance to strengthen systematic data collection, enhancing the credibility and reliability of reports

ESG Rating

Analyze the methodologies employed by various rating agencies to ensure rating upgrades, offering a no-win, no-fee model

Providing ESG advisory services to over 300 companies

Possessing solid expertise in ESG advisory

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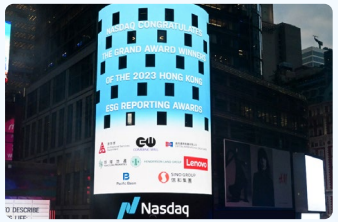
Private Companies	A-shares	HK-listed Companies

Extensive Stakeholder Network

Hong Kong ESG Reporting Award (HERA)

The Hong Kong ESG Reporting Award (HERA) is a non-profit initiative, aimed at building trust among stakeholders. The Awards represents the most prestigious form of recognition for companies in Hong Kong on Corporate Sustainability.

Listed Companies	Industry Partners
200+	50+

Alaya Consulting's extensive stakeholder network

InvestHK – The Government of the Hong Kong Special Administrative Region
環境及生態局 Environment and Ecology Bureau
HK Financial Services Development Council
HKGCC – Hong Kong General Chamber of Commerce 香港總商會 1861
HKGFA 香港綠色金融協會
CHKLC 香港上市公司商會 The Chamber of Hong Kong Listed Companies
HKiNED 香港獨立非執行董事協會 The Hong Kong Independent Non-Executive Director Association
HKSI Hong Kong Securities and Investment Institute 香港證券及投資學會
75th Chartered Governance Hong Kong YEARS ANNIVERSARY
Nasdaq
GRESB
Green Council 環保促進會

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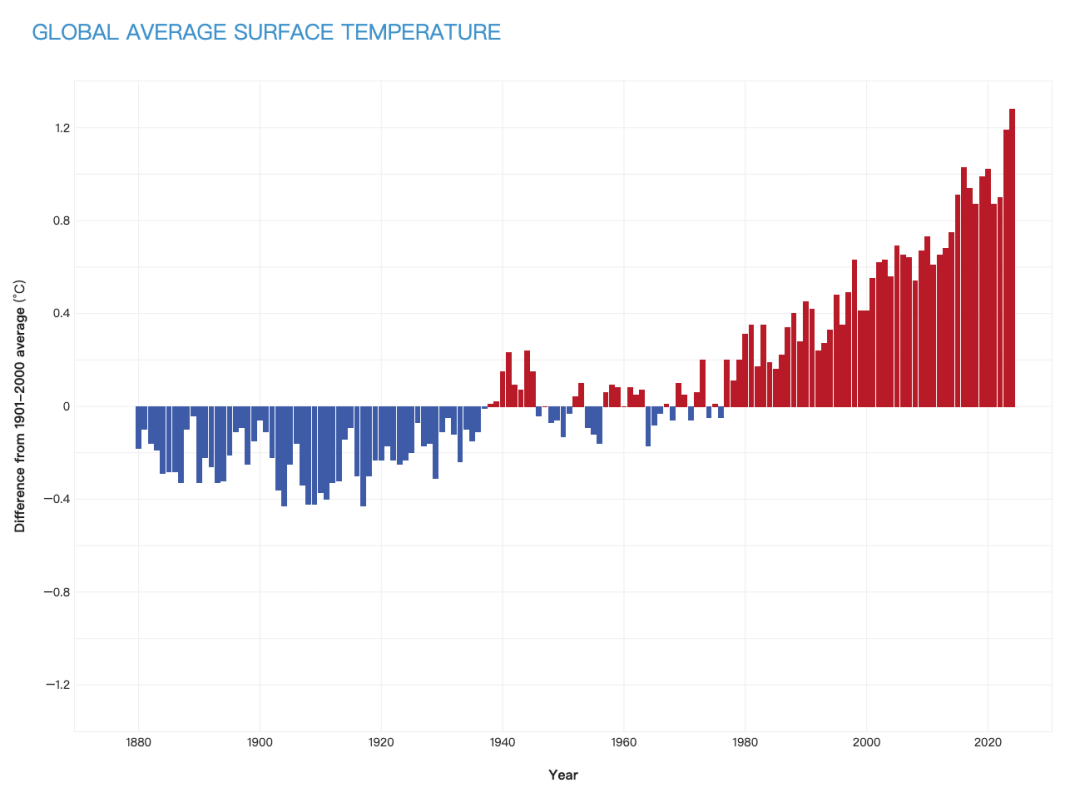
Participant Introductions

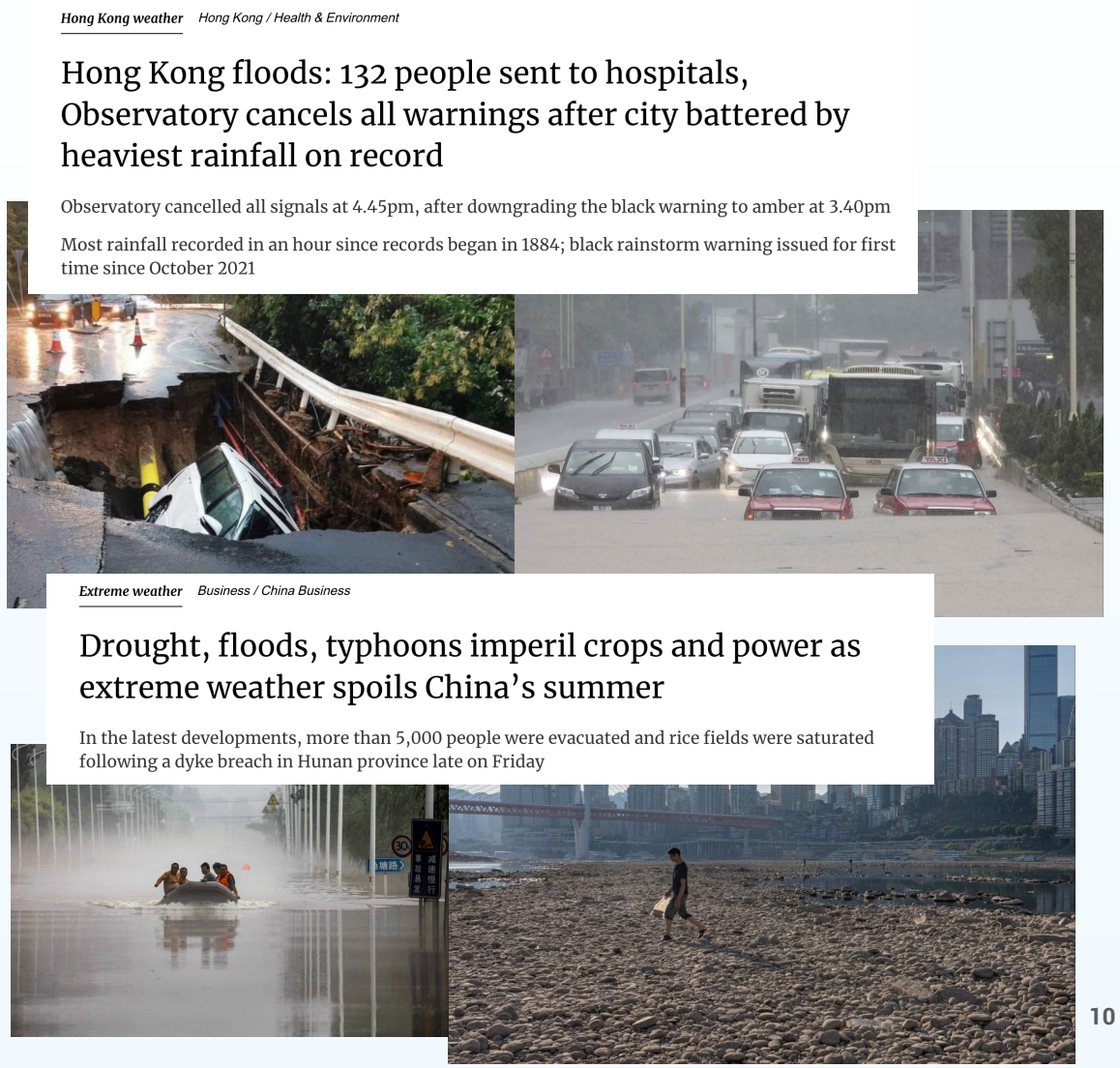
Climate Change and its Related Risks

Climate Change is not a distance threat

Global Temperature Change (1880-2024)



Source: NOAA Climate.gov graph, based on data from the National Centers for Environmental Information.



Hong Kong weather *Hong Kong / Health & Environment*

Hong Kong floods: 132 people sent to hospitals, Observatory cancels all warnings after city battered by heaviest rainfall on record

Observatory cancelled all signals at 4.45pm, after downgrading the black warning to amber at 3.40pm

Most rainfall recorded in an hour since records began in 1884; black rainstorm warning issued for first time since October 2021

Extreme weather *Business / China Business*

Drought, floods, typhoons imperil crops and power as extreme weather spoils China's summer

In the latest developments, more than 5,000 people were evacuated and rice fields were saturated following a dyke breach in Hunan province late on Friday

2024 is the first year with average temperature exceeding 1.5ºC

Key temperature statistics for 2024

Region	Anomaly (vs 1991–2020)	Actual temperature	Rank (out of 85 years)
Globe	**+0.72ºC** (+1.60ºC vs pre-industrial)	15.10ºC	**1st highest** 2nd - 2023
Europe	**+1.47ºC**	10.69ºC	**1st highest** 2nd - 2020
Arctic	**+1.34ºC**	-11.37ºC	**4th highest** 1st - 2016
Extra-polar ocean	**+0.51ºC**	20.87ºC	**1st highest** 2nd - 2023

The European region is defined as 25ºW-40ºE, 34º-72ºN. The extra-polar ocean region is defined as 60ºN-60ºS. Statistics for *globe*, *Europe* and *the Arctic* refer to surface air temperatures, statistics for *extra-polar ocean* refer to the sea surface temperature. Temperatures for Europe and the Arctic are **over land only**.

Data source: ERA5 • Credit: C3S/ECMWF

PROGRAMME OF THE EUROPEAN UNION · Copernicus Europe's eyes on Earth · Climate Change Service · IMPLEMENTED BY ECMWF

Global Commitment to Combat Climate Change

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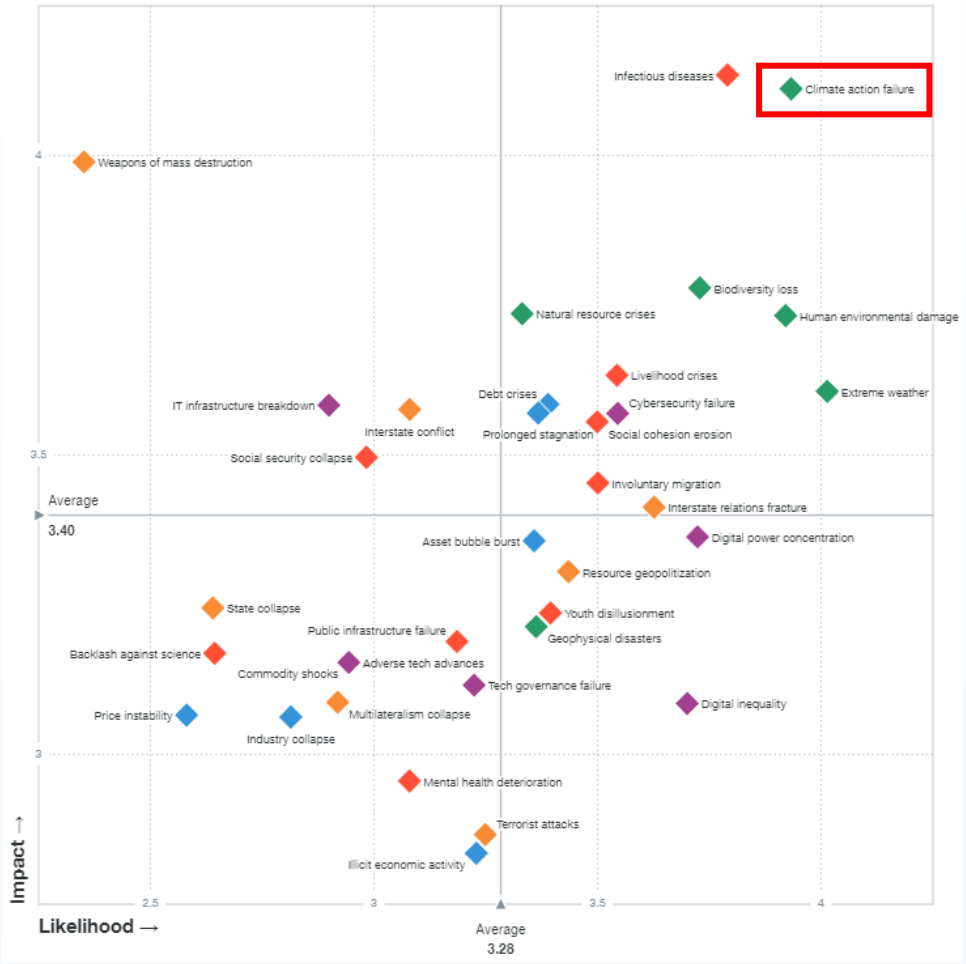
	The Paris Agreement (2015)	Sustainable Development Goals (SDGs)	Intergovernmental Panel on Climate Change (IPCC)
Objectives	✓ Limit global warming to well below 2°C, with efforts to keep it to 1.5°C above pre-industrial levels.	✓ SDG13: Take urgent action to combat climate change and its impacts.	✓ Provide scientific assessments on climate change to inform policy.
Key action points	❑ Nationally Determined Contributions (NDCs): Countries set their own targets for reducing emissions. ❑ Global Stocktake: Review of collective progress every five years. ❑ Climate Finance: Developed countries to provide financial support to developing countries.	❑ Target 13.1: Strengthen Resilience and Adaptive Capacity ❑ Target 13.2 Integrate climate change measures into policies and planning ❑ Target 13.3 Improve education, awareness-raising and human and institutional capacity ❑ Target 13.3a Implement the commitment undertaken by developed-country parties to the UNFCCC ❑ Target 13.3b Promote mechanisms for raising capacity for effective climate change-related planning and management	❑ Regular assessment reports on the state of climate change science. ❑ Special reports on specific topics like global warming of 1.5°C, climate change and land, and the ocean and cryosphere.

Climate-related Risks can Undermine Corporates' Credit Ratings



U.S. Oil Majors Downgraded by S&P on Climate Risk, Earnings

- Rating agencies and financial institutions actively respond to financial-related impacts on climate change in response to the surge in shareholder demand for climate change-related issues
- Credit ratings of Exxon Mobil and Chevron have been downgraded due to risk profile on climate change

Climate Change and its related risks

Financial impact of climate risks & opportunities

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- Climate risk include both increased physical risks, arising from changing weather patterns and transition risks, as global economies transition towards a lower-carbon future.
- Both types of risks may affect companies' revenues and expenses, asset and liability and cost of capital
- Storms, fires and droughts are already damaging real estate and infrastructure holdings and disrupting supply chains in many industries.

The fundamental changes stemming from the emergence and intensification of physical hazards and transition factors present both financial risks and opportunities for businesses

Source: Recommendations of the Task Force on Climate-Related Financial Disclosures

Economic Impacts:

- Business disruptions
- Lower productivity
- Asset damage
- Reconstruction and reinvestment
- Higher commodity and energy prices

Financial Effects:

- Lower property values and asset devaluation
- Increased CapEx/OpEx
- Lower corporate profit and household wealth
- Financial market losses
- Credit market losses

Global ESG Regulatory Overview

Investors call on Australia's largest oil and gas company to set greenhouse targets

More than half of Woodside's investors support shareholder motion to set targets in line with Paris climate agreement

Media release

Woodside climate targets: uninspiring business as usual

11th November 2020

Woodside sets net zero emissions target at Australian LNG project

Operator sets new goals for expanded liquefaction project in Australia

8 June 2021 9:05 GMT *UPDATED 9 June 2021 8:51 GMT*

Shell: Netherlands court orders oil giant to cut emissions

26 May

Climate change

Activists hugged in court after the judge delivered the verdict

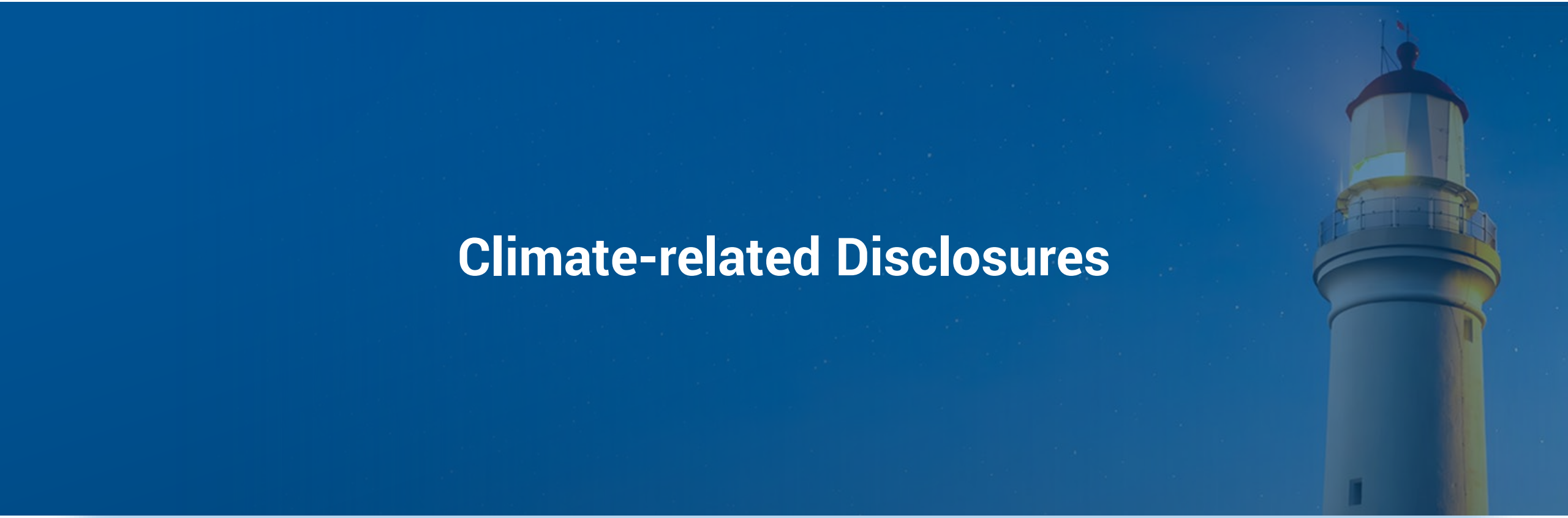
- **A court in the Netherlands has ruled in a landmark case that the oil giant Shell must reduce its emissions.**
- **By 2030, Shell must cut its CO2 emissions by 45% compared to 2019 levels, the civil court ruled.**
- **The Shell group is responsible for its own CO2 emissions and those of its suppliers, the verdict said.**

Investors' considerations

- ✓ **Climate-related risks: Investors are increasingly concerned with the risks presented by climate change to regional and global economies and to individual assets**
- ✓ **Climate-related opportunities: Investors are increasingly interested in the large potential economic opportunities that the transition to a low-carbon economy presents**

Sources: UNEPFI. https://www.unepfi.org/fileadmin/documents/InvestorStatement_ClimateChange.pdf

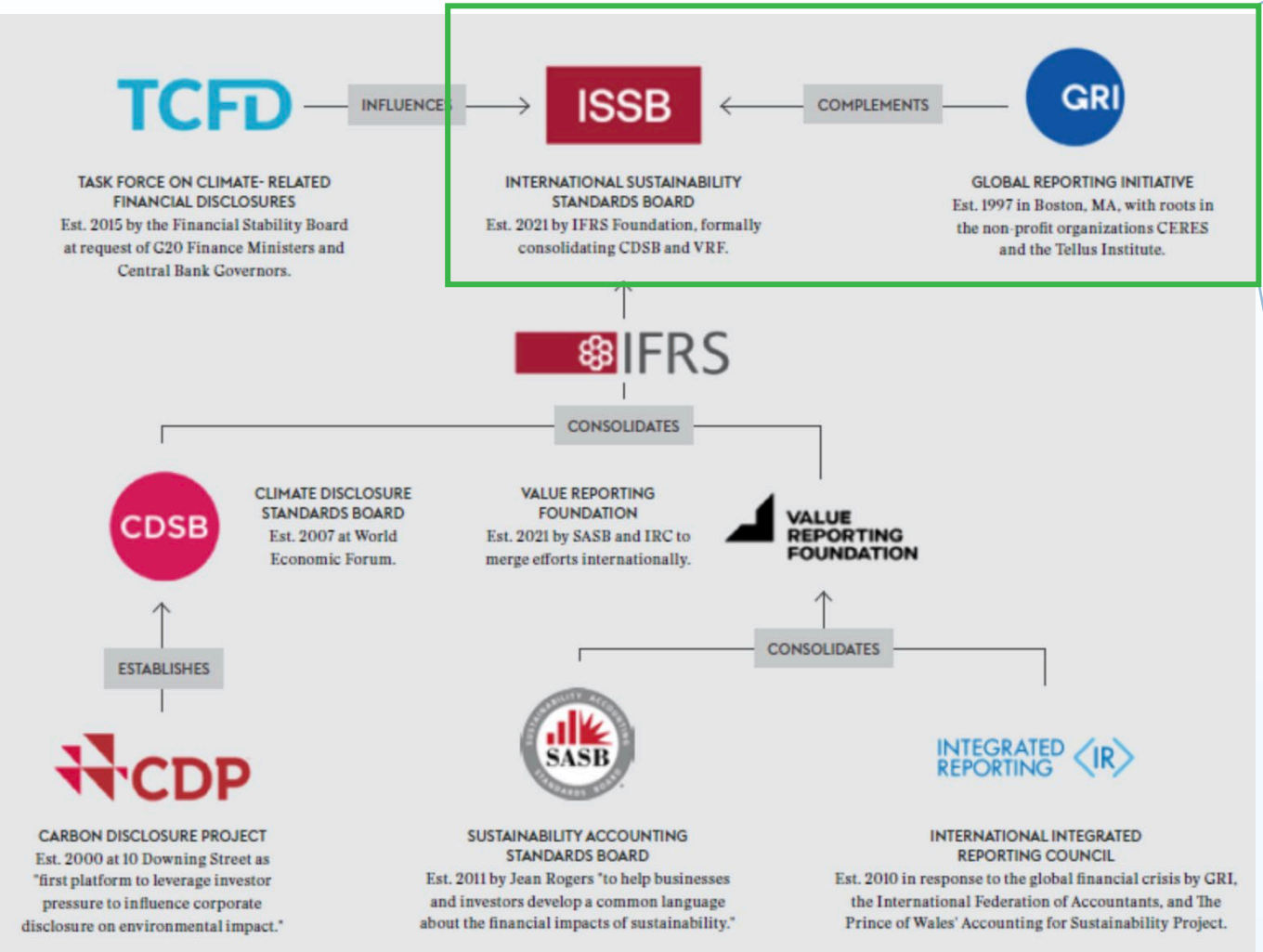
Climate-related Disclosures



Global ESG Regulatory Overview

Framework	Descriptions	Established year
Global Reporting Initiative (GRI)	GRI is an international independent standards organization that helps businesses, governments, and other organizations understand and communicate their impacts on issues such as climate change, human rights, and corruption	1997
Carbon Disclosure Project (CDP)	A non-profit global disclosure system that helps companies, cities, states, and regions manage their environmental impacts	2000
International Financial Reporting Standards (IFRS)	A set of accounting rules for the financial statements of public companies that are intended to make them consistent, transparent, and easily comparable around the world	2001
Climate Disclosure Standards Board (CDSB)	CDSB was an international non-profit organisation providing frameworks to help businesses and investors identify, manage and communicate the climate-related information needed for informed decision making	2007
Integrated Reporting (IR) Framework	Promotes integrated thinking and reporting to achieve a holistic understanding of an organization's value creation process, combining financial and sustainability performance in one report.	2010
Sustainability Accounting Standards Board (SASB)	SASB is a non-profit organization that defines a set of standards for companies to disclose financially material sustainability information to their investors	2011
Task Force on Climate-related Financial Disclosures (TCFD)	TCFD provides a framework for organizations to analyze, understand, and disclose climate-related financial information	2015
International Sustainability Standards Board (ISSB)	ISSB is a standard-setting body that develops sustainability-related financial reporting standards	2021
Value Reporting Foundation (VRF)	VRF is a global non-profit organisation that offers a comprehensive suite of resources designed to help businesses and investors develop a shared understanding of enterprise value—how it is created, preserved or eroded over time	2021

Global Regulatory Development Timeline



ISSB and GRI

- **Key focus of today's workshop**
- **Two interconnected reporting pillars that form a comprehensive reporting regime for sustainability disclosure**

Key development

- **Announcement of a Memorandum of Understanding between ISSB and GRI in 2022 March**

Collaborating purpose

- **Brings clarity to the market on the interaction between the two sets of standards.**
- **Provides a comprehensive and seamless suite of reporting standards for broader stakeholders.**
- **Streamlines the reporting process for companies.**

Enhanced Interoperability

- ✓ **ISSB's partnership with GRI ensures ISSB requirements are interoperable with GRI standards.**
- ✓ **Helps reduce the disclosure burden for companies using both ISSB and GRI Standards for reporting.**

Sources: Havard Law School Forum. (2023). https://corpgov.law.harvard.edu/2023/06/29/the-rise-of-international-esg-disclosure-standards/

IFRS Structure

IFRS Sustainability

Consultant Content Programme

Public accountability	IFRS Foundation Monitoring Board
Governance, strategy, oversight	IFRS Foundation Trustees
Independent standard-setting	International Accounting Standards Board (IASB)
	International Sustainability Standards Board (ISSB)
	IFRS Interpretations Committee

Sources: Havard Law School Forum. (2023). https://corpgov.law.harvard.edu/2023/06/29/the-rise-of-international-esg-disclosure-standards/

Sustainability information tailored to audience needs

IFRS Sustainability

Consultant Content Programme

ISSB's Upcoming Projects Focus on Biodiversity and Human Capital

New ISSB projects

The ISSB has **finalised the decisions** for its next two-year work plan and will start **two new research projects**:

Biodiversity, ecosystems and ecosystem services

- Growing interest among investors for improved disclosure
- Build from pre-existing initiatives such as SASB Standards, CDSB guidance and TNFD

Human capital

- Affects companies of all sizes and types
- Opportunity to address a lack of consistent, comparable disclosures
- Includes both employees and workers in value chain

The ISSB expects to publish its Feedback Statement in June 2024, setting out its two-year work plan.

Sources: IFRS Sustainability Alliance - PARTICIPANT onboarding deck

GRI Standards: Next Steps and How They Complement ISSB S2

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GRI's Newly Added Disclosure Requirements Not Included in IFRS:

Disclosures	Requirement elements
CC-1 Transition plan for climate change mitigation	Alignment with 1.5° C efforts, as per the Paris Agreement
	Targets to phase out fossil fuels
	Stakeholder engagement informing transition plan
	Impacts from transition plan on people and environment
	Lobbying consistent with transition plan
CC-2 Climate change adaptation	Impacts associated with climate change-related risks and opportunities
	Stakeholder engagement informing adaptation plan
	Impacts from adaptation plan on people and environment
CC-3 Just transition	# jobs created/eliminated/redeployed due to transition plan
	# employees trained for up-and reskilling due to transition plan
	Locations with impacts on communities due to transition plan
	% locations with agreements with communities
CC-4 GHG emission reduction target setting and progress	Alignment with 1.5° C efforts, as per the Paris Agreement

Disclosures	Requirement
GH-1, GH-2, GH-3 Scope 1, 2, 3 GHG emissions	Biogenic CO2
	Breakdown by GHGs for Scope 1
	Breakdown by GHGs for Scope 2
	Breakdown by 15 Scope 3 categories
GH-4 GHG emissions intensity	GHG emissions intensity ratio(s)
CC-5 GHG removals in the value chain	Total GHG removals
	Breakdowns by Scope 1 and Scope 3 and by storage pool
	Quality criteria to manage the risk of non-permanence
	Intended use of GHG removals
	Impacts of removals on people and environment
CC-6 Carbon credits	Total carbon credits canceled in reporting period
	Identification of carbon credits
	Type of carbon credits
	Quality criteria for carbon credit projects
	Purpose of cancellation of carbon credits
	Monitoring impacts of carbon credit projects on people and environment

Takeaway:

How GRI Complements ISSB S2

Detailed information: Provide more detailed climate change response measures, transition plans and actual impacts to make up for the shortcomings of ISSB S2 in these aspects.

