



Carbon Accounting Masterclass

March 2026



Today's presenters



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BDO acknowledges the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.



Today's agenda

Time	Topic
9:00am - 9:30am	Setting the scene
9:30am - 10:30am	Introduction to BDO's 10 step process to measuring a carbon footprint
10:30am - 11:00am	Morning tea
11:00am - 12:00am	Scope 1 and Scope 2 emissions
12:00am - 12:30pm	Upstream Scope 3 emissions
12:30pm - 1:30pm	Lunch
1:30pm - 2:30pm	Upstream Scope 3 emissions
2:30pm - 3:00pm	Downstream Scope 3 emissions
3:00pm - 3:30pm	Afternoon tea
3:30pm - 5:00pm	Downstream Scope 3 emissions
5:00pm	Masterclass concludes

BDO Global Carbon Accounting Methodology

IDEAS | PEOPLE | TRUST



1 Overview of Carbon Accounting Methodology



IDEAS | PEOPLE | TRUST



2 Boundary setting



IDEAS | PEOPLE | TRUST



3 Measurement of Scope 1 & 2 emissions



IDEAS | PEOPLE | TRUST



4 Measurement of Scope 3 emissions



Additional Materials to Support the BDO Global Carbon Accounting Methodology



Carbon Accounting Masterclass Alumni



Quarterly Carbon Accounting Masterclass Alumni events

- ▶ Please register for our quarterly Carbon Accounting Masterclass Alumni events - you will receive an invitation shortly

- ▶ Dates for 2026
 - Q1 - Monday, 9 February 2026, 12 pm to 2 pm (Melbourne time)
 - Q2 - Monday, 11 May 2026, 12 pm to 2pm (Melbourne time)
 - Q3 - Monday, 10 August 2026, 12 pm to 2 pm (Melbourne time)
 - Q4 - Monday, 9 November 2026, 12 pm to 2 pm (Melbourne time)



Setting the scene

What is sustainability?



Why is sustainability important NOW?

**Strategic
imperative**

(Voluntary Sustainability Reporting)

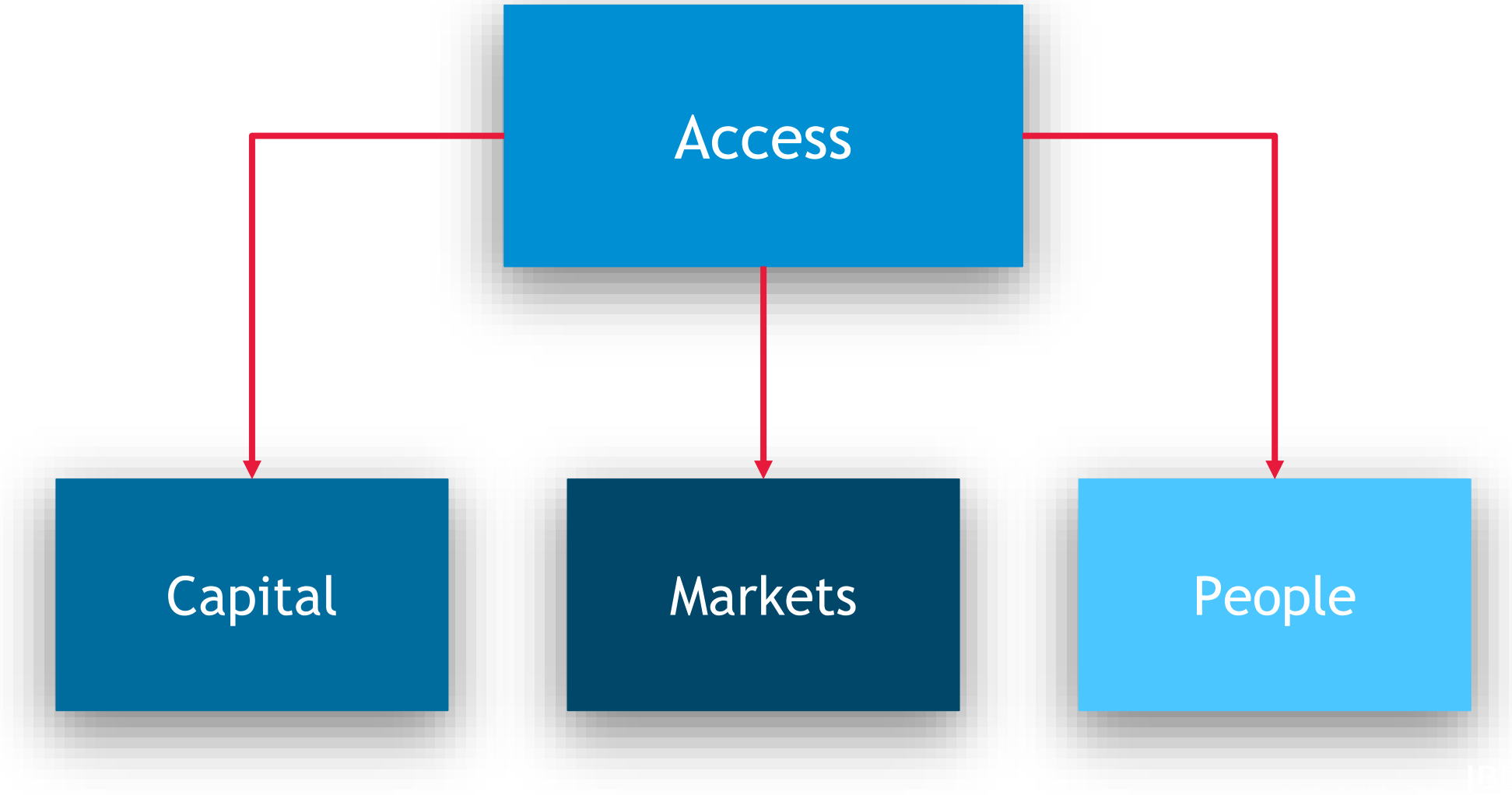
**Compliance
imperative**

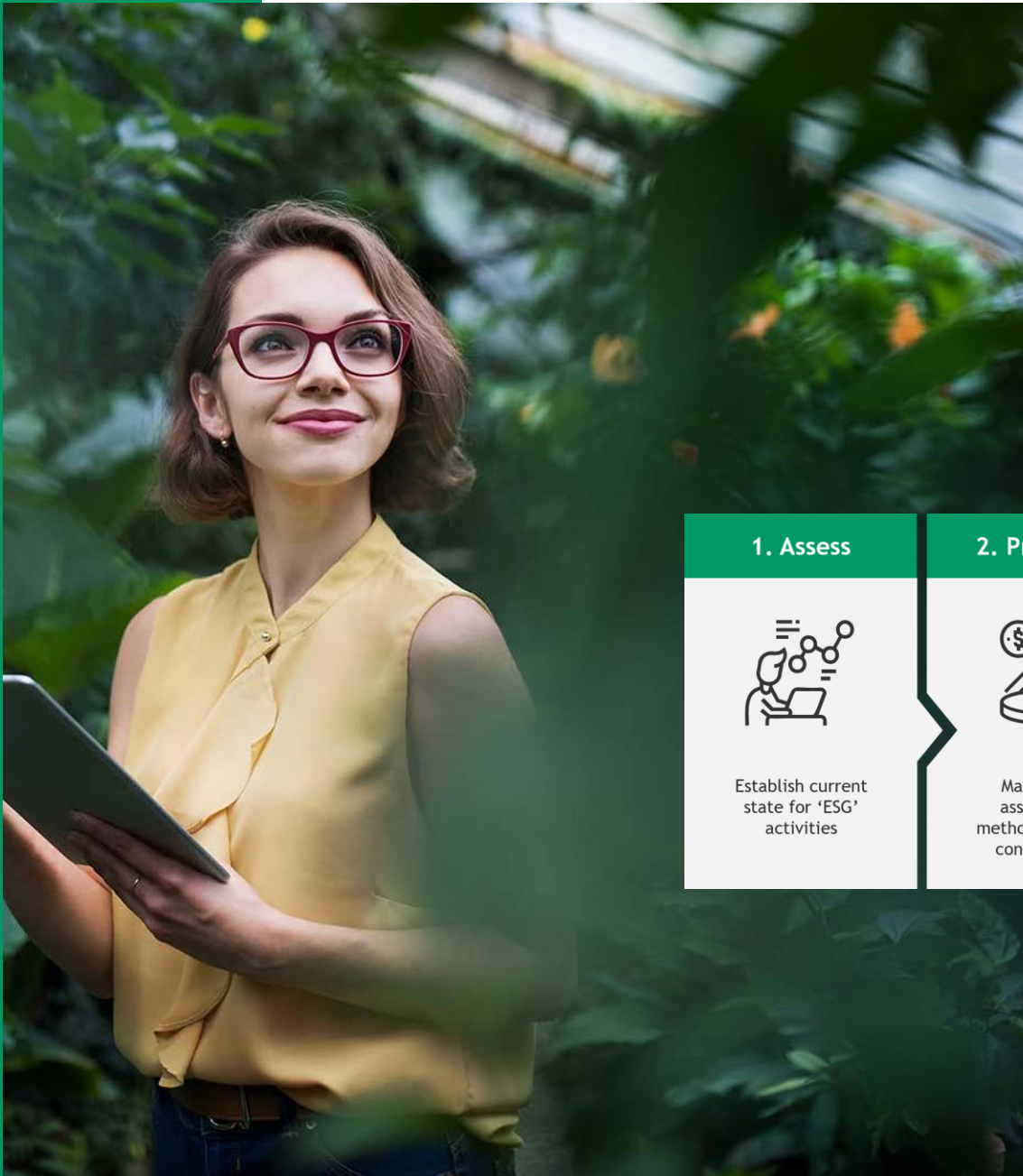
(Mandatory Sustainability Reporting)

Strategic Imperative



What is the strategic imperative?





A checklist for developing your sustainability roadmap

If your organisation hasn't started its sustainability journey, you're certainly not alone - but there's no better time to start. Keep in mind that sustainability is a journey, a process of continuous improvement which you can't tick off in one step.

Demands for transparency on sustainability and climate-related risks and opportunities have been increasing for businesses around the world.

Stakeholders are calling out for information that is accessible, informative, comparable, and - of course - not misleading.

This six-step sustainability roadmap will help to guide you to establish which sustainability activities are a priority to your organisation, based on the importance and value to your stakeholders.



Here to help

If you need a hand to step you through this roadmap to activate sustainability within your organisation, BDO's national team of sustainability experts can help.

[Get in contact](#) 

Compliance imperative





Key features of the Australian regulatory approach

1. Mandated climate-related financial disclosures in a **separate sustainability report** as part of the entity's **annual report**
2. Entities will also be required to obtain an **assurance report** over the sustainability report from **their or other financial report auditors**
3. The *Corporations Act 2001* mandates the use of **two specific scenarios** (1.5°C and 2.5°C) for scenario analysis

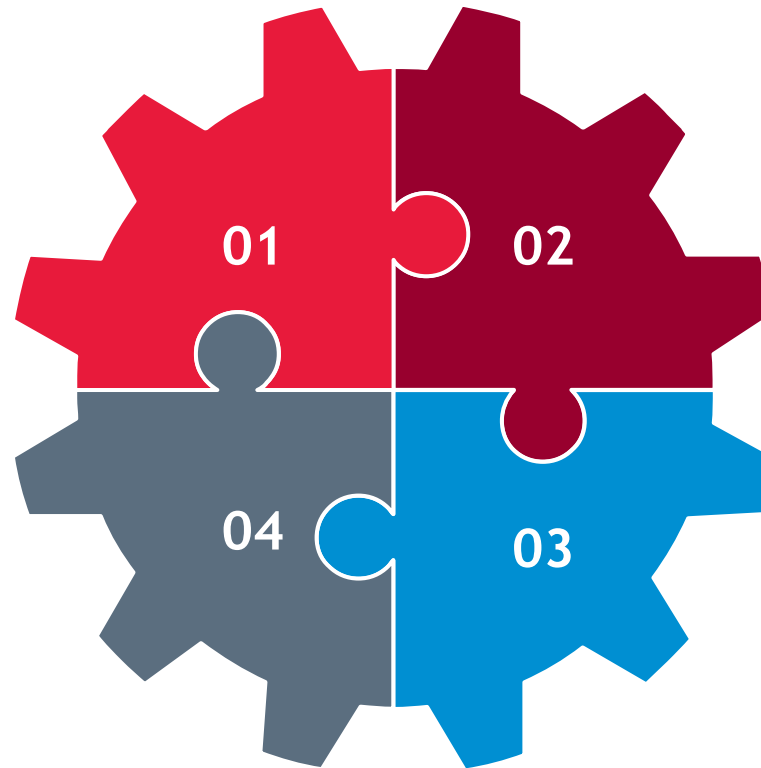
NEW composition of the annual report

**Annual financial
report**

Directors' report

**Annual
sustainability
report**

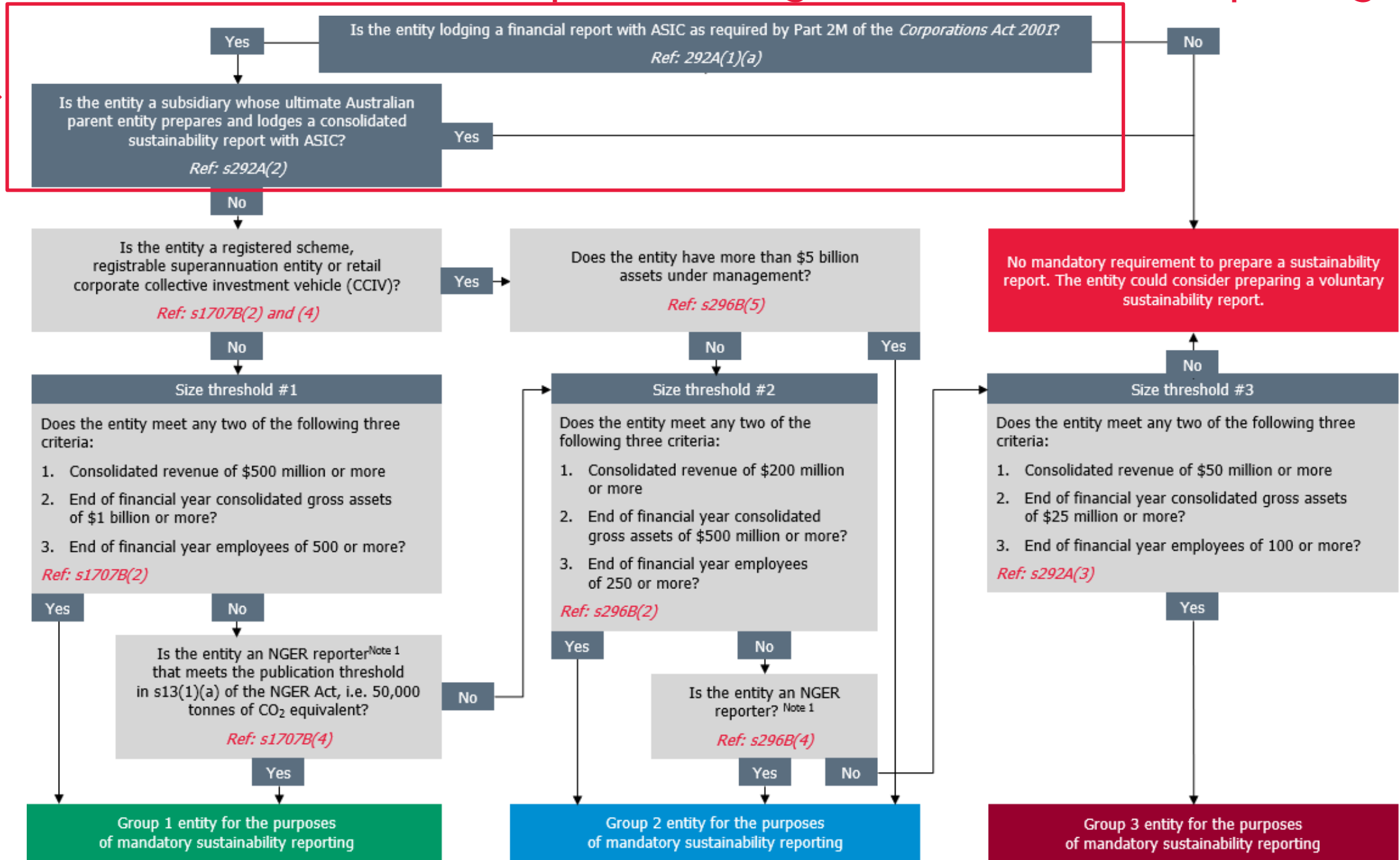
Auditor's report



Final legislation - Who will be required to begin climate-related reporting?

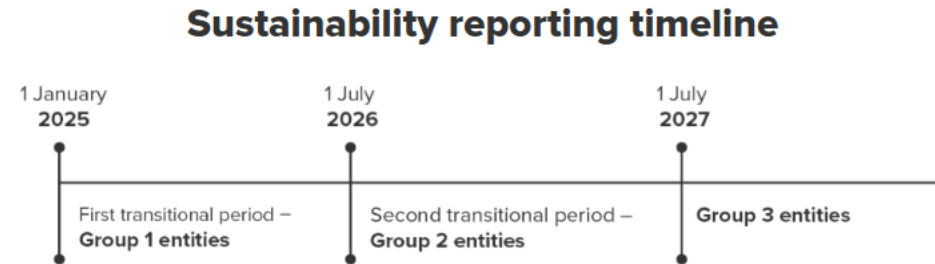
	Criteria 1 - Size thresholds			Criteria 2 NGER reporters	Criteria 3 Asset owners
	Consolidated revenue	Consolidated gross assets	Number of employees		
Group 1	\$500 million or more	\$1 billion or more	500 or more	Above NGER publication threshold	N/A
Group 2	\$200 million or more	\$500 million or more	250 or more	All other NGER reporters	\$5 billion assets under management or more
Group 3	\$50 million or more	\$25 million or more	100 or more	N/A	N/A

Decision tree - Who will be required to begin climate-related reporting?



Climate reporting timeline

<https://www.bdo.com.au/en-au/insights/esg-sustainability/mandatory-climate-reporting-in-australia-starts-on-1-january-2025>



The table below shows the effect of applying these transitional periods to entities with different year-ends.

	Climate reports required for the first year ending on dates shown below		
Year-end	Group 1 entities	Group 2 entities	Group 3 entities
31 December year-end	31 December 2025	31 December 2027	31 December 2028
31 March year-end	31 March 2026	31 March 2028	31 March 2029
30 June year-end	30 June 2026	30 June 2027	30 June 2028
30 September year-end	30 September 2026	30 September 2027	30 September 2028

Proposed phasing of assurance over sustainability information

<https://auasb.gov.au/media/wf5frdj0/assa5010.pdf>

Appendix - Diagrammatic representation of assurance phasing

(Ref: Para. 10)

Years commencing	Year 1*	Year 2	Year 3	Year 4**	Year 5	Year 6
Group 1	1/1/25 to 30/6/26	1/7/26 to 30/6/27	1/7/27 to 30/6/28	1/7/28 to 30/6/29	1/7/29 to 30/6/30	1/7/30 to 30/6/31
Group 2	1/7/26 to 30/6/27	1/7/27 to 30/6/28	1/7/28 to 30/6/29	1/7/29 to 30/6/30	1/7/30 to 30/6/31	1/7/31 to 30/6/32
Group 3	1/7/27 to 30/6/28	1/7/28 to 30/6/29	1/7/29 to 30/6/30	1/7/30 to 30/6/31	1/7/31 to 30/6/32	1/7/32 to 30/6/33
Governance	Limited	Limited	Limited	Reasonable	Reasonable	Reasonable
Strategy – Risks and Opportunities ***	Limited****	Limited	Limited	Reasonable	Reasonable	Reasonable
Climate Resilience Assessments/ Scenario Analysis	None	Limited	Limited	Reasonable	Reasonable	Reasonable
Transition Plans	None	Limited	Limited	Reasonable	Reasonable	Reasonable
Risk Management	None	Limited	Limited	Reasonable	Reasonable	Reasonable
Scope 1 and 2 Emissions	Limited	Limited	Limited	Reasonable	Reasonable	Reasonable
Scope 3 Emissions	N/A	Limited	Limited	Reasonable	Reasonable	Reasonable
Climate-related Metrics and Targets	None	Limited	Limited	Reasonable	Reasonable	Reasonable

* Group 1 entities with years commencing 1 January to 30 June will be subject to the Year 1 provisions twice (e.g. years commencing 1/1/25 and 1/1/26). Reporting of Scope 3 emissions is required for years commencing 1/1/26 to 30/6/26 for these Group 1 entities.

