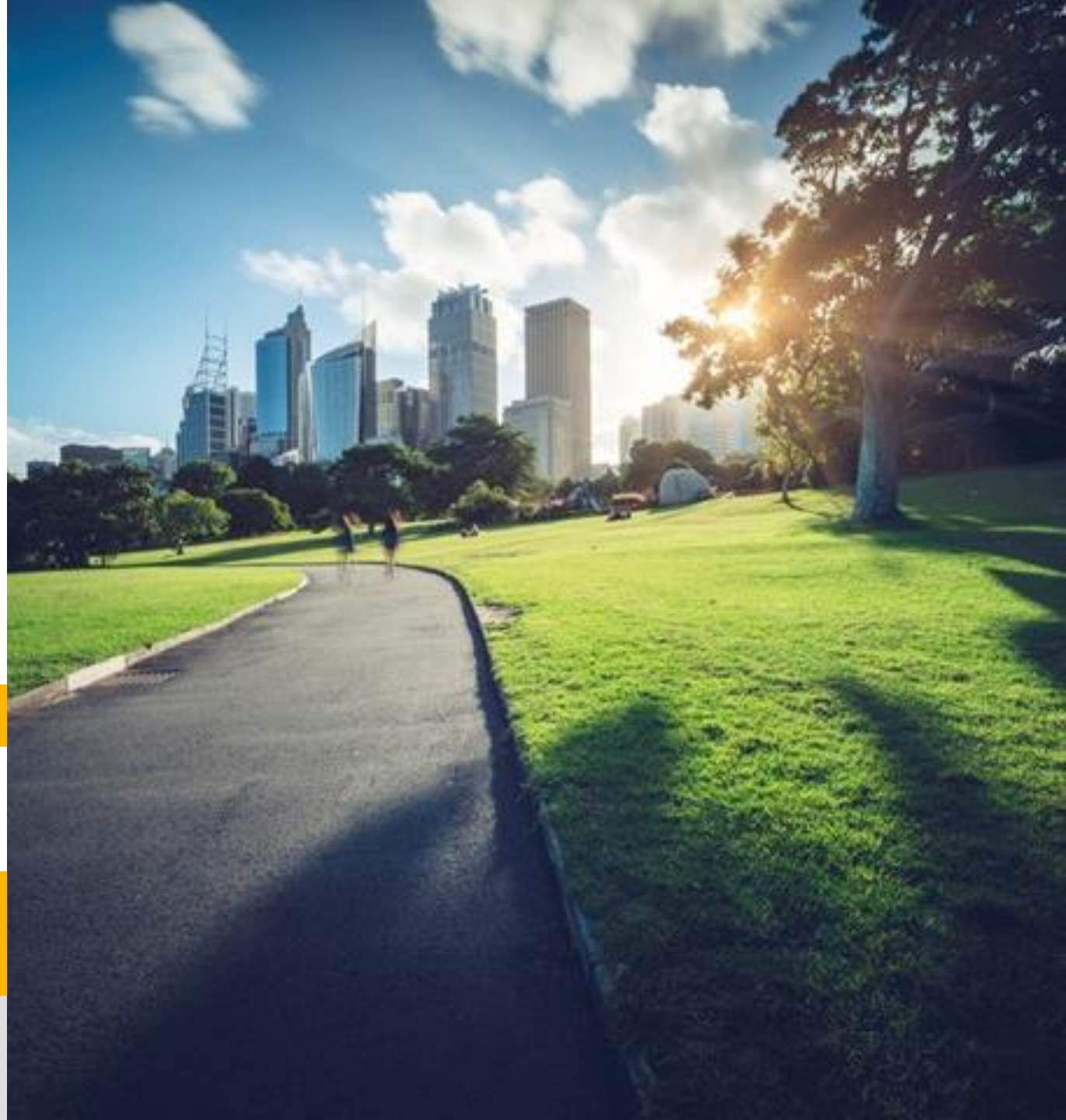
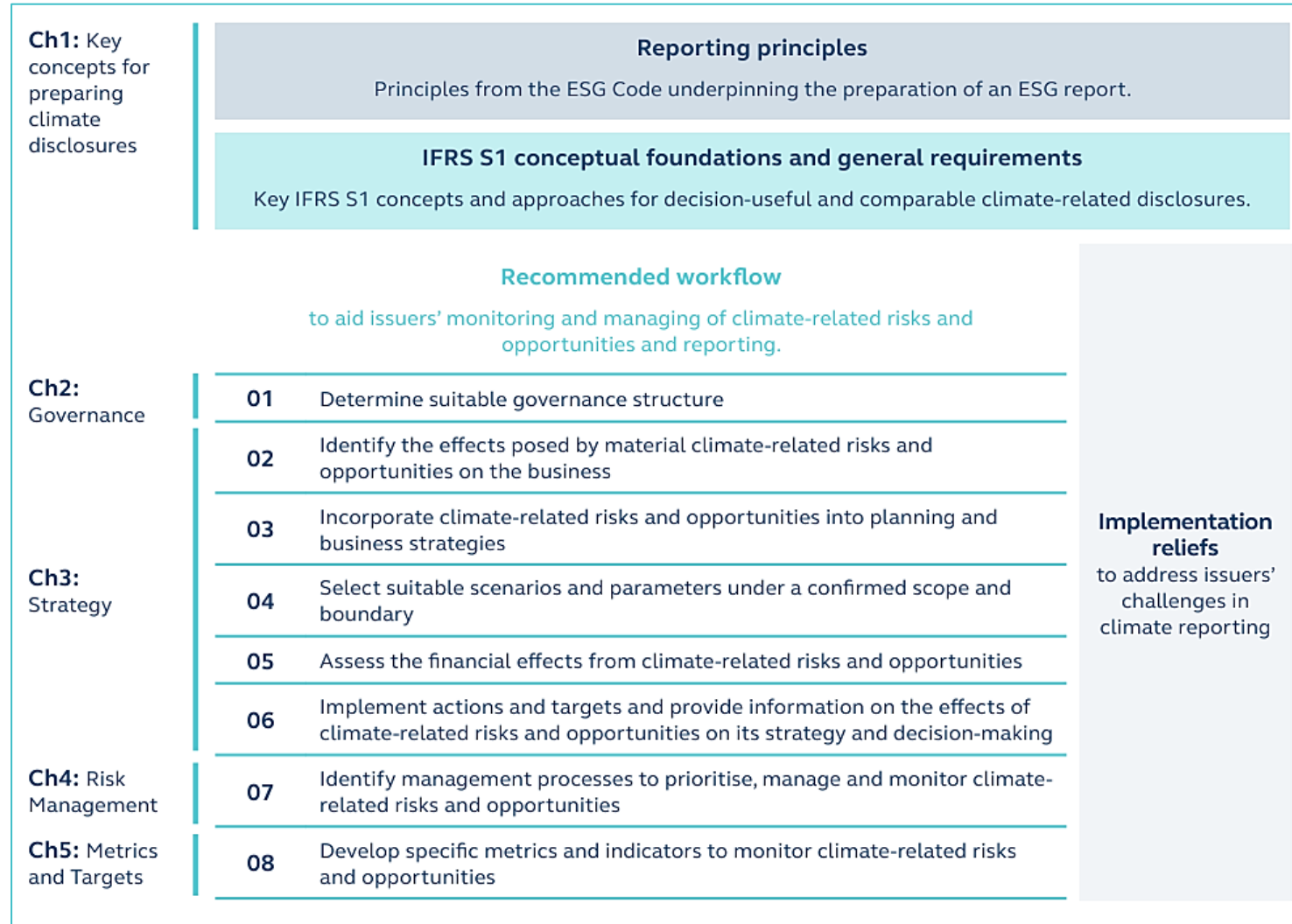