Sources: Global Reporting Initiative. link

Comparison of ISSB and GRI Standards

Aspect	ISSB S1 and S2	GRI
Focus	ISSB S1: General sustainability-related financial information ISSB S2: Climate-related financial information	Comprehensive sustainability impacts
Materiality Approach	Financial materiality	Impact materiality
Target Audience	Investors and financial stakeholders	Multiple stakeholders (investors, communities, regulators)
Framework Used	Based on TCFD recommendations	Comprehensive sustainability reporting framework
Depth of Coverage	In-depth on financial and sustainability considerations	Holistic view on sustainability impacts
Interoperability	Aligns with global financial reporting standards	Complements financial metrics with broader impacts

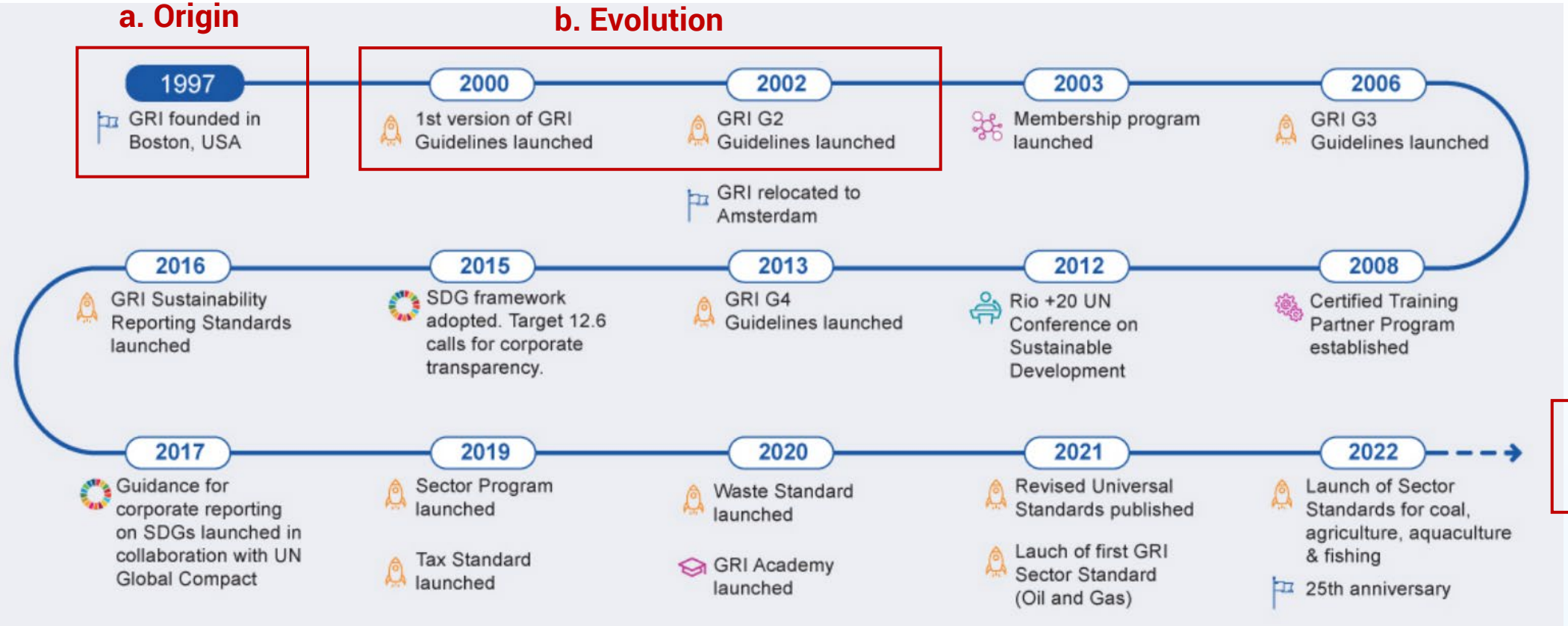
Takeaway

- ISSB standards aim to create a global baseline for investor-focused sustainability reporting, while GRI standards cover broader impact materiality for diverse stakeholders.
- Overall, ISSB is set to become the global standard, but GRI remains crucial for sustainability disclosure as many companies are already using it.

GRI Standards: Background Overview and Relevant History

Timeline of GRI's history:

a. Origin **b. Evolution** **c. Impact**



Highlights

a. **Origin: The GRI was established in 1997 following the Exxon Valdez oil spill, aiming to create a framework for voluntary reporting of environmental impacts. It was initiated by CERES and the Tellus Institute with UNEP support.**
b. **Evolution: The first guidelines were released in 2000. GRI moved to Amsterdam in 2002 and continually updates its standards.**
c. **Impact: GRI standards are the most widely used globally, adopted by over 10,000 organizations in 100+ countries.**

Sources: GRI. https://www.globalreporting.org/about-gri/mission-history/

GRI Standards: Introduction

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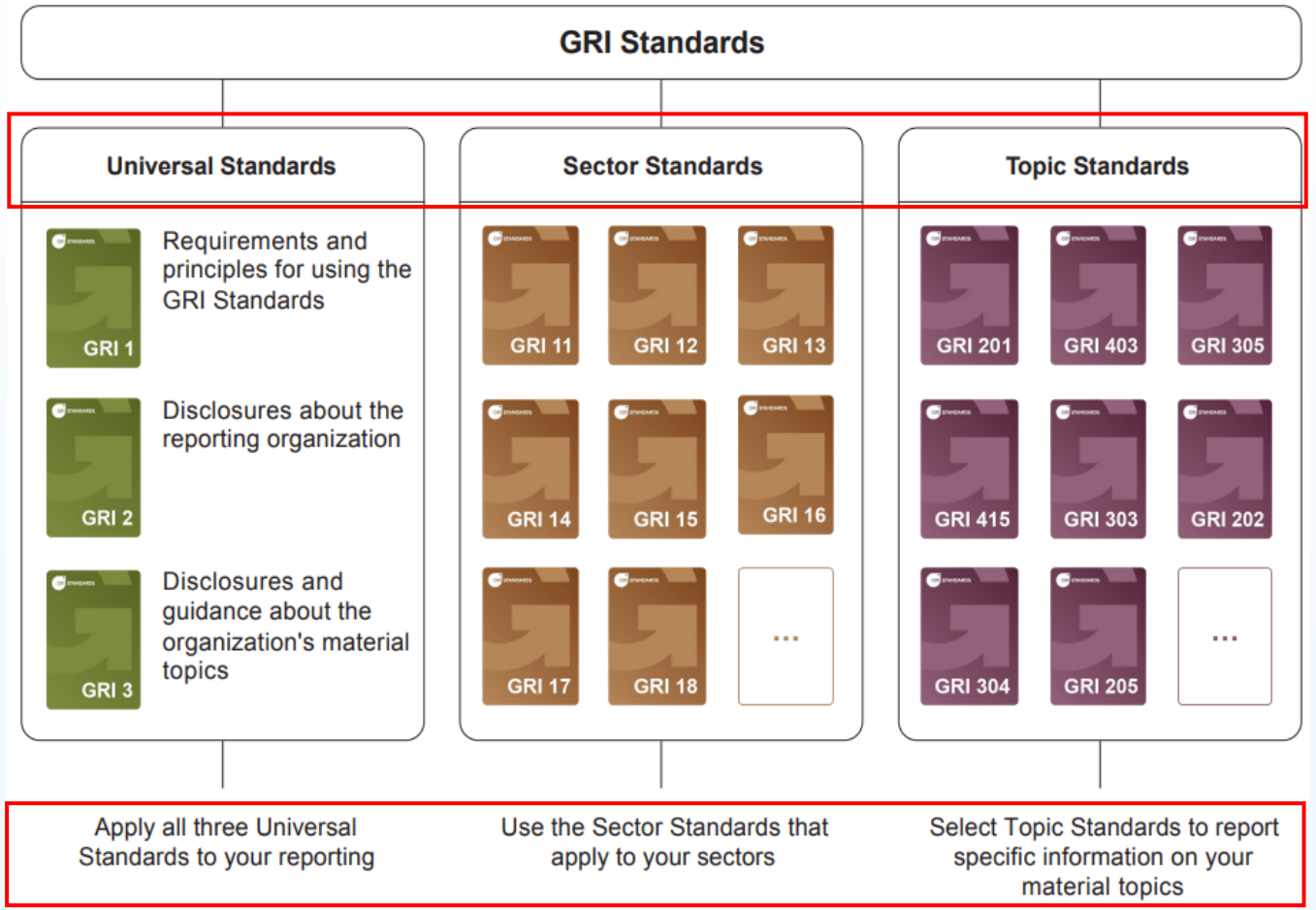
Purpose of GRI

The GRI Standards enable an organization to disclose publicly its most significant impacts on the on the economy, environment, and people, including impacts on their human rights.

Sustainability Reporting

GRI classification



Sources: GRI. (2021). *GRI 1: Foundation 2021.*

GRI Standards: Role in Driving Impact Materiality Concept

1 Definition & Importance of Impact Materiality

Impact Materiality

A Definition

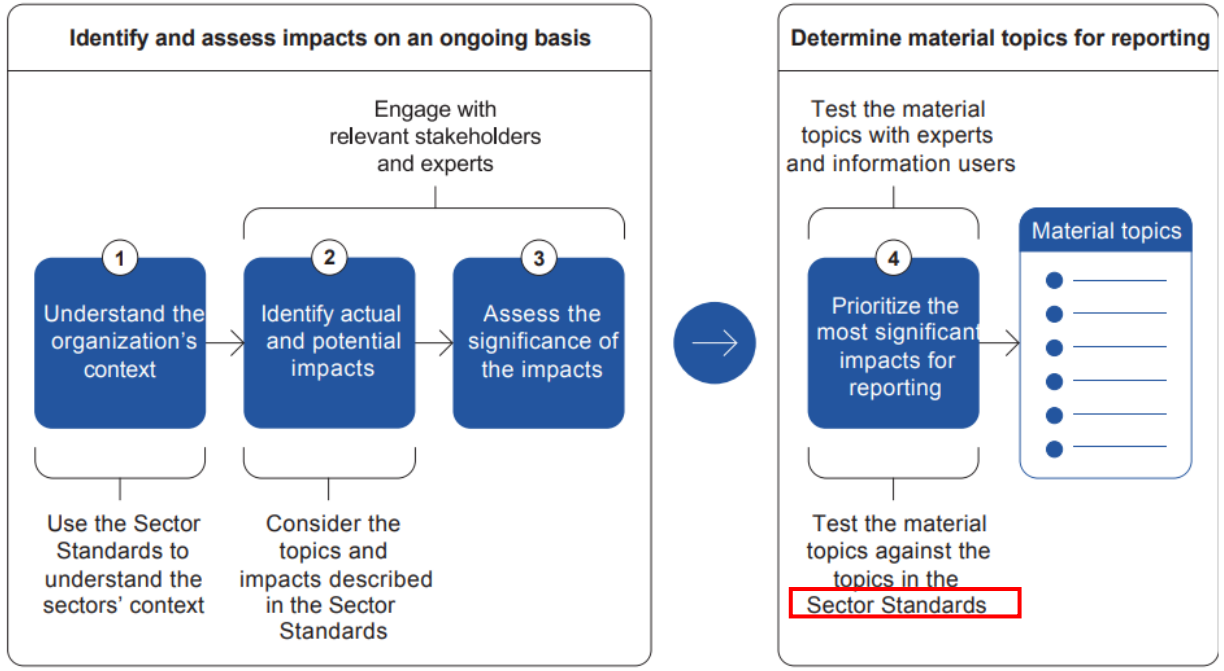
- Impact: Significant effects on the economy, environment, and society
- Severity: Seriousness of negative impacts (scale, scope, irreversibility)
- Significance: Focus on the most important impacts for reporting

B Importance

- Ensure Relevance
- Increase Transparency and Accountability
- Stakeholder Engagement

2 Importance of GRI Standards in determining material topics

Figure: Process to determine material topics



The GRI Standards play a crucial role in driving the concept of impact materiality by providing a comprehensive framework for identifying, assessing, and prioritizing the most significant ESG issues.

Sources: GRI. (2021). *GRI 3: Material Topics 2021.*

GRI Standards: Structure of GRI disclosures -- GRI 1

GRI 1: Foundation 2021 explains the purpose and system of GRI Standards, key sustainability reporting concepts, and the requirements and principles for reporting in accordance with GRI Standards.

Consists Of:

Introduction

1. Purpose and system of GRI Standards
2. Key concepts
3. Reporting in accordance with the GRI Standards
4. Reporting principles
5. Additional recommendations for reporting

Appendix 1: GRI content index in accordance

Appendix 2: GRI content index with reference

Glossary

Bibliography

Sources: GRI. (2021). *GRI 1: Foundation 2021.*

GRI Standards: Structure of GRI disclosures -- GRI 1

Key components in detail

A *Key concepts*

Provides essential definitions and principles for sustainability reporting, such as

- **material topic**
- **stakeholder**
- **due diligence**
- **impact**

B *Overview of in accordance requirements:*

Requirement 1:	Apply the reporting principles
Requirement 2:	Report the disclosures in GRI 2: General Disclosures 2021
Requirement 3:	Determine material topics
Requirement 4:	Report the disclosures in GRI 3: Material Topics 2021
Requirement 5:	Report disclosures from the GRI Topic Standards for each material topic
Requirement 6:	Provide reasons for omission for disclosures and requirements that the organization cannot comply with
Requirement 7:	Publish a GRI content index
Requirement 8:	Provide a statement of use
Requirement 9:	Notify GRI

C *Overview of principles:*

1. **Accuracy**
2. **Balance**
3. **Clarity**
4. **Comparability**
5. **Completeness**
6. **Sustainability context**
7. **Timeliness**
8. **Verifiability**

Takeaway

GRI 1: Foundation 2021 provides the foundation for using GRI Standards, including key sustainability concepts and the requirements for compliance. It emphasizes principles such as accuracy, clarity, and comparability. Organizations must determine material topics, apply reporting principles, and provide comprehensive disclosures according to GRI standards, ensuring transparent and impactful sustainability reporting.

Sources: GRI. (2021). *GRI 1: Foundation 2021*.

GRI Standards: Structure of GRI disclosures -- GRI 2

GRI 2: General Disclosures 2021 contains disclosures about the organization's reporting practices and other details like activities, governance, and policies. This information provides insight into the organization's profile, scale, and impacts.

1 The Standard is structured as follows:

Section	Disclosures	Description
Section 1	5	Organization info and sustainability practices.
Section 2	3	Activities, employees, and other workers.
Section 3	13	Governance structure, composition, roles, and remuneration.
Section 4	7	Sustainable development strategy and responsible business conduct.
Section 5	2	Stakeholder engagement and collective bargaining.
Glossary	-	Defined terms in the GRI Standards.
Bibliography	-	References and authoritative sources.

2 Disclosure partial examples of items

GRI STANDARD / OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
General disclosures						
GRI 2: General Disclosures 2021	2-1 Organizational details		*A gray cell indicates something that does not apply. This only relates to the 'Omission' and 'GRI Sector Standard ref. no.' columns.*			
	2-2 Entities included in the organization's sustainability reporting					
	2-3 Reporting period, frequency and contact point					
	2-4 Restatements of information					
	2-5 External assurance					
	2-6 Activities, value chain and other business relationships					
	" "	" "	" "	" "	" "	
	2-30 Collective bargaining agreements					

GRI 2: General Disclosures 2021 is a critical framework for businesses to comprehensively disclose their organizational practices, governance, and sustainability strategies. By adhering to these standards, companies can enhance transparency, improve stakeholder engagement, and demonstrate their commitment to sustainable development.

Sources: GRI. (2021). *GRI 2: General Disclosures 2021.*

GRI Standards: Structure of GRI disclosures -- GRI 3

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GRI 3: Material Topics 2021 provides step-by-step guidance on determining material topics. It also includes disclosures on the organization's process for identifying material topics, the list of material topics, and how each topic is managed.

1 The Standard is structured as follows:

Section	Disclosures	Description
Section 1	-	Guidance on determining material topics.
Section 2	3	Process, list, and management of material topics.
Glossary	-	Defined terms in GRI Standards.
Bibliography	-	References and authoritative sources.

2 Section 2

Material topics						
GRI 3: Material Topics 2021	3-1 Process to determine material topics					
	3-2 List of material topics					
[Material topic]						
GRI 3: Material Topics 2021	3-3 Management of material topics					
[Title of source]	[Disclosure title]					
" "	" "	" "	" "	" "	" "	" "
[Material topic]						
GRI 3: Material Topics 2021	3-3 Management of material topics					
[Title of source]	[Disclosure title]					
" "	" "	" "	" "	" "	" "	" "

GRI 3: Material Topics 2021 provides essential guidance for businesses to identify and manage their most relevant sustainability issues. By following these standards, companies can ensure their reporting is focused, comprehensive, and aligned with stakeholder expectations, driving more meaningful engagement and strategic insights.

Sources: GRI. (2021). *GRI 3: Material Topics 2021.*

Cross-Collaboration on GHG Emissions: GRI 305 and IFRS S2

Aligned Requirements

A. GRI 305 and IFRS S2 are consistent in terms of disclosing Scope 1, Scope 2, and Scope 3 GHG emissions. Both standards require the disclosure of:
   I. Scope 1: Direct GHG emissions
   II. Scope 2: Indirect GHG emissions from energy
   III. Scope 3: Other indirect GHG emissions

B. Greenhouse Gas Types: Both standards cover the same types of greenhouse gases, such as CO2, CH4, N2O, HFCs, PFCs, SF6, NF3.

Additional disclosures that can be aligned

These standards have differences but can be harmonized:

GHG Protocol Requirement	GRI 305	IFRS S2
Use of categories in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard	Recommended usage; companies can decide specific methods	Mandatory usage; companies must disclose according to GHG Protocol categories
Global Warming Potential (GWP) Values Requirement	GRI 305	IFRS S2
Use of the latest GWP values from the IPCC assessment reports	Required to use the latest GWP values from IPCC assessment reports	Required to use the latest GWP values from IPCC assessment reports as of the reporting date

Specific Disclosure Requirements

A. Scope 2 Emissions
- GRI 305: Requires the disclosure of market-based Scope 2 GHG emissions.
- IFRS S2: Does not explicitly require market-based emissions but requires the disclosure of contractual instruments to help understand Scope 2 emissions.

B. Biogenic CO2 Emissions
- GRI 305: Requires the disclosure of biogenic CO2 emissions.
- IFRS S2: Does not explicitly require this but supports disclosure to meet transparency and consistency requirements.

Sources: IFRS. *Interoperability considerations for GHG emissions when applying GRI Standards and ISSB Standards*

Case Study: Cross-Collaboration on GHG Emissions Reporting between GRI and ISSB

Aligned Requirements

A. GRI 305 and IFRS S2 are consistent in terms of disclosing Scope 1, Scope 2, and Scope 3 GHG emissions. Both standards require the disclosure of:
   I. Scope 1: Direct GHG emissions
   II. Scope 2: Indirect GHG emissions from energy
   III. Scope 3: Other indirect GHG emissions

B. Greenhouse Gas Types: Both standards cover the same types of greenhouse gases, such as CO2, CH4, N2O, HFCs, PFCs, SF6, NF3.

A. Example

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Greenhouse gas emissions

	2023	2022	2021	2020	2019	GRI/HKEx/ SASB/IFRS
CLP Group[1]						
Total CO_2e emissions – on an equity basis (kt)[2,3]	52,988	60,223	65,017	62,138	71,720	GRI 305-1, 305-2, 305-3/ HKEx A1.2/ SASB IF-EU-110a.1, IF-EU-110a.2/ IFRS S2-29(a)
Scope 1 (kt)[4]	38,163	44,141	47,690	45,105	50,047	
Scope 2 (kt)	229	220	236	244	250	
Scope 3 (kt)	14,597	15,861	17,091	16,790	21,424	

Sources: CLP Group. (2023). link

Consistent Requirements: GRI 305 and IFRS S2 both require disclosures for Scope 1, Scope 2, and Scope 3 emissions, covering the same types of greenhouse gases, ensuring baseline alignment.

Case Study: Cross-Collaboration on GHG Emissions Reporting between GRI and ISSB

Additional disclosures that can be aligned

A. GHG Protocol Requirement	GRI 305	IFRS S2
Use of categories in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard	Recommended usage; companies can decide specific methods	Mandatory usage; companies must disclose according to GHG Protocol categories
B. Global Warming Potential (GWP) Values Requirement	**GRI 305**	**IFRS S2**
Use of the latest GWP values from the IPCC assessment reports	Required to use the latest GWP values from IPCC assessment reports	Required to use the latest GWP values from IPCC assessment reports as of the reporting date

These standards have differences but can be harmonized:

A. **Example**

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Greenhouse gas (GHG) reporting guideline

- The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard;

A. **Explanation**

If a company chooses to apply the GHG Protocol Corporate Standard, its disclosures can align with the requirements of both GRI 305 and IFRS S2.

Standards Comparison:

While there are differences, such as in the use of GHG Protocol categories and GWP values, these differences can be harmonized for consistency in reporting.

Sources: CLP Group. (2023). link

Cross-collaboration between GRI and ISSB – GHG emissions

Takeaway:

- **Interoperability**
  Aligning GRI 305 and IFRS S2 standards ensures consistent GHG emissions disclosures, simplifying reporting and enhancing transparency.
- **Standardization**
  The alignment between these standards makes it easier for companies to comply with multiple frameworks, improving efficiency.
- **Improved Quality**
  Using GRI and IFRS S2 standards leads to more accurate GHG emissions disclosures, satisfying investor and stakeholder needs.
- **Future Adaptability**
  As standards evolve, companies must monitor changes to ensure their GHG disclosures remain compliant and current.

GRI Standards: Next Steps for Developing Climate Change Standards -- GRI is developing new standards for climate change

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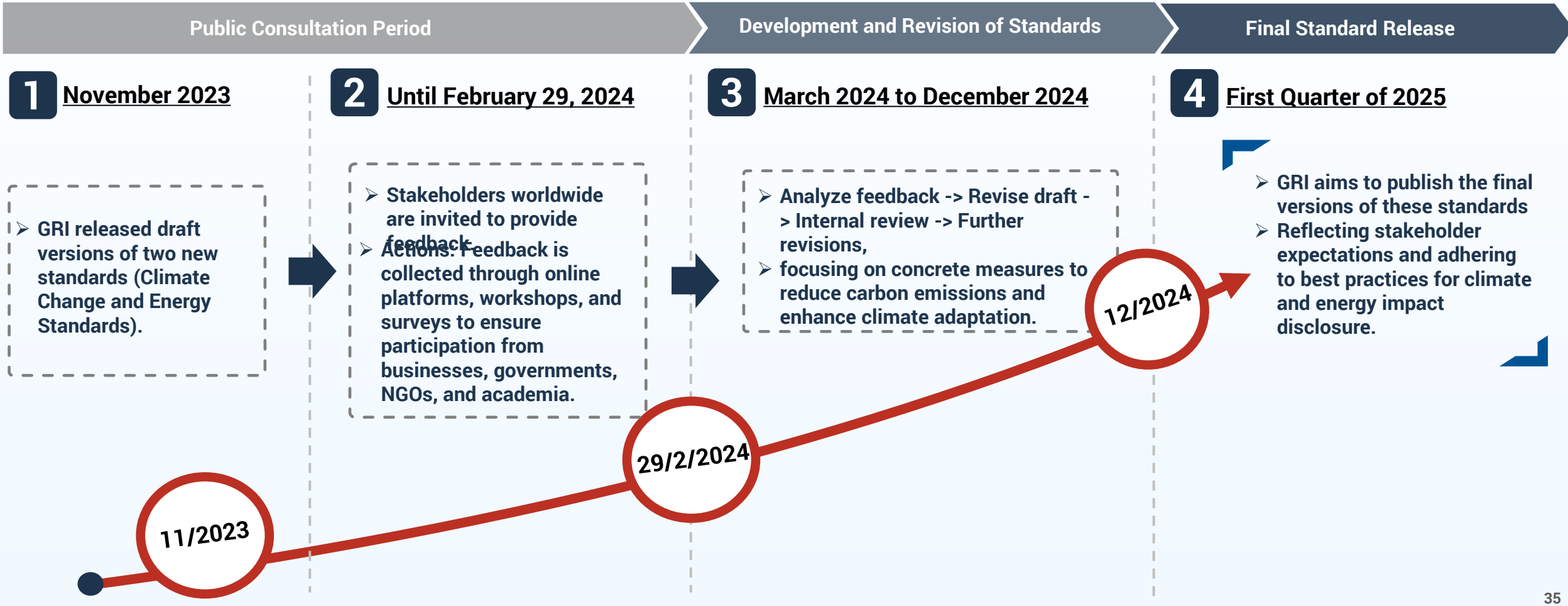
Background and Rationale: GRI is developing new standards for climate change to help companies better disclose and manage information related to climate change. These standards aim to address the urgent global threat of climate change and meet stakeholders' demands for transparent and detailed disclosures.



Sources: Global Reporting Initiative. link

Climate-related Disclosures

GRI Standards: Next Steps for Developing Climate Change Standards -- Enhanced Disclosure and Social Impact Requirements

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✓ Enhanced Disclosure Requirements:

1) Disclosure Content

Organizations must disclose:

a) Climate change transition
b) Adaptation plans
c) Annual progress on emission reduction targets
d) The use of carbon credits and GHG removals

2) Emission Reduction Measures

Emphasis on:

A. Reducing greenhouse gas emissions
B. Energy consumption
C. Supporting principles of a just transition

3) Annual Progress Reports

Organizations are required to report annually on their:

I. Progress towards emission reduction targets
II. Climate adaptation measures

✓ Enhanced on Social Impact:

1) Disclosure Content

The impact of climate change on workers, communities, and vulnerable groups.

2) Corporate Responsibility:

Businesses' responsibility in

1. Ensuring a just transition
2. Covering employment impacts
3. Training for skill enhancement

Takeaway:

- The new GRI standards for climate change will provide a comprehensive framework for organizations to disclose critical information related to their climate impact and actions.
- By following these standards, organizations can improve their transparency, contribute to environmental protection, and ensure social equity in their transition efforts.

Quiz

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1. Which organization is described as providing scientific assessments on climate change to inform policy?

A. GRI

B. IPCC

C. IFRS

D. SASB

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2. What is the primary purpose of the GRI Standards?

A. Provide financial reporting guidance

B. Help organizations disclose their significant impacts on the economy, environment, and people

C. Assess corporate market performance

D. Formulate internal corporate governance policies

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3. The ISSB standards align with which framework to form a global baseline for sustainability disclosures?

A. SASB

B. TCFD

C. CDP

D. All of the above

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4. GRI 305 and IFRS S2 standards are consistent in disclosing which types of emissions?

A. Scope 1 and Scope 2 emissions

B. Scope 1, Scope 2, and Scope 3 emissions

C. Only Scope 1 emissions

D. Only Scope 3 emissions

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5. What is the main goal of the Paris Agreement?