** Years commencing from 1/7/30 to 30/6/31 for Group 3 entities. From that time reasonable assurance is required by the Act for all mandatory climate disclosures.

*** The phasing for assurance on statements that there are no material climate-related risks and opportunities would be the same as for 'Strategy – Risks and Opportunities'.

**** Only subparagraphs 9(a), 10(a) and 10(b) of AASB S2 *Climate-related Disclosures*.

What does this mean for Group 1 entities with entities with years commencing from 1 January to 30 June?

	31 December 2025 year-end		31 December 2026 year-end		31 December 2027 year-end		31 December 2028 year-end		31 December 2029 year-end	
	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Reasonable Assurance
Governance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Strategy - Risks and Opportunities	Yes	Yes (Only para 9(a), 10(a) & 10(b))	Yes	Yes (Only para 9(a), 10(a) & 10(b))	Yes	Yes	Yes	Yes	Yes	Yes
Climate Resilience Assessments/Scenario Analysis	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Transition Plans	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Risk Management	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Scope 1 and 2 Emissions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scope 3 Emissions	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Climate-related Metrics and Targets	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes

What does this mean for Group 1 entities with entities with years commencing from 1 July to 31 December?

	30 June 2026 year-end		30 June 2027 year-end		30 June 2028 year-end		30 June 2029 year-end	
	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Limited Assurance	Reporting AASB S2	Reasonable Assurance
Governance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Strategy - Risks and Opportunities	Yes	Yes (Only para 9(a), 10(a) & 10(b))	Yes	Yes	Yes	Yes	Yes	Yes
Climate Resilience Assessments/Scenario Analysis	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Transition Plans	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Risk Management	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Scope 1 and 2 Emissions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scope 3 Emissions	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Climate-related Metrics and Targets	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes

ASIC Regulatory Guide 280

Sustainability reporting

<https://download.asic.gov.au/media/j4rhwyiz/rg280-published-31-march-2025.pdf>



ASIC
Australian Securities &
Investments Commission

REGULATORY GUIDE 280

Sustainability reporting

March 2025

About this guide

This guide is for entities required to prepare a sustainability report under Ch 2M of the Corporations Act (reporting entities). This may include companies (including registered corporations under the *National Greenhouse and Energy Reporting Act 2007*), registered schemes, registrable superannuation entities and retail corporate collective investment vehicles.

It explains how ASIC will exercise specific powers under legislation (primarily the Corporations Act), how ASIC interprets the law and the principles underlying ASIC's approach. It also provides practical guidance to entities about complying with their sustainability reporting obligations.

Reporting entities may ask for information from entities within their value chain, including small businesses and farmers. These entities should refer to ASIC's website about [sustainability reporting](#) and what it means for them.

Directors' duties re mandatory sustainability reporting

<https://www.bdo.com.au/en-au/insights/esg-sustainability/asic-provides-guidance-on-the-modified-liability-settings-for-mandatory-sustainability-reporting>

- ▶ Subject to existing directors' obligations and liability framework under the Corporations Act
 - Directors' duties, including care and diligence to consider material climate risks
 - Misleading and deceptive conduct
 - General disclosure obligations, maintenance of documents and information provided to others
 - Contraventions of the provisions can attract maximum civil penalty, for an individual, of \$1,565,000



Directors' duties re mandatory sustainability reporting

<https://www.bdo.com.au/en-au/insights/esg-sustainability/asic-provides-guidance-on-the-modified-liability-settings-for-mandatory-sustainability-reporting>

► Directors' declaration

- For the first three years of the sustainability reporting regime (i.e. from 1 January 2025 to 1 January 2028), this obligation is modified such that directors must provide an opinion only as to whether the entity **has taken reasonable steps** to ensure the contents of the sustainability report are in accordance with the Corporations Act
- A sustainability report must include a directors' declaration which is a declaration by the directors of their opinion on whether the contents of the sustainability report are in accordance with the Corporations Act, including that the **sustainability report complies with the sustainability standards** (once made)



Directors' duties re mandatory sustainability reporting

<https://www.bdo.com.au/en-au/insights/esg-sustainability/asic-provides-guidance-on-the-modified-liability-settings-for-mandatory-sustainability-reporting>

- ▶ Under the modified liability settings, no legal action may be brought in relation to certain types of statements ('protected statements') made within a sustainability report or accompanying auditor's report
 - ▶ The modified liability settings do not apply to action taken by ASIC
 - ▶ Protected statements
 - Scope 3 greenhouse gas emissions (including financed emissions)
 - Scenario analysis
 - Transition plan
- for reports prepared for financial years commencing between **1 January 2025 and 31 December 2027**
- ▶ Also includes forward looking statements under continuous disclosure for reports prepared for the financial year commencing between **1 January 2025 and 31 December 2025**



The directors' expectation gap for Group 1 directors at 30 June 2026

	30 June 2026 year-end			
	Reporting AASB S2	Limited Assurance	Directors' personal liability	Directors' expectation gap
Governance	Yes	Yes	Yes	NO
Strategy - Risks and Opportunities	Yes	Yes (Only para 9(a), 10(a) & 10(b))	Yes	NO
Strategy: • Risks and Opportunities • Business model and value chain • Strategy and decision-making • Financial position, financial position and cash flows	Yes	No (Para 10(c) to 21)	Yes	YES
Climate Resilience Assessments/Scenario Analysis	Yes	No	Modified liability - Protected statement	NO
Transition Plans	Yes	No	Modified liability - Protected statement	NO
Risk Management	Yes	No	Yes	YES
Scope 1 and 2 Emissions	Yes	Yes	Yes	NO
Scope 3 Emissions	No	No	Modified liability - Protected statement	NO
Climate-related Metrics and Targets	Yes	No	Yes	YES

BDO's AASB S2 Climate-related Disclosures Checklist

<https://bdoaustralia.bdo.com.au/acton/media/18110/climate-related-disclosures-aasb-s2-checklist>



1 Pillar 1	2 Pillar 2	3 Pillar 3	4 Pillar 4	G General requirements from AASB S1
Governance	Strategy	Risk management	Metrics and targets	
Governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities.	The entity's strategy for managing climate-related risks and opportunities, including understanding current and anticipated financial effects and the entity's climate resilience.	Processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including integration into and informing the entity's overall risk management processes.	The entity's performance in relation to climate-related risks and opportunities, including progress towards any climate-related targets set, and any targets required to be met by law or regulation.	How an entity prepares and reports its climate-related financial disclosures. General requirements for the presentation of those disclosures, guidelines for their structure and requirements for their content.
9 disclosure requirements	56 disclosure requirements	9 disclosure requirements	45 disclosure requirements	31 disclosure requirements



AASB S2 Climate-related Disclosures Checklist

Get ready for climate reporting with confidence

Australia's new sustainability standards are here. Use our checklist to assess readiness across: Governance, Strategy, Risk Management, and Metrics and Targets.

- ✓ Identify gaps
- ✓ Align with AASB S2
- ✓ Prepare audit-ready disclosures

▶ [Download the checklist](#)



Illustrative sustainability report in accordance with IFRS Sustainability Disclosure Standards

[Illustrative-Sustainability-Report-2025.pdf](#)

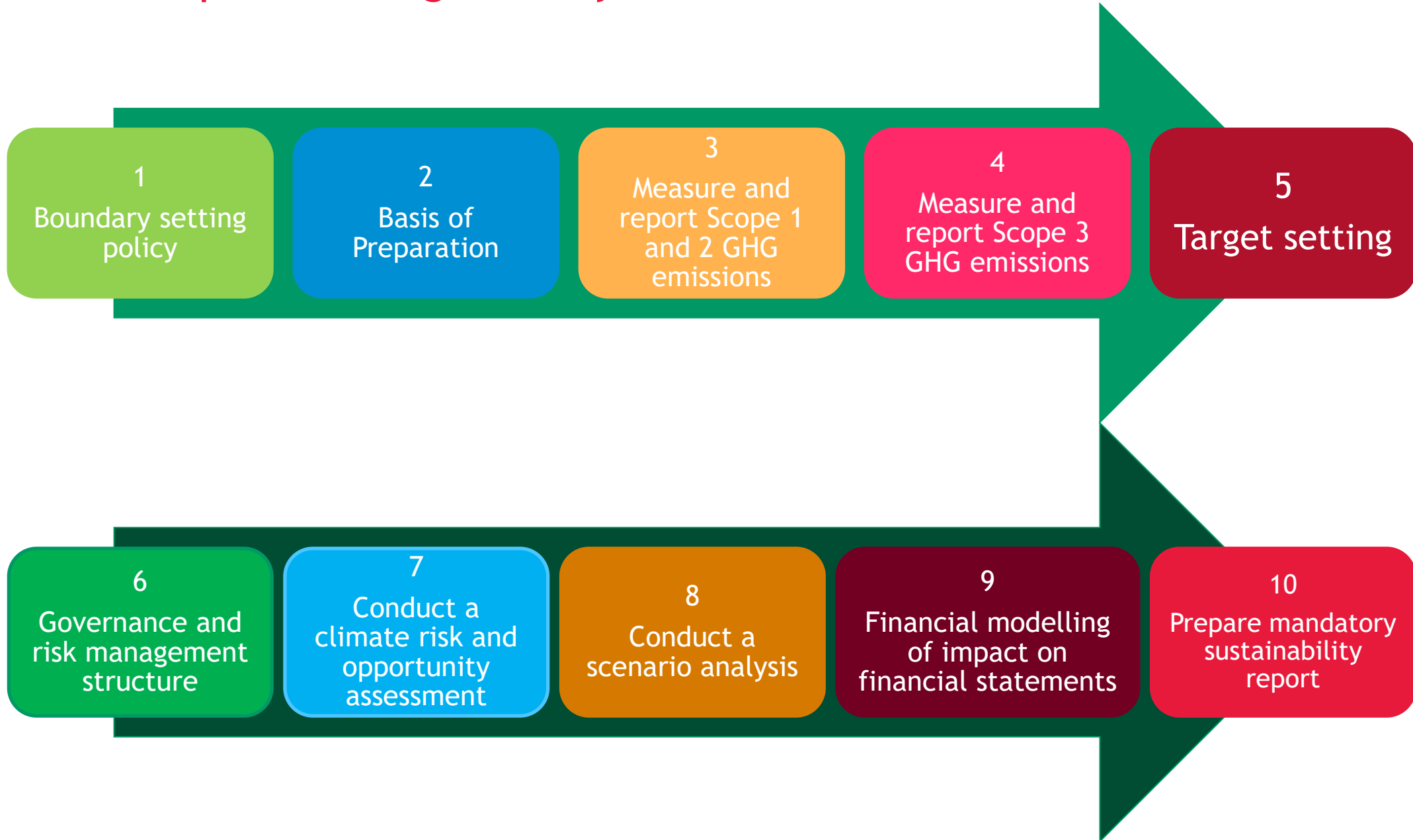
- ▶ BDO Global, together with our Australian team, launched the Illustrative Sustainability Report. It covers the new IFRS S1 and S2 standards (and AASB S2 for Australia)
- ▶ Real-world examples showing exactly how these standards work in practice
- ▶ It's a practical tool for our clients, helping them get ready for mandatory sustainability disclosures—especially Group 1 entities in Australia
- ▶ It brings governance, strategy, risk management, and metrics to life, making the link between sustainability and financial reporting clear and actionable



Best practice roadmap - Group 1 entities

PROJECT STREAMS			Financial year ending on 31 December 2025 or 30 June 2026	Financial year ending on 31 December 2026 or 30 June 2027
1	COMPLIANCE FOCUS: Carbon Footprint Measurement	Scope 1 and 2 emissions	Mandatory calculation and reporting of Scope 1 and 2 emissions, subject to assurance: <ol style="list-style-type: none"> 1. Set carbon inventory boundary 2. Develop a Basis of Preparation (carbon accounting methodology) 3. Measure and report Scope 1 and Scope 2 emissions 	
		Scope 3 emissions	<ol style="list-style-type: none"> 4. Initial measurement (significant estimation) and report internally Scope 3 emissions 5. Set targets in relation to scope 1, 2 and 3 	Mandatory calculation and external reporting of Scope 3 emissions
2	COMPLIANCE FOCUS: Climate-related disclosures	AASB S2 (Mandatory)	Mandatory reporting of all AASB S2 disclosures: <ol style="list-style-type: none"> 6. Establish or improve appropriate governance and risk management structure 7. Conduct a climate risk and opportunity assessment 8. Prepare a scenario analysis 9. Financial modelling of impact on financial statements 10. Prepare first mandatory sustainability report, including a materiality assessment 	
3	STRATEGIC FOCUS: General sustainability-related disclosures	AASB S1 (Voluntary)	<u>Activate sustainability strategy</u> <ul style="list-style-type: none"> • Step 1 - Current state assessment • Step 2 - Materiality assessment (stakeholder engagement) • Step 3 - Identify gaps • Step 4 - Commit and measure to address gap identified • Step 5 - Prepare separate voluntary sustainability report 	

Iterative process to get ready for AASB S2



Best practice roadmap - Group 2 entities

PROJECT STREAMS			Financial year ending on 30 June 2026 and 31 December 2026	Financial year ending on 30 June 2027 or 31 December 2027	Financial year ending on 30 June 2028 and 31 December 2028
1	COMPLIANCE FOCUS: Carbon Footprint Measurement	Scope 1 and 2 emissions	<ol style="list-style-type: none"> 1. Set carbon inventory boundary (i.e. Boundary Setting Policy) 2. Develop a Basis of Preparation (carbon accounting methodology) 3. Initial measurement (significant estimation) and report internally Scope 1 and Scope 2 emissions 	<p>Mandatory calculation and reporting of Scope 1 and 2 emissions, subject to assurance:</p> <ul style="list-style-type: none"> • Measure and report Scope 1 and Scope 2 emissions 	
		Scope 3 emissions			
2	COMPLIANCE FOCUS: Climate-related disclosures	AASB S2 (Mandatory)	<ol style="list-style-type: none"> 6. Establish or improve appropriate governance and risk management structure 7. Conduct a climate risk and opportunity assessment 8. Prepare a scenario analysis 9. Financial modelling of impact on financial statements 10. Prepare a dry-run sustainability report, including a materiality assessment 	<p>Mandatory reporting of all AASB S2 disclosures</p>	<p>Ongoing mandatory reporting of all AASB S2 disclosures</p>
3	STRATEGIC FOCUS: General sustainability-related disclosures	AASB S1 (Voluntary)	<p><u>Activate sustainability strategy</u></p> <ul style="list-style-type: none"> • Step 1 - Current state assessment • Step 2 - Materiality assessment (stakeholder engagement) • Step 3 - Identify gaps • Step 4 - Commit and measure to address gap identified • Step 5 - Prepare separate voluntary sustainability report 		

Best practice roadmap - Group 3 entities

PROJECT STREAMS			Financial year ending on 30 June 2026 and 31 December 2026	Financial year ending on 30 June 2027 and 31 December 2027	Financial year ending on 30 June 2028 or 31 December 2028	Financial year ending on 30 June 2029 and 31 December 2029
1	COMPLIANCE FOCUS: Carbon Footprint Measurement	Scope 1 and 2 emissions	<ol style="list-style-type: none"> Set carbon inventory boundary (i.e. Boundary Setting Policy) Develop a Basis of Preparation (carbon accounting methodology) 	<ol style="list-style-type: none"> Initial measurement (significant estimation) and report internally Scope 1 and Scope 2 emissions 	Mandatory calculation and reporting of Scope 1 and 2 emissions, subject to assurance: <ul style="list-style-type: none"> Measure and report Scope 1 and Scope 2 emissions 	
		Scope 3 emissions			<ol style="list-style-type: none"> Initial measurement (significant estimation) and report internally Scope 3 emissions Set targets in relation to scope 1, 2 and 3 	Mandatory calculation and external reporting of Scope 3 emissions, subject to assurance
2	COMPLIANCE FOCUS: Climate-related disclosures	AASB S2 (Mandatory)	<ol style="list-style-type: none"> Establish or improve appropriate governance and risk management structure Conduct a climate risk and opportunity assessment 	<ol style="list-style-type: none"> Prepare a scenario analysis Financial modelling of impact on financial statements Prepare a dry-run sustainability report, including a materiality assessment 	Mandatory reporting of all AASB S2 disclosures	Ongoing mandatory reporting of all AASB S2 disclosures
3	STRATEGIC FOCUS: General sustainability-related disclosures	AASB S1 (Voluntary)	Activate sustainability strategy <ul style="list-style-type: none"> Step 1 - Current state assessment Step 2 - Materiality assessment (stakeholder engagement) Step 3 - Identify gaps Step 4 - Commit and measure to address gap identified Step 5 - Prepare separate voluntary sustainability report 			



**All roads lead to
carbon accounting!**



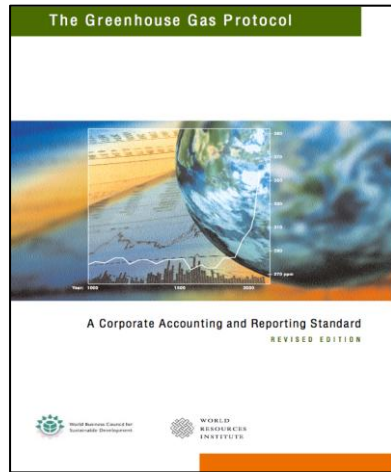
BDO's approach to carbon accounting



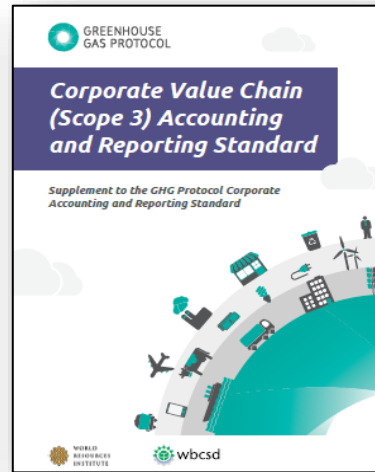
Introduction to carbon accounting

The Greenhouse Gas (GHG) Protocol

Publications



Corporate Standard



Value Chain Standard Scope 3

Other standards & guidance

- GHG Protocol for Cities
- Mitigation Goal Standard
- Policy and Action Standard
- Product Standard
- Project Protocol
- Scope 2 Guidance
- Scope 3 Calculation Guidance
- Agricultural Guidance
- Estimating and Reporting Avoided Emissions
- Public Sector Protocol
- Potential Emissions from Fossil Fuel Reserves
- The Global GHG Accounting and Reporting Standard for the Financial Industry
- Land Sector and Removals Guidance
- GPC Supplemental Guidance for Forests and Trees