# Introducing the Implementation Guidance for Climate Disclosures under HKEX ESG reporting framework

May 2024



# The Implementation Guidance (IG) is structured into five chapters to closely align with HKEX's ESG Code












# Key highlights of the Implementation Guidance



<p><b>Introducing the key concepts of IFRS S1</b></p>	<p><b>Insights from real life application</b></p>	<p><b>Organised into five chapters to closely align with HKEX's ESG Code</b></p>
<p><b>Step-by-step illustrations with explanation</b></p>	<p><b>Practical applications</b></p>	<p><b>Cross-referenced to HKEX ESG Code, IFRS S1 &amp; S2</b></p>
<p><b>Important note to issuers</b></p>	<p><b>Further guidance</b></p>	<p><b>Available in both English and Chinese</b></p>

**Navigation throughout this guidance**

Throughout the Implementation Guidance, you will find various keys to guide you through the content, including:

Keys	Purpose
	Paragraph(s) under HKEX ESG Code requirements
	References to the implementation reliefs available for issuers in preparing climate-related disclosures
	References to relevant paragraph(s) of IFRS S1
	References to relevant paragraph(s) of IFRS S2
	References to HKEX ESG Code requirements
	<b>Further guidance</b> Useful links to reference materials
	<b>Important note</b> Clarifications and key reminders
	<b>Insights</b> Insights and recommendations from real life situations
	<b>Practical application</b> Examples to support the application of Part D of the ESG Code

# Introducing IFRS S1 key concepts for climate disclosure

1. Quality of information

2. Reporting entity

3. Timing of reporting

4. Location of disclosures

5. Materiality

6. Value chain concepts

7. Statement of compliance

8. Judgements and measurement uncertainty

9. Interaction with law or regulation

10. Aggregation and disaggregation

11. Comparative information

12. Estimates and errors

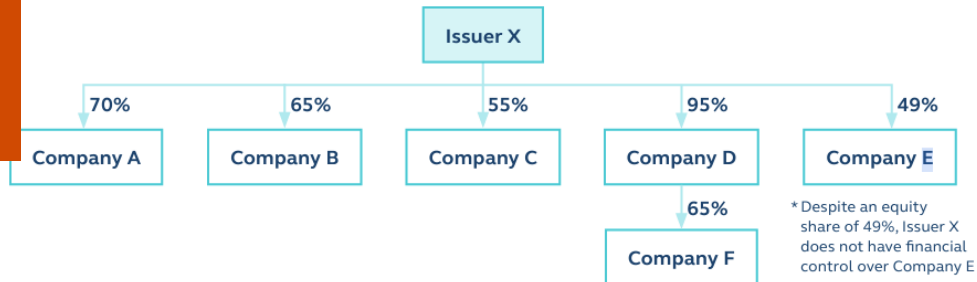
13. Connected information



# Distinguishing between organisational and operational boundaries

## 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%



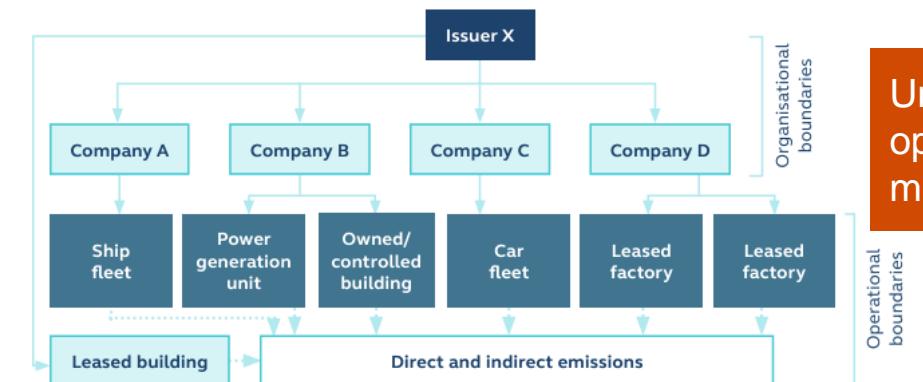
Issuer X decided to account for its GHG emissions using the financial control approach. In this case, Issuer X will include 100% of the GHG emissions from Companies A, B, C and D. As Company F is a subsidiary of Company D and is financially controlled by Company D, its GHG emissions will be accounted for via Company D. As Issuer X does not have financial control over Company E, it will not include Company E's GHG emissions.

**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

Adopt a financial control approach

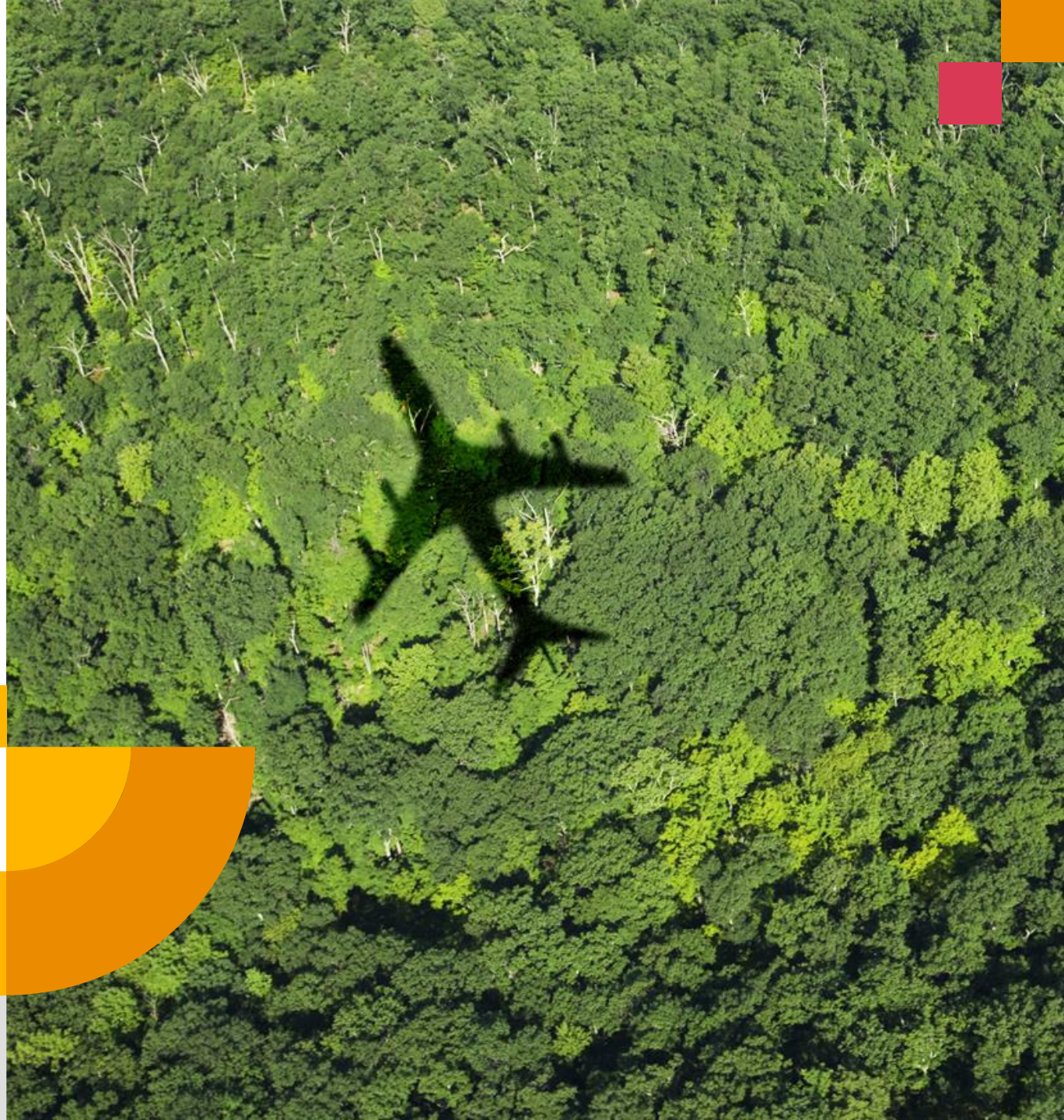
## Organisational and operational boundaries of Issuer X<sup>54</sup>