A. Limit global warming to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C

B. Reduce carbon dioxide emissions by 10% annually

C. Focus solely on climate change in developing countries

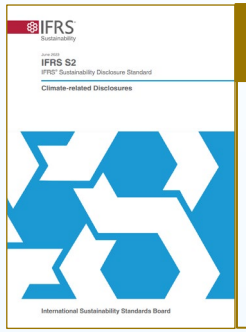
D. Achieve global carbon neutrality

Climate-related Disclosures

Climate-related Disclosures: Future Outlook

TCFD Recommendations

- The Financial Stability Board (FSB) published the TCFD final recommendations in June 2017.
- ✓ With the foundation being set by the TCFD recommendations, the International Sustainability Standards Board (ISSB) was able to develop the IFRS S1 and S2 Standards, with the TCFD recommendations forming the foundation of disclosure requirements



IFRS S2 Sustainability Disclosure Standard: Climate-related Disclosures

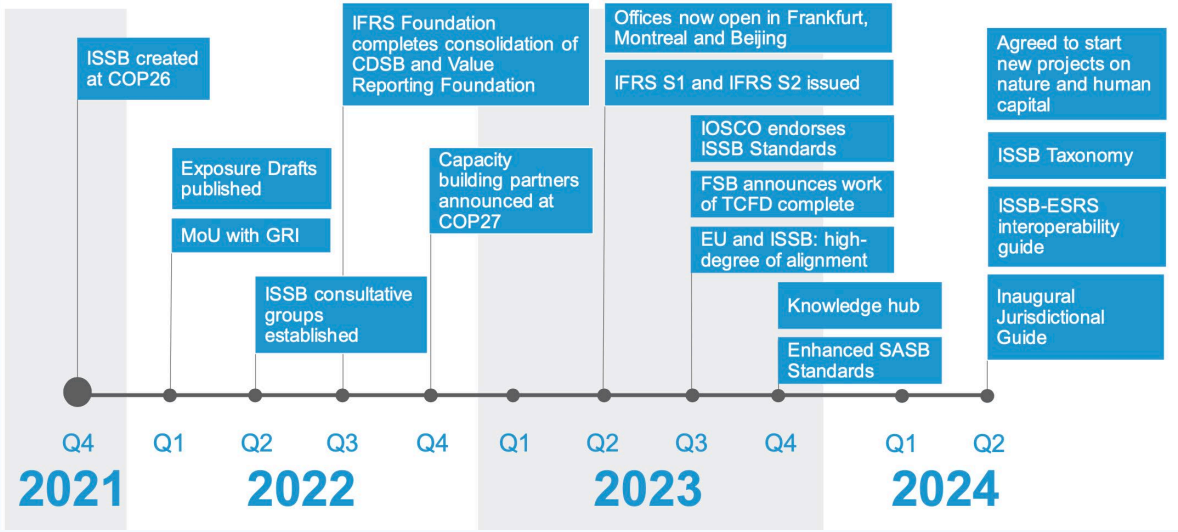
- The International Sustainability Standards Board (ISSB) issued IFRS S2 in June 2023, creating a global baseline of sustainability-related disclosures worldwide and promoting a common language for disclosing the effect of climate-related risks and opportunities on a company's prospects
- ✓ IFRS S2 fully incorporate the TCFD recommendations, as reflected in the comparative analysis conducted by the IFRS Foundation

HKEX Proposed Climate-related Disclosures Enhancements

- ✓ In their consultation conclusion published in April 2024, the HKEX proposes to mandate Hang Seng Composite LargeCap Index constituents to make climate-related disclosures in their ESG reports, and introduce new climate-related disclosures aligned with the IFRS S2 Climate Standard

International Sustainability Standards Board (ISSB) is Founded to Support Better Economic and Investment Decision-Making

Purpose To empower capital market participants with the right information to support better economic and investment decision-making



ISSB Milestones

- ✓ **Foundation: The Trustees of the IFRS Foundation announced the formation of the International Sustainability Standards Board (ISSB) on 3 November 2021 at COP26 in Glasgow**
- ✓ **Global support: The ISSB has international support to develop sustainability disclosure standards backed by the G7, the G20, the International Organization of Securities Commissions (IOSCO), the Financial Stability Board, African Finance Ministers and Finance Ministers and Central Bank Governors from more than 40 jurisdictions**
- ✓ **Recent updates: Released IFRS S1 and S2 in 2023 to provide comprehensive global baseline for sustainability-related disclosures following calls from G20, IOSCO and global leaders**

Sources: https://www.ifrs.org/groups/international-sustainability-standards-board/

Global Regulatory Landscape Overview: Likely to have an Increasing Number of Countries Aligning with ISSB Standards

Country/ Region	Disclosure Requirements and Progress	Effective Financial Year	ISSB Disclosure Progress
European Union	✓ Companies subject to the Corporate Sustainability Reporting Directive (CSRD) (in effect from January 2023) are required to report according to the European Sustainability Reporting Standards (ESRS)	2024 January	❑ Currently working with ISSB to improve the interoperability of their disclosure requirements
United Kingdom	✓ Listed and FCA regulated entities are required to provide climate and sustainability reporting in line with the core elements of the TCFD framework	2021	❑ Expected to develop disclosure standards aligning with the ISSB by July 2024.
United States	✓ SEC released requirements for mandatory material climate-related disclosures for publicly traded companies in the US, drawing upon TCFD framework	2025-2027 (initial implementation)	❖ Declined to recognise the ISSB standard at the moment
Hong Kong	✓ TCFD-aligned climate-related disclosures mandatory for all issuers by 2025	2025	✓ Proposed mandatory and enhanced climate-related disclosures aligned with the ISSB climate disclosure standards (from January 2025).
Singapore	✓ SGX-listed issuers must provide climate reporting on a 'comply or explain' basis in their sustainability reports.	2022	✓ Mandatory ISSB-aligned disclosures from FY2025 for listed issuers, and from FY2027 for non-listed companies with annual revenue >S$1b and $500 million in assets (by Sustainability Reporting Advisory Committee).
Japan	✓ JFSA has introduced mandatory greenhouse gas and TCFD-aligned climate-related risk disclosures for prime blue-chip companies	2023 (all companies)	✓ ISSB-aligned disclosures required from 2025.
Australia	✓ Proposed mandatory climate-related financial disclosures beginning with large companies, aligning with the ISSB IFRS S2 standards.	2024 July	✓ Disclosure requirement aligned with ISSB IFRS S2 standards

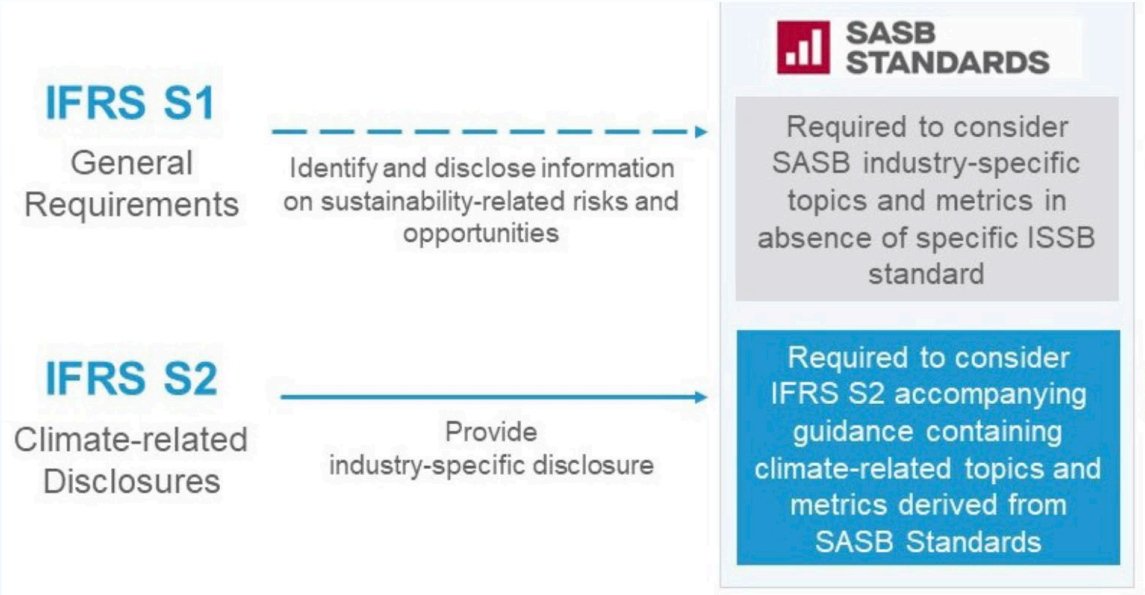
Aligned or will align with ISSB | Working on aligning with ISSB | Declined to align with ISSB

Sources: Intelsel. https://intensel-backend-data.s3.amazonaws.com/public/blog-resources/intensel-publications/Intensel+-+Regulatory+Requirements+for+Climate+Risk+Disclosures+March+2024.pdf

ISSB Value Industry-specific Disclosures by Incorporating SASB Topics and Metrics

Role of SASB Standards in IFRS S1 and IFRS S2

- ✓ **IFRS S1 requires a company to consider SASB disclosure topics and metrics when identifying industry-specific sustainability-related risks and opportunities**
- ✓ **IFRS S2 requires a company to consider the accompanying guidance on climate-related disclosure topics and metrics. The IFRS S2 industry-based metrics and disclosure topics have been derived from SASB Standards with amendments to improve international applicability**



Industry-specific disclosure

- ✓ **Both S1 and S2 require industry-specific disclosures, and SASB Standards provide industry-specific guidelines such that companies can fulfill IFRS S1 and S2**
- ✓ **Specifically, S2 requires companies to draw reference from climate-related topics and metrics from the SASB Standards**

Sources: IFRS Sustainability Alliance - PARTICIPANT onboarding deck

IFRS S1 key concepts

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Key concepts for preparing climate disclosures

01 Quality of information

Climate- related information is expected to possess qualitative characteristics to be useful. Relevance Disclosures should have predictive and confirmatory value.
Faithful representation: Complete, neutral, and accurate depiction.
Comparability: Enable the identification and understanding of similarities and differences
Verifiability: Provide users confidence in completeness, neutrality, and accuracy
Timeliness: Provide information timely for decision- making.
Understandability: Clear and concise information without duplication.

02 Reporting entity

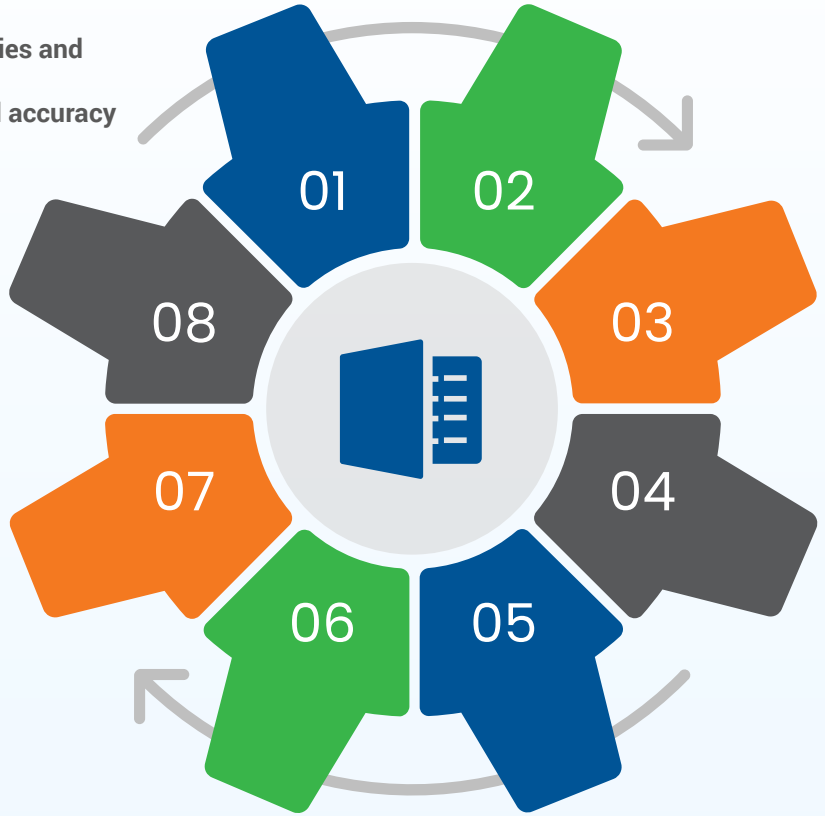
Sustainability- related financial disclosures shall be for the same reporting entity as the related financial statements.

03 Timing of reporting

Disclosures shall be reported at the same time as related financial statements. Issuers are reminded to publish their ESG report annually and regard the same period covered in their annual report and at the same time as their annual reports.

04 Location of disclosures

Disclosures should be part of general- purpose financial reports.
Climate- related disclosures could be located in an issuer's ESG report or integrated into other sections.



05 Materiality

Materiality judged on whether omitting, misstating, or obscuring information could influence primary users' decisions.
Over the short, medium, or long term, disclose material sustainability- related risks and opportunities affecting cash flows, access to finance, or cost of capital.

06 Value chain concepts

Disclosure should allow an understanding of sustainability-related risks and effects on the entity's value chain.

07 Statement of compliance

Issuers making sustainability- related financial disclosures in compliance with IFRS S1 and S2 considered compliant with Part D of the ESG Code.

08 Judgments and measurement uncertainty

Disclose information enabling understanding of judgments made affecting the information reported.
Where amounts reported cannot be measured directly and only estimated, measurement uncertainty should be disclosed.

IFRS S1 and S2 Disclosure Structure Overview

IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information

- ❑ **Asks for disclosure of material information about sustainability-related risks and opportunities with the financial statements, to meet investor information needs**
- ❑ **Applies TCFD architecture whenever providing information about sustainability**
- ❑ **Requires industry-specific disclosures**
- ❑ **For matters other than climate (IFRS S2) refers to sources to help companies identify sustainability-related risks and opportunities and information**
- ❑ **Can be used in conjunction with any accounting requirements (GAAP)**

IFRS S2: Climate-related Disclosures

- ❑ Incorporates the **TCFD recommendations**
- ❑ To meet investor information needs, IFRS S2:
  - ❑ is used in accordance with **IFRS S1**
  - ❑ requires disclosure of **material information about climate-related risks and opportunities**, including physical and transition risks
  - ❑ requires **industry-specific disclosures**, which are supported by accompanying guidance built on SASB Standards

Sources: IFRS Sustainability Alliance - PARTICIPANT onboarding deck

Four Pillars - Governance

IFRS S2 Disclosure Overview

Objective

✓ **Require an entity to disclose information about its sustainability-related and climate-related risks and opportunities that that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity**

Four ISSB pillars:

Governance

❑ **Understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.**

Strategy

❑ **Understand an entity's strategy for managing climate-related risks and opportunities.**

Risk Management

❑ **Understand an entity's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process.**

Metrics and Targets

❑ **Understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.**

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

IFRS S2 Disclosure Overview: Governance

Governance

❑ Understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.

S2 Disclosure Area	Disclosure Items	
Governance	Policies and Responsibilities	Reflecting oversight responsibilities for climate-related risks and opportunities (CRROs) in policies.
	Skills and Oversight	Ensuring appropriate skills are available to oversee CRRO.
	Information Frequency	How often the body is informed about CRROs.
	Strategy Consideration	Taking CRROs into account in business strategy.
	Target Setting and Monitoring	Setting and monitoring targets related to CRROs.
	Governance Role	Whether governance roles are delegated to specific positions or committees.
	Management Controls	Use of controls to support CRRO oversight and integration with other internal functions.

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

Case Study – CLP Established a Clear Governance Structure Responsible for ESG-related Matters

Governance

Reference Number	Disclosure description
IFRS S2- 6(a)	The governance body(s) (which can include a board, committee or equivalent body charged with governance) or individual(s) responsible for oversight of climate-related risks and opportunities

Sustainable Governance

To align with market practice, companies can

- Establish a clear governance structure responsible for ESG-related matters and disclosure
- Assign clear divisions of responsibility among the Board, Management Team, and execution teams, with regular reporting to ensure consistent and effective communication
- Seek external assurance to ensure the accuracy and consistency of ESG data

About CLP

- Its 2023 Sustainability Report has been prepared in accordance with ISFR S1 and S2, GRI Standards, HKEX ESG Reporting Guide with reference to SASB electric utilities and power generation industry-specific standards

Sustainability Committee

- Oversee the company's sustainability strategy and practices

Audit & Risk Committee

- Retains oversight and responsibility for material risks and reviews the assurance of CLP's sustainability data

Sustainability Executive Committee

- Compiles the business and operational plans detailing how the organisation will reach its climate goals, which are put to the Board for approval

Group Sustainability Department

- Coordinates delivery of the sustainability strategy and oversees the regular updating of CLP's Climate Vision 2050, its materiality assessment, and its sustainability reporting

Source: CLP 2023 Sustainability Report

Four Pillars - Governance

Case Study – Swire Pacific Established a Clear Governance Structure in Management Level for Sustainable-related Matters

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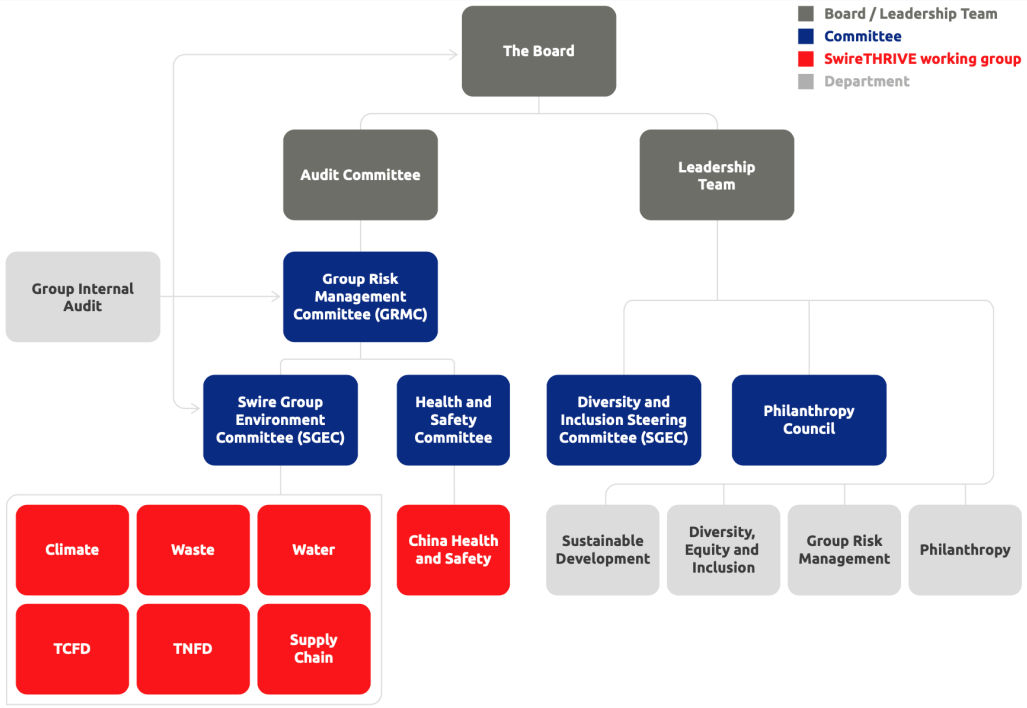
SWIRE PACIFIC

Governance

Reference Number	Disclosure description
IFRS S2- 6(b)	The management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities.

Sustainable Governance



Group Risk Management Committee (GRMC)

- The Board is kept informed of sustainability risks and performance by GRMC, which reports to the Board via the Audit Committee.

Swire Group Environmental Committee (SGEC)

- The Committee meets at least three times each year and advises on matters:
  - ➢ The Group to operate sustainably for the benefit of current & future generations
  - ➢ Sustainable growth by maintaining & enhancing the Group's economic, environmental, human, technological, and social capital in the long term
  - ➢ The identification and effective management of the Group's Sustainable Development (SD) risks

Sustainable Development Office (SDO)

- Advises senior management of key developments and emerging risks related to sustainable development.
- Set Group environmental policies and targets, monitoring the implementation of SwireTHRIVE and our ESG policies, and internal and external reporting on ESG matters.

To align with market practice, companies can

- Assign a clear division of responsibility among the management team, including reporting structure and frequency
- Set up corresponding execution groups responsible for specific ESG-related topics and monitoring the implementation of the company's ESG strategy

Source: Swire 2023 Sustainability Report

Four Pillars - Governance

Case Study – Vtech Establish a Remuneration Committee to Prepare for Disclosing Remuneration-related Reporting

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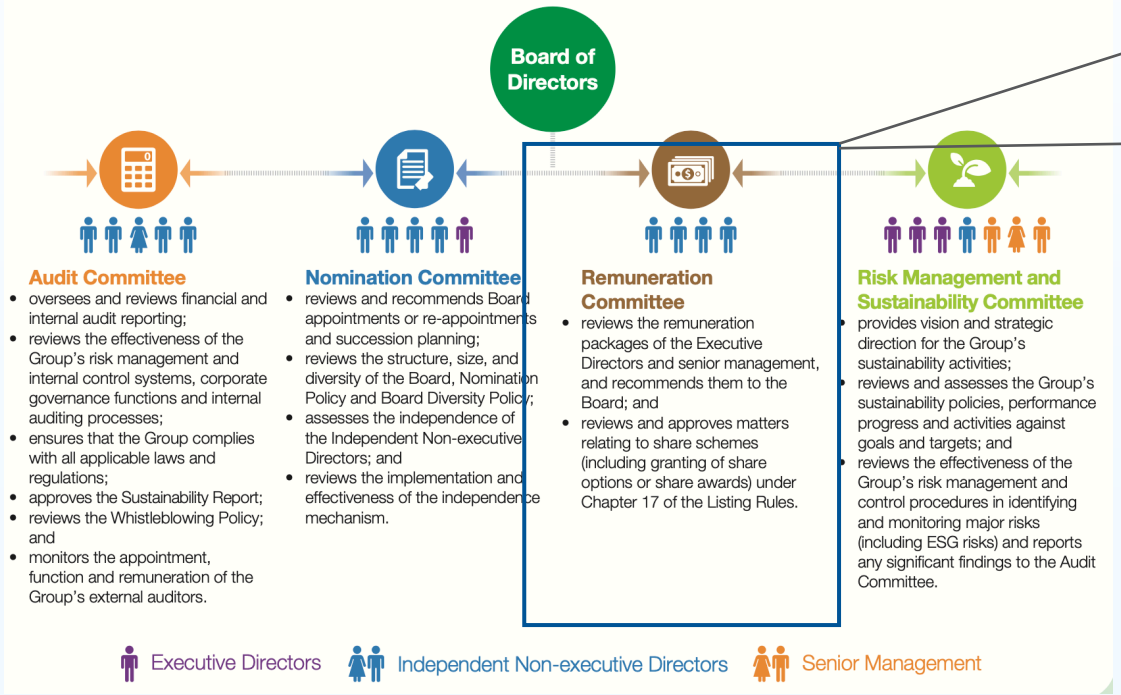
vtech

Governance

Reference Number	Disclosure description
IFRS S2- 6(a)(v)	How the body(s) or individual(s) oversees the setting of targets related to climate- related risks and opportunities, and monitors progress towards those targets, including whether and how related performance metrics are included in remuneration policies.

Roles and Responsibilities of Board Committees



Vtech are preparing for the incorporation of ESG and climate-related considerations into executive remuneration to be disclosed in the future reporting

To align with market practice, companies can

- **Set up a committee or group to be responsible for climate-related renumeration matters to ensure that compensation and incentives for executives are linked to the company's climate goals and sustainability performance, thus demonstrating commitment to sustainability**

Source: VTech 2024 Sustainability Report

Four Pillars - Governance

Example: Governance structure

Illustrative disclosure 1: Governance structure

Board of Directors

C2 19(a)(iii)

- Review and approve material operational matters (e.g. climate strategies and policies)
- Oversee climate development and performance (e.g. progress against goals)

Audit Committee

- Ensure quality and timely investor grade disclosures including climate-related issues
- Ensure compliance with new regulations

Remuneration Committee

- Formulate remuneration structure and policy
- Incorporate climate-related issues into senior management's performance evaluation and compensation

Risk Management Committee

- Oversee risks of business operation
- Incorporate relevant risks into enterprise risk management framework
- Follow on non-compliance incidents

Climate Committee

C2 19(b)

- Formulate and review climate-related strategy and approach
- Oversee climate-related issues, including risks
- Communicate with committees on the latest climate-related issues affecting the company
- Coordinate climate-related tasks
- Approve and review climate-related targets and key initiatives regularly

Our Board oversees climate-related risks and opportunities C2 19(a) during board meetings on a bi-annual basis C2 19(a)(ii) to ensure that our climate development and performance are on track.

The Board is supported by our four Committees in different aspects to address Climate Change. Specifically, our Climate Committee is appointed by our Board and chaired by an Independent Non-Executive Director. C2 19(a) It comprises senior management from different business functions C2 19(b) and is responsible for formulating and reviewing climate-related strategy, coordinating climate-related tasks and communicating with the Board and committees on the latest climate-related issues affecting the company on a bi-annual basis.

To oversee duties performed by the Climate Committee, climate-related performance target are set at the management level to assist our Board in evaluating the effectiveness of its climate strategy and measures on an annual basis. C2 19(a)(iv)

To ensure our Board keeps up with the latest trend of climate-related risks and opportunities, we provide the Board with annual climate-related training where external subject matter experts are invited to share on climate-related topics. C2 19(a)(i)

Commentaries

C2 19(a)	Stated that the Board and the Climate Committee are responsible for oversight of climate-related risks and opportunities.
C2 19(a)(i)	Disclosed the availability of annual climate-related trainings with external subject matter experts to ensure competence in the Board in overseeing strategies to respond to climate-related risks and opportunities.
C2 19(a)(ii)	Disclosed that board meetings are arranged on a bi-annual basis to keep the Board informed of the company's climate developments and performances.
C2 19(a)(iii)	Disclosed how the board and its committees takes into account climate-related risks and opportunities in its operations, supported by a diagram demonstrating the organisational structure and segregation of roles and responsibilities, demonstrating each Committee's role in integrating climate-related risks and opportunities.
C2 19(a)(iv)	Disclosed the use of climate-related performance target, which is monitored by the Board on an annual basis.
C2 19(b)	Explained that management from different business functions also takes part in managing climate-related risks and opportunities, and are overseen by the Board with performance monitored by climate-related performance targets.

Example: Clarification on Disclosure

Governance a) and b): Clarification on Disclosure

In its 2019 status report, the TCFD shared the results of a comprehensive survey on the adoption and use of the TCFD recommendations. Part of the survey asked companies that had implemented or were implementing the TCFD recommendations to **describe issues they encountered as part of their implementation.**

For the Governance recommendation, nearly 50% of the companies indicated disclosing governance practices around climate-related issues was **challenging** because their **governance practices apply to all issues, not just climate.**

Companies did not want to disclose their governance around climate-related issues separately from their disclosure of their general governance practices, which apply to all types of issues.

To address this concern, the Task Force clarified that it did not intend for companies with comprehensive governance processes that address climate-related issues to create separate processes or duplicate existing disclosures. If a company's disclosures **clearly describe its governance processes** and **it is clear those processes cover climate-related issues**, then no further disclosure may be needed.

Example: Disclosure for Governance b)

Example of Disclosure for *Governance b)*

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

Example Disclosure: Allianz Group (Insurance Underwriting and Investing)

TCFD alignment: this example describes management's responsibilities for climate-related issues at Allianz Group.

- The company indicates that Global Sustainability is responsible for coordinating integration of climate into insurance and investment activities and that ESG Task Forces were created to support cross-functional collaboration in implementing efforts for integration. The ESG Task Forces are sponsored by senior executives, as shown in the table on the right.
- The company indicates its insurance and investment functions have well-established climate teams that report to Board of Management level. In addition, the Investment Management Board oversees climate strategy for the investment management function, including decisions on implementation, target-setting, and compliance related to portfolio decarbonization targets.

05.2.2 Business and management-level governance

Group functions

The Global Sustainability[1] function includes a team dedicated to Climate Integration and is responsible for coordinating the integration of ESG and climate aspects into core investment and insurance activities. It also acts as the secretariat of the ESG Board and meets regularly with its chair. Further functions, such as Group Risk, Regulatory and Public Affairs, report on non-financial matters and support operating entities in integrating the Group's strategic approach and policies.

Addressing sustainability matters requires cross-functional collaboration and support across our global operations. To develop projects and proposals for ESG and climate integration and drive implementation, cross-functional ESG Task Forces were set up in 2019 (see also section 02.7.1). They consist of ESG specialists and representatives of relevant local operating entities, global lines and Group functions. Each taskforce is sponsored by senior executives from different functions and quarterly meetings between sponsors ensure alignment between the different task forces.

Additional bodies and functions within the Group monitor and analyze market, technological and regulatory trends and developments and share insights with key stakeholders.

Further information can be found in the Allianz Group Annual Report 2020.

[...]

Insurance and investment functions

Key insurance operating entities, our internal asset managers (Allianz Global Investors and PIMCO), and the investment management function, Allianz Investment Management (AIM), have well-established climate and ESG teams, which report to BoM level.

At AIM, the Investment Management Board (IMB) oversees implementation of climate and ESG strategy for our proprietary investment portfolio of € 835 billion[2]. This includes regular updates, discussions and decisions on implementation, target-setting and compliance related to portfolio decarbonization targets and measures. Analyses of asset stranding in climate scenarios and engagement on climate aspects are also regularly addressed. Within AIM, climate and ESG is steered at IMB level with a Managing Director in charge of the implementation.

Several business units have dedicated competence centers that promote low-carbon technologies from an insurance and investment perspective. They include Allianz Capital Partners, Allianz Global Investors, Allianz Global Corporate & Specialty, Allianz Climate Solutions, among others.

For more details, see section 02.7 Corporate Responsibility Governance.

For more details, also see the Allianz ESG Integration Framework.

[...]

1. See section 02.7 about the changes to the organization of the sustainability organization within Allianz SE as of 01 January 2021).
2. Based on economic view. Compared to accounting view it reflects a volume increase due to switch from book to market values and changed asset scope (e.g. including FVO, trading and real estate own use).