Complimentary to the GHG Protocol; not part of the authoritative text

'Built on' GHG guidance

Guidance that is not part of the Protocol, but was designed to interface with it (e.g. Partnership for Carbon Accounting Financials - PCAF)

Form the GHG Protocol standard

ISO and GHG Protocol Announcement

<https://ghgprotocol.org/blog/release-iso-and-ghg-protocol-announce-strategic-partnership-deliver-unified-global-standards>

RELEASE: ISO and GHG Protocol Announce Strategic Partnership to Deliver Unified Global Standards for Greenhouse Gas Emissions Accounting

- *A new era begins in carbon accounting as ISO and GHG Protocol agree to harmonize their existing portfolios of GHG standards and to co-develop new standards for GHG emissions measurement and reporting*
- *Until now, GHG standards have been developed separately with varying scopes and verification guidance. The new ISO–GHG Protocol partnership, announced today, represents a fundamental shift toward integration and co-development, enabling users to rely on a coherent framework and reducing potential confusion in the market*
- *The partnership will produce a common global language for emissions accounting, which will accelerate progress towards decarbonization*
- *The development of combined, credible standards for GHG emissions terminology, measurement, and reporting provides a long-awaited, trusted solution for companies, investors, verifiers, auditors and policymakers, and aligns with recent calls for harmonization by both government and companies.*

Proposed amendments to the Greenhouse Gas Protocol

<https://ghgprotocol.org/blog/release-ghg-protocol-opens-public-consultations-scope-2-and-electricity-sector-consequential>

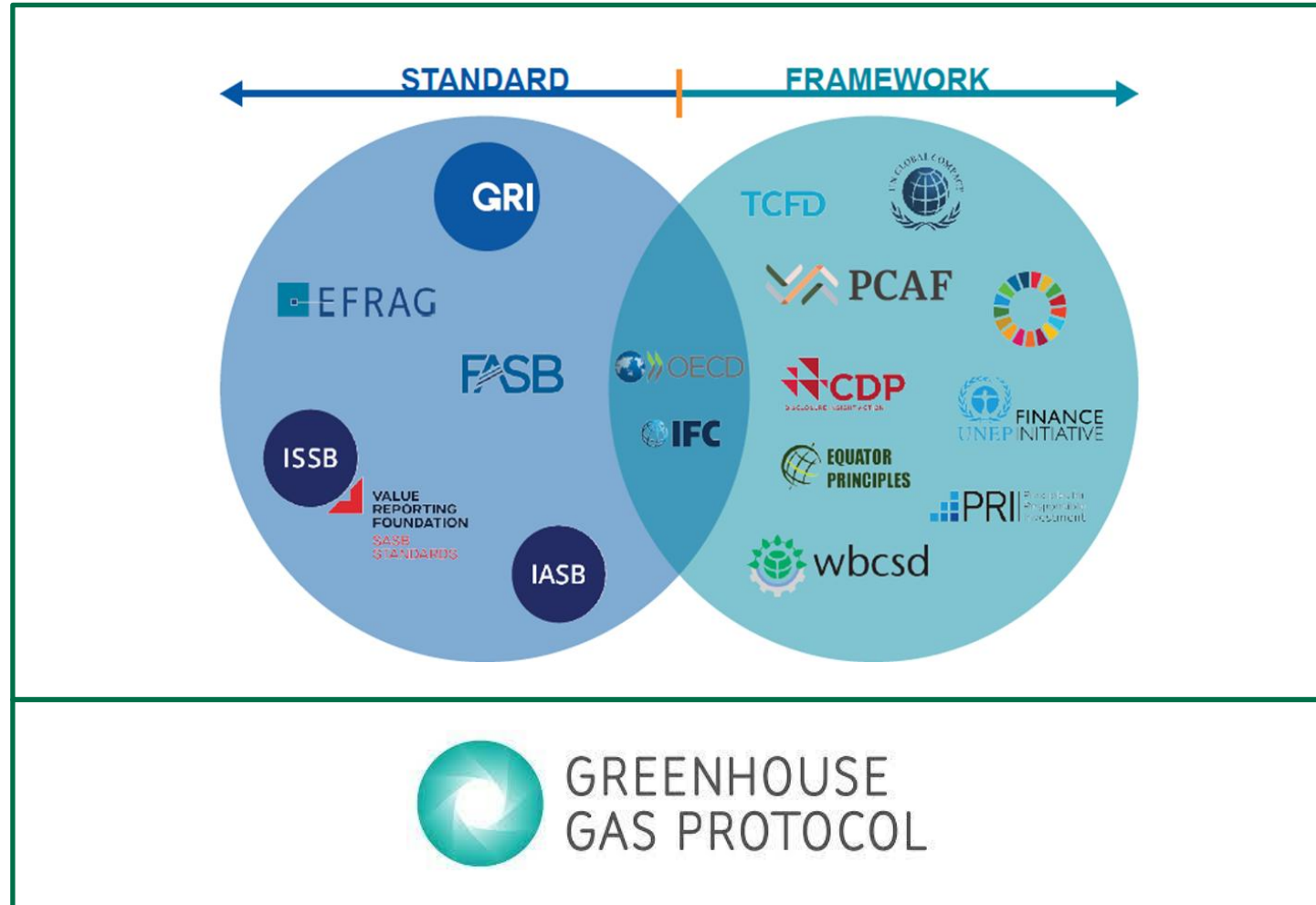
RELEASE: GHG Protocol Opens Public Consultations on Scope 2 and Electricity Sector Consequential Accounting

Proposed revisions aim to improve accuracy while keeping reporting clear, consistent, and manageable for organizations of all sizes.

Washington, D.C., October 20, 2025 — Greenhouse Gas Protocol (GHG Protocol) today announced the launch of a 60-day period for **two public consultations**. One consultation focuses on updates to the **Scope 2 Guidance** (2015) which addresses inventory accounting, while the other seeks feedback on consequential accounting methods for estimating avoided emissions from electricity-sector actions. These are the first public consultations in a broader effort to update GHG Protocol's suite of corporate standards and guidance.

This public consultation period marks an important milestone in ensuring that corporate greenhouse gas inventories remain accurate, comparable, and useful for decision making as energy systems and disclosure requirements evolve worldwide.

GREENHOUSE GAS PROTOCOL - REPORTING FRAMEWORK AGNOSTIC



GHG PROTOCOL - AT A GLANCE

[https://global-
www.bdo.global/getmedia/c
90321ed-984c-4ae1-b198-
80e0eafa53a2/GHG-
Protocols-At-a-
Glance.pdf.aspx](https://global-
www.bdo.global/getmedia/c
90321ed-984c-4ae1-b198-
80e0eafa53a2/GHG-
Protocols-At-a-
Glance.pdf.aspx)



The National Greenhouse and Energy Reporting (NGER) Act 2007

- ▶ In Australia, the [National Greenhouse and Energy Reporting Act 2007](#) (NGER Act 2007) provides the national framework for organisational reporting of greenhouse gas emissions - including projects, energy consumption and production
- ▶ Lodge NGER report with the Clean Energy Regulator (CER) - <https://cer.gov.au/>

Legislation

- [National Greenhouse and Energy Reporting Act 2007](#)
- [National Greenhouse and Energy Reporting Regulations 2008](#)

Clean Energy Regulator

<https://cer.gov.au/>



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Renewable Energy Target

Information for householders

Small-scale Renewable Energy Scheme

Large-scale Renewable Energy Target

Renewable Energy Target liability and exemptions

Participants and industry



Australian Carbon Credit Unit Scheme

How to participate

Methods

Australian carbon credit units

Project reporting and audits

Project and contract register



National Greenhouse and Energy Reporting Scheme

Report emissions and energy

Assess your obligations

Record keeping and compliance

Register as a reporter



The Safeguard Mechanism

Safeguard baselines

Safeguard net emissions

Managing excess emissions

Safeguard Mechanism credit units

Safeguard Mechanism before 1 July 2023



Guarantee of Origin Scheme

Designing the Guarantee of Origin

Renewable Electricity Guarantee of Origin



Nature Repair Market scheme

How to participate

Replanting method

Biodiversity certificates



Audits in our schemes

Find an auditor

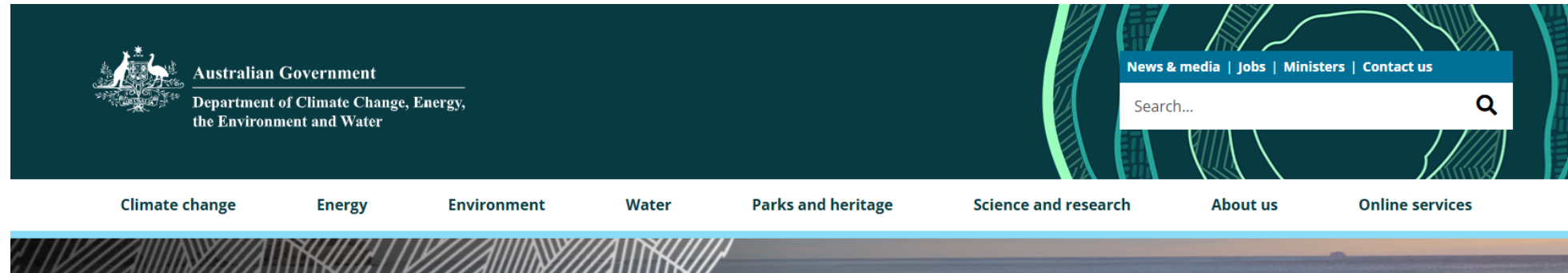
Audit teams and quality management

Register as an auditor

Maintain your registration as an auditor

Department of Climate Change, Energy, and Environment and Water

<https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-accounts-factors>



[Home](#) / [Climate change](#) / [Climate change publications](#) / National Greenhouse Accounts Factors

← Climate change

Publications

National Greenhouse Accounts Factors

National Greenhouse Gas Inventory: Quarterly updates

National Greenhouse Accounts Factors

The National Greenhouse Accounts (NGA) Factors provide methods that help companies and individuals estimate greenhouse gas emissions.

While drawing on the [National Greenhouse and Energy Reporting \(Measurement\) Determination 2008](#), companies can apply the factors and methods to a broader range of emissions estimates.

The NGA Factors must not be used to meet reporting requirements under the [National Greenhouse and Energy Reporting \(NGER\) Act 2007](#). Further information on reporting under NGER can be found on the [Clean Energy Regulator's website](#).

The NGA Factors are updated and published each year.

View all editions of the NGA Factors:

- [National Greenhouse Accounts Factors 2025](#)
- [National Greenhouse Accounts Factors 2024](#)
- [National Greenhouse Accounts Factors 2023](#)
- [National Greenhouse Accounts Factors 2022](#)
- [National Greenhouse Accounts Factors 2021](#)
- [National Greenhouse Accounts Factors 2020](#)

The Intergovernmental Panel on Climate Change

<https://www.ipcc.ch/assessment-report/ar5/>

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The Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.

IPCC-62, WGI-15, WGII-13, WGIII-15

VACANCIES




The Intergovernmental Panel on Climate Change

<https://www.ipcc.ch/assessment-report/ar5/>



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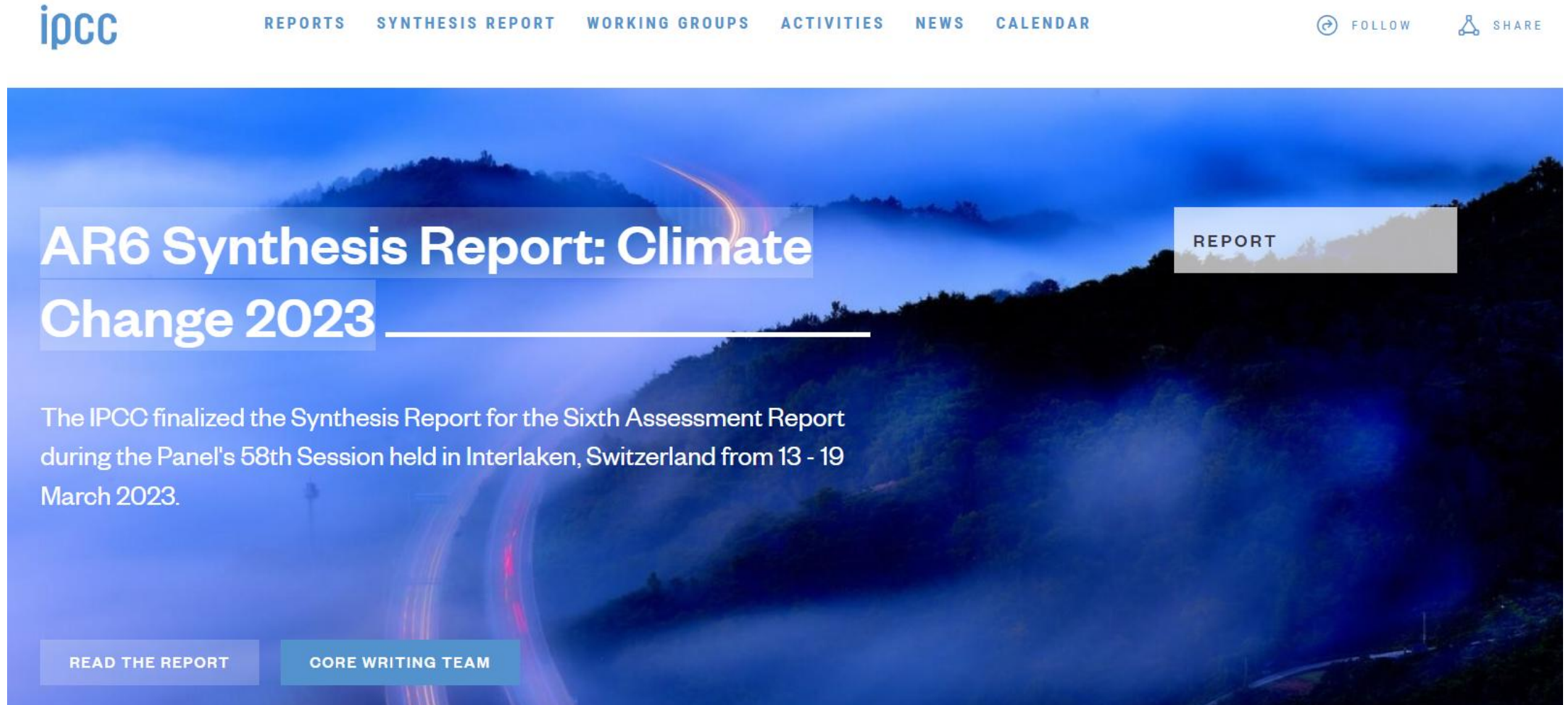
Fifth Assessment Report _____

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AR5 Reports

The Intergovernmental Panel on Climate Change

<https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

The banner features a background image of a mountain landscape at dusk or dawn, with a road winding through the valley and light trails from a car. The IPCC logo is in the top left. A navigation menu is centered at the top, and social media links for 'FOLLOW' and 'SHARE' are on the right. The main title 'AR6 Synthesis Report: Climate Change 2023' is on the left, with a 'REPORT' button on the right. A descriptive paragraph is below the title, and two buttons, 'READ THE REPORT' and 'CORE WRITING TEAM', are at the bottom left.

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REPORTS SYNTHESIS REPORT WORKING GROUPS ACTIVITIES NEWS CALENDAR

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AR6 Synthesis Report: Climate Change 2023

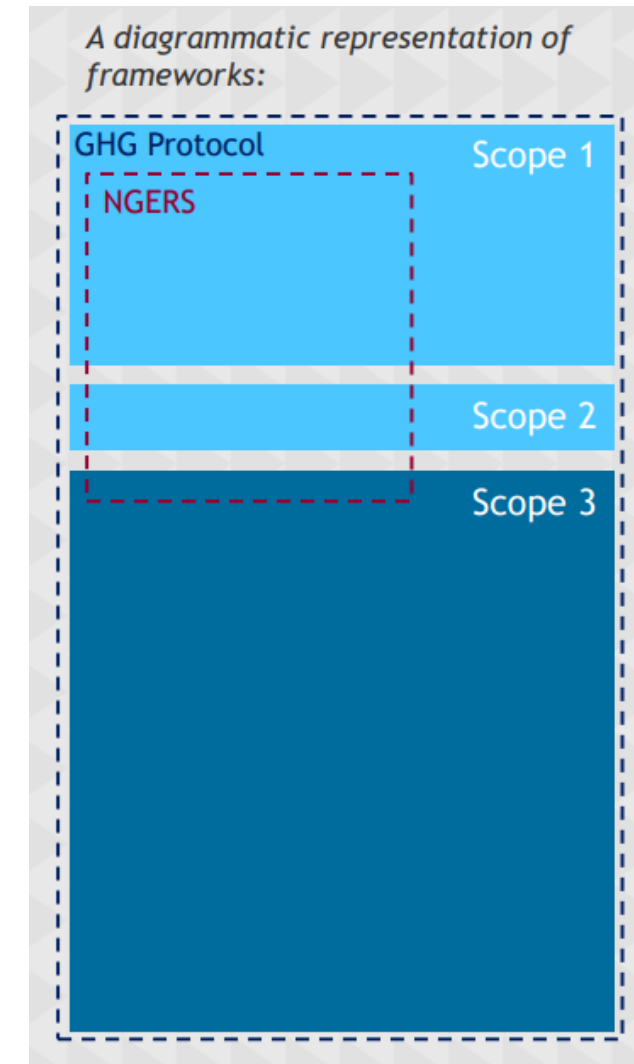
REPORT

The IPCC finalized the Synthesis Report for the Sixth Assessment Report during the Panel's 58th Session held in Interlaken, Switzerland from 13 - 19 March 2023.