Understand your operational model



# Scenario analysis



# Selecting your climate scenarios

	IPCC <i>(Sixth Assessment Report AR6)</i>	IEA <i>(GEC Model 2022)</i>	NGFS <i>(Phase IV Scenario)</i>
<b>Remit</b>	<ul style="list-style-type: none"> <li>Scientific and academic perspectives to assess the climate response to five illustrative scenarios that cover</li> </ul>	<ul style="list-style-type: none"> <li>Energy system perspective to explore various scenarios, each of which is built on a different</li> </ul>	<ul style="list-style-type: none"> <li>Convened by a group of central banks and supervisors to bring together a global, harmonised set</li> </ul>

An overview of **common scenario sources** is provided as the basis for performing scenario analysis

Scenarios	IPCC	IEA	NGFS
>3°C	<ul style="list-style-type: none"> <li>SSP5-8.5</li> <li>SSP3-7.0</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Current Policies</li> </ul>
>1.5°C and <3°C	<ul style="list-style-type: none"> <li>SSP2-4.5</li> <li>SSP1-2.6</li> </ul>	<ul style="list-style-type: none"> <li>Stated Policies Scenario (STEPS)</li> <li>Announced Pledges Scenario (APS)</li> </ul>	<ul style="list-style-type: none"> <li>Below 2°C</li> <li>Delayed Transition</li> <li>National Determined Contributions (NDCs)</li> <li>Fragmented World</li> </ul>
≤ 1.5°C	<ul style="list-style-type: none"> <li>SSP1-1.9</li> </ul>	<ul style="list-style-type: none"> <li>Net Zero Emissions by 2050 Scenario (NZE)</li> </ul>	<ul style="list-style-type: none"> <li>Net Zero 2050</li> <li>Low Demand</li> </ul>

Each scenario specifies a given level of **global warming**, making the concept of **high-contrast** scenarios (e.g. ≤ 1.5°C vs >3°C) easier to understand for issuers

Table 3: Overview of publicly available scenario sources<sup>31</sup>

	IPCC <i>(Sixth Assessment Report AR6)</i>	IEA <i>(GEC Model 2022)</i>	NGFS <i>(Phase IV Scenario)</i>
<b>Remit</b>	<ul style="list-style-type: none"> <li>Scientific and academic perspectives to assess the climate response to five illustrative scenarios that cover the range of possible future development of anthropogenic drivers of climate change</li> </ul>	<ul style="list-style-type: none"> <li>Energy system perspective to explore various scenarios, each of which is built on a different set of underlying assumptions about how the energy system might respond to the current global energy crisis and evolve thereafter</li> </ul>	<ul style="list-style-type: none"> <li>Convened by a group of central banks and supervisors to bring together a global, harmonised set of transition pathways, physical climate change impacts and economic indicators</li> </ul>
<b>Characteristics</b>	<ul style="list-style-type: none"> <li>Focuses on the physical science of climate change but also addresses transition risks associated with climate change</li> </ul>	<ul style="list-style-type: none"> <li>Focuses on transition risks and opportunities e.g. energy and emissions scenarios describing the future energy mix</li> </ul>	<ul style="list-style-type: none"> <li>Focuses on macro-financial impacts from physical risks, transition risks and opportunities</li> </ul>
<b>Scenarios</b>	<ul style="list-style-type: none"> <li>&gt;3°C                             <ul style="list-style-type: none"> <li>SSP5-8.5</li> <li>SSP3-7.0</li> </ul> </li> <li>&gt;1.5°C and &lt;3°C                             <ul style="list-style-type: none"> <li>SSP2-4.5</li> <li>SSP1-2.6</li> </ul> </li> <li>≤ 1.5°C                             <ul style="list-style-type: none"> <li>SSP1-1.9</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> <li>Stated Policies Scenario (STEPS)</li> <li>Announced Pledges Scenario (APS)</li> <li>Net Zero Emissions by 2050 Scenario (NZE)</li> </ul>	<ul style="list-style-type: none"> <li>Current Policies</li> <li>Below 2°C</li> <li>Delayed Transition</li> <li>National Determined Contributions (NDCs)</li> <li>Fragmented World</li> <li>Net Zero 2050</li> <li>Low Demand</li> </ul>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>Until 2100, granularity depending on data sources</li> </ul>	<ul style="list-style-type: none"> <li>Until 2050, granularity depending on data sources</li> </ul>	<ul style="list-style-type: none"> <li>5 year interval until 2050, some indicators depending on model are available up to 2100</li> </ul>
<b>Geographic coverage</b>	<ul style="list-style-type: none"> <li>Global</li> <li>Regional data for North America, Europe, Asia, Small Islands, Central and South America, Africa, Australasia</li> <li>Selected country data</li> </ul>	<ul style="list-style-type: none"> <li>Global</li> <li>Regional data for North America, Central and South America, Europe, Africa, Middle East, Eurasia and Asia Pacific</li> <li>Selected country data</li> </ul>	<ul style="list-style-type: none"> <li>Global</li> <li>Country data for ~200 countries, incl. Mainland China, Hong Kong SAR</li> </ul>

# Illustrative case studies of different industries

## 1 Real estate company

The issuer is a real estate company with properties in Hong Kong and Mainland China. It has conducted an assessment process for one of its identified climate-related risks that may affect its business model and value chain.

Key disclosure areas	Actions by the issuer
Climate-related risks and opportunities and business model and value chain	<p>The issuer identifies income derived from sea level rise as a climate-related risk that may cause disruption to the drainage capacity. <a href="#">C2 20</a></p> <p>During the year, an incident affected the issuer's properties in Hong Kong and properties located in the coastal flooding. <a href="#">C2 21</a></p> <p>The issuer expects that in the short term (i.e. 2080), as compared to long term horizons are defined by national and governmental policies.</p>
Climate resilience	<p>To understand the potential impact of sea level rise, the issuer conducted a scenario analysis during the year on its assets in pre-investment stage.</p> <p>The issuer has already implemented measures arising from coastal flooding to improve its level and flood-resistance. In light of recent coastal</p>

## 2 Logistics company

The issuer is a logistics company that transports vehicles using internal combustion engines and electric vehicles ("EVs"). Based on the issuer's pricing as a relevant climate-related risk, the issuer carried out on the risk to its profit margin.

Key disclosure areas	Actions by the issuer
Climate-related risks and opportunities and business model and value chain	<p>The issuer identifies climate-related risks such as pricing to affect its business model using internal combustion engines and electric vehicles. It expects that the impact will be taken into account in the short term (i.e. 2025 and 2030).</p>
Climate resilience	<p>The issuer has been monitoring emissions trajectory in the region, the issuer. Hence the issuer has updated its strategy. If carbon prices rise, financial performance will be affected. To assess the effectiveness of the amount of carbon credits, the issuer has conducted a scenario analysis. <a href="#">C2 26(b)(iii)</a></p>

Inputs for analysis

## 3 Manufacturing company

The issuer is a manufacturing company of packaging materials with plants in Guangdong province in Mainland China. With the increased spotlight on climate change such as China's '30-60' carbon neutrality targets<sup>85</sup>, the issuer is observing a shift in consumer preferences whereby reusable or recyclable materials are increasingly preferred over single-use plastics. The issuer identifies the shift in consumer preference, a climate-related transition risk, as its relevant climate-related risk. The following table sets out the issuer's assessment process for this risk.