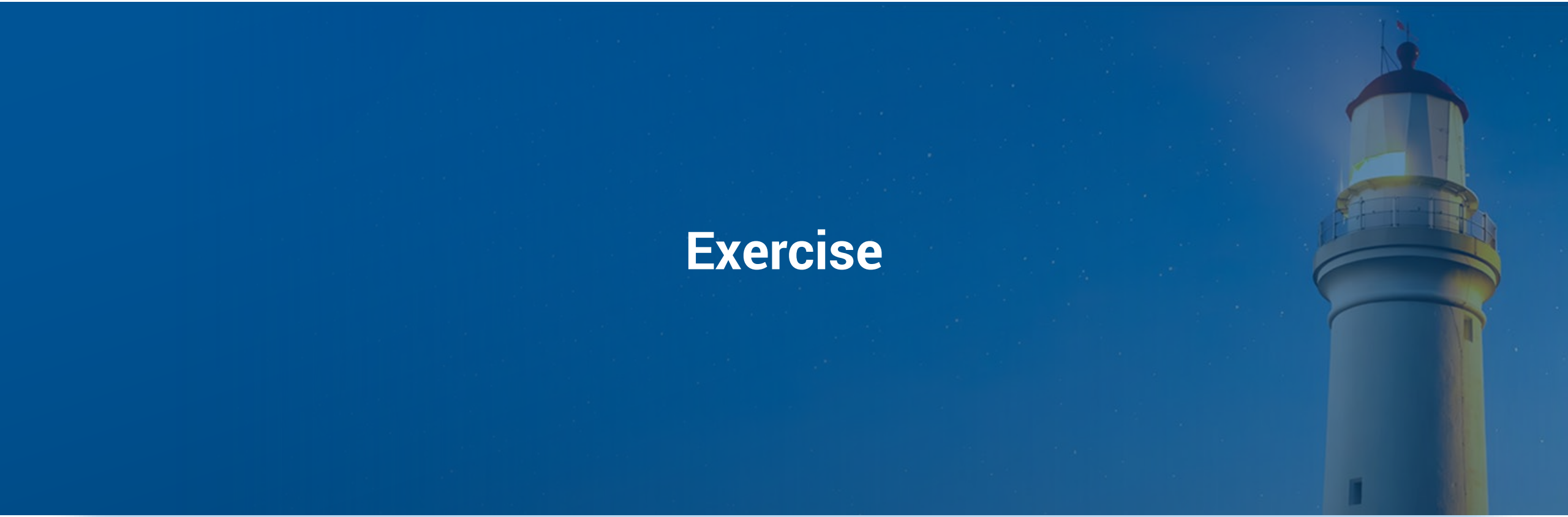
ESG Task Force	Sponsor
Corporate responsibility disclosures	Head of Group Accounting and Reporting, Allianz SE
Environmental management	Head of Group Operations and Performance, Allianz SE
ESG integration in communication and in branding/ marketing	Head of Group Communications and Corporate Responsibility, Allianz SE
ESG integration in investments	Managing Director, Allianz Investment Management SE
ESG integration in underwriting	ESG Working Group (including representatives Group ESG Office, Global P&C, Allianz Re, Allianz Global Corporate and Specialty, Euler Hermes, Allianz Germany and other P&C entities)
Operating entity collaboration	Head of Group Communications and Corporate Responsibility, Allianz SE
Sustainability ratings	Member of the Board of Management, Investment Management and ESG, Allianz SE
Societal impact	Member of the Board of Management, Human Resources, Legal, Compliance, Mergers & Acquisitions, Allianz SE
Sustainable finance regulation	Head of Group Regulatory and Public Affairs, Allianz SE Head of Asset Manager Management, Governance and Compliance, Allianz Investment Management SE

Quarterly meetings to ensure alignment between Task Forces.

Discussion questions

- **Does your company already have governance processes and bodies in place that explicitly address climate-related issues?**
- **Are the responsibilities of the board and management clearly defined?**

Exercise



Exercise

Group Exercise: Analyzing a Climate Disclosure Case Study

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- Each group will read the case study and review the provided climate-related disclosures.
- Key areas to focus on:
  - Governance: Does the board oversee climate-related risks and opportunities?
  - Strategy: Are the disclosed climate-related risks and opportunities aligned with the company's overall strategy?
  - Risk Management: How effectively has the company disclosed its approach to managing climate-related risks?
  - Metrics and Targets: Are the disclosed metrics (e.g., Scope 1, 2, and 3 emissions) clear, measurable, and aligned with GRI or ISSB standards?

- Each group will discuss the following questions:
  - Strengths: What aspects of the disclosure are well-executed and aligned with best practices?
  - Gaps: Are there any missing elements or unclear areas?
  - Improvements: What recommendations would you make to strengthen the disclosure?

- Each group will prepare a brief summary of their analysis, highlighting:
  - 1–2 strengths
  - 1–2 gaps
  - 1–2 actionable recommendations for improvement

Four Pillars - Strategy

Four Pillars - Strategy

IFRS S2 Disclosure Overview

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Objective

✓ **Require an entity to disclose information about its sustainability-related and climate-related risks and opportunities that that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity**

Four ISSB pillars:

Governance	Strategy	Risk Management	Metrics and Targets
❑ Understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.	❑ Understand an entity's strategy for managing climate-related risks and opportunities.	❑ Understand an entity's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process.	❑ Understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

IFRS S2 Disclosure Overview: Strategy

Strategy

- Understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.

S2 Disclosure Area	Disclosure Items	
Strategy	Impact on Prospects	Identifying CRROs affecting the entity's prospects.
	Risk Classification	Classifying risks as physical or transition risks.
	Strategic Effects	Effects of CRROs on strategy and decision-making, including transition plans.
	Time Horizons	Defining short, medium, and long-term time horizons for CRRO effects.
	Strategic Definitions	How definitions for time horizons are used in strategic decisions.
	Business Model Impact	Current and anticipated effects on business model and value chain.
	Adaptation and Mitigation Efforts	Current and future mitigation and adaptation efforts, including climate-related targets.

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

Example of climate related risks & opportunities

Examples of Climate-Related Risks

 **Physical Risks**	**Acute** • Increased severity of extreme weather events such as cyclones and floods **Chronic** • Changing weather patterns and rising mean temperature and sea levels
 **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 **Technology** • Substitution of existing products and services with lower emissions options • Unsuccessful investment in new technologies • Costs to transition to lower emissions technology **Market** • Changing customer behavior • Uncertainty in market signals • Increased cost of raw materials **Reputation** • Shifts in consumer preferences • Stigmatization of sector • Increased stakeholder concern or negative stakeholder feedback

Examples of Climate-Related Opportunities

 **Resource Efficiency**	• Use of more efficient modes of transport and production and distribution processes • Use of recycling • Move to more efficient buildings • Reduced water usage and consumption
 **Energy Source**	• Use of lower-emission sources of energy • Use of supportive policy incentives • Use of new technologies • Participation in carbon market
 **Products & Services**	• Development and/or expansion of low emission goods and services • Development of climate adaption and insurance risk solutions • Development of new products or services through R&D and innovation
 **Markets**	• Access to new markets • Use of public-sector incentives • Access to new assets and locations needing insurance coverage
 **Resilience**	• Participation in renewable energy programs and adoption of energy-efficiency measures • Resource substitutes/diversification

Key elements of scenario analysis

Scope of the scenario analysis

Scenario analysis should encompass the entire company including supply and distribution chains.

However, companies may start with a narrower focus (specific business unit, product line, or geography) to gain experience before expanding to company-wide analysis.

Time horizon

Companies should select time horizons that are long enough to reveal meaningful climate changes but not so distant that uncertainties overwhelm analysis.

Horizons should align with the company's capital planning cycles, asset lifespans, and climate policy time frames (e.g. 2030/2050).

Number and diversity of scenarios

Multiple scenarios should be used to capture a wide range of plausible future and create challenging "what-if" analyses.

Scenarios should be sufficiently diverse to adequately cover key impacts and uncertainties.

What are climate scenario?

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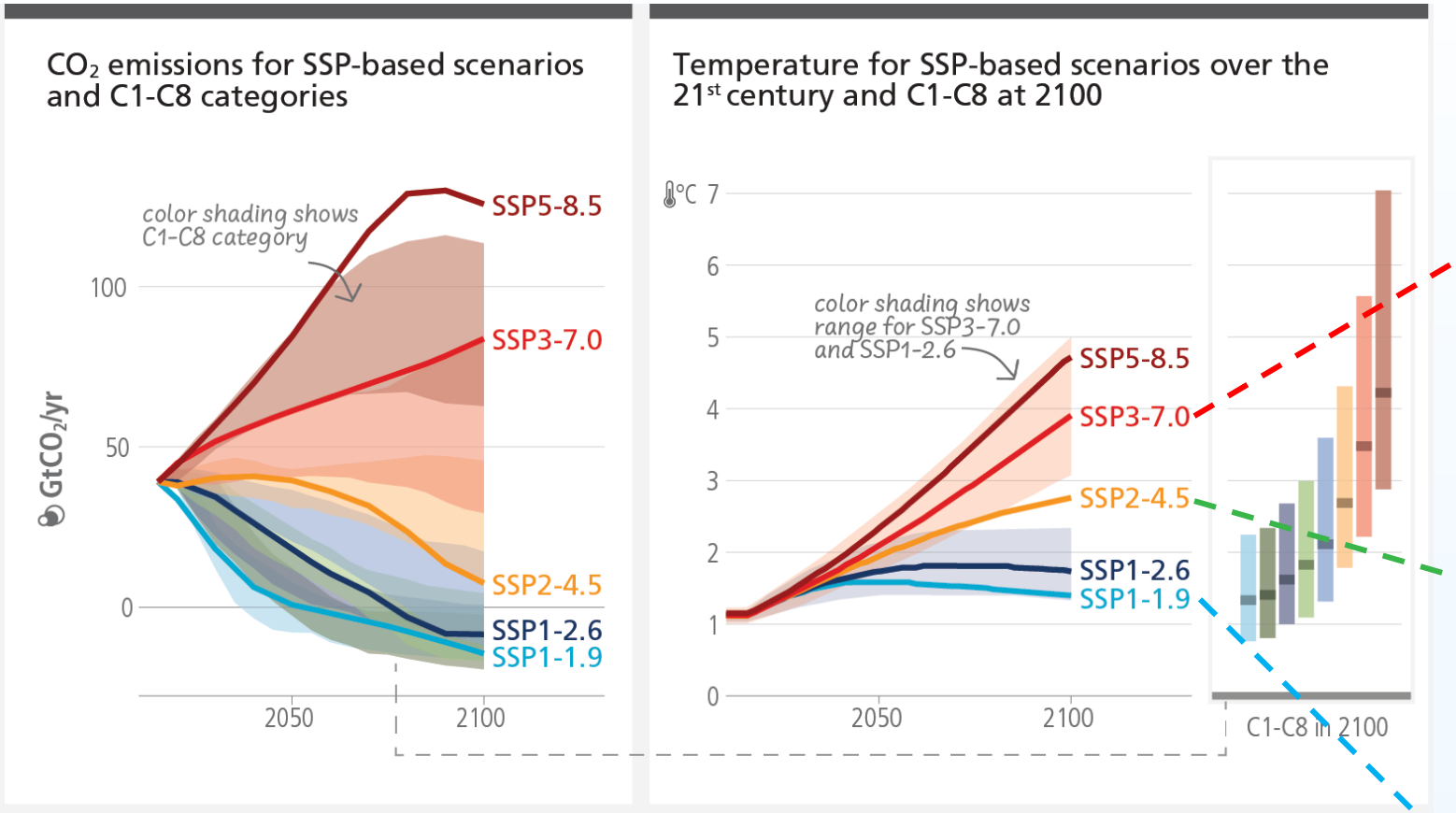
Companies are asked to consider different scenarios, based on different climate warming trajectories, and the risk associated with them. These trajectories can range from anywhere between 1.5ºC to over 4ºC. Companies may use different types of scenarios, representing different plausible futures, to assess potential climate-related risks and uncertainties.



Types of scenario narratives

Business as usual (BAU) scenario:
Current policies remain in place. Low effort to curb emissions; more adaptation required.

Intermediate scenario:
Binding to long-term or net-zero target. Closer to current practice and require some mitigation strategies and technologies.

1.5ºC-aligned scenario:
Reaching net-zero GHG emissions in the 2nd half of this century. Less adaptation required.

Source: IPCC AR6 Synthesis Report, Cross-Section Box.2, Figure 1

Sources of scenarios

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Companies should consider multiple sources of scenarios to understand each scenario's characteristics and select scenarios most aligned with their circumstances.

	Public climate scenarios	Proprietary climate scenarios	Company climate scenarios	Standard scenarios
Characteristics	Created by international agencies and coalitions for widespread adoption or to serve as a point of comparison or benchmark	Developed primarily by consulting and specialist organizations to explore particular aspects of possible climate-related impacts and transitions	Developed by private companies as their own analyses of possible future climate impacts on their businesses	To be used to specific groups according to the prescriptions of the party requiring the use of the scenarios
Example	• IEA's Global Energy and Climate (GEC) models • NGFS's climate scenarios • IRENA's Planned Energy Scenario and 1.5°C Scenario	• Moody's RMS™ climate-conditioned catastrophe models • MSCI ESG Research's Climate Value-at-Risk • S&P Global's dataset and models • ISS ESG's climate dataset and models	• BP's energy transition scenarios • Lendlease's 2050 Future Scenarios	• The Bank of English's system-wide exploratory scenario

Overview of publicly available scenarios

There are 3 prominent entities that provide comprehensive and in-depth studies regarding climate change scenarios which can be used as references for climate risk scenario analysis. They are Intergovernmental Panel on Climate Change (IPCC), Network of Central Banks and Supervisors for Greening the Financial System (NGFS) and International Energy Agency (IEA).

Publisher	Background	Provided Scenario Category(s)
IPCC (Intergovernmental Panel on Climate Change)	IPCC is a scientific body established by the Untied Nations. It provides policymakers with objective and comprehensive assessments of climate change based on the latest scientific research.	• IPCC started with a set of Representative concentration pathways (RCP) to determine physical effects of GHG emissions • On Sixth Assessment Report (AR6), these RCP's are integrated to five Shared Socioeconomic Pathways (SSP), which leveraged by socio-economics consideration
NGFS (Network of Central Banks and Supervisors for Greening the Financial System)	NGFS is an international group of central banks and financial regulators. It provides a platform for sharing best practices, conducting research, and developing guidelines on integrating climate considerations into financial systems.	• The scenario(s) development are largely based on IPCC's work • 4 representative scenario categories, which are "Orderly", "Disorderly", "Hot House World" and "Too-little-too-late". • Banks use the scenario for climate analysis for debtors
IEA (International Energy Agency)	The IEA is at the heart of global dialogue on energy, providing authoritative analysis, data, policy recommendations, and real-world solutions to help countries provide secure and sustainable energy for all.	• The World Energy Outlook makes use of a scenario approach to examine future energy trends relying on the world energy model • The 2023 Outlook explores 3 scenarios – fully updated – that provide a framework for exploring the implications of various policy choices, investment and technology trends

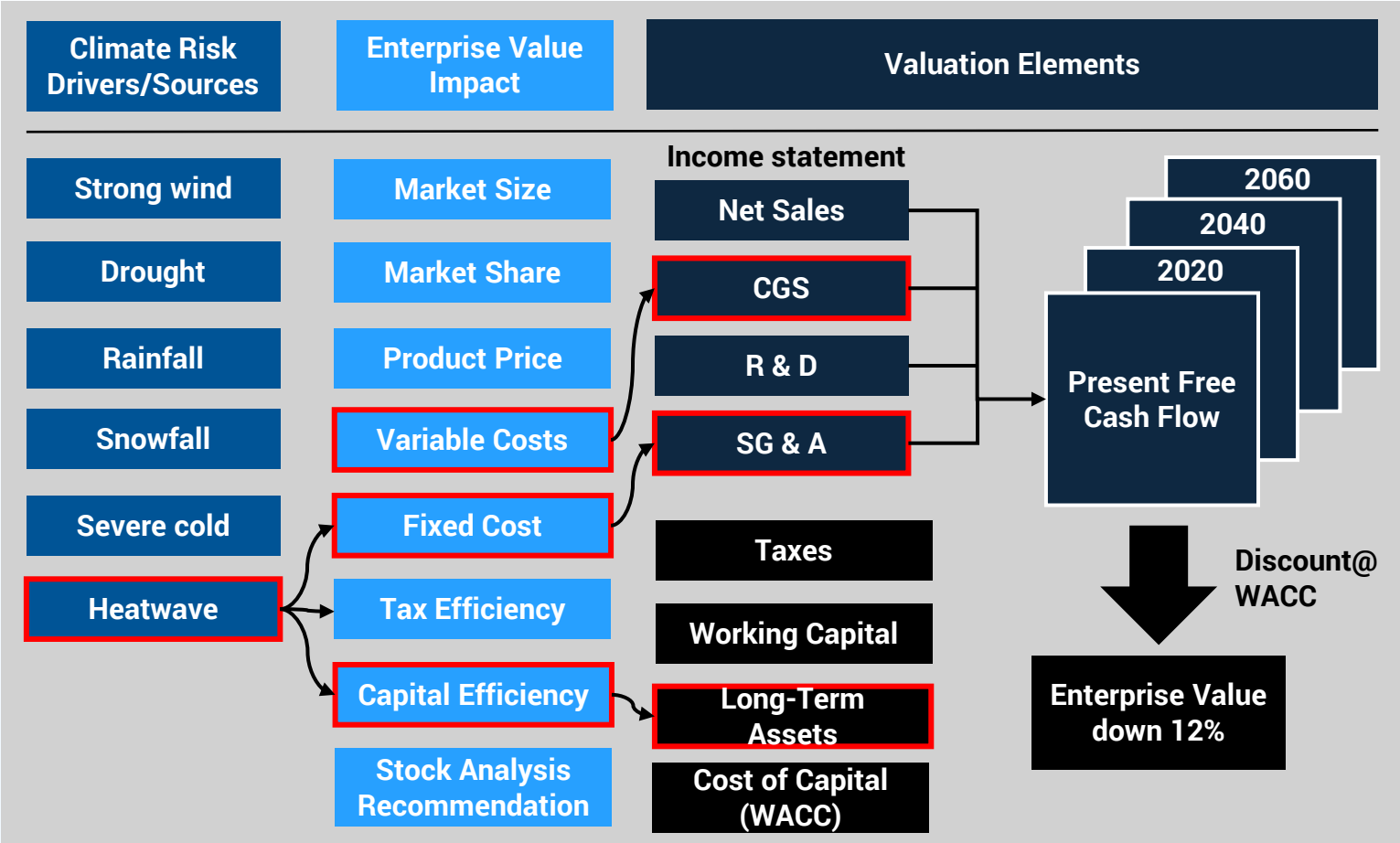
Transition vs physical climate scenario analysis

	Transition risk analysis	Physical risk analysis
Primary diver	Emissions reduction policy. Market and technology changes that drive low-carbon transition	Physical climate hazards and their impacts on operations and assets
Impact pathway	Top-down: Global/Sector emissions pathways affecting company operations	Bottom-up: Facility-level impacts that aggregate upward to company level
Sectoral coverage	Often focused on high-emitting sectors	All sectors with physical assets are potentially affected
Time sensitivity	Highly dependent on emission trajectory chosen	Less variation between scenarios until longer term (post-2050)
Modeling approach	Economic and policy models (IAMs) that optimize economic outcomes	Physical climate models downscaling to relevant geographies
Example of scenarios	NGFS: Current Policies, Net Zero 2050	IPCC: SSP2-4.5, SSP5-8.5
Example of parameters	• Carbon price • Energy mix transition • Policy implementation • Market demand	• Precipitation patterns • Temperature increase • Extreme weather frequency/intensity • Sea level rise

Translate risk & opportunity into financial impacts

When assessing physical and financial costs (e.g. business disruption, damage & loss) of climate change impacts to existing or planned assets, operation, supply and value chain, distribution networks and portfolios, business may use vulnerability and loss & damage functions to quantify the magnitude of potential cost, and to model the materiality of asset financial risk exposure.

Illustrative risk: Building with too much glazing facing towards the south or west become unbearably hot, due to the incident solar radiation plus heatwave



Qualitative vs quantitative analysis

Effective scenario analysis requires a methodical progression from qualitative narratives to quantitative modeling

Qualitative Scenario Narratives

- Develop storylines that challenge conventional thinking
- Identify key drivers, constraints, and logical relationships
- Link global climate scenarios to company-specific implications

Initial Quantification

- Start with directional indicators (increase/decrease)
- Use orders of magnitude estimates
- Identify key variables to model
- Test sensitivity to assumptions

Advanced Modelling & Financial Impact Analysis

- Develop comprehensive quantitative models
- Assess financial implications across business units
- Support strategic decision-making with concrete metrics

Example – Food manufacturer

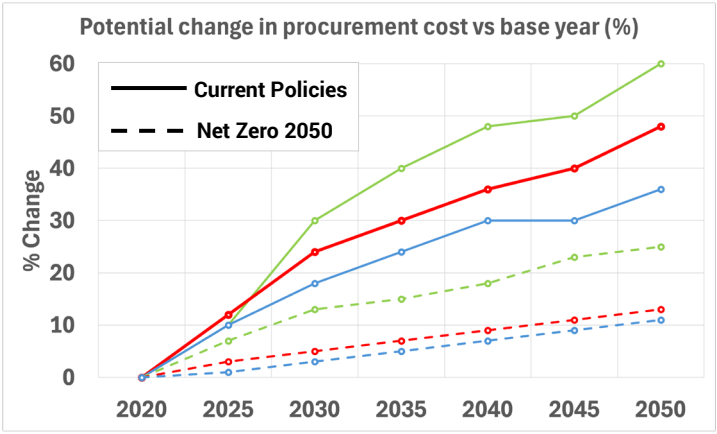
Applied NGFS scenarios to develop narratives showing how yields of core ingredients would change under different climate futures. These narratives qualitatively described how product quality and availability would be affected under each scenario.

Current Policies	Net Zero 2050
Agricultural yields decline gradually as warming continues unchecked, with increasingly frequent extreme weather disrupting harvests. Ingredient quality deteriorates while supply chain disruptions cause significant price volatility.	Agricultural yields stabilize after initial impacts sustainable farming practices become widespread. Ingredients quality remain largely consistent with historical norms while resilient supply chains moderate price volatility.

Estimated how procurement costs would vary based on projected crop productivity changes. Created high/medium/low impact categories for different ingredient types. Tested how sensitive across different climate assumptions.

	Current Policies		Net Zero 2050	
	2030	2050	2030	2050
Ingredient 1	Low	Medium	Low	Low
Ingredient 2	Medium	High	Low	Low
Ingredient 3	Medium	High	Medium	Medium

Built financial model integrating climate data with crop yield projections to quantify the potential financial impacts across different business lines and geographies. Results informed strategic decisions



Four Pillars - Strategy

Example: Scenario analysis

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Illustrative disclosure 2: Scenario analysis – disclosures of a real estate company leveraging qualitative narratives vs quantitative modelling / simulation

Inputs and approach of scenario analysis

Scope of analysis C2 26(b)(i)(7)	
• 50 assets owned and managed in Hong Kong • Including Headquarter and operating offices • 30 assets in China not currently included in the assessment	
Scenarios used C2 26(b)(i)(1)-(5)	
Physical risks	IPCC AR6 SSP2-4.5, SSP5-8.5
Transition risks	NGFS Current Policies, Net Zero 2050
Rationale	• The scenarios developed take reference from IPCC (physical risks) and NGFS (transition risks) • The sources selected provide time frames that align with our strategic planning time horizon and aligns with Paris Agreement • The scenarios chosen will help the company assess the level of exposure from physical and transition risks, and support our future strategic planning (e.g. whether to decommission and relocate assets)
Time horizons C2 26(b)(i)(6)	
Short-term	2030
Medium-term	2050
Long-term	2080
Assumptions C2 26(b)(ii)-(iii)	
• Analysis conducted in 2023, expect asset locations to remain the same over the time horizon • Mitigation measures will remain the same • Absolute zero Scopes 1 and 2 GHG emissions by 2030	

Quantitative modelling / simulation

Physical risk C2 31	**Relevance and assumptions**	**IPCC AR6 SSP2-4.5** *Percentage of value at risk(%) (Asset value at risk (HKD))*			**IPCC AR6 SSP5-8.5** *Percentage of value at risk(%) (Asset value at risk (HKD))*		
		2030	2050	2080	2030	2050	2080
Extreme cold	We quantified how extreme weather events can impact our asset locations and therefore the potential asset value at risk.	<1% (<0.5m)	<1% (<0.5m)	<1% (<0.5m)	<1% (<0.5m)	<1% (<0.5m)	2-5% (0.5-3m)
Coastal flooding		<1% (<0.5m)	<1% (<0.5m)	2-5% (0.5-3m)	<1% (<0.5m)	2-5% (0.5-3m)	6-10% (3-5m)
Tropical cyclone		2-5% (0.5-3m)	2-5% (0.5-3m)	6-10% (3-5m)	2-5% (0.5-3m)	6-10% (3-5m)	10-15% (5-10m)

Transition risk C2 30	**Relevance and assumptions**	**NGFS Net Zero 2050** *Percentage of total cost (%) (Potential financial effect(HKD))*			**NGFS Current Policies** *Percentage of total cost (%) (Potential financial effect(HKD))*		
		2030	2050	2080	2030	2050	2080
Increasing cost from carbon pricing	We quantified how carbon price (e.g. carbon tax) for our Scopes 1 & 2 emissions might impact our construction costs.	<1% (<0.5m)	6-10% (3-5m)	10-15% (5-10m)	<1% (<0.5m)	<1% (<0.5m)	<1% (<0.5m)
Increasing electricity costs	We quantified how the electricity price is expected to change and how this may impact our electricity costs if our consumption remains the same.	2-5% (0.5-3m)	2-5% (0.5-3m)	6-10% (3-5m)	2-5% (0.5-3m)	2-5% (0.5-3m)	6-10% (3-5m)
Increasing cost to upgrade assets to "green"	We quantified the potential costs to upgrading assets anticipating increasingly stringent building regulations.	2-5% (0.5-3m)	2-5% (0.5-3m)	6-10% (3-5m)	2-5% (0.5-3m)	6-10% (3-5m)	6-10% (3-5m)

Lower risk Medium risk Higher risk

Case Study – CLP Power Conducted Three Scenario Analysis, Namely High-, Low- and Deferred Transition Scenario

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Strategy

Reference Number	Disclosure description
IFRS S2- 22(b)	How and when the climate-related scenario analysis was carried out.

High-emissions scenario:
- Physical risks are higher under this scenario and it is used as the "worst case" for physical risks in our assessment.

Low-emissions scenario
- Transition risks are higher under this scenario, as regulatory changes, technology advancement and behavioural changes are required.

Deferred transition scenario
- GHG accumulates to have severe climate-related physical effects.

To align with market practice, companies can
- Conduct relevant scenario analyses to understand risks and opportunities and test the resilience of the climate strategy
- Draw references from recognized scenarios to ensure the accuracy of the results

Selected scenarios

The three scenarios that we use to help us assess climate-related risks and opportunities are described in the table below:

CLP 中電

Scenarios and their temperature alignment	Referenced scenarios for physical risks	Referenced scenarios for transition risks and opportunities
Sources of scenarios	**Shared Socioeconomic Pathways (SSP) trajectories under IPCC's AR6 (2021):** The SSPs reflect potential changes in net CO_2 emissions, by combining qualitative storylines of societal features and quantified measures of development alongside climate data to create plausible scenarios for how quickly humans can curb emissions.	**Network for Greening the Financial System (NGFS) (2023):** These are climate scenarios for central banks and supervisors, as well as financial institutions, to use in stress testing and scenario analysis exercises. The NGFS scenarios are chosen for the assessment of transition risks for their extensive analysis on policy, economic and technology trends. Scenarios from the **IEA** and **AEMO** are also referenced, where relevant.
High-emissions scenario – with temperature rise of >4°C by 2100	**Fossil-fuelled Development (SSP5-8.5):** This scenario represents the high end of the range of future pathways with the highest economic growth and highest anthropogenic radiative forcing. It points to a continued rise in carbon emissions in the 21st century, which would lead to global warming of 4.4°C. **This is considered as a "stress test" scenario of climate-related physical risks.**	**NGFS Current policies:** This scenario assumes that only current implemented policies are preserved and no further climate action is taken, leading to global warming of approximately 2.8°C by 2100. The temperature rise is already the highest among all NGFS scenarios. We also draw reference from the **IEA STEPS scenario (2023)**, to supplement the NGFS scenario on their carbon price assessment. Carbon prices are restricted to the regions with existing or scheduled initiatives.
Low-emissions scenario – an immediate, strong transition that limits temperature rise to 1.5°C by 2100	**Sustainability (SSP1-2.6):** This scenario belongs to the family of radiative forcing scenarios for the lowest anthropogenic carbon emissions. Although SSP1-1.9 is more aligned with 1.5°C, it has less data available to support our analysis. SSP1-2.6 projects instant global warming of 1.3–2.4°C by 2100. This pathway is considered to be a transitive scenario towards the 2°C target. It reflects a scenario where global carbon emissions peak between 2020 and 2025 and hits net zero by 2075.	**NGFS Net Zero 2050:** This scenario foresees global carbon emissions to be at net zero in 2050. Furthermore, countries with a clear commitment to a specific net-zero policy target before February 2023 are assumed to meet this target. This scenario assumes steeper increases in carbon price programmes to reach global net-zero carbon emissions around 2050. This is supplemented with the **IEA Net Zero Emissions by 2050 scenario (below 1.5°C scenario) (2023)**, where carbon prices are in place in all regions.
Deferred transition – a bespoke scenario that is aligned better with the decarbonisation pathway in CLP's key markets, and is considered more "probable".	**Fossil-fuelled Development (SSP5-8.5)**, following the High-emissions scenario.	**NGFS Delayed transition:** Annual emissions do not decrease until 2030. Strong policies are needed to limit global warming to below 2°C. Negative emissions are limited. This is in line with China's carbon neutrality commitment. **AEMO's Step change scenario** was used to inform our assessment for EnergyAustralia. It assumes a rapid and significant investment in consumer energy resource, strong transport electrification, as well as electrification of industries. It showcases a scale of energy transformation supporting Australia's contribution to limiting global warming to below 2°C compared with pre-industrial level.