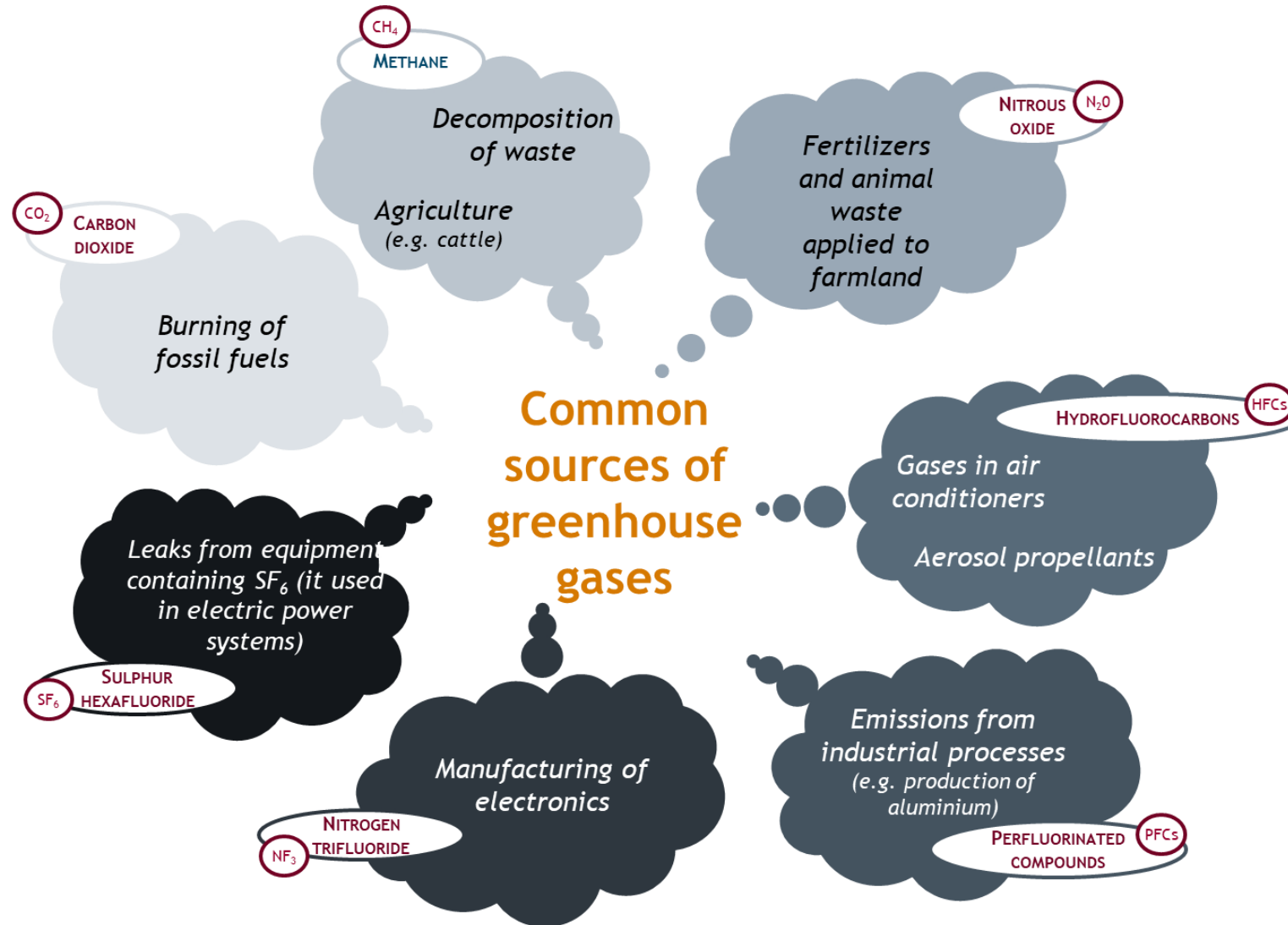
READ THE REPORT CORE WRITING TEAM

NGER and GHG Protocol Comparison

NGER	GHG Protocol
Only scope 1 and 2	Scope 1, 2 and 3
Size thresholds re facilities	All facilities included
Size thresholds re greenhouse gases	All greenhouse gases included
Can assign operational control to another party	Operational control is a factual assessment



Common sources of greenhouse gases

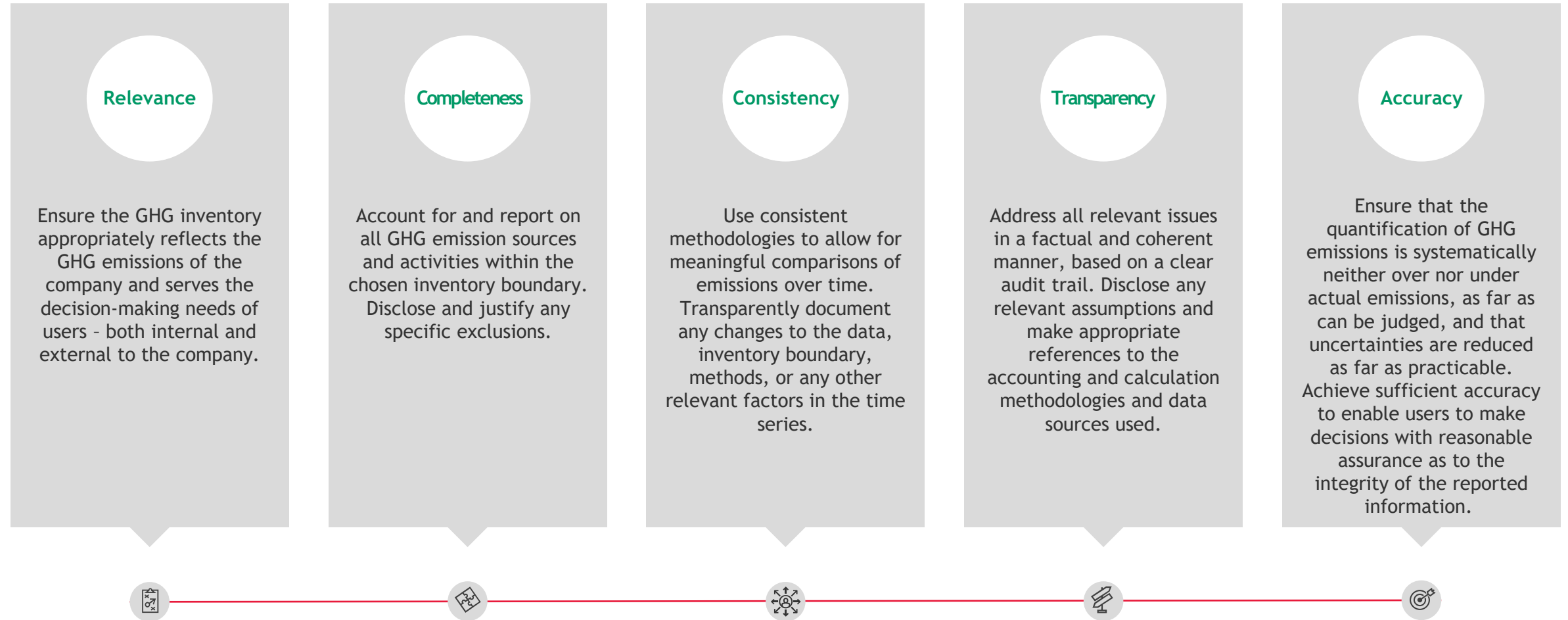


Interaction between the GHG Protocol and other sustainability reporting frameworks



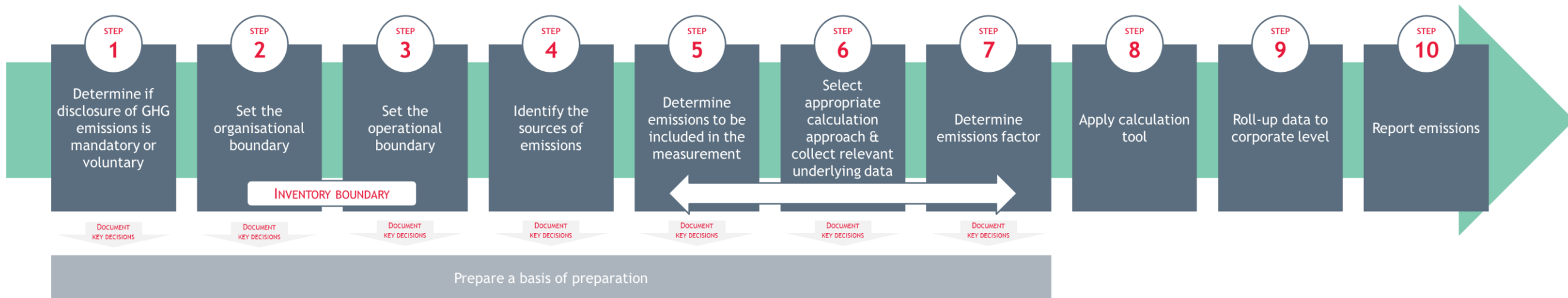
GHG accounting and reporting principles

GHG accounting and reporting are based on the following principles:



These principles are derived from the GHG Protocol. Aspects of these principles overlap with audit assertions and for that reason, these principles should be applied in all carbon accounting work, regardless of the emissions measurement framework selected.

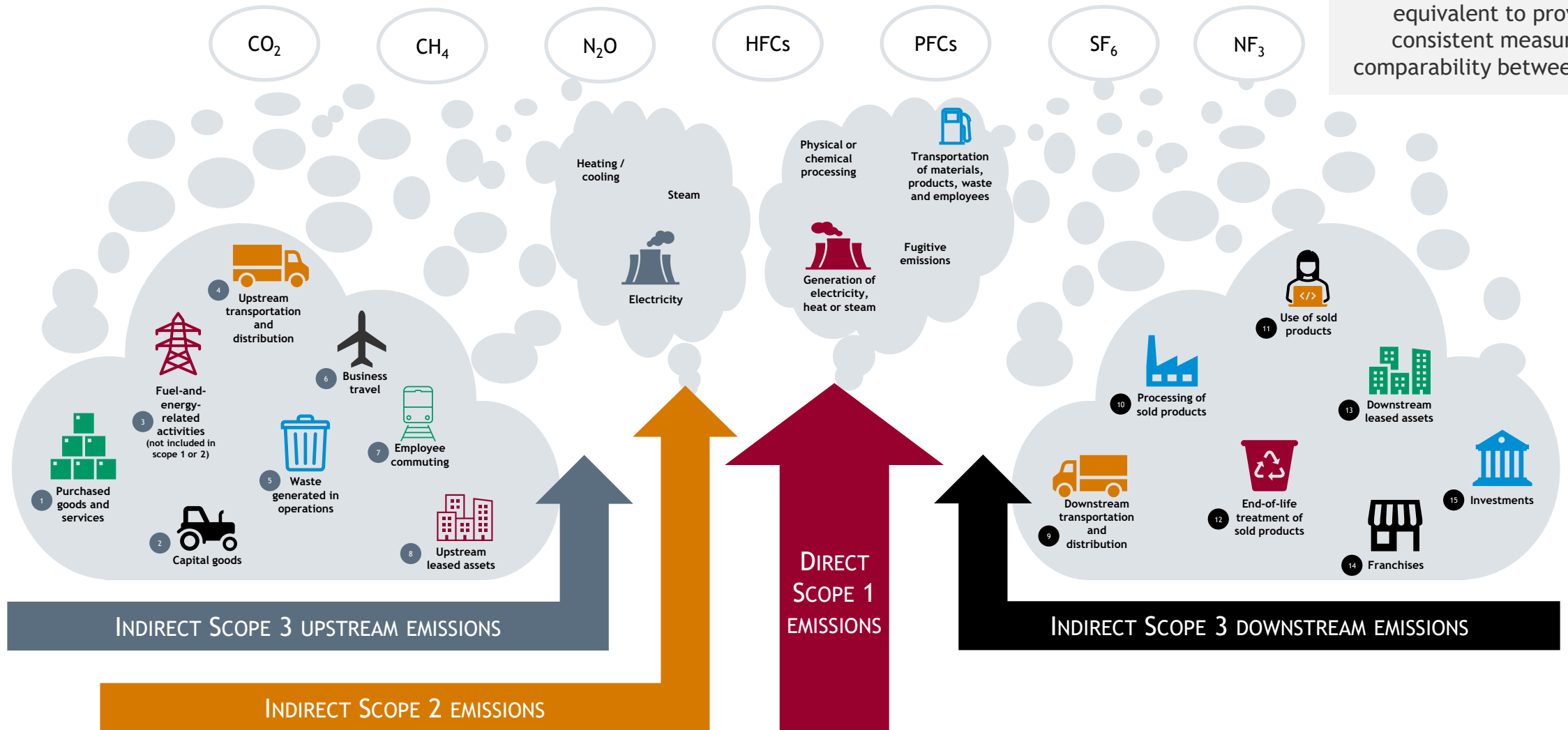
BDO's approach to measuring carbon emissions



GHG Measurement

Reminders

GHG Equivalent
Emissions translated into CO₂ equivalent to provide a consistent measure and comparability between entities





Step 1: Determine if disclosure of GHG emissions is mandatory or voluntary

Step 1: voluntary or mandatory reporting of carbon footprint

STEP
1

Determine if disclosure of GHG emissions is mandatory or voluntary

a

Determine entity reporting on emissions

b

Determine if the carbon footprint required on a mandatory or voluntary basis

c

Document key decisions in the basis of preparation

Why is the entity preparing a carbon footprint

Why is the entity preparing a carbon footprint?



Prepared on VOLUNTARY basis



Prepared for MANDATORY reporting in
entity's jurisdiction



Step 2: Set the organisational boundary

Elements that form the inventory boundary

Organisational boundary

STEP
2

Set the
organisational
boundary

Determine which company subsidiaries, segments or operations to include. The organisational boundary is similar to the scope of consolidation in accounting (e.g., which entities to consolidate, how to account for investees, etc.)

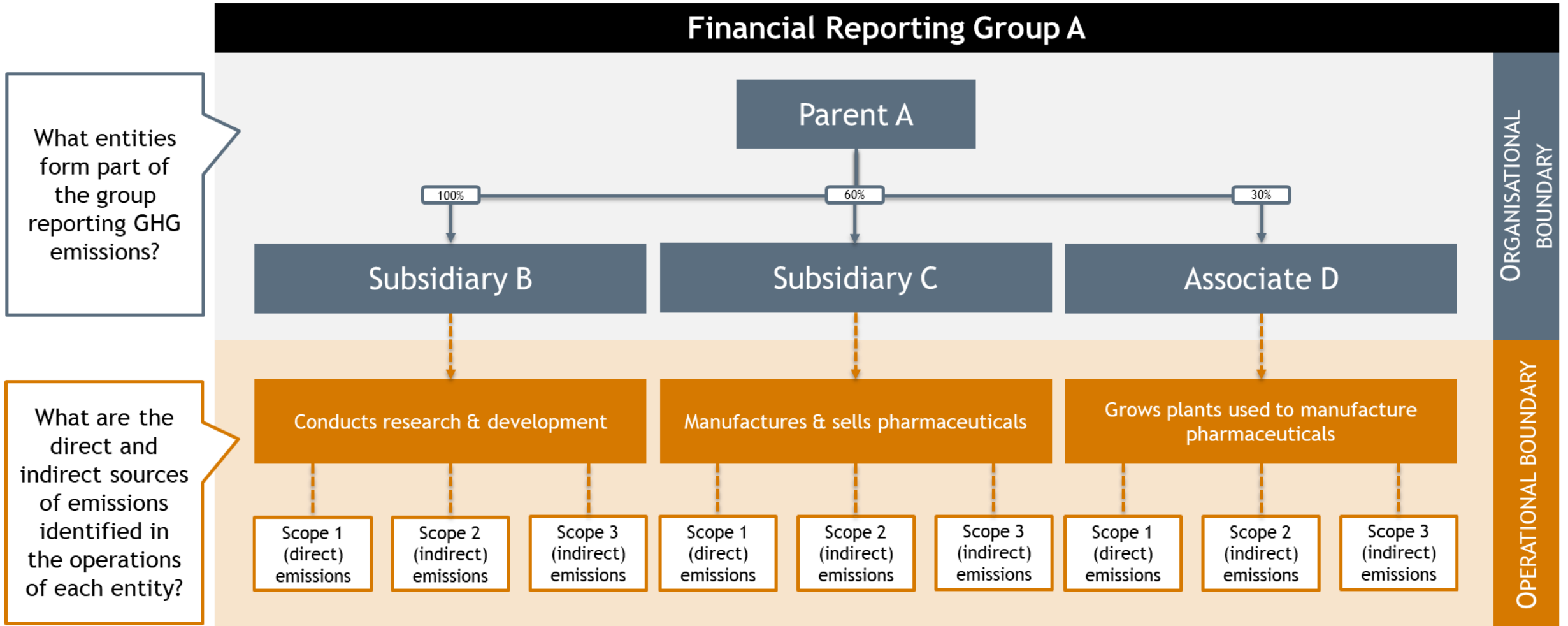
Operational boundary

STEP
3

Set the
operational
boundary

Determine the direct and indirect emissions associated with each of the entities owned or controlled by the reporting entity (i.e. the entities selected in the organisational boundary). When setting the operational boundary the reporting group must determine which specific business activities are relevant, and categorise all its emission sources