Key disclosure areas	Actions by the issuer
Climate-related risks and opportunities and business model and value chain	<p>The issuer expects a gradual consumer shift from single-use plastic to reusable or recyclable materials to impact its business, accelerating the need to <b>upgrade its production lines</b> to accommodate a change from single-use packaging materials to more sustainable packaging materials. <a href="#">C2 20(a)-(b)</a></p> <p>As the issuer anticipates the shift to realise in the next 5 years, its business in Mainland China will be impacted more significantly over the <b>short term</b> (i.e. 2025), as compared to medium and long term (i.e. 2030 and 2050). The time horizon was selected to align with the issuer's five-year strategic planning. <a href="#">C2 20(d), 21</a></p>
Climate resilience	<p>As part of its 2030 strategy, the issuer already has plans to set aside budget to upgrade 20% of its production lines that are manufacturing single-use plastics. However, the shift in consumer preference may come about faster than expected. The issuer highlights uncertainty around the exact time period when the impact will realise, as this may affect its production line upgrade plan. <a href="#">C2 26(a), 30</a></p>



# Case study – a logistic company measuring its transition risks

## Transition risks – increased carbon pricing will result in increasing in operating costs

### Approach to scenario analysis and findings

- The issuer uses the **expected carbon price** of Mainland China from the two selected scenarios under NGFS.
- The issuer also collects its Scope 1 and Scope 2 GHG emissions in the current reporting year and **forecasts** future emissions in 2025, 2030 and 2050 under a “Do nothing” strategy, assuming no decarbonisation efforts will be performed. **C2 26(b)(ii)**

### Do nothing

Source	Variable	Unit	2025	2030	2050
<b>Current Policies scenario</b>					
NGFS	Carbon price	US\$/tCO <sub>2</sub>	-	-	4.45
Company data	Scope 1 & 2 GHG emissions	Tonnes	100	120	140
<b>Net Zero 2050 scenario</b>					
NGFS	Carbon price	US\$/tCO <sub>2</sub>	80.55	115.48	626.03
Company data	Scope 1 & 2 GHG emissions	Tonnes	100	120	140

- The issuer then quantifies the potential impact of carbon pricing based on the below calculation:

**Potential carbon cost (US\$) = Carbon price (US\$/tCO<sub>2</sub>) x Scope 1 & 2 emissions (tonnes)**

Variable	Unit	2025	2030	2050
<b>Current Policies scenario</b>	US\$	-	-	623
<b>Net Zero 2050 scenario</b>	US\$	8,055	13,858	87,644

- Based on the analysis, all of the issuer’s vehicles will be vulnerable to the risk of carbon pricing. However, it is estimated that under a Net Zero 2050 scenario, carbon costs will be significantly higher than the Current Policies scenario due to more stringent climate policies coming into place. **C2 30**
- To minimise its impacts from carbon pricing, the issuer analyses the use of a “Gradual transition” strategy, where it assumes 100% of its fleet to be renewable, which results in lower levels of emissions as compared to a “Do nothing” strategy. **C2 26(b)(ii)**

# Case study – a logistic company managing its transition risks

Demonstrating climate resilience – disclosure of the replacement of ICE fleet to EV (with timeline and milestone indicated)

As a result of the scenario analysis, the issuer understands that all of its vehicles are vulnerable to carbon pricing, especially under the Net Zero 2050 scenario.

To minimise exposure from a potential increase in operational expenses from carbon pricing, the issuer decides to **replace** its ICE fleet with EVs and plans to move to 100% EV by 2050. Through the replacement of ICE fleet, the issuer expects **a reduction in carbon emissions**. C2 22(a)(i)-(ii)

The issuer does not currently have a climate-related transition plan in place. However, to monitor progress in replacing its ICE fleet, the issuer has set a climate-related target, “to reach 70% electric vehicles of its total fleet by 2030, and 100% electric vehicles of its fleet by 2050”. The issuer plans to set up a separate workforce to monitor its progress and report its progress on an annual basis to its stakeholders. C2 22(a)(iii)-(iv)

# Scenario analysis disclosures - qualitative vs quantitative approaches

## Qualitative narratives

Physical risk	Relevance and assumptions	IPCC AR6 SSP2-4.5			IPCC AR6 SSP5-8.5		
		Percentage of value at risk (%)			Percentage of value at risk (%)		
C2 31		2030	2050	2080	2030	2050	2080
Extreme cold	We assessed how extreme weather events can impact our asset locations and the potential asset value at risk.	●	●	●	●	●	●
Coastal flooding		●	●	●	●	●	●
Tropical cyclone		●	●	●	●	●	●

Transition risk	Relevance and assumptions	NGFS Net Zero 2050			NGFS Current Policies		
		Percentage of total cost (%)			Percentage of total cost (%)		
C2 30		2030	2050	2080	2030	2050	2080
Increasing cost from carbon offsets	We expect higher carbon price may lead to increased fuel and energy costs.	●	●	●	●	●	●
Increasing electricity costs	We assessed how electricity and price increases could impact our energy spend.	●	●	●	●	●	●
Increasing cost to upgrade assets to "green"	We expect increasing regulations related to increasing building efficiency will translate into higher costs.	●	●	●	●	●	●

**Qualitative approach** to present the issuer's analysis under different scenarios with **risk scoring** and **qualitative narratives**

## Quantitative modelling / simulation

Physical risk	Relevance and assumptions	IPCC AR6 SSP2-4.5			IPCC AR6 SSP5-8.5		
		Percentage of value at risk (%) (Asset value at risk (HKD))			Percentage of value at risk (%) (Asset value at risk (HKD))		
C2 31		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	Relevance and assumptions	NGFS Net Zero 2050			NGFS Current Policies		
		Percentage of total cost (%) (Potential financial effect(HKD))			Percentage of total cost (%) (Potential financial effect(HKD))		
C2 30		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)

**Quantitative approach** to present the issuer's analysis with a **range of potential financial implications**

# Examples of disclosures climate scenario analysis - Henderson Land

**GREEN FOR PLANET**

It is important to note that these scenarios are not definitive outcomes for the Group. This scenario analysis exercise is based on assumptions that may or may not materialise and on the information available at the time of preparation, and the scenarios may be influenced by additional factors beyond the assumptions made in the exercise and hence do not represent actual future outcomes.

Based on the assessment, the Group has identified and prioritised the following climate risks and opportunities with their potential impacts and our resilience strategy as shown below:

**Physical risks**

Physical risks are risks derived from chronic risks resulting from long-term climate pattern shifts or acute risks from extreme climate events. The frequency and severity of impacts of these risks vary over different geographical locations.

In particular, the analysis also examined the change in risk level for each physical risk across different time horizons under different scenarios, and in our major regions of operations. The heatmap below presents the change in risk level, as expressed in change in annual expected damage, on properties located in Hong Kong and mainland China in 2030, 2050, and 2060, relative to risk level at base year 2022. Darker colour denotes greater change in risk level relative to the base year. For example, in mainland China, under tropical cyclones, the annual expected damage on our properties in 2030 is expected to be around 1%-10% more than that in 2022 under 4°C above scenario.