Source: CLP Climate Vision 2050

Case Study – Swire Pacific Highlights the Qualitative Financial Impacts Corresponding to the Acute and Chronic Risks

Strategy

Reference Number	Disclosure description
IFRS S2- 15(b)	The anticipated effects of climate-related risks and opportunities on the entity's financial position, financial performance and cash flows over the short, medium and long term, taking into consideration how climate-related risks and opportunities are included in the entity's financial planning (anticipated financial effects)

Risk category	Risk	Financial implications	Potential impact rating[1]				Mitigation strategies
			Short-Medium term (2030)		Long-term (2050)		
			Low carbon	High carbon	Low carbon	High carbon	
Acute	– Coastal and fluvial flooding	– More spending to improve the adaptive capacity of our assets and to mitigate adverse effects	•	•	•	•	– We have identified short and medium-term mitigation measures for individual buildings, including: – Upgrading flood protection measures and alert systems – Glass façade inspections – Smart Monitoring Systems
	– Typhoons		•	•	•	•	
Chronic	– Extreme temperatures and heat stress	– Lower productivity due to extreme heat – More spending on cooling	•	•	•	•	– Chiller efficiency improvements – Energy Efficiency Policy – Health & Safety Policy

Opportunity category	Opportunity	Financial implications	Time horizon	Strategy
Businesses where we have operational control				
Resource efficiency	• Use of more efficient production and distribution processes	• Lower operating costs because of higher energy efficiency	• Short – Medium-term	• Swire Properties has an Energy Use Intensity target for its operations and provides free energy audits for tenants • Swire Coca-Cola has both Water and Energy Use Intensity targets to drive operational efficiencies
Products and services	• Increased market demand for climate-resilient, green energy efficient buildings	• Increased revenue due to potentially higher demand of green buildings • Increased revenue due to shifts in market preferences	• Medium – Long-term	• Sustainable Building Design Policy • In 2023, 100% of wholly owned new projects under development achieved green building certification ratings

SWIRE PACIFIC

Source: Swire 2023 Sustainability report

To align with market practice, companies can

- **Highlight the qualitative financial implications and whether they are short, medium or long term for the climate-related risks and opportunities that may impact the company**
- **Provide mitigation strategies with reference to company's policies and targets to address the climate-related risks and opportunities**

Case Study – MTR Disclosed Both the Current and Anticipated Measures to Address Climate-related Risks

Strategy

Reference Number	Disclosure description
IFRS S2- 14(a)(i)	Current and anticipated changes to the entity's business model, including its resource allocation, to address climate-related risks and opportunities.

Among Scope 1 and 2 emissions, purchased energy is the largest source of our carbon emissions

Current measures:
- Implementation of carbon reduction initiatives within railway network and shopping malls
- Improvement in grid emission factors compared to 2019
- Utilization of updated and refined emission factors for more accurate Scope 3 emissions assessment

Anticipated measures:
- Collaboration with HKUST to develop quantification software for tracking and benchmarking embodied carbon in new railway projects
- Exploring blockchain technology for carbon footprint reporting in railway construction projects
- Reviewing and updating contract specifications to promote low-carbon concrete in new railway projects by 2024

To align with market practices, companies can
- Disclose the current and anticipated strategies the company has undergone or planned to implement to achieve climate-related goals
- Set concrete timeline for anticipated measures

Source: MTR 2023 Sustainability report

Case Study – Wharf REIC Disclosed Qualitatively the Acute and Chronic Physical Risks

About Wharf REIC

- **Wharf Real Estate Investment Company Limited (Wharf REIC) is one of the largest real estate companies in Hong Kong**
- **Its 2022 Sustainability Report has been prepared in accordance with HKEX ESG Reporting Guide, GRI Standards with reference to SASB real estate industry-specific sustainability accounting standards and the recommendations of TCFD Framework**

	Risk Type	Risk	Impact
Investment properties	Physical (Acute)	• More frequent flooding events caused or amplified by heavy rain and sea level rise, damaging infrastructure, and facilities	1. Temporary closure of shopping malls and office buildings 2. Tenant complaints and compensation requests due to impact on tenants' operation and costs 3. Maintenance cost for damage repair of facilities, as well as extra manpower required for monitoring 4. Higher operational cost for charge of utilities and cooling equipment 5. Higher energy consumption 6. Reputational damage and property devaluation
	Physical (Chronic)	• Rise in average temperature and decrease in water resource	
Leisure and hospitality	Physical (Acute)	• Increased severity and frequency of extreme weather events and storm surges causing supply chain disruption, demand implication and damage to infrastructure and facilities	1. Higher operational costs to fix damaged facilities 2. Drop in business demand due to business disruption and reputational loss
Transportation	Physical (Acute)	• Increased extreme heat events potentially leading to heat strokes of workers	1. Increased risk of work injury 2. Increased turnover rate of employees

To align with market practice, real estate companies can

- **Identify climate-related physical risks from the perspectives of investment properties, leisure and hospitality and transportation as a starting point for their own risk mapping**
- **Take note of the local context in terms of the local context, i.e. Hong Kong companies may be more vulnerable to extreme heat and corresponding risks**

Sources: Wharf REIC 2022 Sustainability report

Case Study – Wharf REIC Conducted Scenario Analysis Using Two Scenarios

About Wharf REIC

- **Wharf Real Estate Investment Company Limited (Wharf REIC) is one of the largest real estate companies in Hong Kong**
- **Its 2022 Sustainability Report has been prepared in accordance with HKEX ESG Reporting Guide, GRI Standards with reference to SASB real estate industry-specific sustainability accounting standards and the recommendations of TCFD Framework**

Scenario Analysis Modelling

Name of Scenario	4° Warmer Scenario	1.5-2° Warmer Scenario[7]
Time frame	1. Shorter time frame until 2030 and 2. Long-term until 2100	
Referenced scenario	IPCC RCP 8.5	IPCC RCP 4.5 and RCP 2.6
Assumptions	• No or little change of fuel mix of electricity generation • Little policy or regulatory change that will not increase the cost of GHG emissions • Higher cost of asset maintenance and more business disruption due to more frequent extreme weather events • Higher cost to prevent flooding damaging assets • Food security issue	• Electricity consumption to be provided by renewable energy[8] • Vigorous policy or regulatory change will increase the cost of GHG emissions, for example, carbon tax and carbon trade • Significantly higher cost of retrofitting or renovation to meet regulatory change of building emissions standard • Higher food costs
Operation	• Investment Properties • Leisure and Hospitality • Transportation	• Investment Properties • Leisure and Hospitality • Transportation

To align with market practice, real estate companies can

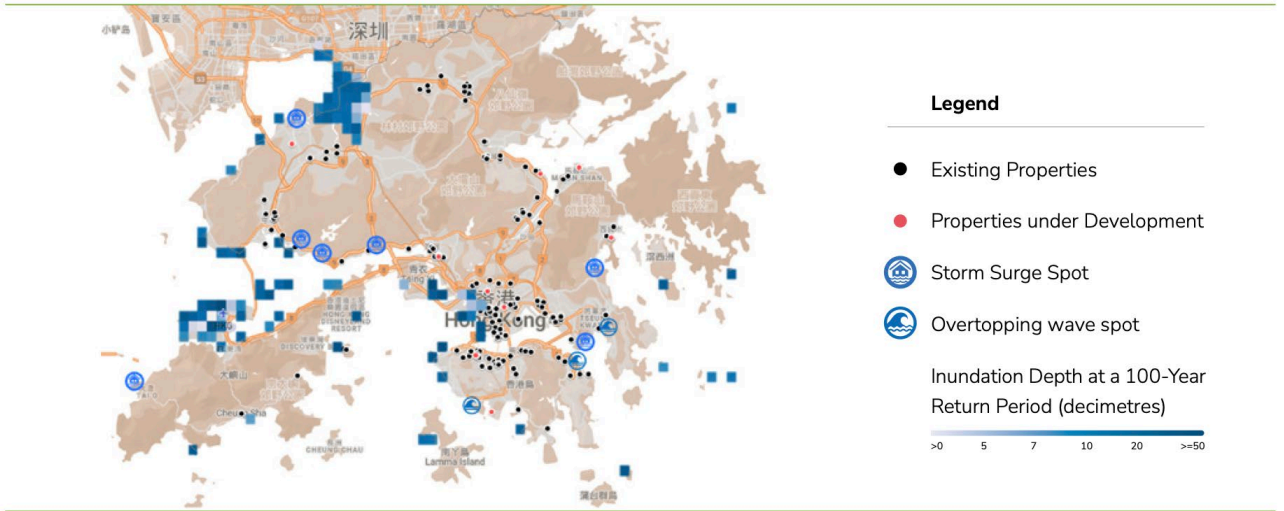
- **Identify climate-related physical risks from the perspectives of investment properties, leisure and hospitality and transportation as a starting point for their own risk mapping**
- **Take note of the local context in terms of the local context, i.e. Hong Kong companies may be more vulnerable to extreme heat and corresponding risks**

Sources: Wharf REIC 2022 Sustainability report

Case Study – Sino Group Created a Physical Risk Mapping to Illustrate Quantitatively the Regions at Risks

About Sino Group
- **Sino Group is one of the largest real estate companies in Hong Kong**
- **Its 2023 Climate Action Report has been prepared in accordance with TCFD Framework**

Mapping Areas to be Inundated by Coastal Flooding due to Storm Surge (at a 100-year return period) in 2050



Scenario Analysis Modelling

Climate model and data utilised
- **Reference to climate model developed by WRI**
- **Historical data published by the Drainage Services Department**

Method
- **Mapped the portfolio with storm surge spots and projected coastal flooding induction in 2050 under the current policies scenario.**

Significance
- **Identify vulnerable properties and estimate asset value at risk brought by coastal flooding due to storm surge.**
- **Important for Sino Land's contingency and climate resilience planning**

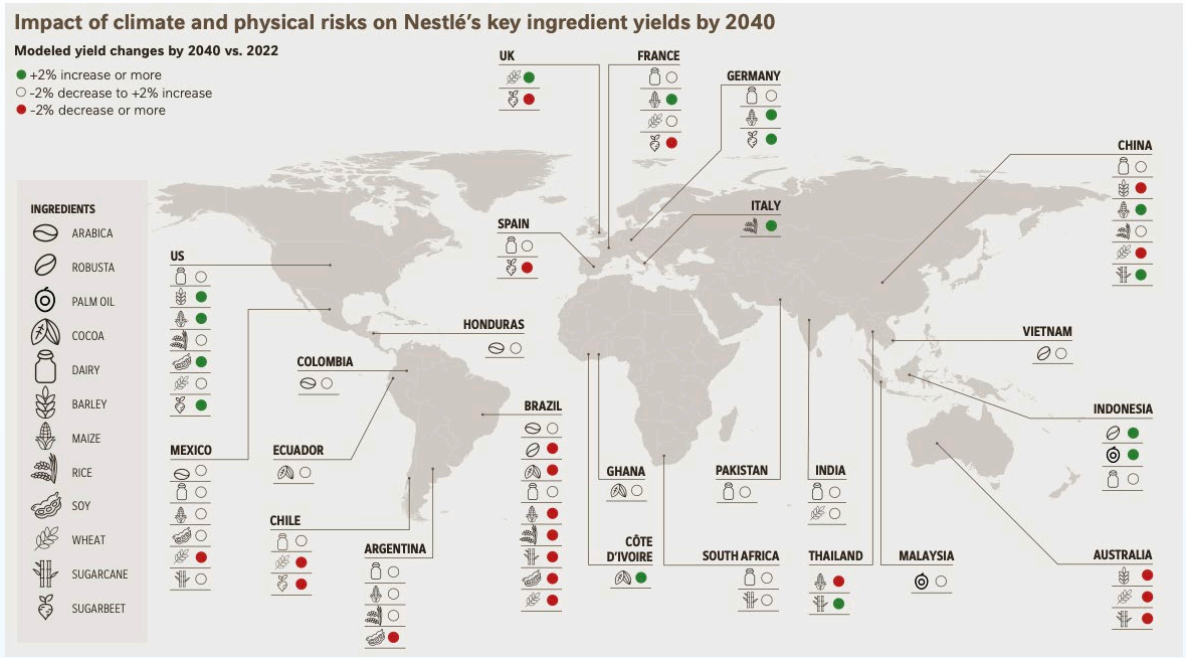
To align with market practice, real estate companies can
- **Identify climate-related physical risks from the perspectives of investment properties, leisure and hospitality and transportation as a starting point for their own risk mapping**
- **Take note of the local context in terms of the local context, i.e. Hong Kong companies may be more vulnerable to extreme heat and corresponding risks**

Sources: Sino Group 2023 Sustainability report

Case Study – Nestle Conducted a Risk Mapping Process to Illustrate the Effects of Climate Change on its Key Ingredients Around the World

About Nestle

- **Nestle is the largest food and beverage company in the world, founded in 1866 and has diverse product portfolio including baby food, bottled water, cereals, coffee, etc.**
- **Its 2023 Sustainability Report has been prepared in accordance with GRI Standards with reference to SASB processed-foods industry-specific standards**



Physical Risk Modelling

Time horizon	2040
Warming scenario	Intermediate (+2 to 3 °C by 2100)
Footprint scope*	12 key raw materials**
Modeling simulations	Assumed current footprint remains static until 2040
Modeling metric	Projected percentage change in crop yields in 2040 compared to 2022 for selected raw materials

* Scope includes only Nestlé's current sourcing footprint.

** The raw materials are arabica coffee, robusta coffee, palm oil, cocoa, dairy, barley, maize, rice, soy, wheat, sugarcane and sugar beet.

To align with market practice, multinational food and beverage companies can

- **Conduct geographical risk mapping to enhance transparency and strategic planning, thereby increasing stakeholder engagement and improving compliance with climate-related regulation standards**

Case Study – HSBC Disclosed Quantitatively the Transition Risks of All Four Categories

About HSBC
- **HSBC Holdings plc is a British multinational banking and financial services company. It was established in 1865 to finance trade between Europe and Asia**
- **Its 2023 Annual Report has been prepared in accordance with TCFD standards**

Climate risk – risk drivers		Details	Potential impacts	Time horizons
Transition	**Policy and legal**	Mandates on, and regulation of products and services and/or policy support for low-carbon alternatives. Litigation from parties who have suffered loss and damage from climate impacts	– Decreased household income and wealth – Increased costs of legal and compliance – Increased public scrutiny – Decreased profitability – Lower asset performance	Short term Medium term Long term
	Technology	Replacement of existing products with lower emissions options		
	End-demand (market)	Changing consumer demand from individuals and corporates		
	Reputational	Increased scrutiny following a change in stakeholder perceptions of climate-related action or inaction		

To align with market practice, financial service companies can
- **Draw references from HSBC's quantitative transition risks from the four aspects of climate-related transition risks as a starting point for their own risk mapping**

Sources: HSBC 2023 Annual Report

Four Pillars - Strategy

Case Study – Nestle Disclosed the Cash Flow Impacts for Each Transition Risk Categories

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About Nestle

- **Nestle is the largest food and beverage company in the world, founded in 1866 and has diverse product portfolio including baby food, bottled water, cereals, coffee, etc.**
- **Its 2023 Sustainability Report has been prepared in accordance with GRI Standards with reference to SASB processed-foods industry-specific standards**

Cash flow impacts

Risk category	Value chain	Impacts assuming no mitigation	Intermediate emissions +2.0°C – +3.0°C	Low emissions +1.5°C
Policy	**Operations Raw materials**	– Increase in raw materials costs. – Restrictions to land use. – Increase in energy costs.	Med	High
	Packaging	– Increase in costs for packaging materials. – Increase in cost of recycled packaging materials due to constraint in supplies, e.g. recycled PET.		
Market	**Brands and portfolio**	– Loss of revenue and/or missed growth opportunities.	Low	Med
Technology	**Operations**	– Asset write-downs, investments in low-emission technology to meet market regulation.	Low	Low

Transition Risks Modelling

Time horizon		10-year horizon		
Scenarios*	Emissions trajectory	High	Intermediate	Low
	Temperature increase by 2100	+4.0°C to +5.0°C	+2.0°C to +3.0°C	+1.5°C
	Global action against climate change	Few or no steps taken to limit emissions	Reliance on existing/planned policies (not commitments)	Immediate and coordinated action to curb emissions
Business scope		Upstream, direct operations and downstream.		
Modeling simulations		*Net zero* – Nestlé's 20% absolute emissions decrease by 2025 and 50% by 2030.		
Modeling metric		Directional cumulative 10-year discounted cash flow (DCF) impacts on net zero business model under the three different scenarios.		
Risk categories		**Policy risks** Actions to limit climate emissions include carbon tax, regulations linked to land and water use, restrictions and/or bans on specific materials, enhanced emissions-reporting obligations, etc. The scenario analysis modeled carbon tax as a proxy for policy risks. **Technology risks** Costs related to decarbonization of the value chain, including replacement and substitution of emission-intensive assets, materials and services. The scenario analysis modeled the share of energy from renewables as a proxy for technology risks. **Market risks** Shifts in supply and demand as consumers switch to more sustainable products, or shun specific categories, brands or materials due to environmental credentials. The scenario analysis modeled the proportion of consumers adopting more sustainable choices as a proxy for market risks.		

Sources: Nestle 2023 Sustainability Report

To align with Nestle, food and beverage companies can

- **Identify climate-related transition risks and corresponding impacts from value chain to assess the vulnerabilities in its operation and the cash flow impacts with current mitigation strategies to help prioritize risk management**
- **Disclose the process of transition risk modelling to enhance transparency**

Case Study – Unilever Disclosed Quantitatively the Potential Financial Impacts for its Transition Risks

About Unilever
- **Unilever is a British multinational consumer goods company founded in 1929. It produces a wide range of products including foods, beverages, cleaning agents, etc.**
- **Its 2023 Annual Report has been prepared in accordance with TCFD standards**

Financial quantification of assessed risks and opportunities

Regulatory and Market Risks	Key assumptions	Sensitivity	Potential financial impact on profit in the year (€bn)[a] 2030	2039	2050
1. Carbon tax and voluntary carbon removal costs We quantified how high prices from carbon regulations and voluntary removal markets for our upstream Scope 3 emissions might impact our raw and packaging materials costs, our distribution costs and the neutralisation of our residual emissions post-2039.	▪ Absolute zero Scope 1 and 2 emissions by 2030 ▪ Scope 3 emissions taxes exclude indirect consumer use emissions ▪ 90% reduction of emissions by 2050 from 2021 baseline ▪ Carbon price would reach 250 USD/ tonne by 2050, rising more aggressively in early years in a proactive scenario ▪ The price of carbon removals would reach 88 USD/ tonne by 2050 ▪ Removal of 100% emissions on and after 2039 ▪ 100% of emissions on or after 2039 exposed to both removal costs and carbon taxes	p	-5.4	-10.4	-1.8
		r	-3.5	-9.3	-1.8

These assessments show the gross impact before any action which Unilever might take to respond.

The ranges reflect the different results from the reactive (r) and proactive (p) pathways assessed

To align with market practice, retail companies can
- **Conduct high-level quantitative assessments for the physical and transition risks to quantify the risks for internal and external references and decision-making**

Sources: Unilever 2023 Sustainability Report

Discussion questions

- **Does your company disclose climate-related risks or opportunities?**
- **Has your organization considered the resilience of its strategy under different climate-related scenarios?**

Four Pillars – Risk Management

Four Pillars – Risk Management

IFRS S2 Disclosure Overview

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Objective

✓ **Require an entity to disclose information about its sustainability-related and climate-related risks and opportunities that that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity**

Four ISSB pillars:

Governance	Strategy	Risk Management	Metrics and Targets
❑ Understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.	❑ Understand an entity's strategy for managing climate-related risks and opportunities.	❑ Understand an entity's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process.	❑ Understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

IFRS S2 Disclosure Overview: Risk Management

Risk Management

- Understand an entity's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process.

S2 Disclosure Area	Disclosure Items	
Risk Management	Scenario Analysis	Conducting and using climate-related scenario analysis.
	Risk Identification and Prioritization	How the entity identifies, assesses, and prioritizes climate-related risks.
	Monitoring Processes	Processes for monitoring and responding to climate-related risks.
	Integration with Risk Management	Integrating climate-related risks into overall risk management.
	Process Adjustments	Changes in processes compared to previous reporting periods.

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

Developing a response

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Scenario Analysis

How could climate change affect my company?

What are the critical uncertainties we need to prepare for?

Are there gaps or weakness in our current strategy, business model, and/or operations?

Outcomes:

- ✓ Test resilience of business model and strategy under different climate scenarios
- ✓ Identify potential risks and opportunities that could be better managed or harnessed

Risk Management & Strategy Setting

What are the actions needed to address climate-related risks and opportunities?

When, and how much resource will be dedicated to these actions?

Outcomes:

- ✓ The climate-related risks and opportunities identified during the scenario analysis process will likely require changes to the core strategy, governance, risk management practices and systems, and metrics & targets

Four Pillars – Risk Management

Integrating result into risk management and business planning – an illustrative example

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Our route to net-zero

Decarbonization → Net-zero

Energy efficiency
Leads to immediate impact on energy consumption and carbon emissions with the goal of 100% renewable energy

Renewables
Sourcing 100% renewable electricity is key to decarbonizing while growing and supporting the expansion of renewable market

Travel
Balancing an approach to travel with delivering remotely, maintaining operational effectiveness while reducing emissions

Supply chain
As our largest area of emissions, we need to work with suppliers who share our vision on climate change and decarbonization

Circularity
Embedding circularity principles, to minimize resource use and waste throughout the procurement lifecycle, reduces our emissions

Nature positive
Achieving net-zero requires us to both understand and reduce our impacts and dependencies on nature, and act to restore and protect it

Carbon removal
High quality carbon removals support net-zero through removing emissions we cannot address through emissions reduction activities

Internal carbon price

2030 decarbonization levers

2050 decarbonization levers

Approaches and examples

Practical application 10: Common risk management approaches and examples[44]

Approach	Definition	Examples
Risk control	Implement measures to control exposures to climate-related risks/ chances of occurrences	An issuer in the real estate sector incorporates climate considerations during its due diligence process to identify climate-related risks and opportunities in potential asset acquisitions.
Risk transfer	Shift risk from the company to another party	An issuer in the real estate sector purchases insurance to cover potential risks from river flooding, thereby transferring some of the potential financial impact to the insurance company.
Risk acceptance	Take no action to change severity of the risk	An issuer in the manufacturing sector accepts potential climate-related risk in supply chain as within its risk appetite. However, the issuer will closely monitor the situation to ensure that the risk level continues to remain stable.
Risk mitigation	Implement measures to minimise the impact of climate-related risks	An issuer in the banking sector reduces its financial exposure to clients who do not fulfil requirements in their climate risk policy.

Risk management process and integration of climate-related risks

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Illustrative disclosure 5: Risk management process and integration of climate-related risks

Climate-related risks are addressed as part of our integrated risk management model, which outlines guidelines for risk management to ensure key corporate risks are properly identified and adequately assessed, managed and monitored. C2 27(c) The model presents findings to our management on a quarterly basis. C2 27(a)(v)

To identify and assess the climate-related risks, our model includes pre-determined risk appetite limits which take into account the likelihood and impact of risks. Risks that exceed limits based on analysis leveraging in-house tools such as natural hazard models will be prioritised and reported to our management through the quarterly updates. C2 27(a)(i) C2 27(a)(iii)

We identified six physical and transition risks material to our business with the use of a climate-related scenario analysis. C2 27(a)(ii) Our most material climate-related risks typically arise from our asset exposure to locations of high climate-related physical risks, including assets locating in coastal areas subject to coastal flooding. Under our risk management framework, our material risk category of Operational Risk incorporates the risks associated with such climate-related physical risks and ensure climate change adaptation or mitigation policies are in place. C2 27(a)(iv)

Our integrated risk management model also ensures periodic risk assessment and monitoring cycles are in place to understand the relevant risks and assess the needs to refresh our risk appetite. C2 27(a)(v) As a next step, we will begin identifying and assessing climate-related opportunities and disclose when the analysis is completed. C2 27(b)

Commentaries

C2 27(a)(i)	Described the use of in-house tools to inform the identification and assessment climate-related risks.
C2 27(a)(ii)	Disclosed the use of scenario analysis to inform the identification of 6 relevant climate-related risks.
C2 27(a)(iii)	Explained that risks are assessed based on a pre-determined risk appetite limits leveraging other in-house tools.
C2 27(a)(iv)	Explained that climate-related risks are treated as a cross-cutting risk that impacts its existing operational risks, and describes that risk mitigation measures are in place to manage such risks.
C2 27(a)(v)	Disclosed that the integrated risk management model findings are reviewed by the management quarterly and the model methodology is periodically reviewed to assess the needs to refresh.
C2 27(a)(vi)	No disclosures are provided as no changes were made to the processes used.
C2 27(b)	Explained that climate-related opportunities are not currently identified or assessed, but will be analysed as a next step.
C2 27(c)	Described its integrated risk management model and confirmed that climate-related risks are integrated into the overall risk management process as a sub-category of the issuer's operational risk category.