Elements that form the carbon inventory boundary





The inventory boundary

Step 2: Set the organisational boundary

STEP
2

Set the
organisational
boundary

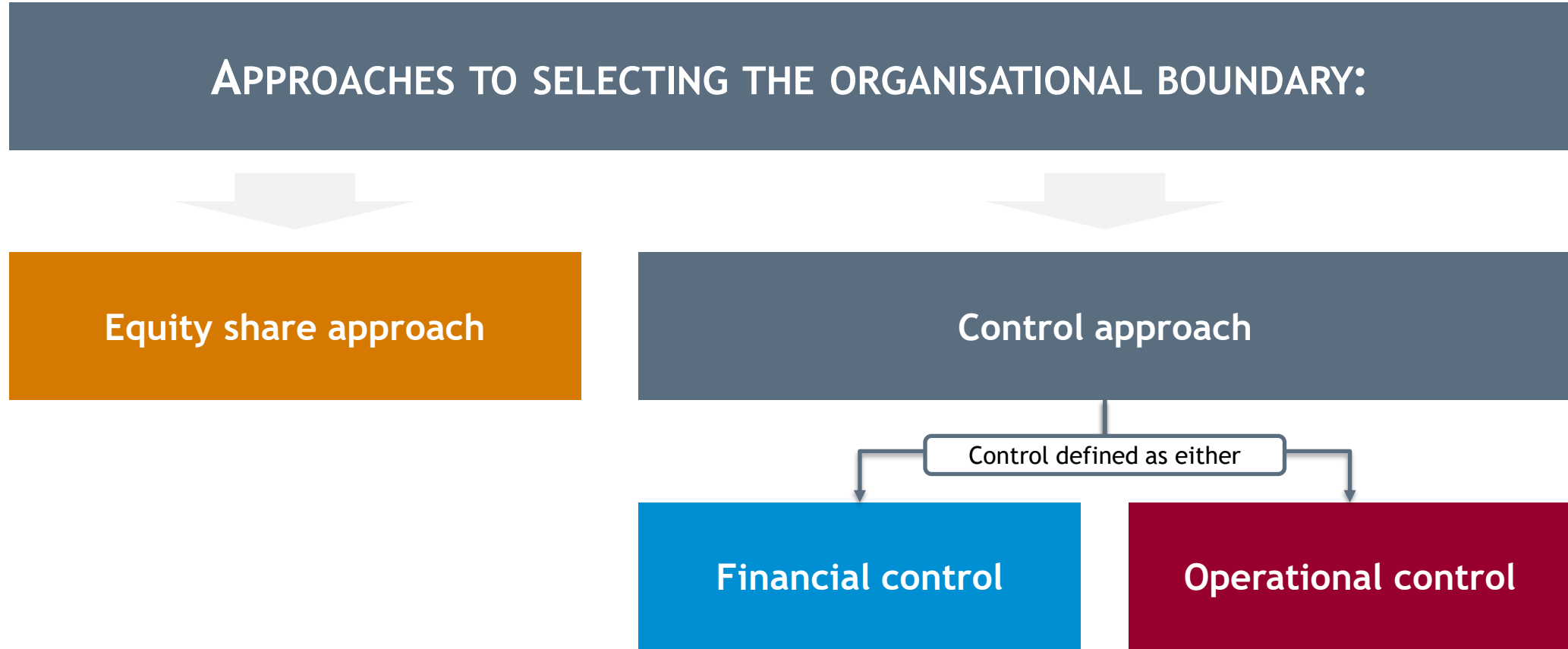
a

Select approach for setting organisational boundary

b

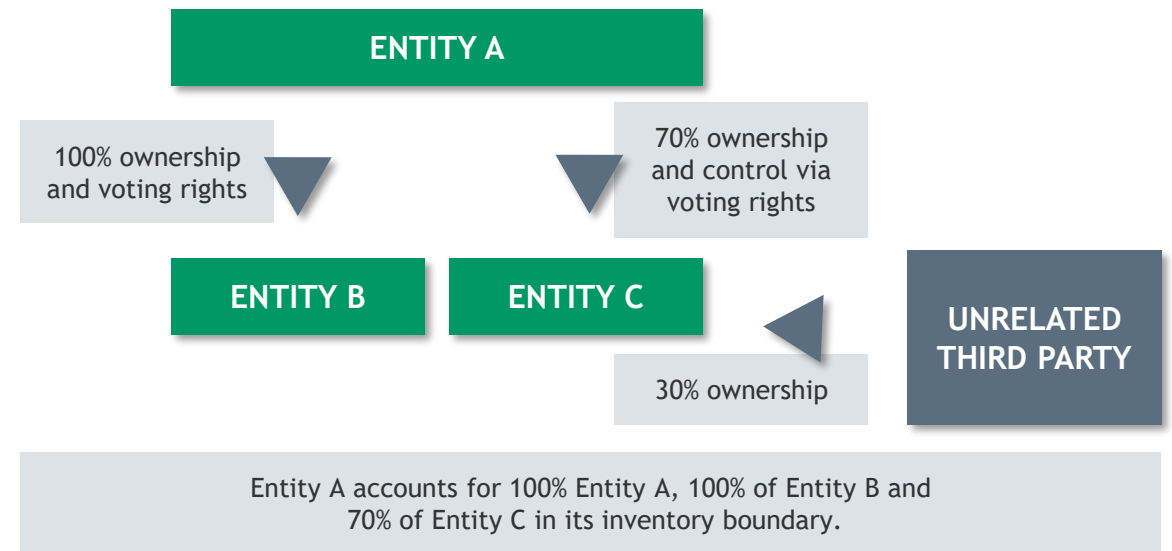
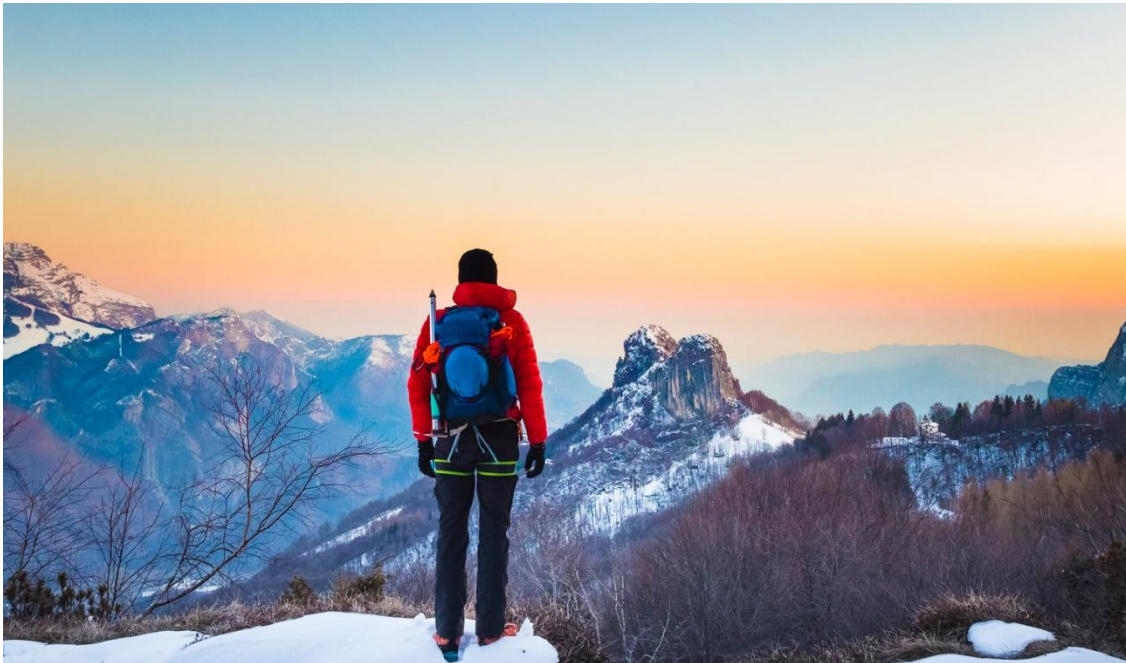
Document key decisions in the basis of preparation

Available approaches to set the organisational boundary



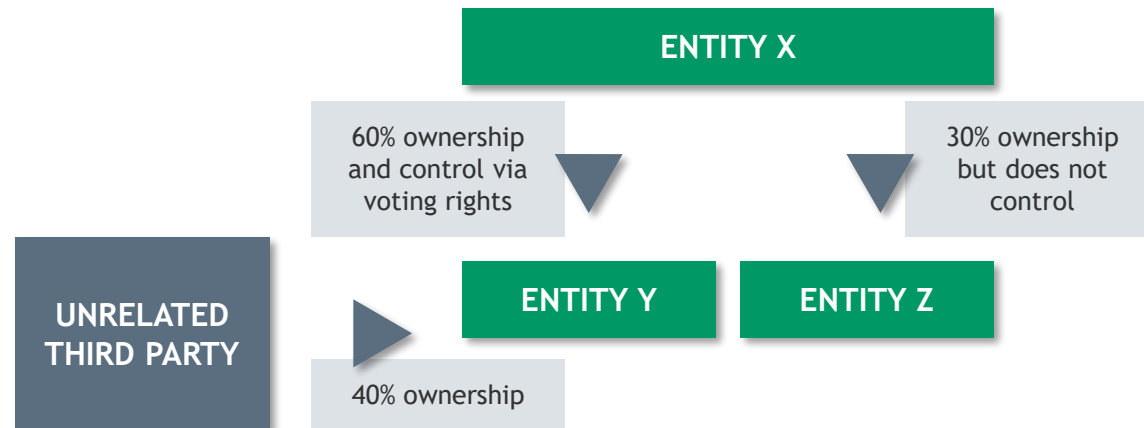
Equity share approach

- ▶ GHG emissions from operations are included based on the share of the equity in the operation
- ▶ The share of equity is typically aligned with the entity's percentage ownership; however, economic substance must be considered and may override legal ownership.



Control approach (financial or operational)

- ▶ 100 per cent of GHG emissions from operations are included for operations controlled by the entity. Control can be defined in financial or operational terms
- ▶ Generally, the outcome will be the same for financial and operational control except in complex ownership structures
- ▶ Emissions are not accounted for if the entity does not control the operation
- ▶ The economic substance of relationships takes precedence over legal form. Therefore, control may exist despite an entity owning a less than 50 per cent interest.



Entity X accounts for 100% of the emissions of Y because it controls its operations. Entity X does not account for any of Z's emissions as X does not control Z.



Operational control considerations

- ▶ The GHG protocol defines operational control as the “*authority to fully introduce and implement its operating policies at the operation*”
- ▶ This translates into the following examples of ‘tests’ that may be applied to assist with appropriately allocation/determining control:
 1. Which party has authority over the project management plan?
 2. Which party has the authority to schedule personnel?
 3. Which party has the authority to determine hours of work or hours of operation?
 4. Which party controls access to the premises or site of work?
 5. Which party’s branding is used or displayed at the project site?
 6. Which party is required to obtain permits and approvals?
 7. Which party is responsible for maintenance of the facility?
 8. Which party has the authority to develop and implement planning and development policies?
 9. Which party is responsible for environmental conditions and/or development and execution of an environmental management plan?
 10. Which party has the authority to develop and implement OH&S policies and procedures?
 11. Which party has the authority to introduce and enforce site safety requirements?
 12. Which party engages with regulators?
 13. Which party conducts inspections/audits of policies?

Operational control considerations

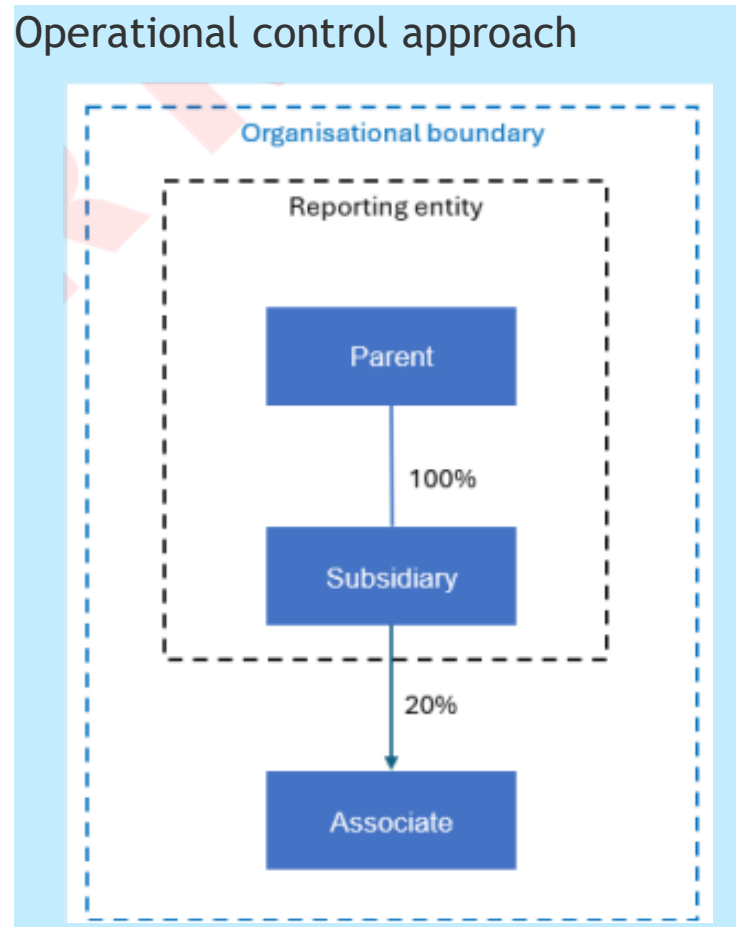
- ▶ There will always be one party with operational control - so: if your business doesn't have operational control, who does?
- ▶ The list on the previous slide is not exhaustive, but rather is intended to provide examples of the considerations and items that should be considered when determining which party has operational control, noting that all items won't apply in every instance

GHG emissions disclosures under different measurement approaches

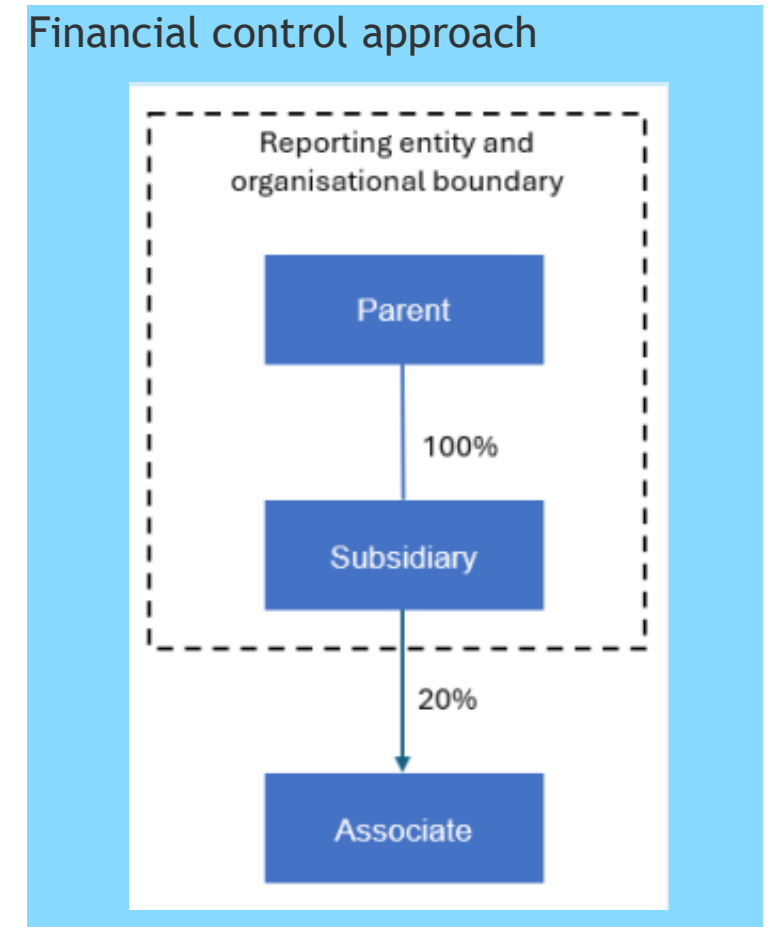
Example

- ▶ The reporting entity consists of parent and its wholly owned (and financially controlled) subsidiary in accordance with IFRS Accounting Standards (Australian accounting standards)
- ▶ The parent concludes it has operational control over the associate

Operational control approach



Financial control approach



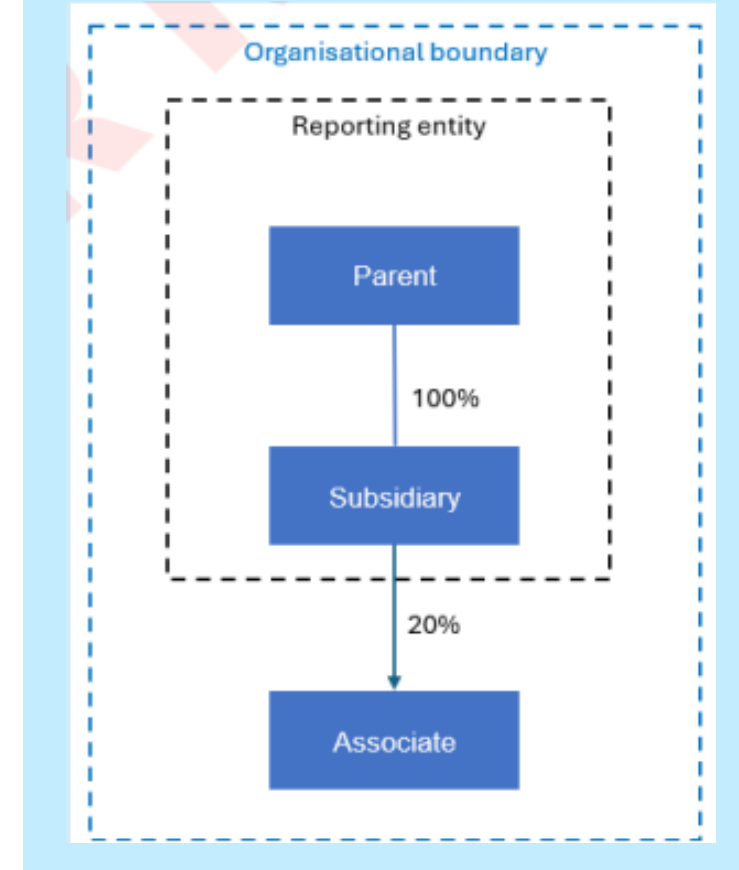
GHG emissions disclosures under different measurement approaches

Example

Operational control approach

- ▶ Reporting entity disclosures include:
 - Scope 1, Scope 2 and Scope 3 GHG emissions of the parent, subsidiary and associate
 - Disaggregated Scope 1 and Scope 2 emissions between the consolidated accounting group (parent and subsidiary) and the other investees (associate)

Operational control approach



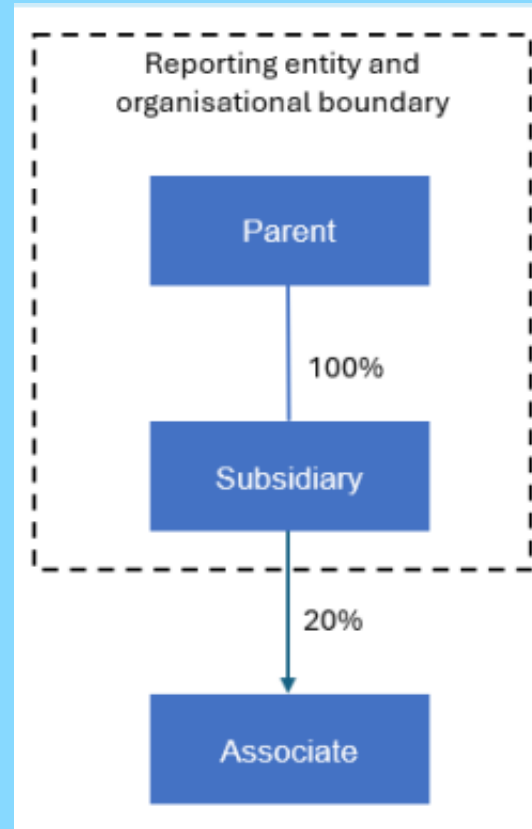
GHG emissions disclosures under different measurement approaches

Example

Financial control approach

- ▶ Reporting entity disclosures include:
 - Scope 1, Scope 2 and Scope 3 GHG emissions of the parent and subsidiary
 - Scope 3 emissions arising from the relationship with the associate
 - That all Scope 1 and Scope 2 emissions are attributable to the consolidated accounting group

Financial control approach



How does the choice of organisational boundary affect the carbon footprint?