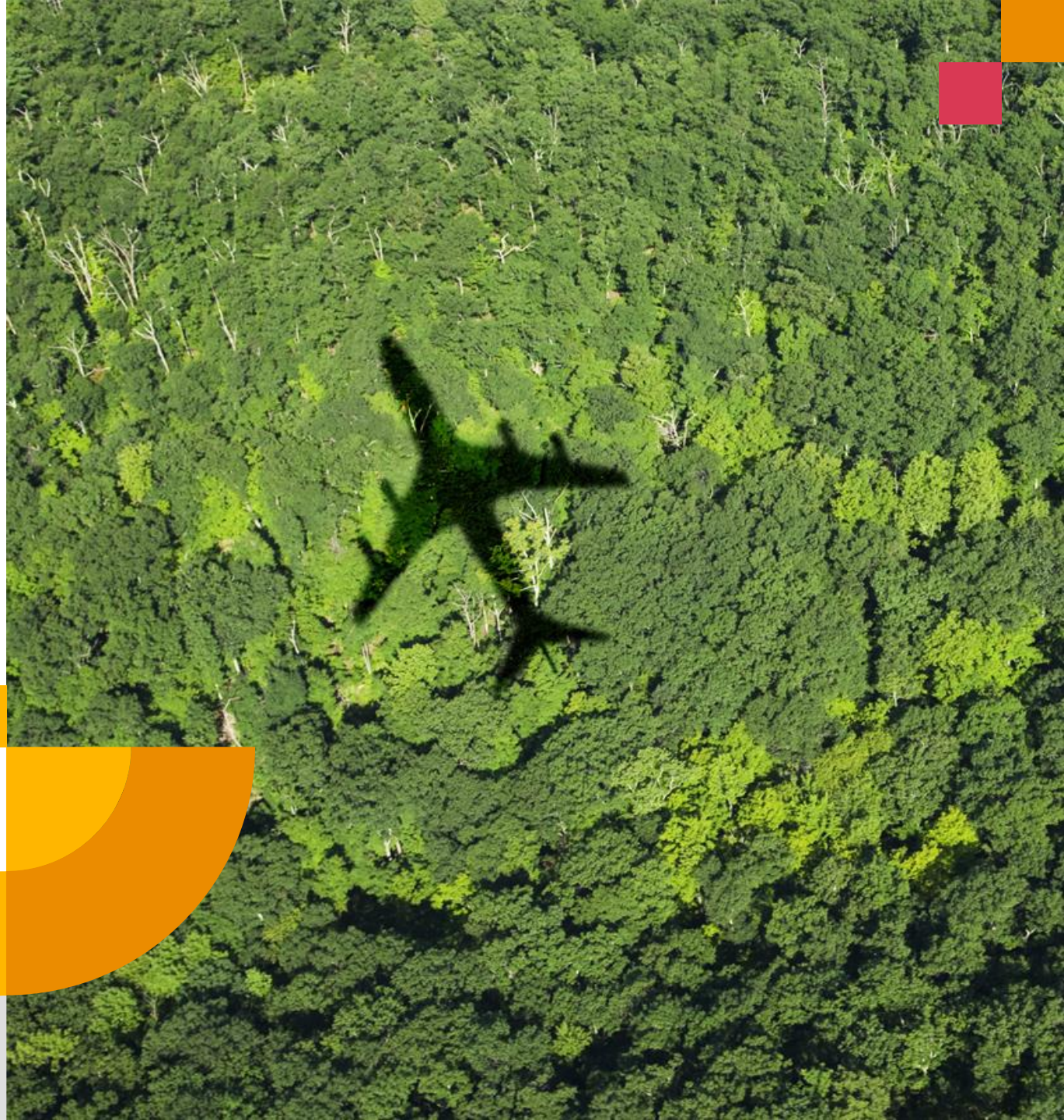
Key physical risks	Potential impacts	Our resilience strategy	Change in risk level with respect to base year <sup>14</sup> (%)							
			4°C above			2°C or below				
			2030	2050	2060	2030	2050	2060		
Coastal flooding (Acute)	<ul style="list-style-type: none"> <li>Decline in asset value on damaged properties</li> <li>Decrease in revenue due to</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade managed properties with infrastructure and controls such as</li> <li>controls, typhoon proof ceiling etc.</li> </ul>	Coastal flooding	Hong Kong	●	●	●	●	●	●
				Mainland China	●	●	●	●	●	●
Riverine flooding			Riverine flooding	Hong Kong	●	●	●	●	●	●
				Mainland China	●	●	●	●	●	●
Tropical cyclones			Tropical cyclones	Hong Kong	●	●	●	●	●	●
				Mainland China	●	●	●	●	●	●

Legend: ● <1%   ● 1%-10%   ● 11%-20%   ● >20%

<b>Location</b>	<ul style="list-style-type: none"> <li>Hong Kong</li> <li>Mainland China - Beijing, Guangzhou, Shanghai, Xian</li> </ul>
<b>Property type</b>	<ul style="list-style-type: none"> <li>Properties under development</li> <li>Managed properties</li> </ul>
<b>Physical risk scenarios</b>	<ul style="list-style-type: none"> <li>IPCC Representative Concentration Pathway ("RCP") 8.5 - exceed warming of 4°C</li> <li>IPCC RCP 2.6<sup>12</sup> - limit warming to 2°C</li> </ul>
<b>Transition risk scenarios</b>	<ul style="list-style-type: none"> <li>NGFS Current Policies Scenario - exceed warming of 3°C</li> <li>NGFS Net Zero 2050 Scenario - limit warming to 1.5°C</li> </ul>
<b>Time horizon</b>	<ul style="list-style-type: none"> <li>Short-term: 2030</li> <li>Medium-term: 2050</li> <li>Long-term: 2060</li> </ul>
<b>Base year</b>	2022

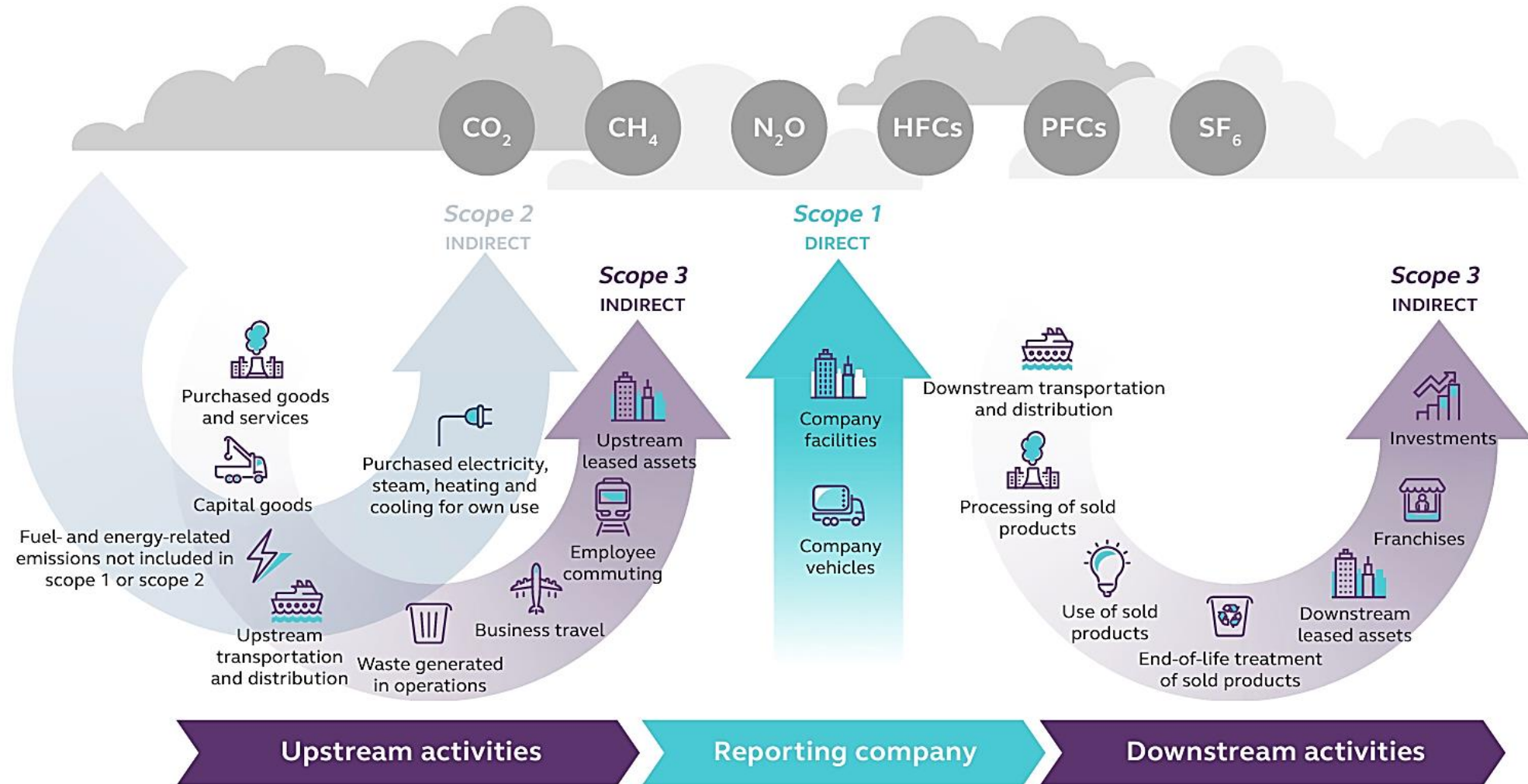
Source: Henderson Land Development Company Limited - Sustainability Report 2023