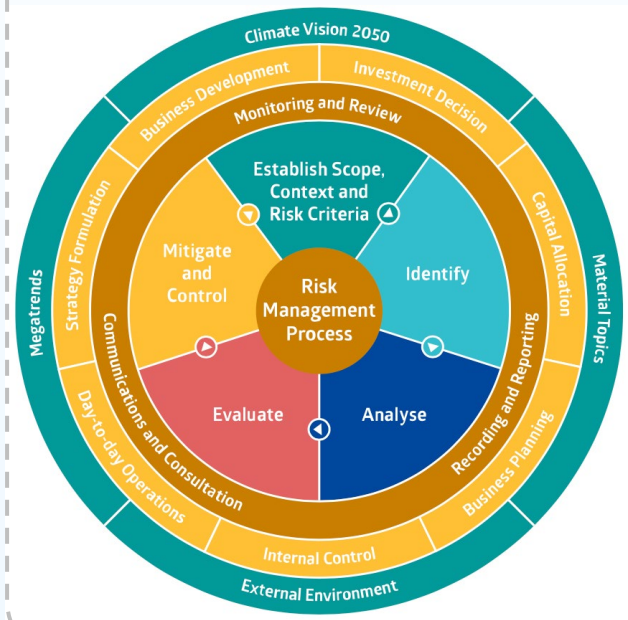
Four Pillars – Risk Management

Case Study – CLP Established a Clear Risk Management Process and Materiality Assessment Process to Provide Guidelines for its strategies

Risk Management

Reference Number	Disclosure description
IFRS S2- 25(a)	The processes and related policies the entity uses to identify, assess, prioritise and monitor climate-related risks

CLP's Risk Management Process



Materiality Assessment Process

IFRS S1 Standard	For understanding financial effects
GRI 3 Standards	For understanding sustainable development
WBCSD & COSO	For integrating sustainability into corporate strategy

Establish context	Strategy and reporting review, megatrend analysis, SWOT interviews
Identify risks, opportunities, impacts	Identify potential material topics, align with financial effects and stakeholder impacts
Define sustainability strategies and disclosure topics / metrics	Workshop and final report to confirm material topics, identify disclosure topics / metrics, and explore sustainability strategies

To align with market practice, companies can

- **Establish a clear risk management process with strategies targeting both internal and external stakeholders.**
- **Incorporate the climate strategy into the risk management process**
- **Identify material topics using clear materiality assessment processes, referencing globally recognized global standards**

Source: CLP 2023 Sustainability Report

Four Pillars – Risk Management

Case Study – Swire Pacific Established a Clear Three Line of Defence and Allocated Corresponding Responsibilities to Each Level of Management

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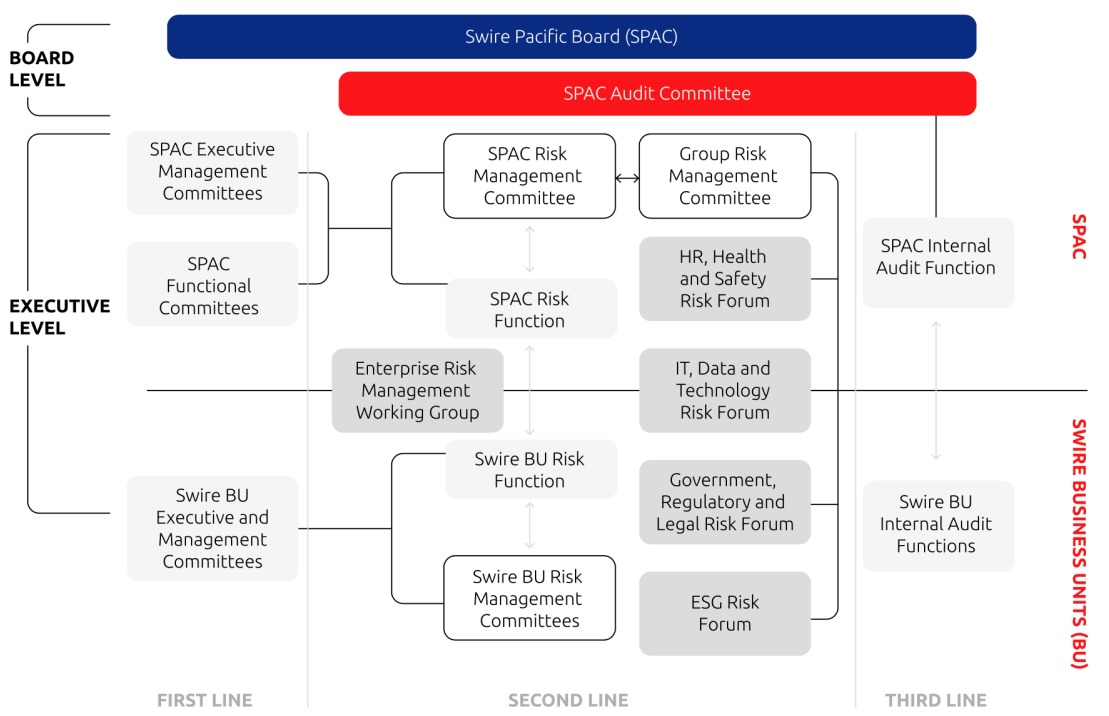
SWIRE PACIFIC

Risk Management

Reference Number	Disclosure description
IFRS S2- 25(a)	The processes and related policies the entity uses to identify, assess, prioritise and monitor climate-related risks

Risk Governance Structure



The First Line

- **the Board is supported by the management of each division and functional committees. They are responsible for identifying, analysing, and managing the risks to us associated with achieving our business objectives, including those relating to sustainability**

The Second Line

- Support the First Line and provide assurance to the Board that risk is being effectively managed

The Third Line

- The Group's Internal Audit provides independent and objective assurance that the risk management processes are implemented properly and operating effectively and that the risks which could impact our ability to achieve our business objectives are being properly identified, assessed, and mitigated

To align with market practice, companies can

- **Develop a clear risk governance structure, as in Swire's case, dividing the governance structure into three lines of defence to ensure the effective reporting, management and assurance of the risk management process**

Source: Swire 2023 Sustainability Report

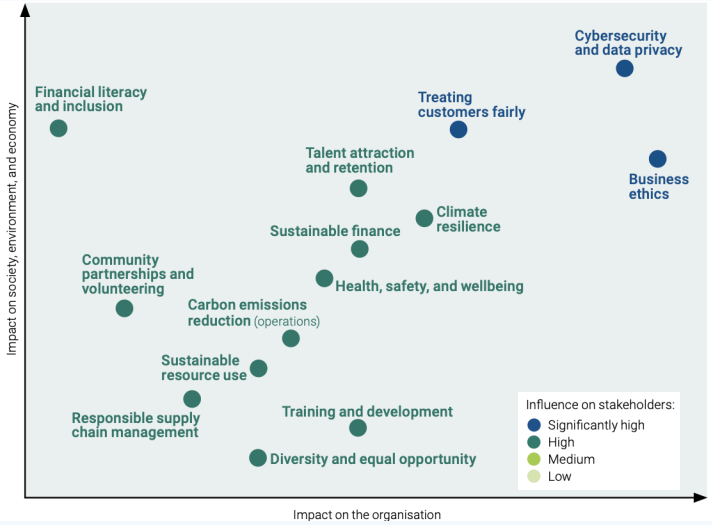
Case Study – BEA Conducted a Materiality Matrix to Determine the Priority of the Material Topics and Influence on Stakeholders

Risk Management

Reference Number	Disclosure description
IFRS S2- 25(c)	(c) the extent to which, and how, the processes for identifying, assessing, prioritising and monitoring climate-related risks and opportunities are integrated into and inform the entity's overall risk management process

BEA東亞銀行

Materiality Matrix 2023



Source: BEA 2023 Sustainability Report

Materiality Assessment Process

Identification
- Topic identification through research into global, regional, and industry trends; the requirements and expectations of our regulators; and ESG topics relevant to the markets in which we operate
- Stakeholder mapping based on the groups we interact with, who are influenced by our actions and who can affect the operations of the Bank

Validation
- The ESG Steering Committee reviews the material topics, confirms those that are most material, and provides direction on which emerging topics should be monitored. The results are then presented to and approved by the ESG Committee

Prioritisation
- Engagement with internal and external stakeholders through daily operations and targeted outreach to determine the impacts of our operations on people, the economy, and the environment, and the likelihood that ESG topics may impact our Bank
- Development of a materiality matrix and determination of a threshold for materiality

To align with market practice, companies can
- Conduct materiality assessment to identify the extent of the impacts on stakeholders and map the results on the materiality matrix
- Engage both internal and external stakeholder to ensure transparency and accuracy

Climate-related Opportunities

Climate-related Opportunities: CLP & Sino Group

Climate-related Opportunities

External
External benefit might achieve when enterprises adopting adaptation approach to climate change

Resilience
Participation in renewable energy programs and adoption of energy-efficiency measures, this could create a better reputation to attract investors

Markets
Could make use of public-sector incentives and access to new market, which enlarge the number of potential clients

Internal
Internal benefit might achieve when enterprises adopting adaptation approach to climate change

Energy Source
Adopting low-emission sources of energy could be a supportive policy incentives and opportunities to participate in carbon market

Resources efficiency
Reduce the consumption of resources and increase the efficiency of use of resources, in which will lower the operation cost as well

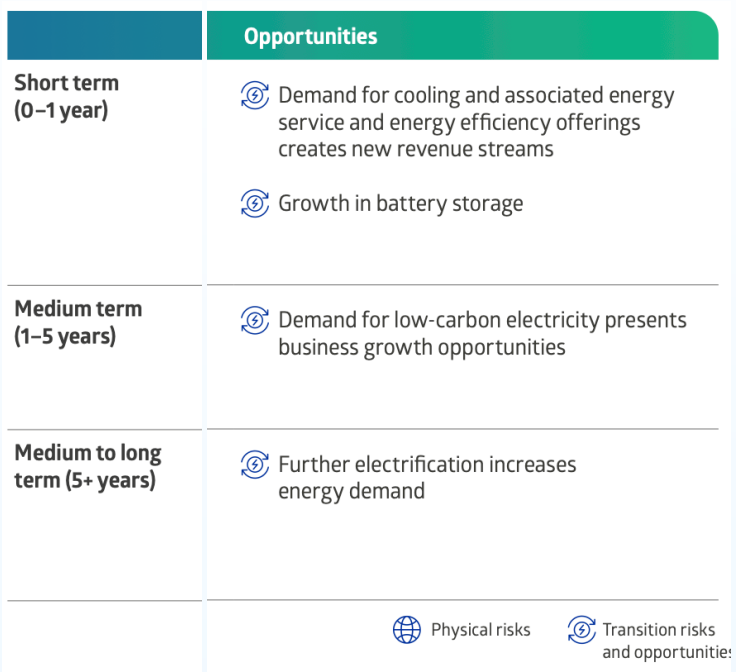
Products & Services
Developing and expanding low emission properties and services could help achieve a low-carbon business model for sustainable development

Climate-related Opportunities

Case Study – CLP Power Disclosed Qualitatively the Market Opportunities arose in Short, Medium and Medium to Long Terms

About CLP

- **Founded in 1901, it provides electricity to more than 80% of Hong Kong's population and one of the largest investor-owned power businesses in the Asia-Pacific region**
- **Its 2023 Sustainability Report has been prepared in accordance with ISFR S1 and S2, GRI Standards, HKEX ESG Reporting Guide with reference to SASB electric utilities and power generation industry-specific standards**



Market

Market

Market

To align with market practice, energy companies can

- **Recognize the growing awareness of sustainability and environmental protection as a new market opportunity**
- **Draw reference from CLP's identified opportunities as a starting point for their own opportunity mapping**

Sources: CLP 2023 Sustainability Report

Climate-related Opportunities

Case Study – Link REIT Identified the Climate-related Opportunities in terms of Resilience and the Potential Financial Impacts

About Link REIT
- **Link REIT is one of the largest real estate companies in Hong Kong**
- **Its 2023 Climate Action Report has been prepared in accordance with HKEX ESG Reporting Guide, GRI Content Index and ISSB Content Index**

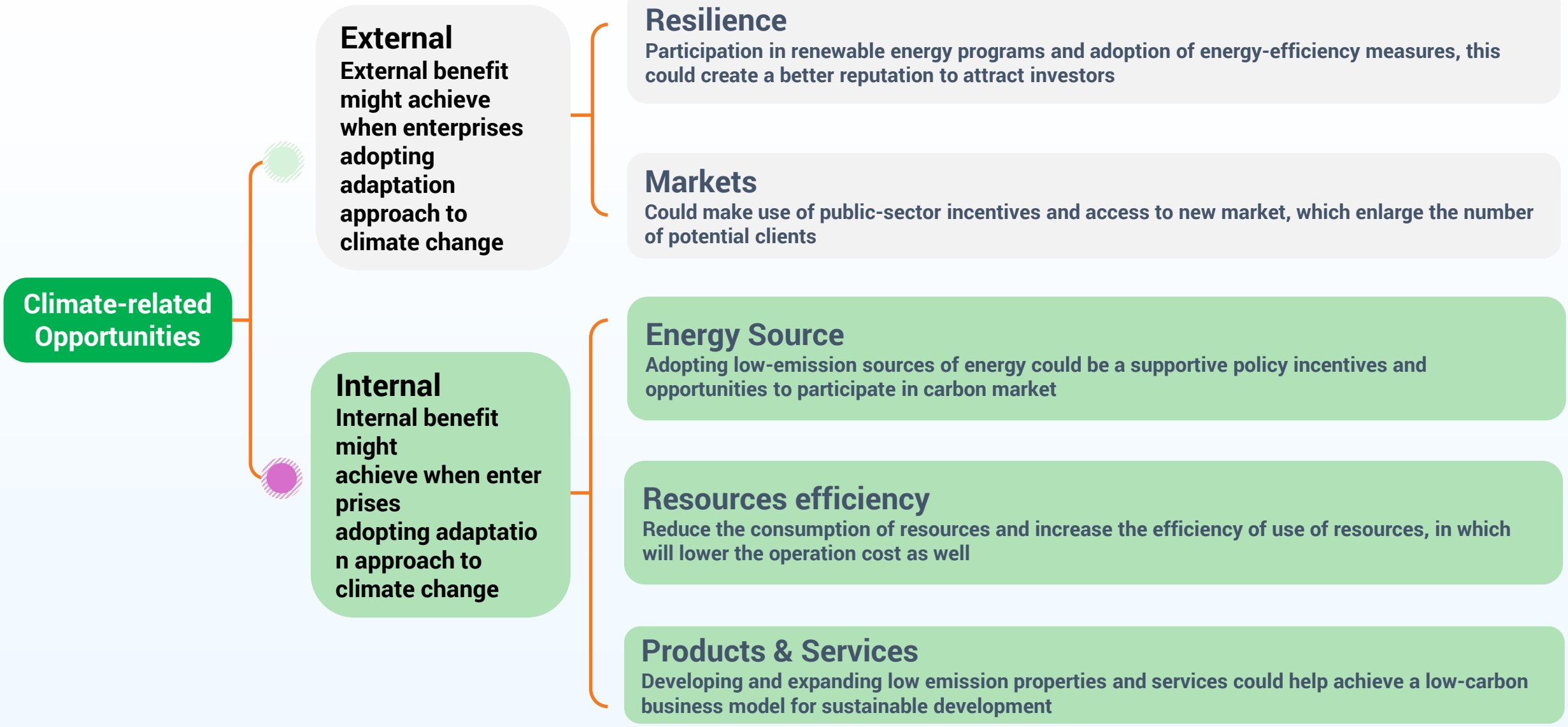
Resilience

Type	Time Horizon	Climate-Related Opportunities	Potential Financial Impacts
Green building	Near-/medium-term	Enhancements for more efficient buildings	• Increased value of fixed assets (e.g. highly rated energy efficient buildings) • Increased rental value as tenants shift their preference towards sustainable buildings. • Buildings that are not built or managed sustainably receive brown discount • Reduced operating costs (e.g. through efficiency gains and cost reduction)
Energy sources	Medium-/long-term	Use of lower carbon emission sources of energy	• Reduced exposure to GHG emissions and anticipated carbon taxes/pricing
Resilience	Near-/medium-term	Adoption of resilience planning	• Increased market valuation through resilience planning • Less potential damage and rectification costs under severe weather events
Finance	Medium-/long-term	Access to capital and new markets	• Strong ESG performance improves access to capital at a lower cost (e.g. through sustainability-linked instruments) • Enhanced readiness to access new markets, especially more developed regions that have higher ESG compliance requirements resulting in increased revenues

To align with market practice, real estate companies can
- **Enhance company's resilience through adopting resilience planning to mitigate the damages caused by climate change**

Sources: Link REIT 2023/2024 Sustainability Report

Climate-related Opportunities: Unilever



Case Study – Unilever Disclosed All Three Categories of Climate-related Opportunities

About Unilever

- **Unilever is a British multinational consumer goods company founded in 1929. It produces a wide range of products including foods, beverages, cleaning agents, etc.**
- **Its 2023 Annual Report has been prepared in accordance with TCFD standards**

Resource efficiency, resilience, and market opportunities

	Opportunity	Capitalisation of opportunity
Energy source **Energy efficiency**	**Investment in energy transition technologies** This represents a shift to efficient and less centralised energy supply and consumption (e.g. through on-site renewable energy generation and storage), zero-emission logistics and designing products for resource-efficient consumption. This could drive decarbonisation across the value chain, while opening up the opportunity to access the utility market as an off-grid generator and create new revenue streams from grid balancing or demand side response services, or providing excess renewable power of oversized capacity to supply chain partners. **Timeframe:** Short term to long term	**Actions:** We capitalise on resource efficiency opportunities by generating renewable electricity at our factory sites where feasible (see page 44), targeting emissions reduction from our logistics suppliers and own vehicle fleet (see page 45) and through product reformulations which make our products more resource efficient in use – for example, many of our laundry products are now low-temperature washing as standard (see page 25). **Key targets:** ▪ Zero GHG emissions in our operations by 2030

Innovative products and services opportunities

	Opportunity	Capitalisation of opportunity
Products and services	**Growth in plant-based or lab-grown foods** This could increase rapidly in the coming years. As people become more environmentally conscious and there is regulation on land use, we could see a rise in plant-based diets away from animal-based protein. **Timeframe:** Short term to long term	**Actions:** We are capitalising on innovative product and service opportunities by offering a range of vegan and vegetarian products in our Nutrition and Ice Cream Business Groups. **Key goals:** ▪ €1.5 billion of sales per annum from plant-based products in categories whose products are traditionally using animal-derived ingredients by 2025

To align with Unilever, retail companies can

- **Draw reference from Unilever's identified opportunities in aspects of energy sources and energy efficiency in its operation, supply and value chain and logistics as a starting point for identifying their own climate-related opportunities**

Sources: Unilever 2023 Sustainability Report

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Four Pillars – Metrics & Targets

IFRS S2 Disclosure Overview

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Objective

✓ **Require an entity to disclose information about its sustainability-related and climate-related risks and opportunities that that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity**

Four ISSB pillars:

Governance	Strategy	Risk Management	Metrics and Targets
❑ Understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.	❑ Understand an entity's strategy for managing climate-related risks and opportunities.	❑ Understand an entity's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process.	❑ Understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.

Sources: IFRS S2 General Requirements for Disclosure of Sustainability-related Financial Information

IFRS S2 Disclosure Overview: Metrics and Targets

Metrics and Targets

- Understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.

S2 Disclosure Area	Disclosure Items	
Metrics and Targets	Cross-Industry Metrics	Information relevant to cross-industry metric categories.
	Industry-Based Metrics	Metrics associated with specific business models or industry characteristics.
	GHG Emissions	Reporting gross Scope 1, 2, and 3 GHG emissions.
	Measurement Approaches	Methods and assumptions used to measure GHG emissions, including any changes.
	Risk Vulnerability	Percentage of assets or activities vulnerable to climate-related risks.
	Capital Allocation	Capital expenditure and investment towards climate-related opportunities.
	Carbon Pricing	Application of carbon pricing in decision-making.
	Executive Remuneration	Integration of climate-related considerations into executive remuneration.
	Target Setting	Objectives, applicable parts, periods, base periods, milestones, and impacts of international agreements for each target.
	Target Validation	Validation of targets by third parties.
	Target Monitoring	Metrics used to monitor progress towards targets.
	Performance Analysis	Performance against targets and trend analysis.
	Carbon Offsetting	Use of carbon credits to offset emissions.

Four Pillars – Metrics & Targets

Example: Approaches

Approach	Definition	Features of approach
1(a). Financial Control	An issuer accounts for 100% of the GHG emissions from operations if it has financial control over the operation i.e. the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities	• Suitable if the issuer takes full ownership of all GHG emissions it can directly influence and reduce • More comprehensive coverage of liability and risks as ultimate financial liability often rests with an issuer that holds an equity share • Closer alignment between GHG accounting and financial accounting • Facilitate performance tracking by holding managers accountable • Likely to have better access to operational data • Less common for government reporting and emissions trading programmes where monitoring and compliance enforcement is required, with responsibility falling on the operator
1(b). Operational Control	An issuer accounts for 100% of the GHG emissions from operations if the former or one of its subsidiaries[52] has the full authority to introduce and implement its operating policies at the operation	• Suitable if the issuer takes full ownership of all GHG emissions it can directly influence and reduce • Generally preferred by governments as compliance responsibility generally falls on the operator • Facilitate performance tracking by holding managers accountable • Likely to have better access to operational data • More difficult to demonstrate completeness of reporting due to lack of list of financial assets to verify operations included in the organisational boundary
2. Equity share	An issuer accounts for GHG emissions from operations according to its share of equity in the operation	• Assign ownership for GHG emissions on the basis of economic interest • More comprehensive coverage of liability and risks as ultimate financial liability often rests with an issuer that holds an equity share • Closer alignment between GHG accounting and financial accounting • Higher administrative costs due to data collection from entities not under the issuer's control e.g. where the issuer conducts frequent mergers and acquisitions • Less common for government reporting and emissions trading programmes where monitoring and compliance enforcement is required, with responsibility falling on the operator

Example: Boundaries

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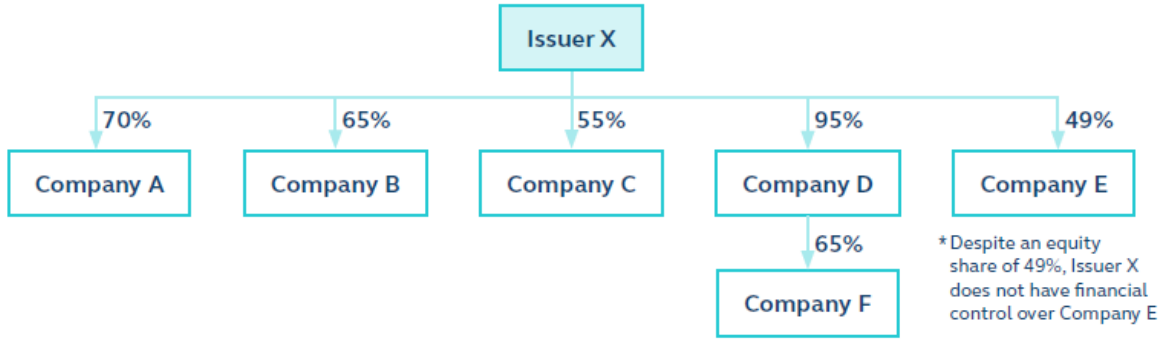
Insights: Relationship between organisational and operational boundaries

Issuer X has direct and indirect subsidiaries as below.



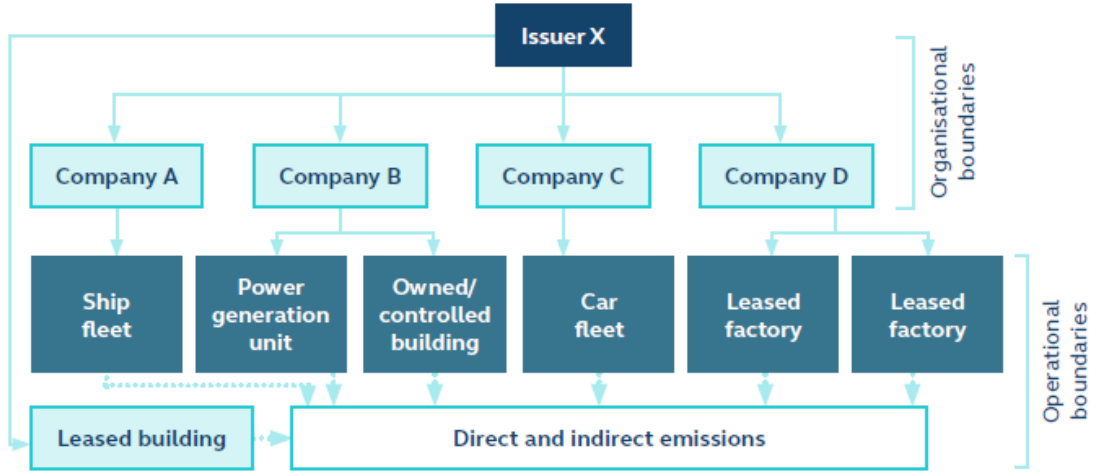
Setting organisational boundary: The issuer assesses how GHG emissions can be accounted for via the equity share and the control approach.

Entity	Classification in Issuer X's financial statements	Economic interest held by Issuer X	Control of financial policies	Emissions accounted for	
				Equity share	Control approach
Company A	Subsidiary	70%	Issuer X	70%	100%
Company B	Subsidiary	65%	Issuer X	65%	100%
Company C	Subsidiary	55%	Issuer X	55%	100%
Company D	Subsidiary	95%	Issuer X	95%	100%
Company E	Associated company	49%	Company E	49%	0%
Company F	Subsidiary of Company D	65% by Company D	Company D	61.75% (95% x 65%)	100%

Setting operational boundary: Once the organisational boundary is set, Issuer X determines the scope of GHG emissions (i.e. Scope 1, 2 and 3).

Entity	Activities	Scope of emissions
Issuer X	Leases out a building as a lessor with emissions associated with lessees' use of energy on the premise	Scope 3
Company A	Owns and operates a ship fleet with emissions from mobile combustion	Scope 1
Company B	Owns a power generation unit with emissions from stationary combustion	Scope 1
	Owns a building with use of purchased electricity	Scope 2
Company C	Owns and operates a car fleet with emissions from mobile combustion	Scope 1
Company D	Leases and operates a factory as lessee with use of purchased electricity	Scope 2
	Owns a building with use of purchased electricity	Scope 2

Organisational and operational boundaries of Issuer X[54]



Example: Scope 3 emissions

Illustrative disclosure 6: Scope 3 GHG emissions

6.1 Just beginning – Manufacturing company

- Identifies relevant Scope 3 GHG emission categories
- Describes the work plan, progress and timetable for making the required disclosure

Data table C2 28(a)-(c)

Scope	Source of emission factor	Unit	2023	2022	2021
Scope 1	GHG Protocol Emission Factors from Cross-Sector Tools	$MtCO_2e$	22,658	22,982	21,879
Scope 2 (Location-based) C2 29(c)	• CLP Power Hong Kong Limited: Latest sustainability report • Ministry of Ecology and Environment: Greenhouse Gas Emissions Reporting and Management of Power Generation Enterprises	$MtCO_2e$	35,951	38,659	38,577

Our approach

Our approach	
Standard used C2 29(a)	GHG Protocol Corporate and Reporting Standard (2004) GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard (2011)
Consolidation approach C2 29(b)	Operational control due to the access to operational data
Operational boundary	• 3 manufacturing plants in Hong Kong, 1 in China

Our progress C2 29(d)

We have begun mapping our Scope 3 GHG emissions and have identified 3 relevant upstream or downstream activities along the value chain that account for over 80% of Scope 3 GHG emissions.

These include:

- Category 1: Purchased goods & services
- Category 5: Waste generated in operations
- Category 12: End-of-life treatment of sold products

We are in the process of collecting data with regards to the material categories to compile our Scope 3 GHG emissions inventory and will aim to share by FY2025.

Example: Emissions reduction progress

6.2 Progressing – Financial services company

- Quantifies absolute gross GHG emissions for selected Scope 3 GHG emissions categories
- Describes the work plan, progress and timetable for making the required disclosure

Data table C2 28(a)-(c) C2 29(b)

Scope	Source of emission factor	Unit	2023	2022	2021
Scope 1 (consolidated accounting group)	GHG Protocol Emission Factors from Cross-Sector Tools	$MtCO_2e$	22,658	22,982	21,879
Scope 1 (joint venture)		$MtCO_2e$	1,500	1,000	890
Total Scope 1		**$MtCO_2e$**	**24,158**	**23,982**	**22,769**
Scope 2 - Location-based (consolidated accounting group)	IEA Emissions Factors	$MtCO_2e$	35,951	38,659	38,577
Scope 2 - Location-based (joint venture)		$MtCO_2e$	2,500	2,300	2,200
Total Scope 2 C2 29(c)		**$MtCO_2e$**	**38,451**	**40,959**	**40,777**
Scope 3 (Category 3: Fuel- and energy-related activities)	IEA Emissions Factors	$MtCO_2e$	1,890	1,560	N/A
Scope 3 (Category 5: Waste generated in operations)	No local source available, referred to UK Defra for proxy for factor: Government Conversion Factors for Company Reporting of Greenhouse Gas Emissions	$MtCO_2e$	4,900	4,700	N/A
Scope 3 (Category 6: Business travel)	Third-party travel provider data	$MtCO_2e$	980	400	N/A
Scope 3 (Category 15: Investments)	Emission data from investees	$MtCO_2e$	4,200	N/A	N/A

Case Study – CLP Disclosed All Three Scopes of Emissions and Provided Calculation Methods For Scope 3 Emissions

Metrics and Targets

Reference Number	Disclosure description
IFRS S2- 29(a)(i)	Disclose its absolute gross greenhouse gas emissions generated during the reporting period, expressed as metric tonnes of CO2 equivalent

Greenhouse Gas Emission

	2023	2022	2021	2020	2019	GRI/HKEx/ SASB/IFRS
CLP Group[1]						
Total CO_2e emissions – on an equity basis (kt)[2,3]	**52,988**	60,223	65,017	62,138	71,720	GRI 305-1, 305-2, 305-3/ HKEx A1.2/ SASB IF-EU-110a.1, IF-EU-110a.2/ IFRS S2-29(a)
Scope 1 (kt)[4]	**38,163**	44,141	47,690	45,105	50,047	
Scope 2 (kt)	**229**	220	236	244	250	
Scope 3 (kt)	**14,597**	15,861	17,091	16,790	21,424	

Scope 3 GHG emissions categories relevant to CLP

Scope 3 category	Relevance to CLP	Calculation and emission factors
1: Purchased goods and services Emissions from the extraction, production and transportation of goods and services purchased or acquired.	a) Products-related emissions relate to the upstream emissions of EnergyAustralia's natural gas retail business, including the emissions from upstream gas production and transmission, and distribution leakage in the State pipeline systems.	• Assessed using the average-data method. The quantities of natural gas supplied are multiplied by State-based upstream emission factors to calculate the emissions. • Emission factors source: Australia's National Greenhouse Accounts Report 2023.