	EQUITY SHARE APPROACH	FINANCIAL CONTROL APPROACH	OPERATIONAL CONTROL APPROACH	
PARENT ENTITY	100% of emissions	100% of emissions	100% of emissions	
WHOLLY OWNED SUBSIDIARIES	100% of emissions	100% of emissions	100% of emissions	
PARTIALLY OWNED SUBSIDIARIES (CONTROLLED)	Equity share of emissions	100% of emissions	100% of emissions IF operational control exists	OR Include emissions as part of Scope 3 Category 15 if NO operational control
UNINCORPORATED JOINT VENTURES	Equity share of emissions	Equity share of emissions	100% of emissions IF operational control exists	OR Include emissions as part of Scope 3 Category 15 if NO operational control
ASSOCIATES	Equity share of emissions	Include emissions as part of Scope 3 Category 15	100% of emissions IF operational control exists	OR Include emissions as part of Scope 3 Category 15 if NO operational control
JOINT OPERATIONS	As per agreement between operators	As per agreement between operators	100% of emissions IF operational control exists	OR Include emissions as part of Scope 3 Category 15 if NO operational control
FRANCHISES (CONTROLLED)	Equity share of emissions	100% of emissions	100% of emissions IF operational control exists	OR Include emissions as part of Scope 3 Category 14 if NO operational control
FRANCHISES (NO CONTROL OR SIGNIFICANT INFLUENCE)	Include emissions as part of Scope 3 Category 14	Include emissions as part of Scope 3 Category 14	Include emissions as part of Scope 3 Category 14	
INVESTMENTS	Equity share of emissions	Include emissions as part of Scope 3 Category 15	100% of emissions IF operational control exists	OR Include emissions as part of Scope 3 Category 15 if NO operational control

**A correct
boundary
setting policy
is critically
important**





Step 3: Set the operational boundary

Step 3: Set the operational boundary

STEP
3

Set the
operational
boundary

a

Select approach for setting operational boundary

b

Document key decisions in the basis of preparation

Emission sources

DIRECT EMISSIONS

Emissions from sources that are owned or controlled by the reporting company

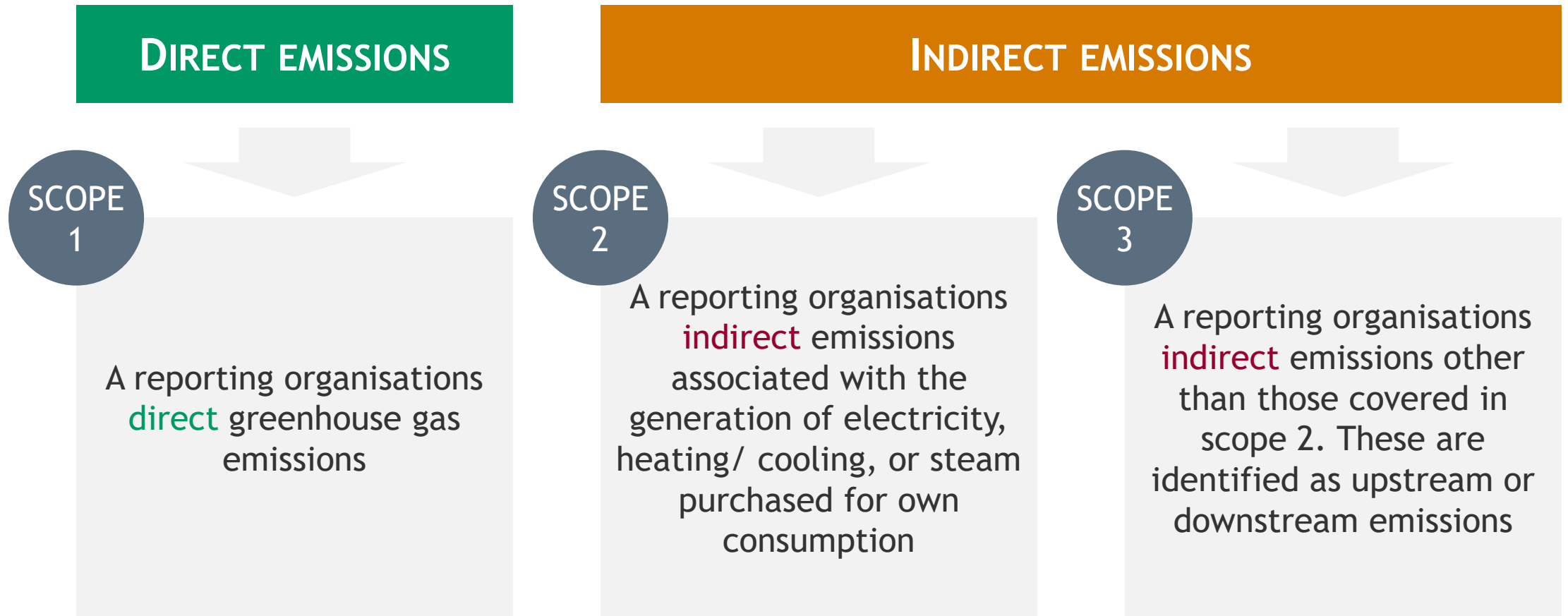
Example: Entity G owns a manufacturing plant which is powered by a diesel generator. GHG emissions from combusting diesel in the generator form part of Entity G's direct emissions

INDIRECT EMISSIONS

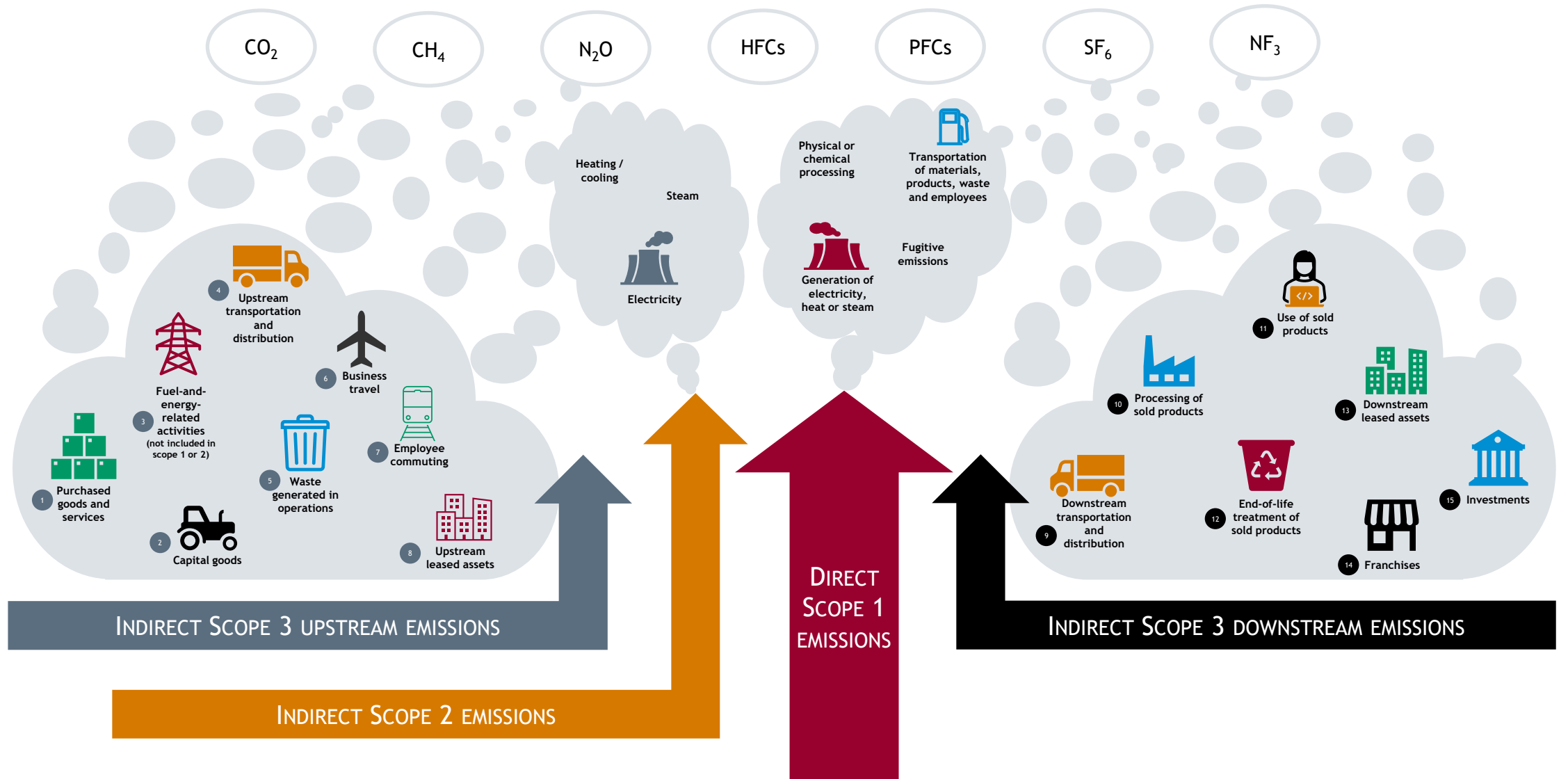
Emissions that are a consequence of the operations of the reporting company, but occur at sources owned or controlled by another company.

Example: Entity H purchases electricity to power its manufacturing plant from the local power company. Emissions from purchased electricity forms part of Entity H's indirect emissions.

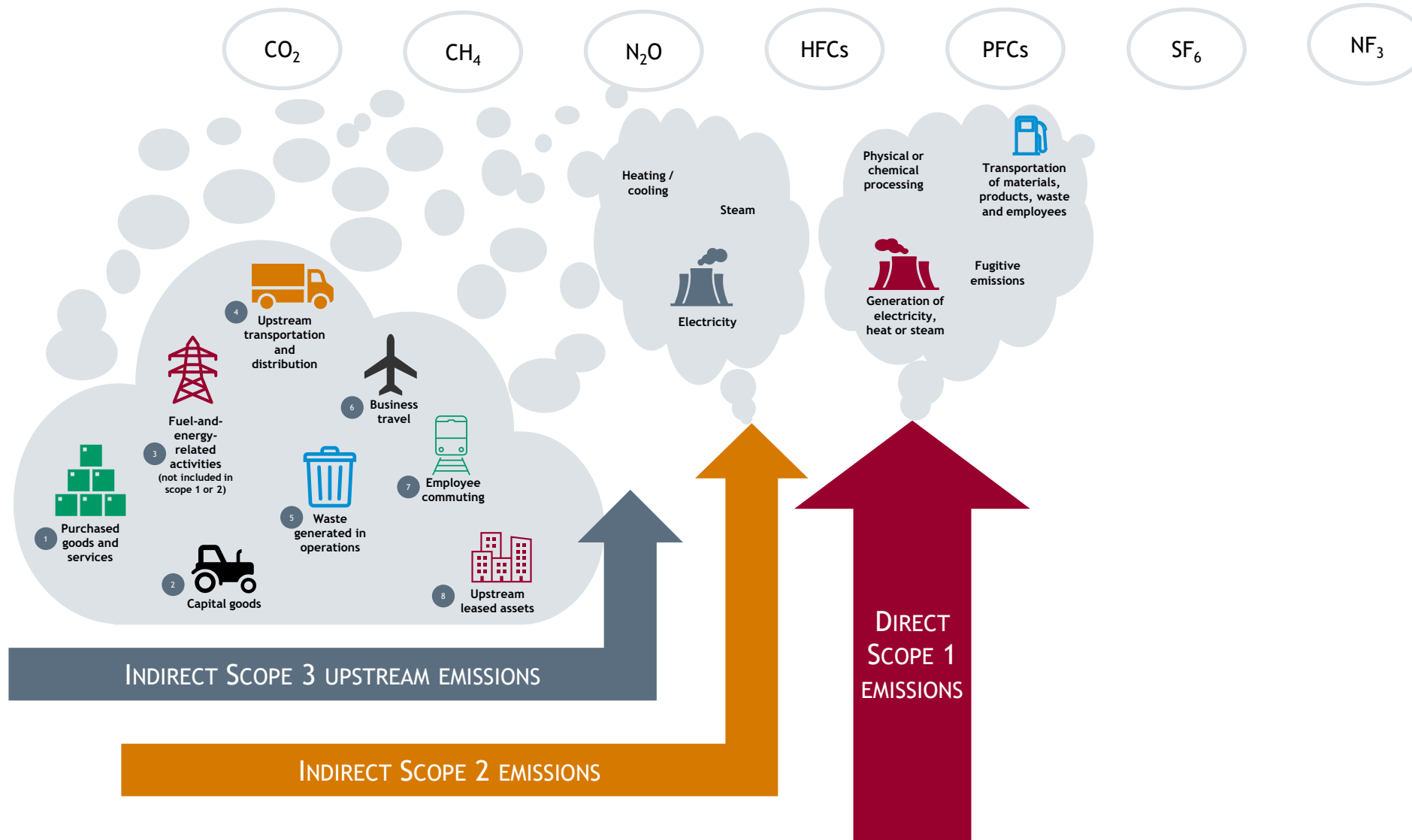
Emission categories



Operational boundary - cradle to grave



Operational boundary - cradle to gate



Operational boundary - Scope 1 & 2 only





Step 4: Identify the sources of emissions

Step 4: Identify the sources of emissions

STEP
4

Identify the
sources of
emissions

a Map the value chain

b Identify sources of emissions in the value chain and categorise the emission sources into scopes and sub-categories

c Document key decisions in the basis of preparation

The value chain

What is the value chain?

**Value
chain**



The interactions or activities, resources and relationships that an entity depends on to create or deliver its products or services from conception, to delivery, consumption and end of life

Most entities will have many different value chains

The value chain

What are value chain emissions?

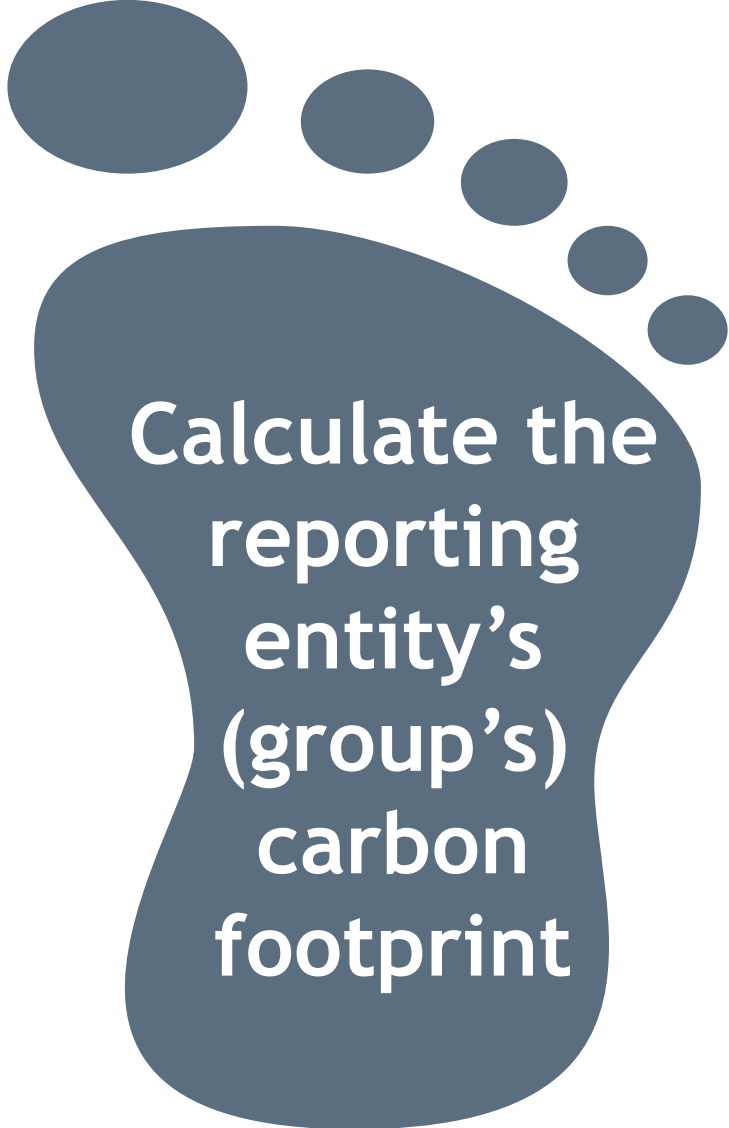
**Value
chain
emissions** = **Emissions associated with the upstream and
downstream activities associated with the operations
of the reporting entity**

The value chain

Why map and understand the sources of emissions within the value chain?

**Must be able to
identify all
emission sources
across a reporting
entity (group)**

IN ORDER TO

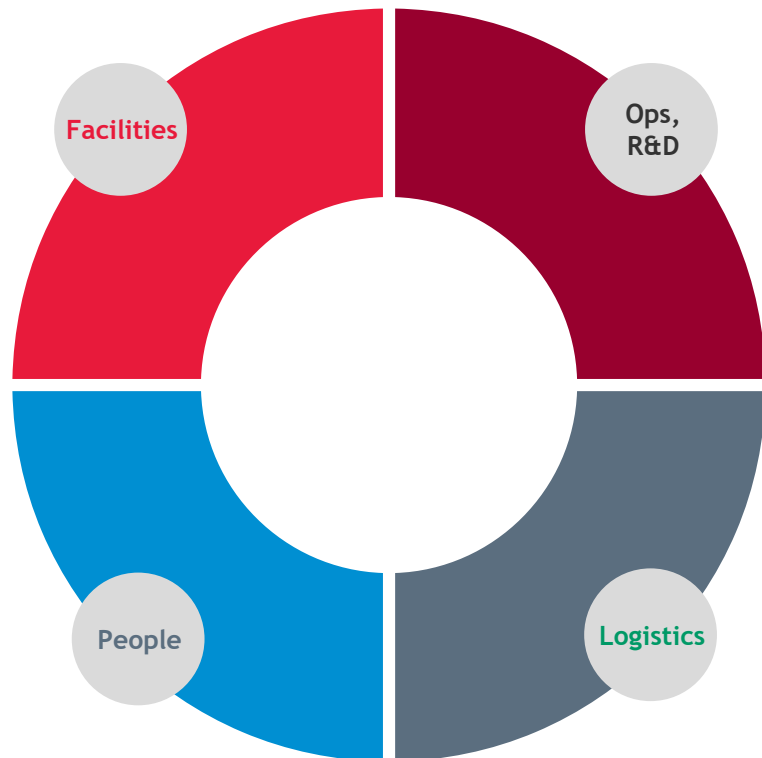


**Calculate the
reporting
entity's
(group's)
carbon
footprint**

The value chain

Examples of business activities that may be different value chains

There are common activities across businesses and industries that will result in greenhouse gas emissions. Examples of these activities include:



Facilities and offices

- ▶ Waste generated from non-production activities, e.g. printing & stationary, staff refreshments, sewerage
- ▶ Emissions from gas and hot water heating
- ▶ Release of refrigerants from air conditioning and fridges
- ▶ Energy used for lighting and data storage.

Operations, research & development

- ▶ Chemical processes
- ▶ Industrial manufacturing
- ▶ By-product and waste treatment
- ▶ Operating machinery, e.g. heavy vehicles on fuel, furnace burning coal
- ▶ Post-production processing, e.g. washing, packaging.

Employment of staff

- ▶ Commuting to work
- ▶ Business-related travel
- ▶ Emissions associated with working from home.

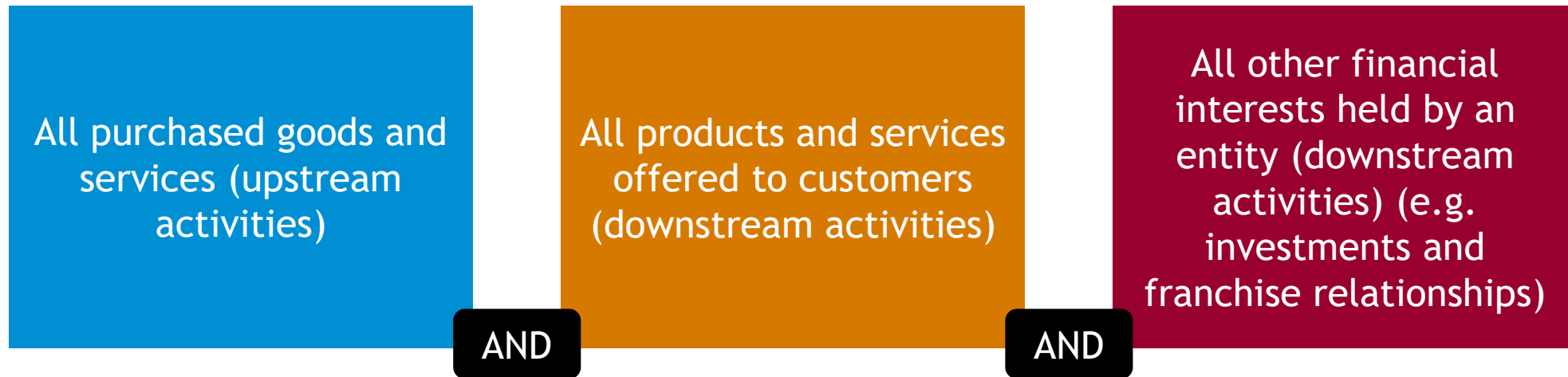
Logistics

- ▶ Embedded supply chain emissions
- ▶ Inbound transportation of purchases, e.g. raw materials and consumables
- ▶ Outbound distribution.

Identify sources of emissions in the value chain

How does an entity identify the sources of emissions in its value chain(s)?

- ▶ Step 1 - map the value chain
- ▶ Step 2 - understand operations from 'cradle to grave'. A useful starting point if for an entity to produce a complete list of:



- ▶ Step 3 - categories the emissions into scopes and sub-categories

Identify sources of emissions in the value chain

Sources that can be used to identify activities and entities in the value chain

Financial records

General ledger: identify emissions sources by goods/services expensed or recognised as inventories

Procurement systems: export vendor/supplier information, which may identify the first layer of suppliers in the value chain

Corporate expense reimbursement systems (employees) (e.g. air travel including class of fare, taxis, meals, etc.)