# Scope 3 emissions



# Identifying Scope 3 emissions across the value chain under the Greenhouse Gas (GHG) Protocol

Overview of GHG Protocol scopes and emissions across the value chain



# A construction company calculating Scope 3 GHG emissions

## Practical application 15: Overview of inputs to calculate Scope 3 GHG emissions



Input	Methodology	Example <sup>66</sup>
Activity data	<p>For Scope 3 GHG emissions, the activity data for collection and its granularity will vary depending on the Scope 3 categories identified<sup>67</sup>, and examples include fuel use or passenger miles.</p> <p>GHG Protocol suggests different methods (e.g. supplier-specific, average-based, spend-based methods) to account for Scope 3 GHG emissions, therefore the activity data to be collected may vary.</p> <p>Issuers should determine the extent of the use of primary and secondary data to calculate Scope 3 GHG emissions based on their business Scope 3 activity quality. (See input data.)</p>	<p>A Hong Kong construction company purchased materials (cement, timber and concrete) for its operations and will be required to calculate its Scope 3 GHG emissions from Category 1 (Purchased Goods and Services). Using its internal IT system, the company is able to determine the total weight (kg) purchased for each material.</p> <ul style="list-style-type: none"> <li>• Cement: 200,000 kg</li> <li>• Timber: 100,000 kg</li> <li>• Concrete: 50,000 kg</li> </ul> <p>The company collects product-specific emission factors</p> <ul style="list-style-type: none"> <li>• Timber: 0.25 kg CO<sub>2</sub>e/kg</li> <li>• Concrete: 0.20 kg CO<sub>2</sub>e/kg</li> </ul> <p>The supplier-specific emission factor has already converted relevant GHGs into CO<sub>2</sub>e, so no recalculation is required on the emission factors using GWP values.</p>
Emission factor	<p>Depending on the Scope 3 categories identified and the corresponding activity data, issuers may refer to source- or facility-specific emission factors available in the operating location. Where location-specific emission factors are not available, issuers should refer to those published by other regions.</p> <p>Depending on the Scope 3 categories identified and the corresponding activity data, the GHG involved may be different, affecting the application of GWP values. For example, for Category 11 (Use of Sold Products), depending on the products sold, different GHGs may be released. Issuers should account for all the different types of GHGs contained in a product, then aggregate for all products.</p>	<p><b>Estimated Scope 3 Category 1 emissions:</b></p> $= (200,000\text{kg} \times 0.15\text{ kg CO}_2\text{e/kg}) + (100,000\text{ kg} \times 0.25\text{ kg CO}_2\text{e/kg}) + (50,000\text{kg} \times 0.20\text{kg CO}_2\text{e/kg}) \times 0.001\text{ MT/kg}$ $= 65,000\text{kg CO}_2\text{e} \times 0.001\text{ MT/kg}$ $= 65\text{ MTCO}_2\text{e}$

**Estimated Scope 3 Category 1 emissions:**

$$= (200,000\text{kg} \times 0.15\text{ kg CO}_2\text{e/kg}) + (100,000\text{ kg} \times 0.25\text{ kg CO}_2\text{e/kg}) + (50,000\text{kg} \times 0.20\text{kg CO}_2\text{e/kg}) \times 0.001\text{ MT/kg}$$

$$= 65,000\text{kg CO}_2\text{e} \times 0.001\text{ MT/kg}$$

$$= 65\text{ MTCO}_2\text{e}$$

# A real estate company disclosing Scope 3 GHG emissions

## 6.3 Advanced – Real estate company

- Quantifies absolute gross GHG emissions for all Scope 3 categories

### Data table

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

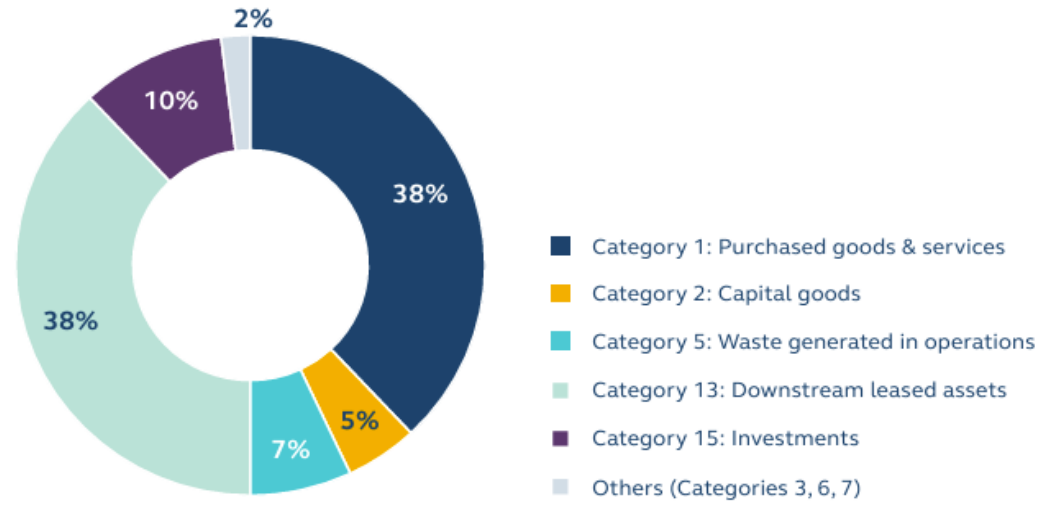
Scope	Source	Unit	2023	2022	2021
Scope 1	GHG Protocol Emission Factors from Cross-Sector Tools	MtCO <sub>2</sub> e	15,375	10,294	11,396
Scope 2	C2 29(c) CLP Power Hong Kong Limited and Hongkong Electric (Location-based) Sustainability Reports	MtCO <sub>2</sub> e	38,734	39,081	38,903
Scope 3	See Scope 3 reporting boundary	MtCO <sub>2</sub> e	256,153	257,496	259,210