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Calculation Methodology

- **Scope 1 and 2: Calculated in accordance with CLP's GHG Reporting Guideline**
- **Scope 3: Explained in a table summarising the Scope 3 Categories that were identified as relevant to CLP, and the emission calculation methods**
- **The categories not included in Scope 3 emissions profile are explained in a separate table**

To align with market practice, companies can

- **Develop reporting guidelines with reference to Greenhouse Gas Protocol or other recognised frameworks to ensure accuracy and credibility**
- **Disclose calculation methodology and details of included categories of Scope 1, 2 and 3 emissions to ensure transparency**
- **Explain the relevance for including or excluding certain categories for Scope 3 categories**

Source: CLP 2023 Sustainability Report

Case Study – Swire Disclosed the Emissions of Specific Categories Among the Scope 3 Emissions

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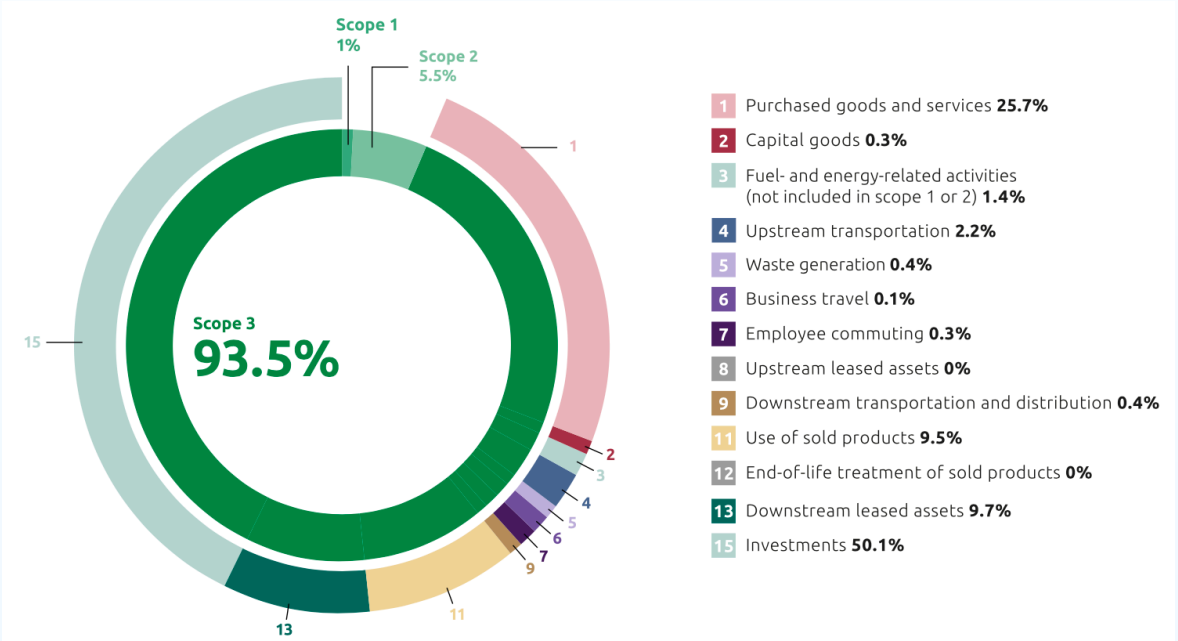
Metrics and Targets

Reference Number	Disclosure description
IFRS S2- 29(a)(vi)	The categories included within the entity's measure of Scope 3 greenhouse gas emissions, in accordance with the Scope 3 categories described in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)

Emissions by Scopes



*Scope 3 categories 10 and 14 are not relevant for the Group.

Topic Boundary

- We currently report all our scope 3 GHG emissions, which includes scope 3 emissions for all subsidiaries in four divisions (Property, Beverage, Aviation, and Trading & industrial (T&I)), and a proportion the Cathay Pacific Group and HAESL total scope 1 & 2 GHG emissions according to our investments in these.

Reporting basis for these indicators:

- Emissions are calculated in accordance with the Greenhouse Gas Protocol developed by World Resources Institute and World Business Council on Sustainable Development (Greenhouse Gas Protocol)

To align with market practice, companies can

- Conduct Scope 3 category mapping to identify the relevant emissions and disclose the corresponding categories
- Disclose the ESG reporting basis to ensure accuracy and credibility

Source: Swire 2023 Sustainability Report

Case Study – Vtech Set Both Quantitative and Qualitative Targets to Address Climate-related Risks and Opportunities

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vtech

Metrics and Targets

Reference Number	Disclosure description
IFRS S2- 28(c)	**Targets set by the entity, and any targets it is required to meet by law or regulation, to mitigate or adapt to climate-related risks or take advantage of climate-related opportunities, including metrics used by the governance body or management to measure progress towards these targets.**

Sustainability Targets and Performances

Strategy Themes	Approaches	Targets for FY2025
Climate Change – Risks and Opportunities	Review our approach on climate change and develop sustainability initiatives to identify and address the associated physical and transitional risks and opportunities	Continue to use sustainable materials in our products and recycle our products in a responsible way
		Reduce GHG emission per production output in assembly factories by 10% compared with FY2020
		Reduce GHG emission per production output in plastic factories by 8% compared with FY2020
		Increase renewable energy use by 100% compared with FY2020
		Disclose scope 3 emission

To align with market practice, companies can

- **Set both quantitative and qualitative targets regarding climate-related risks and opportunities**
- **Set scope 3 emission disclosure as a target to comply with upcoming regulations as ISSB has started to require the disclosure of scope 3 emission**

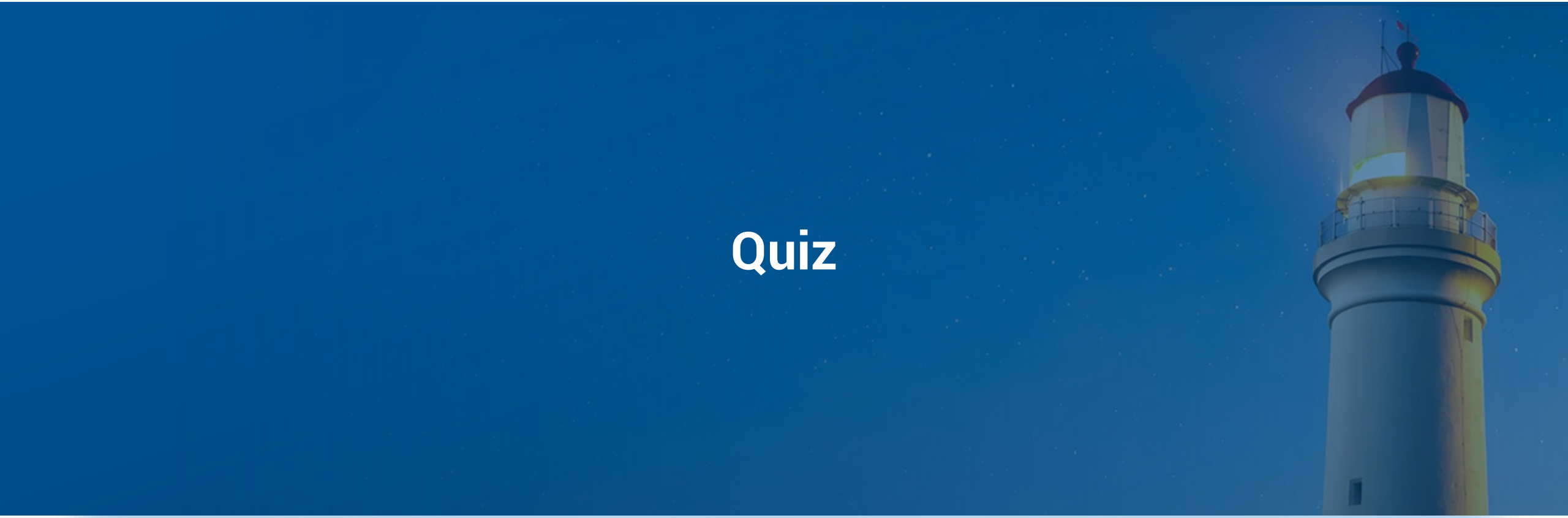
Module 4 Summary

- **Comprehensive Understanding of Scope 3 Emissions:**
  - **Definition and Importance: Scope 3 emissions include all indirect GHG emissions that occur in a company's value chain. They often represent the largest portion of a company's total emissions and are crucial for comprehensive climate strategies.**
  - **Categories: Encompass upstream and downstream activities such as purchased goods and services, business travel, employee commuting, and the use of sold products.**

- **Challenges in Measuring and Reporting:**
  - **Data Quality and Availability: Challenges in obtaining accurate data from suppliers and other third parties.**
  - **Complexity: The broad range of activities and sources within Scope 3 makes data collection and calculation complex.**
  - **Standardization Issues: Inconsistencies in reporting and measurement practices across industries and regions.**

- **Frameworks and Standards:**
  - **GHG Protocol: Provides a standardized framework for measuring and managing GHG emissions across value chains.**
  - **Science Based Targets Initiative (SBTi): Encourages setting emissions reduction targets in line with climate science, including Scope 3 emissions.**
  - **CDP: Supports companies in disclosing their environmental impact, including Scope 3 emissions.**

Quiz



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1. Arrange the following steps in the correct order for scope 3 disclosure.

A. Report scope 3 emissions

B. Track scope 3 emissions

C. Define organization boundary

D. Calculate scope 3 emissions

E. Classify source of scope 3 emissions

Case Study – SCSB Disclosed Qualitatively the Impacts of Carbon Price under Different Scenario and within Different Time Frame

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About SCSB
- **SCSB is a prominent financial institutions in Taiwan**
- **Its 2022 Sustainability Report has been prepared in accordance with GRI Standards, Taiwan Stock Exchange Regulation with reference to SASB industry-specific standards**

	NGFS Scenario		Carbon price projections (New Taiwan dollar/Per metric ton)			Carbon emissions compared to the base year (2020) Growth rate		
			2023	2027	2050	2023	2027	2050
1	No new carbon reduction as a path (Hot house world)	Nationally Determined Contribution scenarios (NDCs)	300	300	300	0.32%	0.48%	-1.02%
2	Delay the execution road (Disor-derly)	Deferred transformation scenarios (Delayed transition)	-	-	11,937.71	-0.42%	-1.52%	-73.61%
3	The road to orderly transformation diameter (Orderly)	2050 Net zero scenarios (Net Zero 2050)	1,160.61	2,333.52	17,301.28	-5.05%	-15.46%	-80.58%

Scenario Analysis Modelling

Models utilised
- **Three carbon tax scenarios were developed in accordance with the SCSB NGFS climate change scenario framework and takes into account Taiwan's Intended Nationally Determined Contribution (Nationally Determined Contributions, NDCs)**

Significance
- **Assess the transformational impact of regulations and reduction targets on the SCSB**

To align with market practice, financial service companies can
- **Conduct scenario analysis and quantify the climate-related risks, i.e. Conduct scenario analysis to find out carbon price projection in short, medium and long-term timeframe**

Sources: SCSB 2022 Sustainability Report

Challenges for Corporates to Address CRROs

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Challenges		
01 Resource Constraints	A Funding Shortages	A: Obstacles in carbon trading and green finance
	B Staff Shortages	B: Lack of specialized personnel for climate-related issues
	C Time Constraints	C: Challenging to allocate time for climate-related risks due to daily operations
02 Lack of Tools and Technology	A Lack of Specialized Tools	A: Missing appropriate tools and platforms for monitoring and managing climate risks
	B Insufficient Technological Innovation	B: Lack of specialized personnel for climate-related issues
03 Lack of Information and Expertise	A Data Acquisition and Management Challenges	A: Climate-related data is complex and fragmented
	B Lack of Expertise	B: Insufficient understanding of climate science and related risks
	C Lack of Information Transparency	C: Challenges in making effective decisions without transparent information

Sources: Springer, https://link.springer.com/article/10.1007/s00267-017-0933-1#citeas

Challenges for corporates to address CRROs

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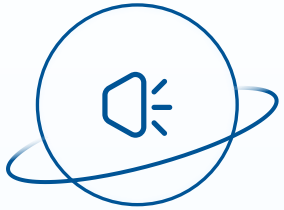
Challenges		
04 Underdeveloped Market and Policy Environment	A Underdeveloped Market Mechanisms	A: Requires significant financial investment; many companies have limited budgets.
	B Insufficient Policy Support	B: Lack of support in some regions, hindering policy-driven motivation.
	C Lack of Market Demand	C: Low demand for climate-related products and services.
05 Leadership and Organizational Culture Deficiencies	A Lack of High-Level Engagement	A: Leaders do not prioritize climate-related risks and opportunities.
	B Lack of Supportive Organizational Culture	B: Internal culture may resist innovation and change.
06 Conflict in Competitive Priorities	A Short-Term Economic Pressure	A: Prioritizing profit over long-term climate risk management.
	B Conflict of Values and Interests	B: Conflicting interests within companies regarding climate risk responses.

Sources: Springer. https://link.springer.com/article/10.1007/s00267-017-0933-1#citeas

Implementation reliefs

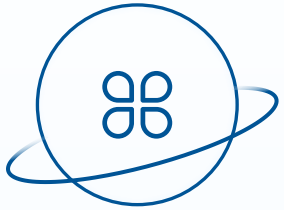
Reasonable Information Relief

Issuers can make disclosures based on reasonable information available at the reporting date without undue cost or effort.



Capabilities Relief

Use approach informed by or commensurate with issuer's available skills, capabilities, and resources in preparing scenario analysis and anticipated financial effects.



Commercial Sensitivity Relief

Allows non- disclosure of confidential and commercially sensitive information about climate-related opportunities under limited circumstances.

Table of Implementation reliefs

Reliefs available for certain climate- related disclosure requirements.

Key Takeaway

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1 Leverage available tools and resources

Adopt well-established climate scenarios and utilize existing tools to perform risk analysis

2 Understand underlying assumption

Understand scenario assumptions and methodologies in order to properly interpret and apply the analysis outputs

3 Take a cross-functional approach

Combine diverse expertise by involving experts across ESG, risk management and finance

4 Enable forward-looking resilience

Use scenario analysis to monitor early warming signs about which climate futures would materialize, enabling preparedness and proactive action

5 Integrate with strategy planning

Use insights to inform climate transition planning and build adaptive capacity to thrive in a changing business environment

Step 1: Discover - Identifying Teams and Conducting Gap Analysis

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Step 1 | **Step 2** | **Step 3** | **Step 4**

Step 1: Discover

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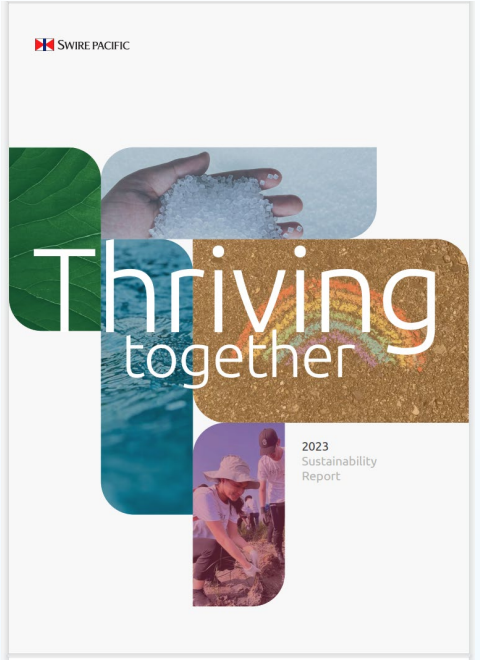
1. ***Identify the Responsible Team for Climate Risk Reporting:***

Example:

Swire Pacific has a Climate Change Working Group and the Swire Group Environment Committee (SGEC) responsible for identifying and managing climate-related risks and opportunities. These groups report to the Group Risk Management Committee (GRMC).

2. ***Conduct Gap Analysis and Peer Benchmark***



About This Report: Climate-Related Disclosures: The "2023 Sustainability Report" by Swire Pacific Limited highlights the company's commitment to addressing climate change. The report details Swire Pacific's strategies for mitigating climate risks and leveraging opportunities, showcasing their transparent reporting and continuous improvement efforts.

Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities; Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-

Steps to Reporting Climate Risks and Opportunities

Step 1: Discover - Identifying Teams and Conducting Gap Analysis

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Step 1 | **Step 2** | **Step 3** | **Step 4**

Step 1: Discover

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③ ***Understand Stakeholder Climate Reporting Requests:***

Example:

Board members

Mode of engagement
Board meetings, interviews

Key sustainability topics
- Climate change mitigation
- Cyber-security, privacy and data protection
- Sustainability governance
- Waste management and circularity
- Water management

Senior leadership

Mode of engagement
Interviews and executive meetings

Key sustainability topics
- Climate change mitigation
- Employee wellbeing
- Waste management and circularity
- Water management
- Sustainability governance
- Talent attraction and retention
- Workplace health and safety

NGOs and activists

Mode of engagement
Focus groups, interviews, multi-stakeholder initiatives (e.g. Drink Without Waste)

Key sustainability topics
- Climate change mitigation
- Cybersecurity, privacy and data protection
- Natural capital and resource use
- Waste management and circularity
- Product quality and safety
- Changing consumer preferences

④ ***Develop TCFD Alignment Roadmap***

Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities; Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-eng.pdf

Step 2: Assess - Conducting GHG Inventory & Identifying Extreme Weather Impacts

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Step 1 | Step 2 | Step 3 | Step 4

Step 2: Assess

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① *Conduct GHG Inventory:*

Description:
Determine Scope 1, 2, and 3 emissions

② *Identify Historical Extreme Weather Impacts:*

Description:
Analyze financial impacts of past extreme weather events

Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities;
Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-eng.pdf

Step 2: Assess - Scenario Analysis & Impact Assessment

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Step 1 | **Step 2** | Step 3 | Step 4

Step 2: Assess

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3 *Conduct Scenario Analysis: Assess future transition and physical climate risks.*

4 *Assess risks' and opportunities' impact on strategy and finance under analyzed scenarios.*

Example:

"We have assessed the physical climate-related risks and opportunities for over 850 of the Group's highest value assets (by insured value) under four climate change scenarios (Representative Concentration Pathways RCP 2.6, 4.5, 6, and 8.5)."

Key climate-related physical risks

● Low ● Moderate ● High

Risk category	Risk	Financial implications	Potential impact rating[1]				Mitigation strategies
			Short-Medium term (2030)		Long-term (2050)		
			Low carbon	High carbon	Low carbon	High carbon	
Acute	– Coastal and fluvial flooding	– More spending to improve the adaptive capacity of our assets and to mitigate adverse effects	●	●	●	●	– We have identified short and medium-term mitigation measures for individual buildings, including: – Upgrading flood protection measures and alert systems – Glass façade inspections – Smart Monitoring Systems
	– Typhoons		●	●	●	●	
Chronic	– Extreme temperatures and heat stress	– Lower productivity due to extreme heat – More spending on cooling	●	●	●	●	– Chiller efficiency improvements – Energy Efficiency Policy – Health & Safety Policy
	– Water stress and drought	– Decreased production volume due to reduced water supply	●	●	●	●	– Conduct water risk assessments (Source Vulnerability Assessments (SVAs)) for all bottling plants

Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities; Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-

Step 2: Assess - Setting Goals and Metrics

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Step 1 | Step 2 | Step 3 | Step 4

Step 2: Assess

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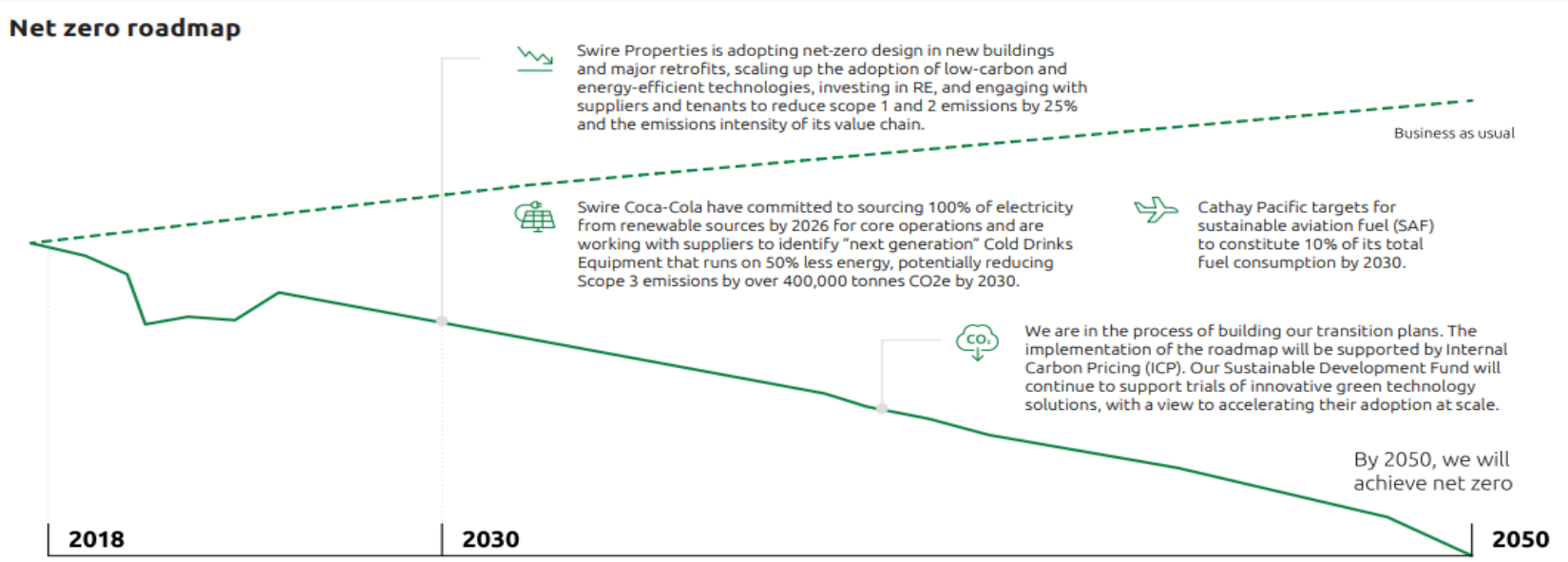
5 *Establish goals, metrics, and targets to reduce and manage current and future climate risks and opportunities:*

Example:

Mid-term Goal: Reduce Scope 1 and Scope 2 emissions in traditional markets by 50% from the 2018 baseline by 2030

Long-term Goal: Achieve net-zero emissions by 2050



Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities; Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-

Step 2: Assess - Transition and Adaptation Plans

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Step 1 | Step 2 | Step 3 | Step 4

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Step 2: Assess

6 *Develop transition and adaptation plans, describing the actions the organization will take to achieve these goals and metrics:*

Example:

- Swire Properties conducted a climate scenario analysis and implemented energy efficiency measures, such as upgrading lighting and HVAC systems, to reduce emissions.
- They adopted renewable energy sources like solar panels and invested in wind energy projects. Additionally, Swire Properties enhanced climate resilience by incorporating flood-resistant designs and retrofitting buildings to withstand extreme weather.
- Collaboration with stakeholders, including government bodies and NGOs, ensured the implementation of these strategies.
- Progress is monitored and reported regularly to ensure goals are met.

Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities;
Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-eng.pdf

Step 3: Report - Disclosure Preparation and Communication

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Step 1 | Step 2 | **Step 3** | Step 4

Step 3: Report

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1. ***Prepare disclosure content:***

   Description:
   Align with relevant frameworks and standards (e.g., TCFD's principles) for effective disclosure

2. ***Disclose transition and adaptation plans:***

   Description:
   Outline goals, metrics, and targets to minimize physical and transition risks and maximize opportunities

3. ***Communicate progress:***

   Description:
   Report goals, metrics, targets, and progress to internal and external stakeholders

Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities; Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-eng.pdf

Step 4: Manage - Implement and Monitor Actions

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Step 1 | Step 2 | Step 3 | Step 4

Step 4: Manage

1. *Implement the roadmap and plan actions.*

Example:

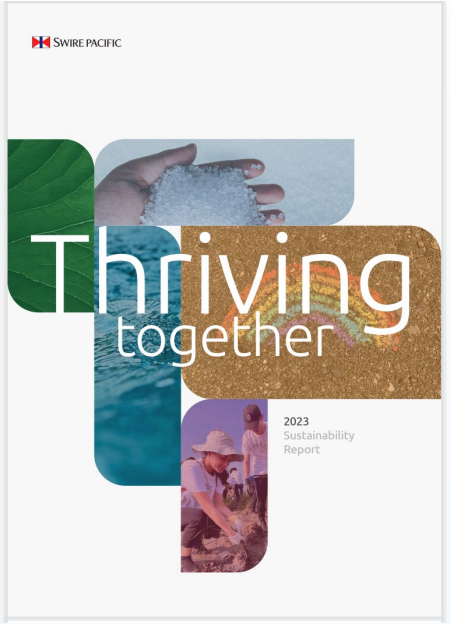
To reduce emissions, our roadmap includes:

Improving energy efficiency

Using more renewable energy

Choosing low-carbon and energy efficient products

Encouraging our suppliers and customers to decarbonise



2. *Monitor and regularly re-evaluate risks, opportunities, progress, and barriers.*
3. *Continually assess and report progress and opportunities for improvement.*

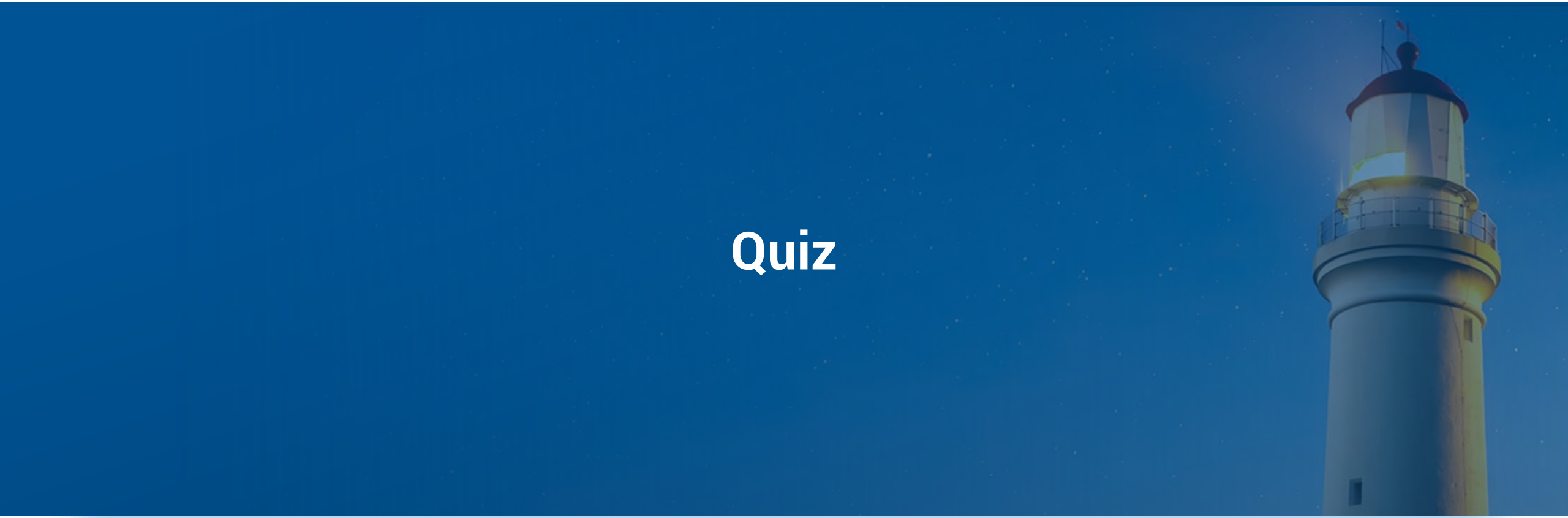
Sources: EPA. https://www.epa.gov/climateleadership/steps-reporting-climate-risks-and-opportunities; Swire Pacific. https://www.swirepacific.com/storage/media/64744/2023-sustainability-report-

Module 3 Summary

Key Takeaways

- **Overview of Climate-related Risks: Recognizing the physical and transition risks associated with climate change. Physical risks include acute events like floods and chronic changes like sea level rise, while transition risks involve policy, market, technology, and reputational changes.**
- **Corporate Interests in Climate-related Risks and Opportunities: Companies are increasingly focused on identifying, assessing, and managing climate-related risks to protect their assets and operations. They also explore opportunities for resilience and market advantages through sustainable practices.**
- **Case Studies on Climate-related Risks: Real-world examples illustrate how companies assess and mitigate climate-related risks, integrating them into their overall risk management processes. These case studies highlight best practices and innovative approaches.**
- **Introduction to Climate-related Opportunities: Identifying opportunities arising from the transition to a low-carbon economy, such as investment in renewable energy, energy efficiency, and sustainable products. Companies can leverage these opportunities for competitive advantage and long-term sustainability.**
- **Challenges for Corporates: Companies face several challenges in addressing climate-related risks and opportunities, including data collection, scenario analysis, regulatory compliance, and stakeholder engagement. Effective strategies and collaboration are essential for overcoming these challenges.**
- **Steps to Reporting Climate Risks and Opportunities: Practical steps for companies to begin their climate-related disclosures include conducting a materiality assessment, engaging stakeholders, using established frameworks like TCFD, and continuously monitoring and reporting progress.**

Quiz



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Identify whether the following are climate-related risks or opportunities.