Corporate travel booking systems: records of air and rail travel, including class of fare; some corporate travel systems may embed emissions data

Loan portfolios: for entities that lend funds as a primary business activity, records of the types of loans, industries, intended use of funds, etc.

Fixed asset registers: listing of fixed assets used in delivery of goods and services

Customer lists: records of goods/services sold and potential source of use of product information

Investment statements: listing of investments held, such as equities, bonds, etc.

UPSTREAM ACTIVITIES

DOWNSTREAM ACTIVITIES

Non-financial records

Technical specifications of goods: manufacturing and/or design specifications of goods will include information on the inputs required to manufacture the items

Employee files and/or surveys of employees: information on commuting distance and tendencies such as mode of transportation, number of days worked remotely and average distance travelled

Surveys and data requests of suppliers: requesting (or requiring) suppliers to provide information on emissions in their value chain

Technical specifications of goods: manufacturing and/or design specifications of goods showing how they may be disposed of at their end of life (e.g. whether components are recyclable, go to land fill)

Customer surveys: information on the use of goods and services and how customers dispose of assets

Franchise agreements: population of franchise agreements entered into

Lease agreements as lessee/lessor: population of leases used in delivering goods and services as a lessee (upstream activities) and assets leased to other entities as a lessor

Logistical planning documentation: logistics departments may have detailed information on how goods are delivered to the entity (upstream activities) and how they are delivered to customers and end consumers

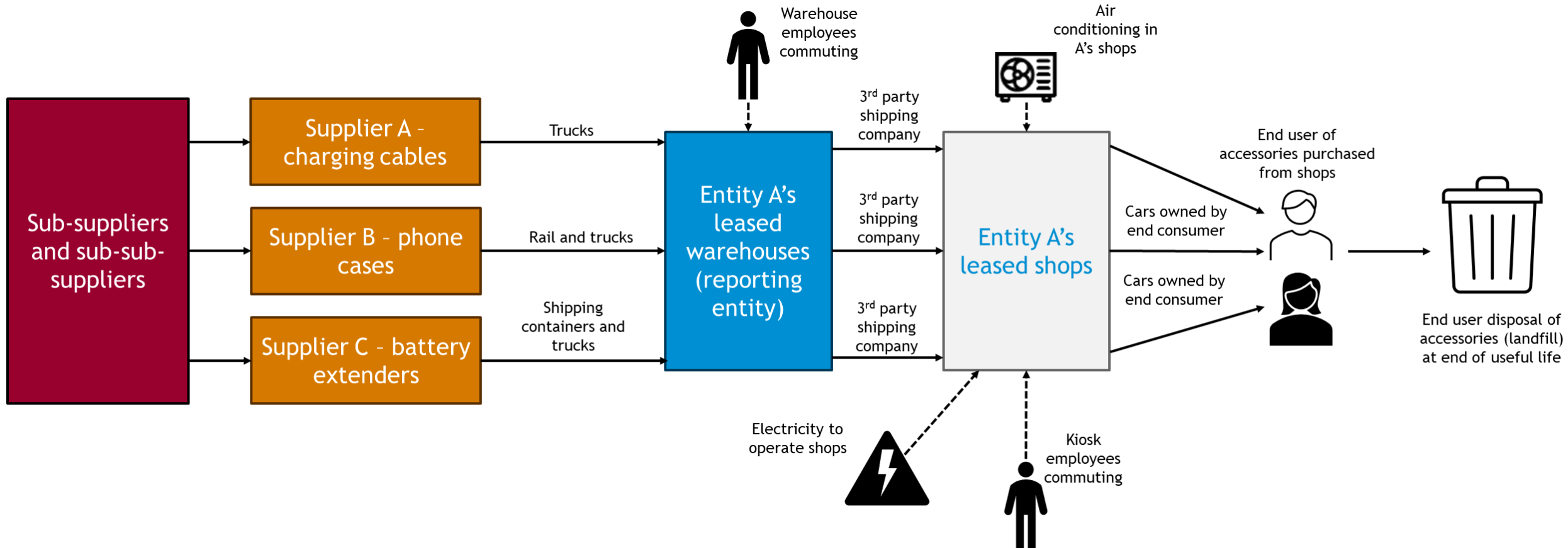
UPSTREAM ACTIVITIES

DOWNSTREAM ACTIVITIES

Identify sources of emissions in the value chain

Example: Step 1 - map the value chain

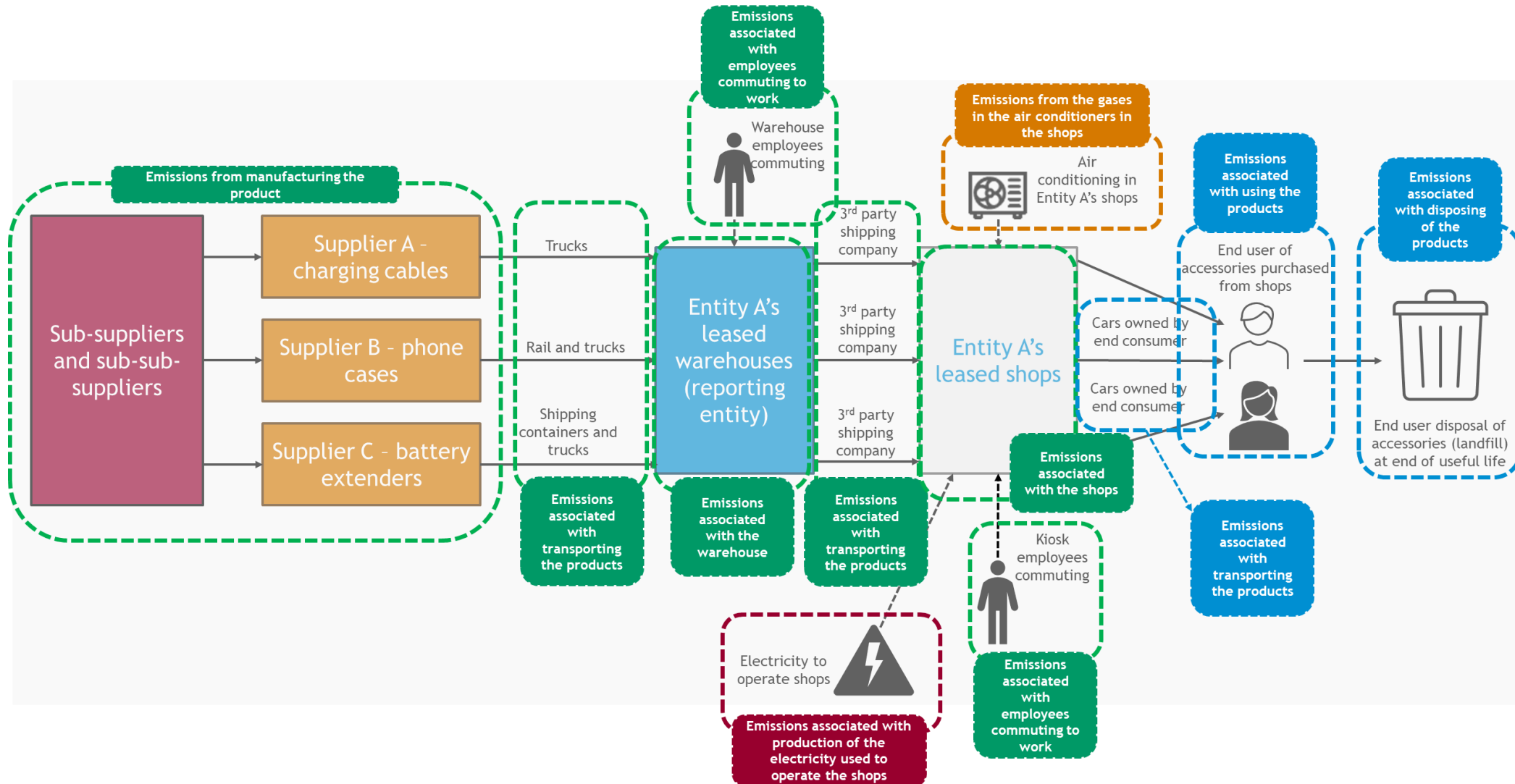
Value chain of Entity A - a distributor of cellular phone accessories (cables, phone cases & battery extenders):



Identify sources of emissions in the value chain

Example: Step 2 - identify the sources of emissions

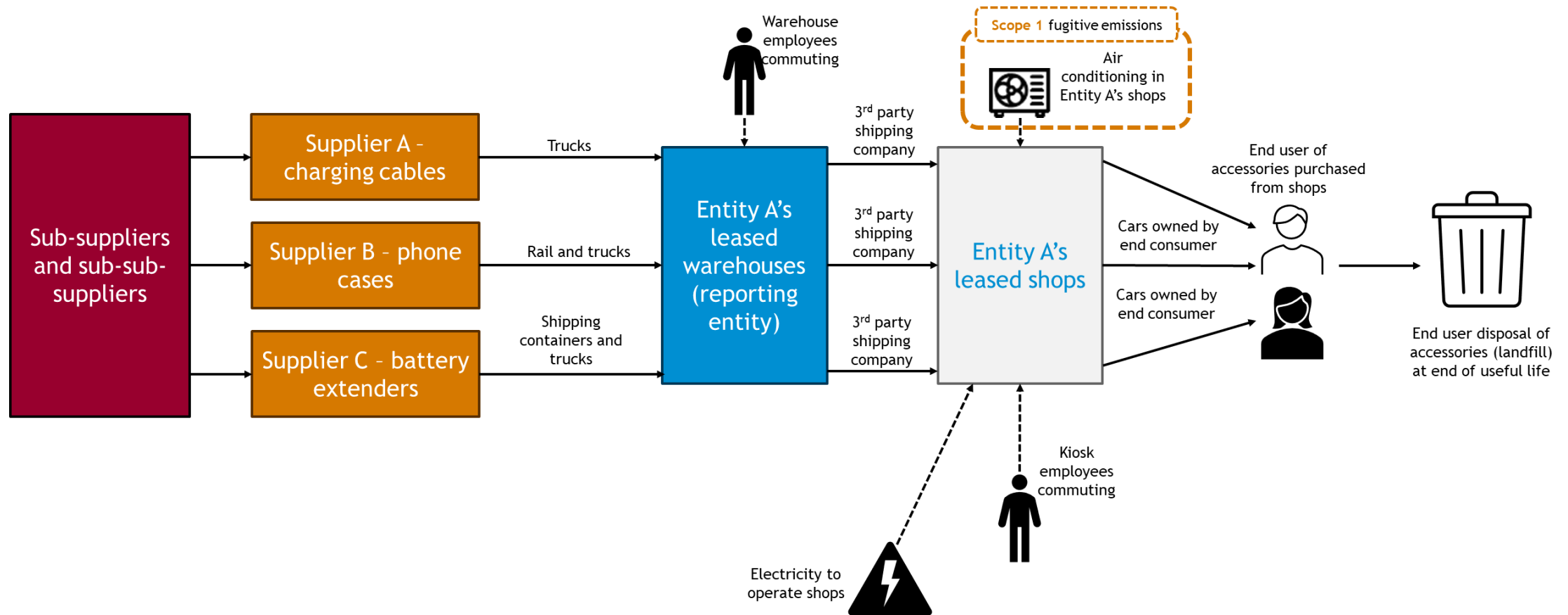
After mapping the value chain, Entity A then identified all sources of emissions



Identify sources of emissions in the value chain

Example: Step 3 - identify the scopes of emissions

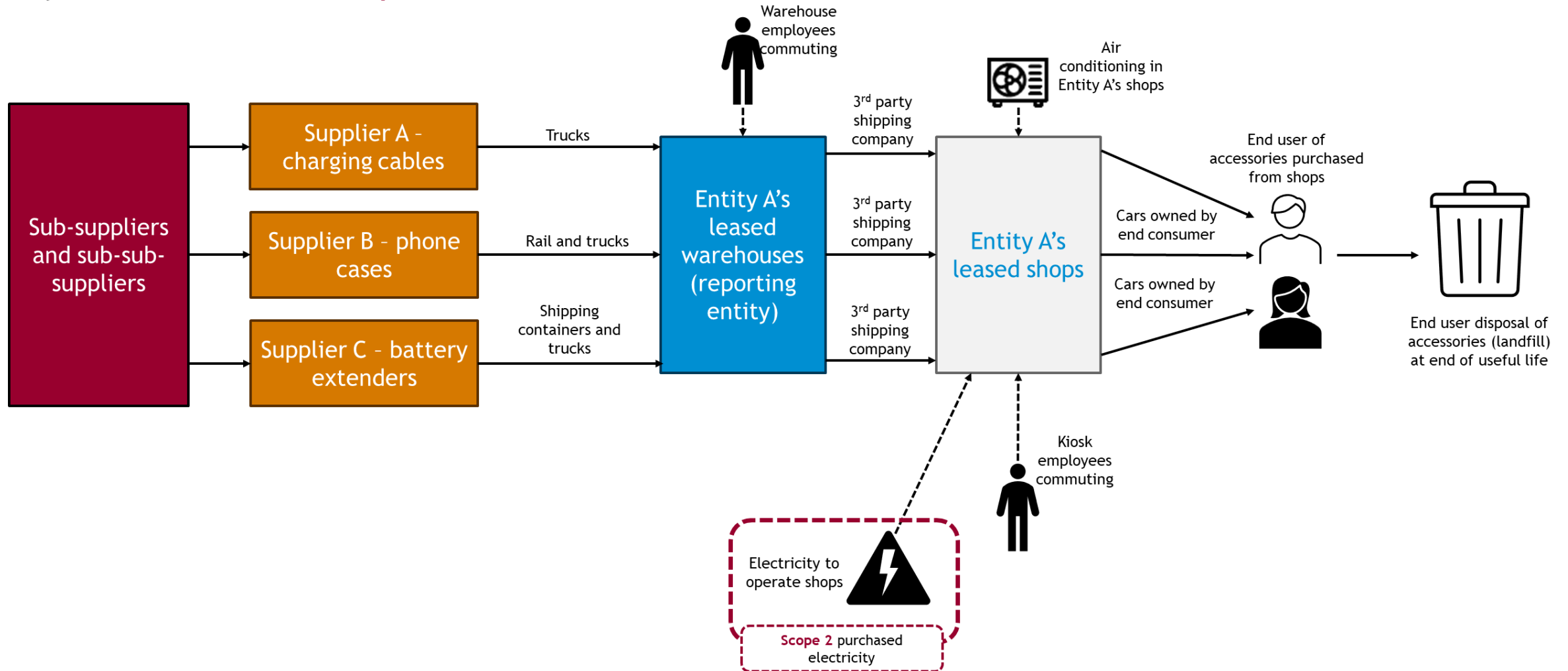
Entity A then identifies its **Scope 1** emissions:



Identify sources of emissions in the value chain

Example: Step 3 - identify the scopes of emissions

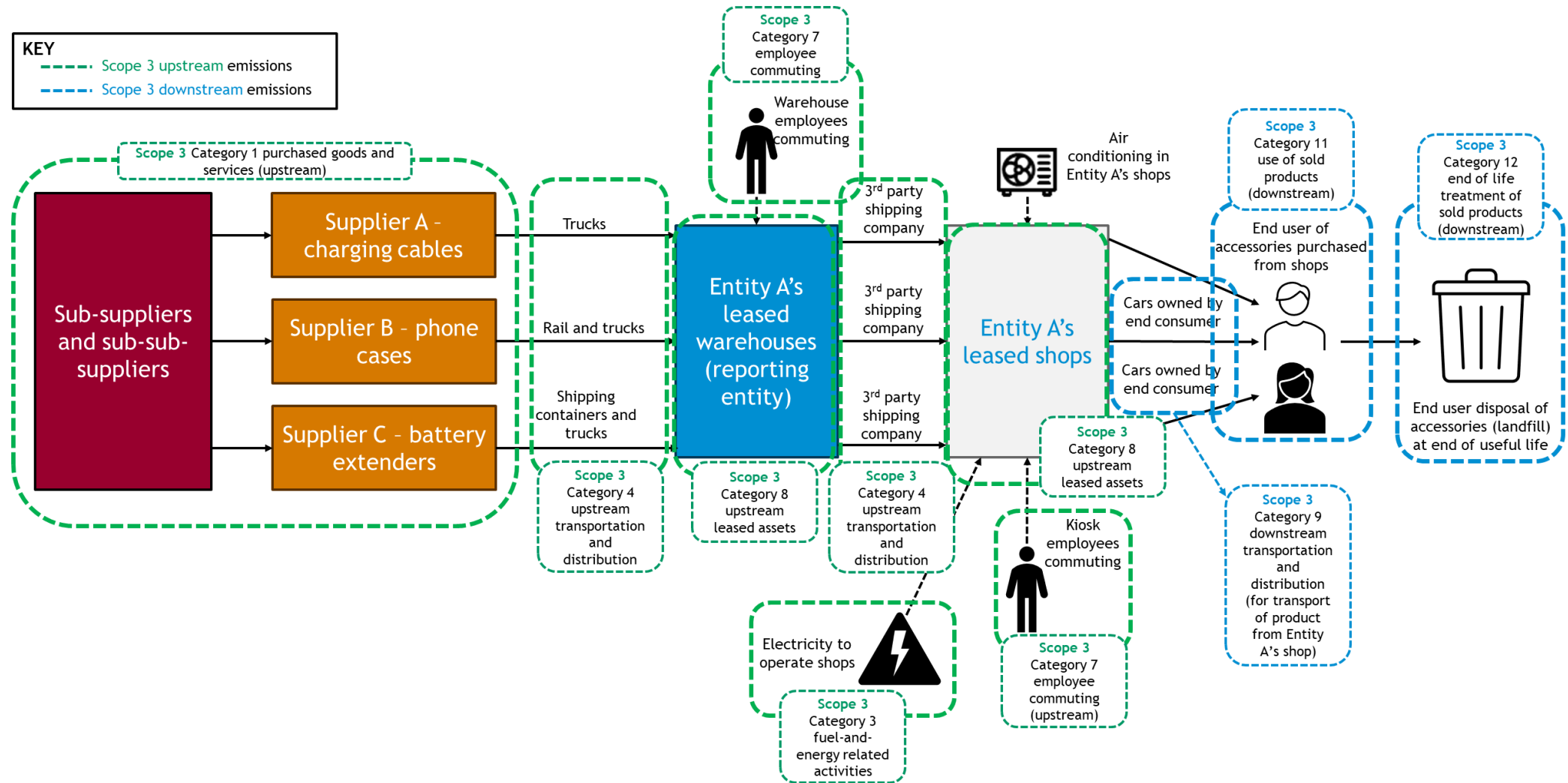
Entity A then identifies its **Scope 2** emissions:



Identify sources of emissions in the value chain

Example: Step 3 - identify the scopes of emissions

Entity A then identifies its **Scope 3 upstream** and **Scope 3 downstream** emissions:





Step 5: Determine emissions to be included in the measurement

Step 5: Determine emissions to be included in the measurement

STEP
5

Determine emissions to be included in the measurement

a

Screen categories to identify scopes and categories the entity should focus its efforts in calculating its GHG emissions

b

Reassess emissions in the entity's value chain when there are changes in circumstances or significant events.

c

Document key decisions in the basis of preparation

Screening categories - estimated emissions

Determine categories to include

‘Screening’