### Our approach

#### Our approach

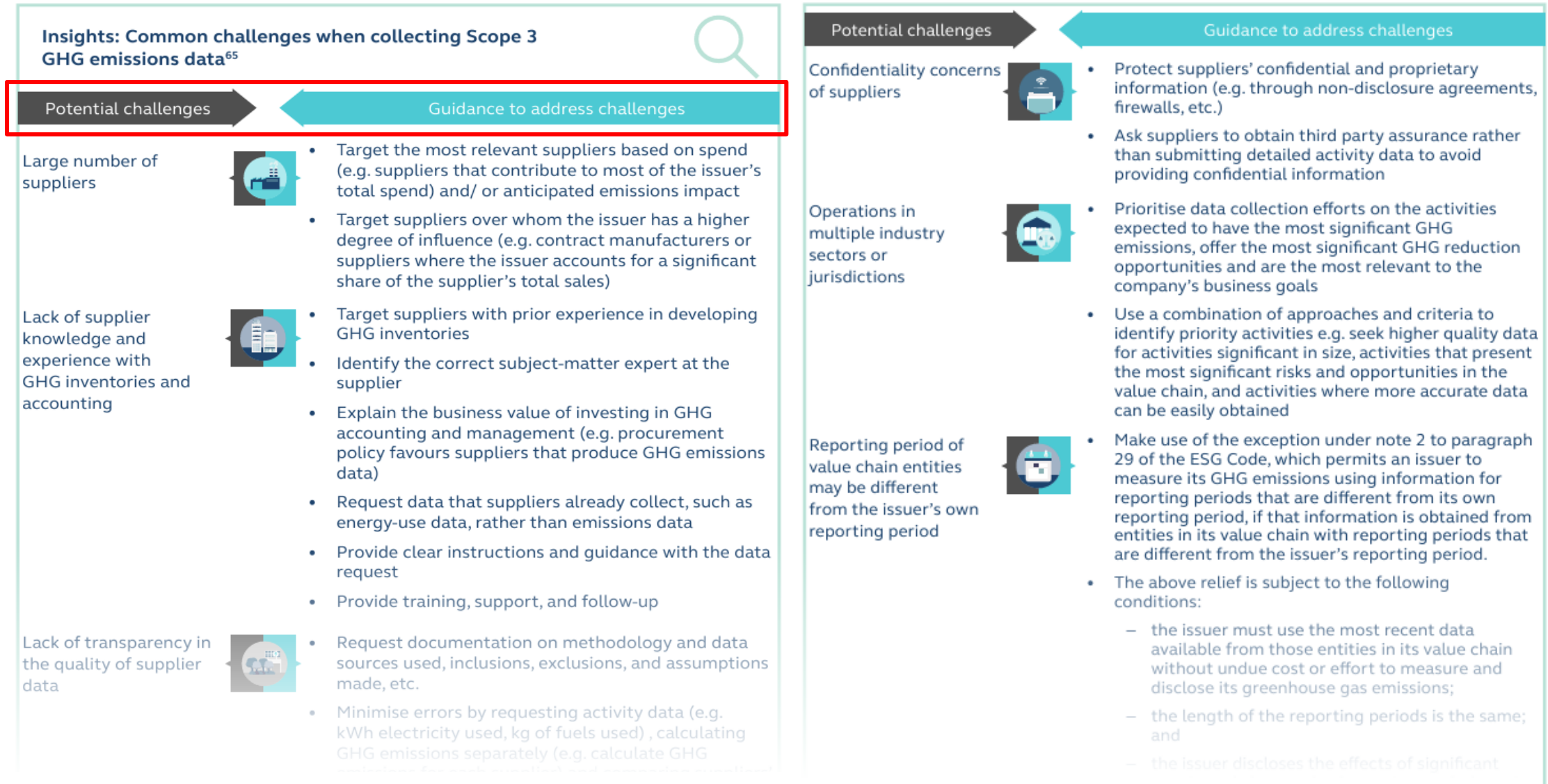
Standard used	C2 29(a)	GHG Protocol Corporate and Reporting Standard (2004) GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard
Measurement approach	C2 29(b)	Operational control due to the ability to take full ownership of all GHG emissions we can directly influence and reduce
Operational boundary		<ul style="list-style-type: none"> <li>80 assets that are owned and managed in Hong Kong</li> <li>Including Headquarter and operating offices</li> </ul>

Scope 3 GHG emissions breakdown (2023)





# Scope 3 data collection: common challenges and how to overcome them



# Examples of disclosures of Scope 3 emissions – MTR



The table below lists out our Scope 3 reporting boundaries aligning with our SBTs, the methodologies, and sources of emission factors EFs.

Scope 3 category <sup>[1]</sup>	Calculation methodology and source of emission factor	Scope 3 category <sup>[1]</sup>	Calculation methodology and source of emission factor
1. Purchased goods and services <sup>[2]</sup>	<p><u>2023</u> Spend-based method based on capital expenditure on purchase of assets and the corresponding EFs from Supply Chain Greenhouse Gas Emission Factors v1.2 published by the US Environmental Protection Agency (USEPA)</p> <p><u>2019</u> Spend-based method based on capital expenditure on purchase of assets and the corresponding EF from Quantis GHG Protocol Scope 3 Evaluator For emission due to electricity used for processing of water: Hong Kong Water Supplies Department (WSD) Annual Report</p>	5. Waste generated in operations	<p>Estimated quantity of waste and EFs from the following sources:</p> <ul style="list-style-type: none"> <li>- Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong published by the EPD and EMSD</li> <li>- Carbon Audit Toolkit for Small and Medium Enterprises in Hong Kong published by the University of Hong Kong and the City University of Hong Kong</li> <li>- Measuring Emissions: A Guide for Organisations: 2023 Detailed Guide published by the New Zealand Ministry for the Environment</li> <li>- Hong Kong Drainage Service Department Sustainability Report</li> </ul>
2. Capital goods	<p><u>2023</u> Spend-based method based on capital expenditure on developments and the corresponding EFs from Supply Chain Greenhouse Gas Emission Factors v1.2 published by the US Environmental Protection Agency (USEPA)</p> <p><u>2019</u> For railway: spend-based method based on capital expenditure on developments and the corresponding EF from Quantis GHG Protocol Scope 3 Evaluator For IP: Floor areas of IPs and EF for construction carbon emission from an academic paper jointly published by HKUST and Swire Properties</p>	6. Business travel	Greenhouse gas reporting: conversion factors 2023 published by the UK Department for Energy Security and Net Zero.
3. Fuel and energy related activities	<p><u>2023</u> Consumption of fuel and the corresponding EF from Greenhouse gas reporting: conversion factors 2023 published by the UK Department for Energy Security and Net Zero. Scope 2 emission due to electricity consumption and % loss in power transmission and distribution published by the International Energy Agency</p> <p><u>2019</u> For railway: EF from Quantis GHG Protocol Scope 3 Evaluator For IP: floor areas and EF developed by Arup based on carbon emission owing to extraction, production, transportation and T&amp;D loss.</p>	7. Employee commuting	Number of Hong Kong employee and EF from Quantis GHG Protocol Scope 3 Evaluator
4. Upstream transportation & distribution	A lumpsum spending covering transportation and distribution of goods has been included in Cat 1	8. Upstream leased assets <sup>[3]</sup>	Greenhouse Gas Protocol
		13. Downstream leased assets	Tenants' emissions estimated by using the energy consumption data published in EMSD Energy Consumption Indicators and Benchmarks and respective floor use distribution in IPs.

#### Notes

- [1] Category 9 to 12 are considered not relevant as the Corporation has no applicable sale of goods and services. Category 14 and 15 are not relevant as the Corporation has no applicable franchises or investments.
- [2] Given the nature of our business, majority of GHG emissions in this category is associated with purchase of goods (e.g. equipment), while the emission due to purchased services is comparatively low and well below the threshold to be covered in Scope 3 emission (i.e. not exceeding 33% of entire Scope 3 emission as required by SBTi). As such, it is excluded from our Scope 3 reporting boundary.
- [3] This category includes Scope 1 and 2 emissions from our majority-owned subsidiaries in Mainland China, Australia, UK and Sweden, including the following:
- Shenzhen Metro Line 4 operated by MTR Corporation (Shenzhen) Limited in Mainland China;
  - Hangzhou Metro Line 5 operated by Hangzhou MTR Line 5 Corporation Limited in Mainland China;
  - Stockholm Metro operated by MTR Tunnelbanan AB and its rolling stock maintenance by MTR Tech AB in Sweden;
  - Stockholm commuter rail (Stockholms pendeltåg) operated by MTR Pendeltågen AB and its rolling stock maintenance by MTR Tech AB in Sweden;
  - Mälardalen Regional Traffic (Mälartåg) operated by MTR Mälartåg AB in Sweden;
  - Stockholm-Göteborg Intercity Express Service (MTRX) with operations being performed by MTR Express (Sweden) AB in Sweden;
  - Elizabeth line operated by MTR Elizabeth line in London;
  - Melbourne's metropolitan rail services operated by Metro Trains Melbourne Pty. Ltd. in Australia; and
  - Sydney Metro North West Line operated by Metro Trains Sydney Pty. Limited in Australia.