1) Severe floods causing damage to infrastructure and disrupting operations.

A. Physical acute risk

B. Physical chronic risk

C. Transition technology risk

D. Transition market risk

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Identify whether the following are climate-related risks or opportunities.

2) Introduction of a new carbon tax by the government.

A. Transition technology risk

B. Transition market risk

C. Transition policy and legal risk

D. Transition reputation risk

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Identify whether the following are climate-related risks or opportunities.

3) Shifts in consumer preferences towards eco-friendly products.

A. Transition technology risk

B. Transition market risk

C. Transition policy and legal risk

D. Transition reputation risk

Identify whether the following are climate-related risks or opportunities.

4) Costs associated with upgrading to energy-efficient machinery and equipment.

A. Transition technology risk

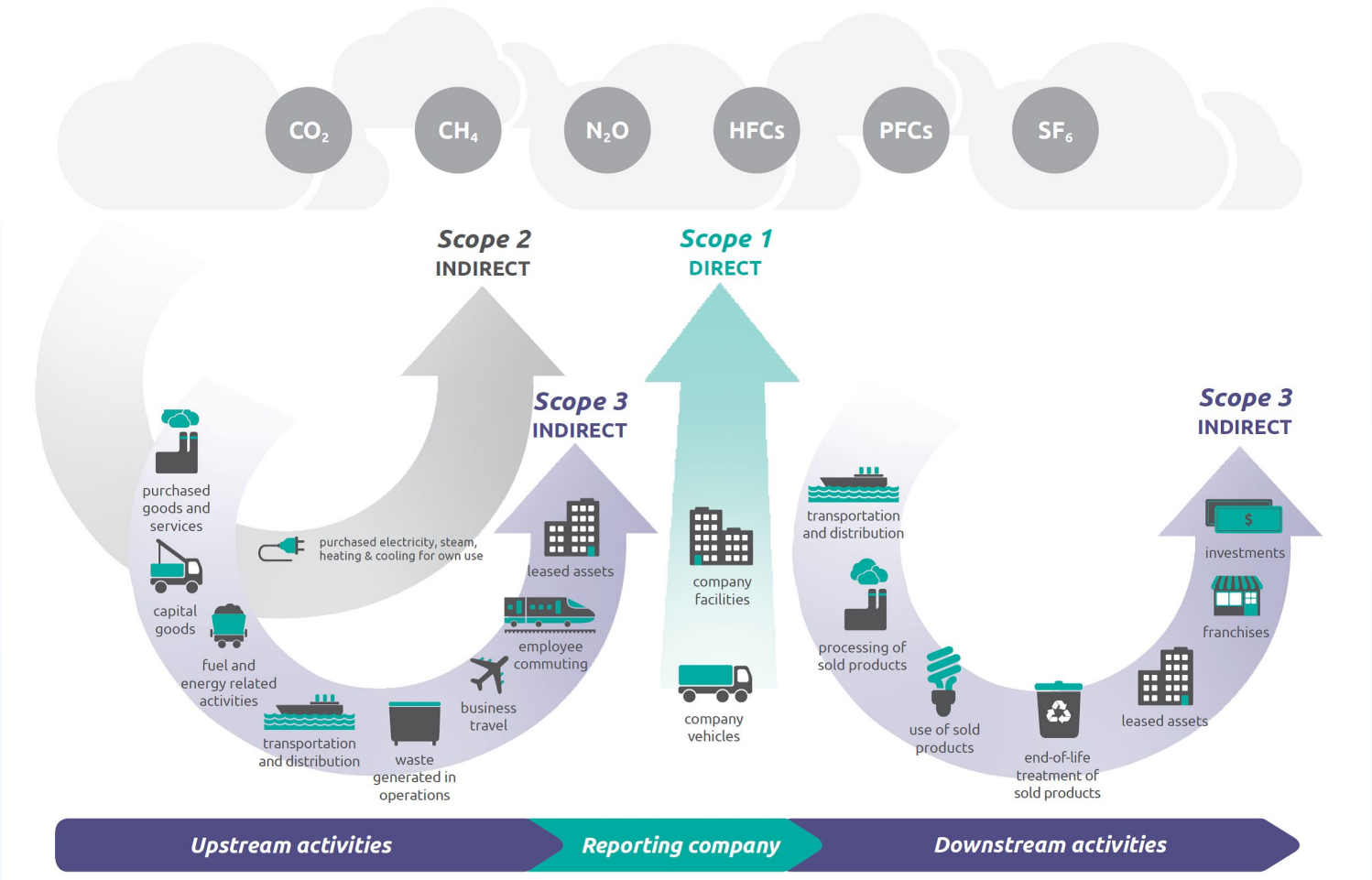
B. Transition market risk

C. Transition policy and legal risk

D. Transition reputation risk

Scope 3 Emission Disclosure

Introduction to Scope 3



Recap:

Scope 1: Direct emissions from owned or controlled sources

Scope 2: Indirect emissions from the generation of purchased energy

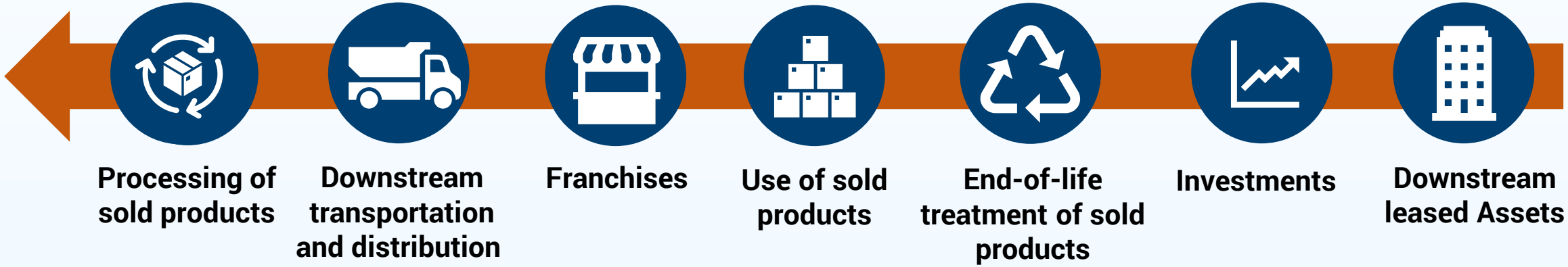
Scope 3: All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions

While outside an organisation's direct control, scope 3 emissions make up the vast majority (between 65-95%) of an organisation's carbon footprint

Sources: GHG FAQ

15 Categories of scope 3

Upstream



Downstream

Scope 3 Emission Disclosure is Pressured by Various Stakeholders

Consumer Pressure

- Customers increasingly prefer organizations addressing ESG concerns
- Measuring and managing Scope 3 emissions shows a commitment to sustainability and meets consumer expectations

Supplier Pressure

- Suppliers and business partners are both working to reduce their carbon footprint, aiming for sustainable sourcing, cost savings, and reduced inefficiencies
- Organizations can collaborate with suppliers on sustainable initiatives that benefit both parties

Regulatory Pressure

- Scope 3 disclosure is now required by ISSB S2
- Measuring and reporting Scope 3 emissions ensures compliance and positions your organization as responsible and forward-thinking

Environment Pressure

- Scope 3 emissions average 75% of companies' GHG emissions
- For financial service, Scope 3 emissions average 99.98% of companies' GHG emission
- Reducing Scope 3 emissions is crucial for decarbonization strategies

Sources: PwC. (2023). https://www.pwc.com/mt/en/publications/sustainability/the-importance-of-scope-3-emissions-for-sustainable-success.html

Scope 3 Emission Disclosure Enables Decision Making for Investors

Inform investment analysis and decisions

- Details on an investee company's Scope 3 emissions size and sources ("categories") provide investors insights into climate risks and opportunities in the value chain, impacting financial performance and valuation

Improve asset-level engagement and stewardship

- Investee Scope 3 data informs targeted engagement by investors, enhancing stewardship efforts and setting expectations for emissions reduction in the value chain based on climate risk management insights

Identify engagement opportunity for systematic change

- Diversified investors leverage their stakes in interconnected companies to influence upstream and downstream entities in the value chain
- By analyzing emissions hotspots and engagement opportunities, they identify strategic ways to support sector-wide decarbonization

Sources: IGCC. (2024). https://igcc.org.au/wp-content/uploads/2024/03/2024-IGCC-Scope-3-Emissions-Paper.pdf

Five Main Challenges in Measuring and Reporting Scope 3 Emissions

Low data quality and availability

- Accessing reliable, comprehensive Scope 3 emissions data is a major challenge
- Unlike Scopes 1 and 2 emissions, companies often deal with incomplete or outdated information regarding their value chain emissions

Diversity of disclosure standards

- Various disclosure standards contribute to inconsistent and incomparable Scope 3 emissions reporting due to interpretive differences and the need for deep expertise in understanding the standards

Constraints in resources

- Organisations experience constraints in their available resources, including people, funding and tools, making the process time-consuming and expensive

Sources: Deloitte. https://www2.deloitte.com/nl/nl/pages/sustainability/articles/challenges-and-solutions-scope-3-emissions.html

Five Main Challenges in Measuring and Reporting Scope 3 Emissions

Difficulties engaging the stakeholder landscape

- ❑ Stakeholder engagement is crucial for obtaining reliable Scope 3 emissions data and meeting reduction targets
- ❑ However, challenges in supplier engagement include awareness gaps, contractual obstacles, limited corporate participation in ambitious targets, and inadequate reporting incentives

Limited integration of insights into business decisions

- ❑ Not all levels of business understand the relevance and need for emissions accounting and reduction, making it harder to use Scope 3 emissions reporting insights efficiently in decision-making

Sources: Deloitte. https://www2.deloitte.com/nl/nl/pages/sustainability/articles/challenges-and-solutions-scope-3-emissions.html

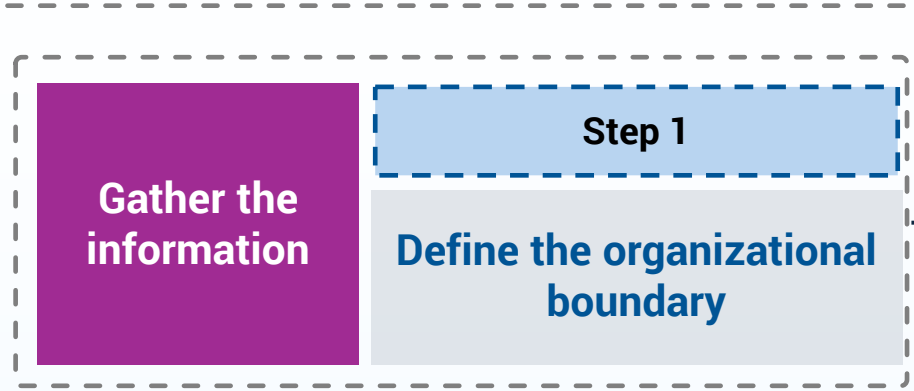
Roadmap for Corporates to Scope 3 Emissions Reporting

A. Roadmap to the elements of emissions reporting

Gather the information	Step 1	Define the organizational boundary
	Step 2	Classify sources of emissions
	Step 3	Calculate emissions
Use the information	Step 4	Track emissions
	Step 5	Report emissions

Source: KPMG, 2024. *Handbook: GHG Emissions Reporting*. link

Roadmap for Corporates to Scope 3 Emissions Reporting -- Define the Organizational Boundary



a) The first step in reporting emissions is determining the organizational boundary, which is similar to the 'reporting entity' in financial statements.

b) This boundary helps identify the emission sources and frames the scopes 1 and 2 emissions within the overall inventory boundary.

Example:

"Organizational boundary
The Company presents its emissions under the operational control approach, accounting for emissions from operations over which it, or one of its subsidiaries, has the full authority to introduce and implement its operating policies."

Source: KPMG, 2024. *Handbook: GHG Emissions Reporting*. link

Roadmap for Corporates to Scope 3 Emissions Reporting -- Classify Sources of Emissions

Gather the information

Step 2

Classify sources of emissions

a) Define the operational boundary

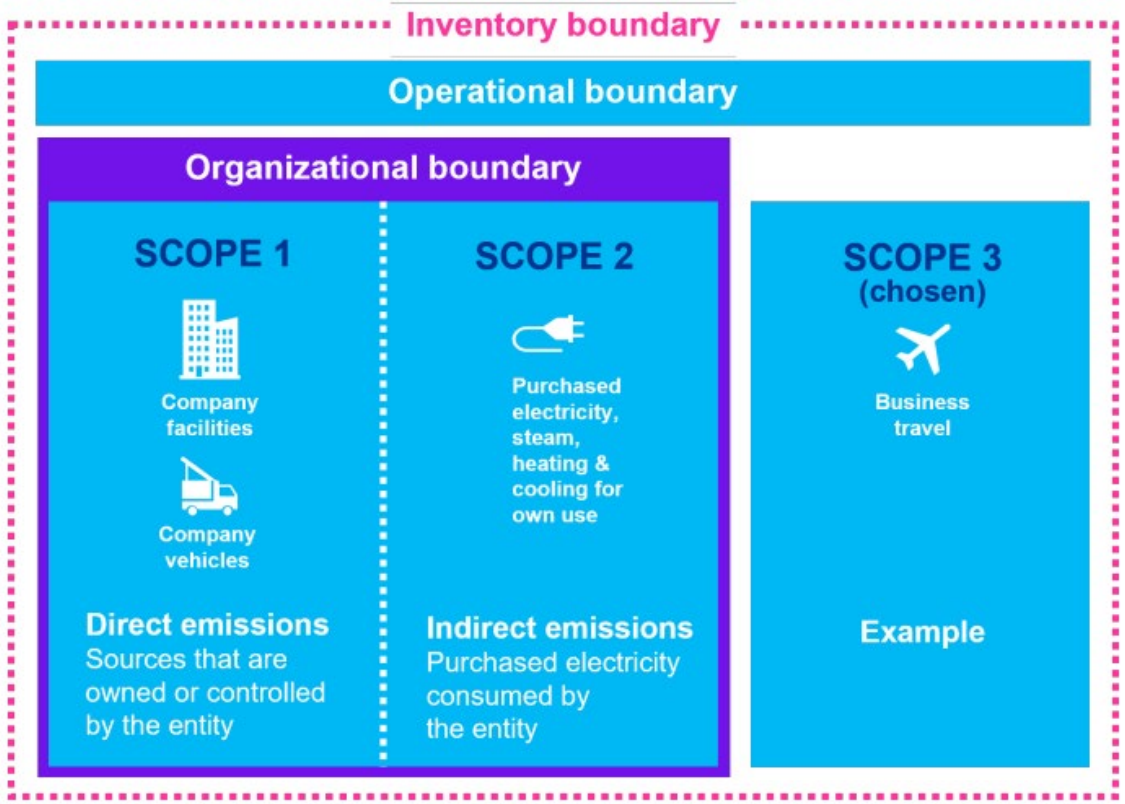
b) Identify and categorize emissions

a) Define the operational boundary

Operational boundary = Organizational boundary + Selected scope 3 categories

b) Identify and categorize emissions.

Scope 3 emissions occur outside the organizational boundary and are indirect, as they come from sources not owned or controlled by the entity but are part of its upstream or downstream value chain.



Source: KPMG, 2024. *Handbook: GHG Emissions Reporting.* link

Roadmap for Corporates to Scope 3 Emissions Reporting -- Example for Classify Sources of Emissions

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Gather the information

Step 2

Classify sources of emissions

a) Define the operational boundary

b) Identify and categorize emissions

Example:

c. Scope 3 emissions #

Scope 3 emissions are indirect emissions from the generation of fuel from sources outside the organizational boundary as a consequence of activities of the Company.

The Company has elected to include three categories of scope 3 emissions in its GHG emissions statement. These emissions have been calculated (but are not presented) in accordance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard and following the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions.

Source	*Boundary description*
Category 1, purchased goods and services	The production, transportation and distribution of products purchased or acquired, including hard drives, semiconductors, batteries, keyboards, third-party software.
Category 6, business travel	Air, rail, bus, automobile (including employee-owned and rental cars) and hotel stays when employees* travel for business.
Category 7, employee commuting	Air, rail, bus, automobile (including employee-owned and rental cars) when employees* commute between home and worksites.

* Employees include employees of operations owned, operated or leased by the Company. The Company does not include consultants, contractors or other individuals who travel or commute on behalf of the Company.

Source: KPMG, 2024. *Handbook: GHG Emissions Reporting*. link

Roadmap for Corporates to Scope 3 Emissions Reporting -- Calculate Emissions

Gather the information

Step 3

Calculate emissions

a)

tCO_2e	=	Activity data	×	Emission factor	×	GWP
Tonnes of CO_2 equivalent		Estimated measure of activity related to a specific emissions source		Factor applied to make varied activities comparable		Multiplier that makes different GHGs comparable

a) Activity Data

Entities use primary and secondary data to calculate scope 3 emissions, often combining both based on business goals and data availability.

1. Primary Data

Primary data is directly provided by suppliers or value chain partners and includes specific activity-related data or actual emissions. It can be costly and difficult to verify. For example:

Scenario 1: An airline calculates CO2 emissions for booked flights based on aircraft size and flight distance provided by the supplier.

2. Secondary Data

Secondary data includes general data like industry averages and is used when primary data is unavailable. It may lack accuracy. For example:

Scenario 2: A car manufacturer uses industry-average emission factors to estimate emissions for steel purchased from multiple suppliers who do not provide specific emissions data.

Source: KPMG, 2024. *Handbook: GHG Emissions Reporting*. link

Roadmap for Corporates to Scope 3 Emissions Reporting -- Calculate Emissions

Gather the information

Step 3

Calculate emissions

b) c)

tCO_2e	=	Activity data	×	Emission factor	×	GWP
Tonnes of CO_2 equivalent		Estimated measure of activity related to a specific emissions source		Factor applied to make varied activities comparable		Multiplier that makes different GHGs comparable

b) Emission factor examples

Activity data	Emission factor
Liters of fuel consumed	$kgCO_2e$ per liter of fuel consumed
Kilowatt-hours of electricity consumed	$kgCO_2e$ per kWh of electricity consumed
Hours of time operated	$kgCO_2e$ per hour of time operated
Kilogram of product sold	$kgCO_2e$ per kg of product sold
Quantity of money spent	$kgCO_2e$ per unit of currency spent

c) GWP

a) Greenhouse gases are assigned a Global Warming Potential (GWP) value, representing their heat-trapping ability relative to carbon dioxide (GWP of 1).

b) Higher GWP values mean greater heat absorption and stronger warming effects. These values are calculated over 20, 100, and 500 years.

Source: KPMG, 2024. *Handbook: GHG Emissions Reporting*. link

Roadmap for Corporates to Scope 3 Emissions Reporting -- Track Emissions

Use the information

Step 4

Track emissions

a) Develop a base year

b) Set reduction targets.

a) Develop a base year

A base year is a benchmark that allows an entity to observe trends in emissions information.

b) Set reduction targets

a) Setting emission reduction targets involves establishing "net zero" and "carbon neutral" goals.

b) After setting these targets, entities create reduction plans and work on minimizing emissions.

c) They can also purchase carbon offsets for unavoidable emissions.

Source: KPMG, 2024. *Handbook: GHG Emissions Reporting*. link

Benefits of Setting Scope 3 GHG Reduction Targets

A. Improve Risk & Cost Management

a) Vulnerable to Risk:
   - GHG-intensive segments of the value chain are vulnerable to risks from rising resource prices and regulatory changes, such as increased production costs, stricter efficiency standards, or carbon emission taxes.

b) Understand Key Sources:
   - A deep understanding of key sources, hotspots, and drivers of GHG emissions across the value chain is required.

c) Strategic Tool:
   - A robust system for Scope 3 accounting and management is a crucial part of strategic risk management and proactively addressing value chain risks.

B. Respond to External Pressures

a) Increasing External Pressure: Companies face growing pressure from investors, customers, peers, suppliers, and civil society to fully measure, manage, and reduce their climate impact.

b) Reporting Requirements: Reporting and reducing Scope 3 emissions has become integral to frameworks such as the CDP climate change questionnaire, TCFD recommendations, and initiatives like the Science Based Targets initiative and WWF's Climate Savers program.

C. Unlock Business Opportunities & Innovation

a) Market Disruption & Emergence: As the global economy decarbonizes, existing markets are disrupted and new markets emerge. Staying competitive requires providing solutions fit for a low-carbon world.

b) Forecasting & Identifying Opportunities: The GHG emission hotspots map created through Scope 3 accounting improves companies' ability to forecast changes and identify emerging business opportunities early.

c) Systemic Understanding: Understanding the value chain from a systems perspective unlocks opportunities for improved design and collaborative innovation with suppliers.

d) Long-term Targets Catalyze Innovation: Ambitious long-term reduction targets promote innovation, helping companies shift focus from incremental improvements to transformative change.

Source: SBTi, 2018. *Value Change in the Value Chain: Best Practices in Scope 3 Greenhouse Gas Management.* link

What is Science Based Target Initiative (SBTi)?

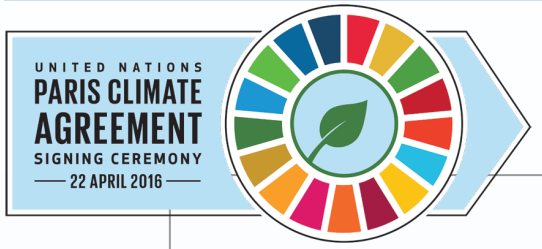
Purposes

- Defines and promotes best practice in science-based target setting
- Provides technical assistance and expert resources to companies who set science-based targets in line with the latest climate science
- Brings together team of experts to provide companies with independent assessment and validation of targets
- Leads the Business Ambition for 1.5°C campaign, mobilizing companies to set science-based targets in line with a 1.5°C future

Businesses who sign the SBTi commitment letter are:

- Immediately recognized as "Committed" on the SBTi, CDP and We Mean Business, UN Global Compact websites
- If committing to the highest level of commitment ambition, the company is recognised in the Business Ambition for 1.5C campaign

Significance



An SBT is to be understood within the context of the Paris Agreement

- Legally binding international treaty on climate change
- Participating nations have committed to limiting global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels
- <u>In order to achieve 1.5°C limit, GHG Emissions must halve by 2030 and be net-zero by 2050</u>
- A rise above 1.5°C will result in severe consequences, categorised by the TCFD as 'physical and transition risks'

SBTi Provides Guidelines and Standards for Setting and Achieving Scope 3 Emissions

Scope 3 Target Setting Guidelines under SBTi

Scope 3 Emission Proportion	Scope 3 target is mandatory for companies with carbon 3 emissions exceed over 40%
Emission Calculation	Calculate emissions from scope 3 source from 15 categories at which they have the potential to influence GHG reductions
Target Boundary Definition	Scope 3 target boundary should include the majority of the value chain emissions: • The top three emission source categories or • Two-thirds of total scope 3 emissions

Companies follow SBTi for Scope 3 Target Setting

96%

Companies with targets approved by the SBTi include scope 3

90%

Respondents in SBTi Corporate Survey think the process for setting a scope 3 science-based target is challenging

Sources: Science Based Targets. (2023). *Catalyzing Value Chain Decarbonization: Corporate Survey Results*. link

Overview of Target Boundaries and Target Types

Types of Target Boundaries

1. A single target for scope 1, 2 and 3 emissions
2. A single target for scope 3 total emissions
3. Separate targets for individual scope 3 categories

Types of Targets

A **Absolute targets**

Specific total reduction in greenhouse gas emissions

B **Intensity targets**

Reduction of emissions per unit of economic output or activity

Scope 3 Emission Disclosure

Companies can Set Different Target Boundaries for Scope 1, 2 and 3

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About MTR
- **a leading public transport operator in Hong Kong and is renowned for its commitment to sustainability, focusing on reducing GHG emissions and improving energy efficiency across its operations**
- **The targets are SBTi-approved reduction targets and in line with a well-below 2°C trajectory**

Target boundary	*Advantages*	*Disadvantages*
A single target for total scope 1 + scope 2 + scope 3 emissions	• Ensures more comprehensive management of emissions across the entire value chain (i.e., all three scopes) • Offers greater flexibility on where and how to achieve the most cost-effective GHG reductions • Simple to communicate to stakeholders • Does not require base year recalculation for shifting activities between scopes (e.g., outsourcing)	• May provide less transparency for each scope 3 category (if detail is not provided at the scope 3 category level) • Requires the same base year for scope 1, scope 2, and scope 3 emissions, which may be difficult if scope 1 and scope 2 base years have already been established
A single target for total scope 3 emissions	• Ensures more comprehensive GHG management and greater flexibility on how to achieve GHG reductions across all scope 3 categories (compared to separate targets for selected scope 3 categories) • Relatively simple to communicate to stakeholders	• May provide less transparency for each scope 3 category (if detail is not provided at the scope 3 category level) • May require base year recalculation for shifting activities between scopes (e.g., outsourcing)

1

Scope 1,2,3	**Target for rail transport** • **Reduce well-to-wheel GHG emissions by 46.2% per passenger kilometre (pkm) by 2030, from a 2019 base year**
Scope 1, 2	**Target for investment properties** • **Reduce GHG emissions by 58.6% per square metre (sq m) of floor area by 2030, from a 2019 base year**

2

Scope 3	**Reduce by 13.5% by 2030, from a 2019 base year**

To align with market practice, companies can
- **Set different target boundaries for different emission sectors and for different emission scopes**

Sources: GHG Corporate Value Chain (Scope 3) Accounting and Reporting Standard, MTR 2023 Sustainability Report

Scope 3 Emission Disclosure

Companies can Set Different Target Boundaries for Scope 1, 2 and 3

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About Swire

- **Swire Properties was the first real estate developer in Hong Kong and the Chinese Mainland to set science-based targets**
- **The targets are SBTi-approved reduction targets and in line with a 1.5°C trajectory**

SWIRE PACIFIC

Target boundary	*Advantages*	*Disadvantages*
Separate targets for individual scope 3 categories	• Allows customization of targets for different scope 3 categories based on different circumstances • Provides more transparency for each scope 3 category • Provides additional metrics to track progress • Does not require base year recalculations for adding additional scope 3 categories to the inventory • Easier to track performance of specific activities	• May result in less comprehensive GHG management across the value chain (if multiple scope 3 targets are not set) • May result in "cherry picking" (or the perception thereof) by setting targets only for categories that are easier to achieve • More complicated to communicate to stakeholders • May require base year recalculation for outsourcing or insourcing

3

Downstream leased assets	**Reduce by 28% per sqm by 2030 (compared to a 2018 baseline)**
Capital gods	**Reduce scope 3 GHG emissions from capital goods by 25% per sqm by 2030 (compared to a 2016-2018 baseline)**

Sources: Swire 2023 Sustainability Report

Scope 3 Emission Disclosure

Companies can Set Absolute or Intensity Targets

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About CLP
- **CLP provides electricity to more than 80% of Hong Kong's population and one of the largest investor-owned power businesses in the Asia-Pacific region**
- **The targets are SBTi-approved reduction targets and in line with a 1.5°C trajectory**

Target type	*Examples*	*Advantages*	*Disadvantages*
Absolute target	• Reduce total scope 3 emissions by 10 percent from 2010 levels by 2015 • Reduce scope 3 emissions from the use of sold products by 20 percent from 2010 levels by 2015	• Designed to achieve a reduction in a specified quantify of GHGs emitted to the atmosphere • Environmentally robust and more credible to stakeholders as it entails a commitment to reduce total GHGs by a specified amount	• Does not allow comparisons of GHG intensity/efficiency • Reported reductions can result from declines in production/output rather than improvements in performance
Intensity target	• Reduce scope 3 emissions per unit of revenue by 25 percent from 2010 levels by 2015 • Improve the energy efficiency of sold products by 30 percent from 2010 levels by 2015	• Reflects GHG performance improvements independent of business growth or decline • May increase the comparability of GHG emissions among companies	• Less environmentally robust and less credible to stakeholders because absolute emissions may rise even if intensity decreases (e.g., because output increases more than GHG intensity decreases). If a monetary metric is used, such as dollar of revenue or sales, recalculation may be necessary for changes in product prices and inflation.

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A

Absolute Scope 3 (Category 11) GHG emissions

Reduce by 28% by 2030 (compared to 2019 baseline)

B

GHG emission Intensity (Scope 1, 2, 3)

Reduce by 59% to to 0.26kg CO_2e/kWh by 2030 (compared to 2019 baseline)

Sources: CLP 2023 Sustainability Report

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