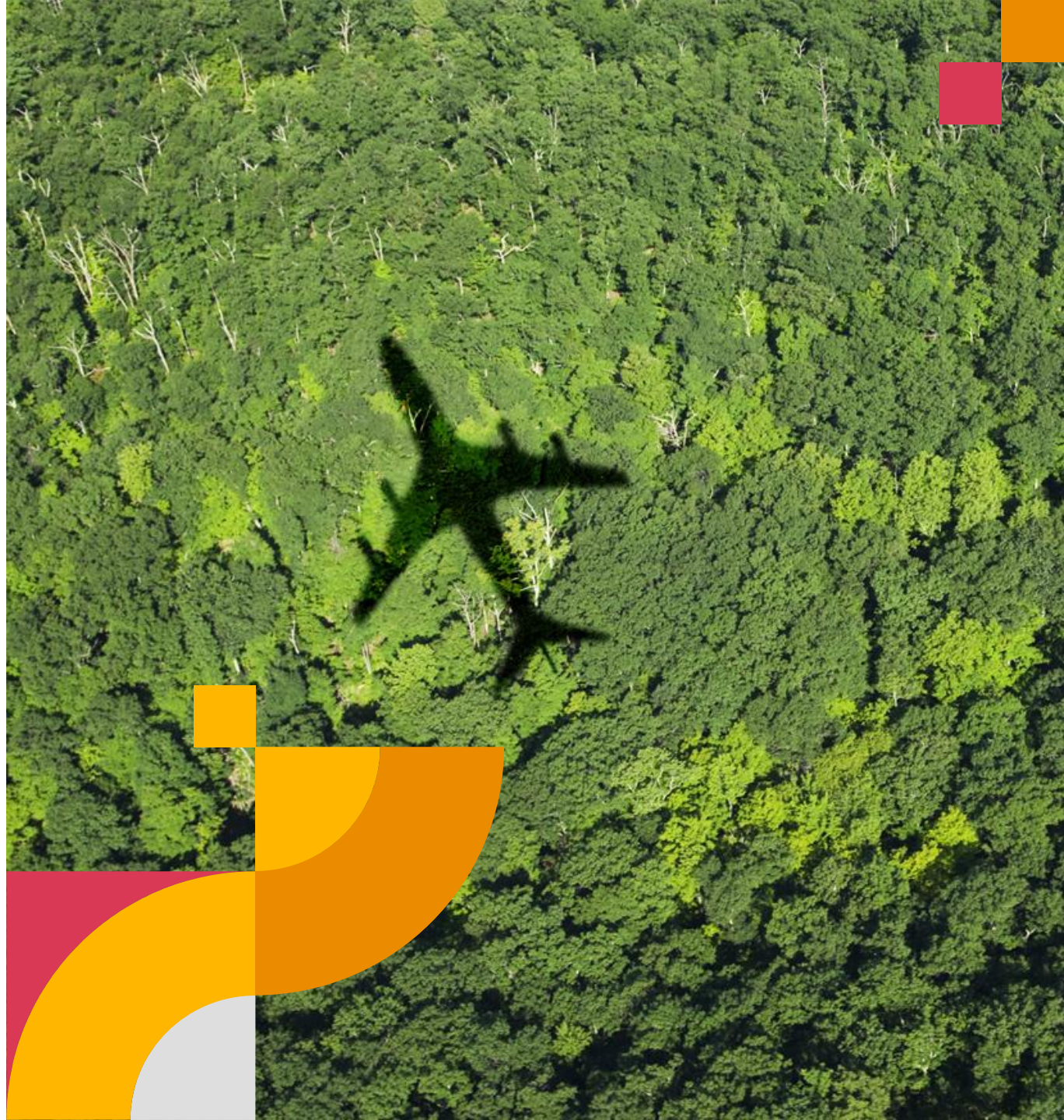
# Other topics

Financial position, financial performance  
and cash flows

Target-setting

Internal carbon pricing

Risk integration



# Where to locate the HKEX IG?

HKEX - Listing Regulations / Sustainability & Corporate Governance / ESG Academy / Publications and Training

Publications and Training

## Guides

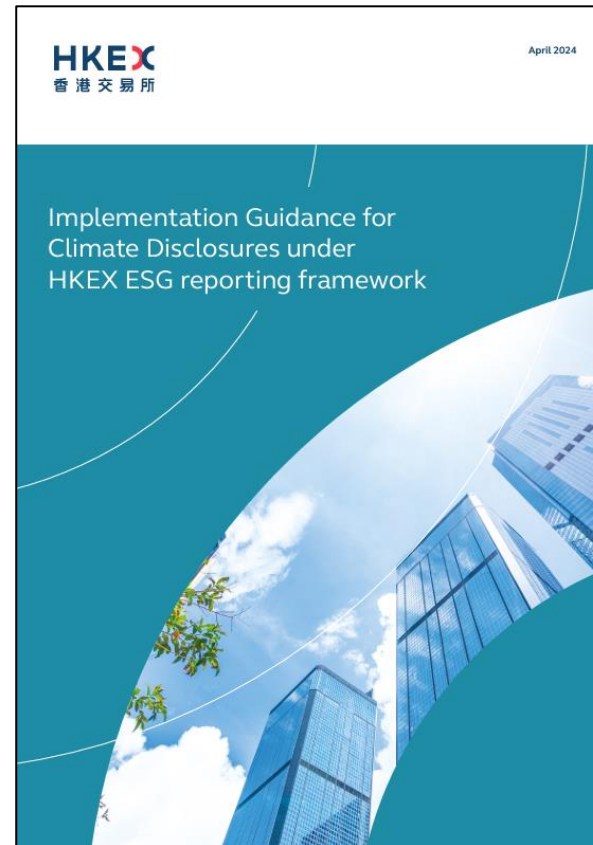


[Implementation Guidance for Climate Disclosures under HKEX ESG Reporting Framework](#) [PDF](#) >

[Link](#)



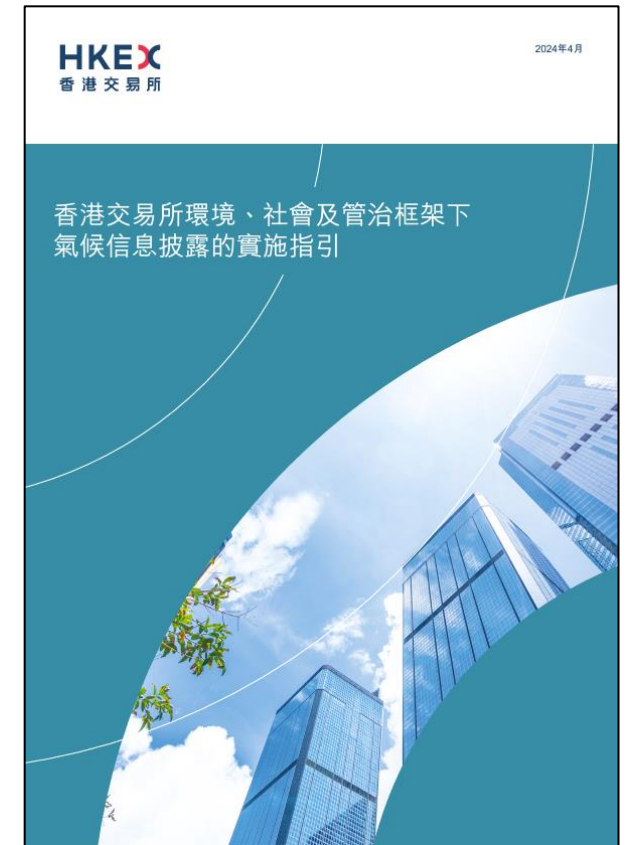
## English



[Link](#)



## Traditional Chinese



# Thank You



Sammie Leung

Partner, Regional ESG Services  
Asia Pacific, PwC



**Important note:**

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