REFERS TO

The process that an entity uses to determine which categories (or which specific activities) will be included in measuring its carbon footprint

CONSIDERS
BOTH

Qualitative factors

Quantitative factors

Screening categories - estimated emissions

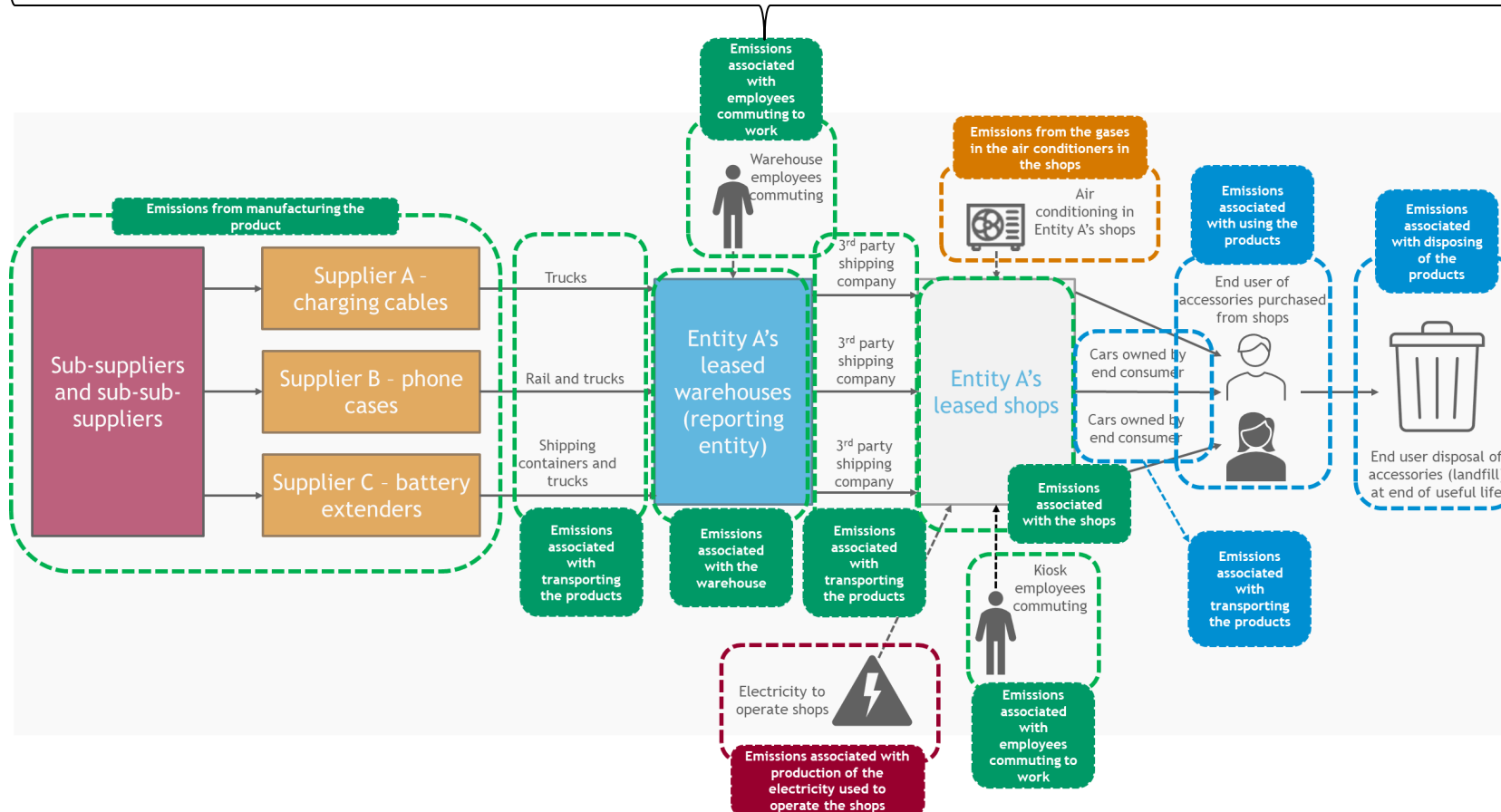
Example - Entity A (continuing example from Step 4) a distributor of cellular phone accessories (cables, phone cases & battery extenders)

Review of the emission sources it identified when it mapped its value chain



Review of GL

To
DETERMINE



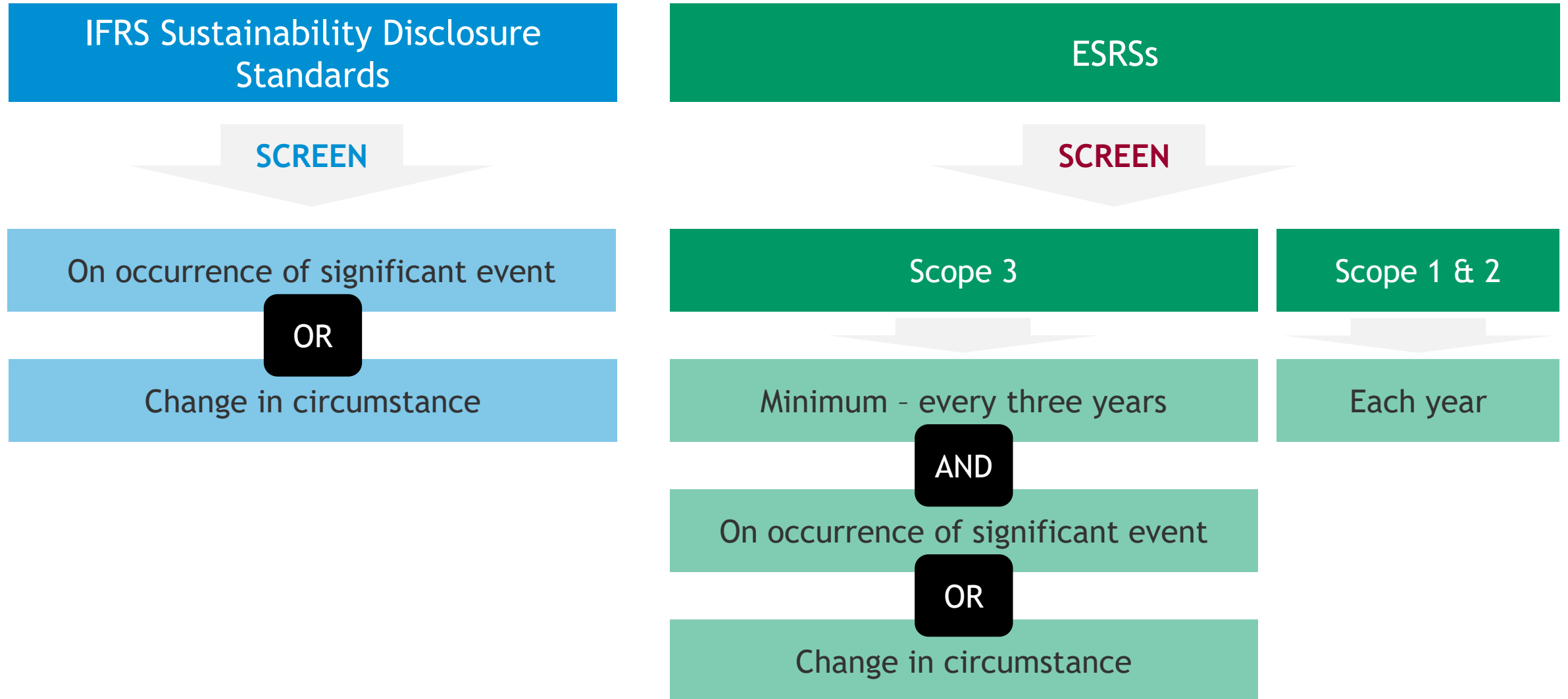
- Sub-categories where no material emissions exist
- Through basic calculations which categories it needs to focus efforts on quantifying the GHG emissions

Screening categories - estimated emissions

Consideration of different data sources



How often is screening required?





Step 6: Select appropriate calculation approach & collect underlying data

Step 6: Select appropriate calculation approach & collect underlying relevant data

STEP

6

Select appropriate calculation approach & collect relevant underlying data

a

Identify available data and determine approach to calculate emissions

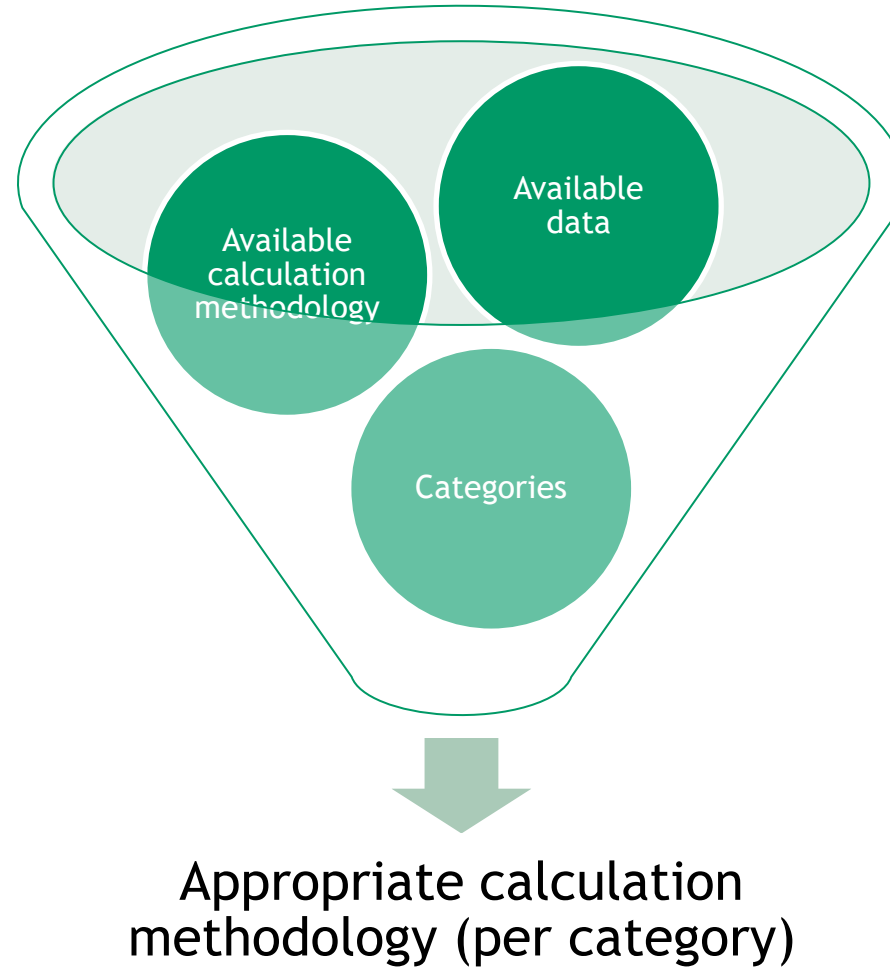
b

Collect appropriate data for emissions calculation

c

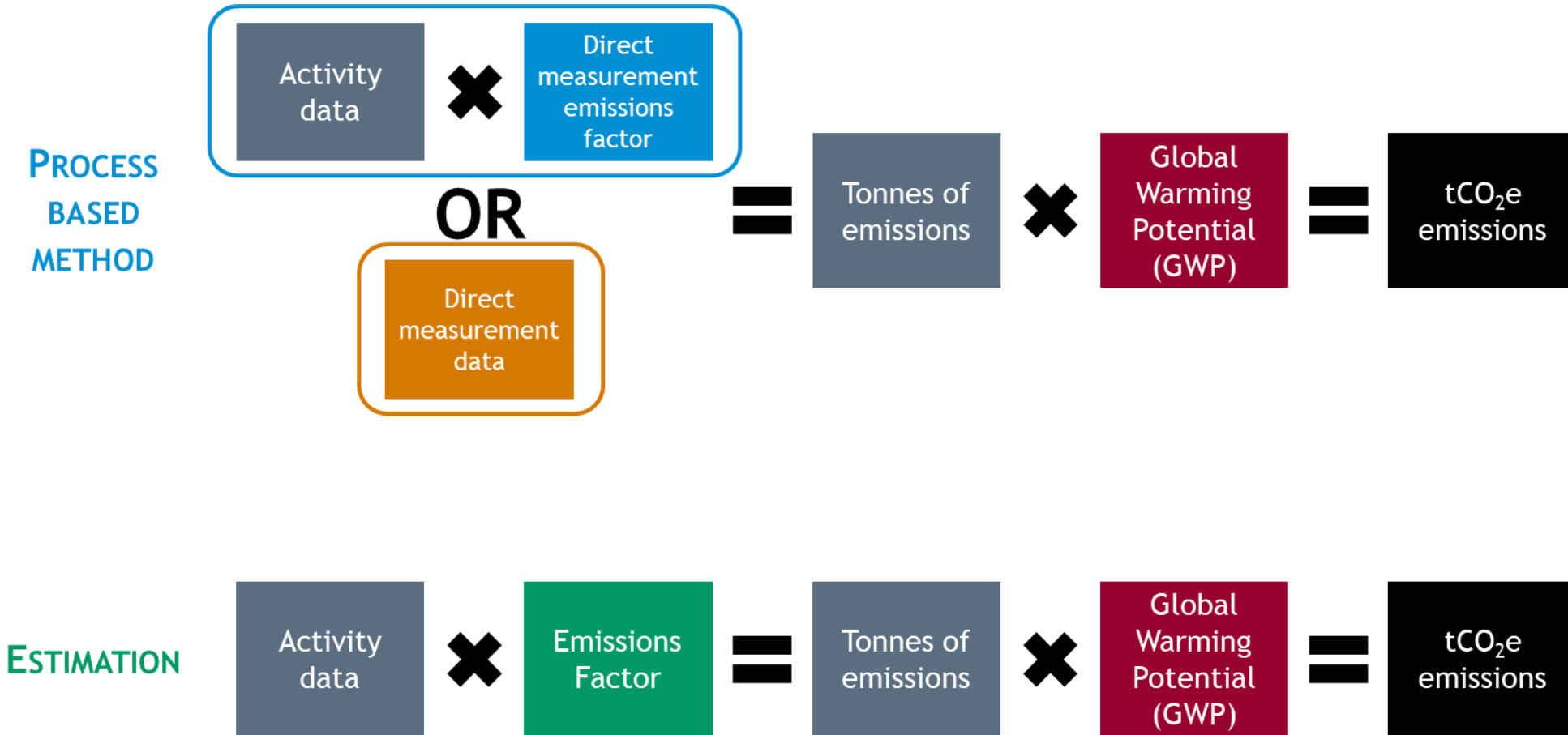
Document key decisions in the basis of preparation

Select appropriate calculation methodology for each category



Select appropriate calculation approach

Available methods



Collect relevant underlying activity data

Activity data is the measurement of how much activity has occurred during the reporting period related to a source of emissions

EXAMPLES

Electricity
consumption - kWh

Gas consumption - kJ,
MJ or GJ


Water consumption -
kL

Distance travelled -
km

NOTE:

An entity must ensure that the activity data collected is appropriate for the calculation methodology applicable to the emissions category, and units are converted as required when performing calculations

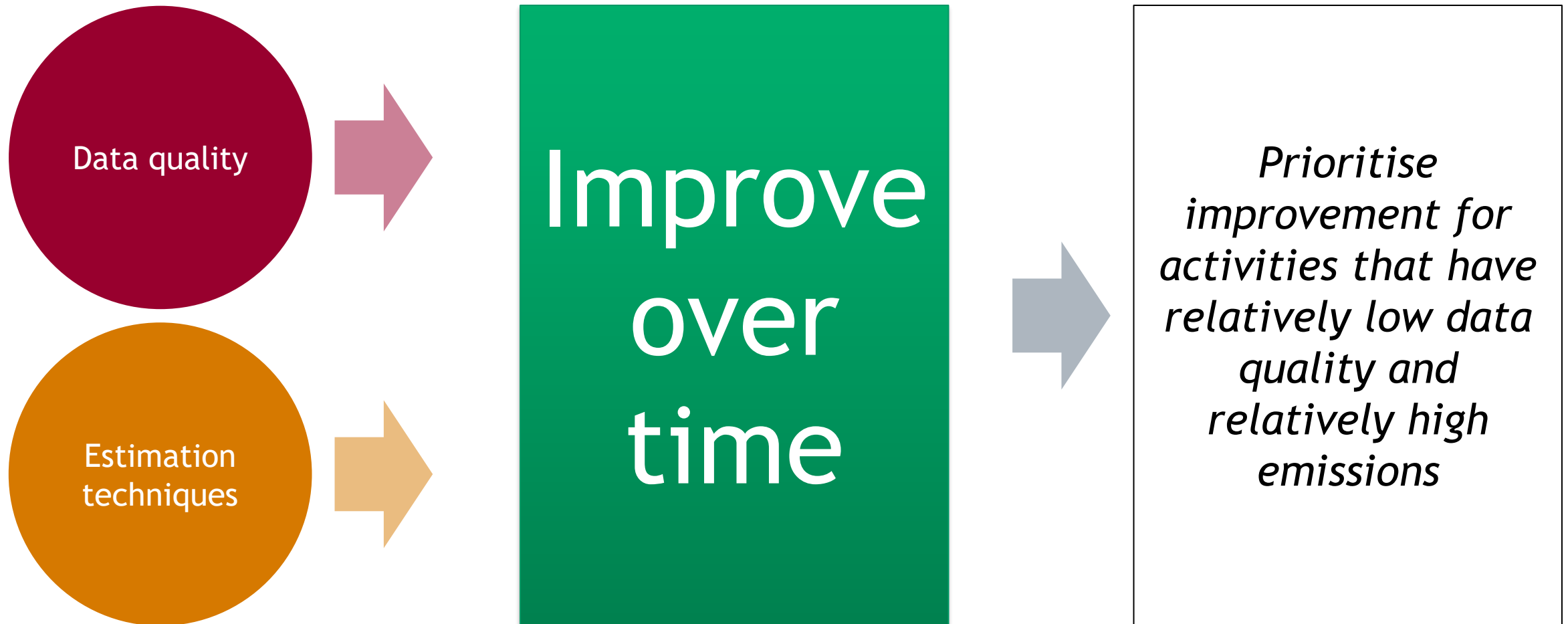
Emission data types

Data type	Description	Quality
Primary data	Data from specific activities within an entity's value chain. For example, supplier-specific data.	Higher
Secondary data	Data that is not from specific activities within an entity's value chain. For example, industry-average data, or Environmentally Extended Input-Output (EEIO) model emissions factor databases.	
Estimation	In the absence of data estimates can be made based on assumptions or benchmarks. Estimations should be used as a last resort for Scope 1 & 2 emissions calculations and materiality of the source considered when determining the suitability of this type of data.	

Data quality indicators

Quality indicator	Description
Technological representativeness	The degree to which data captured represents the technology in use.
Temporal representativeness	The degree to which the timing of data captured, being its seasonality and currency, is representative of activities occurring throughout the reporting period.
Geographical representativeness	The degree to which data is relevant to the geographical conditions of the location where activities being measured are occurring.
Completeness	The degree to which data fully captures or represents the total volume of activity being reported on.
Reliability	The degree to which data has been verified or is able to be verified.

Data quality and estimation techniques





Step 7: Determine emissions factor

Step 7: Determine emissions factor

STEP
7

Determine
emissions factor

a

Identify emissions factors for lowest level of each emission stream identified

b

Select most appropriate emissions factor for each identified emissions stream

c

Document key decisions in the basis of preparation

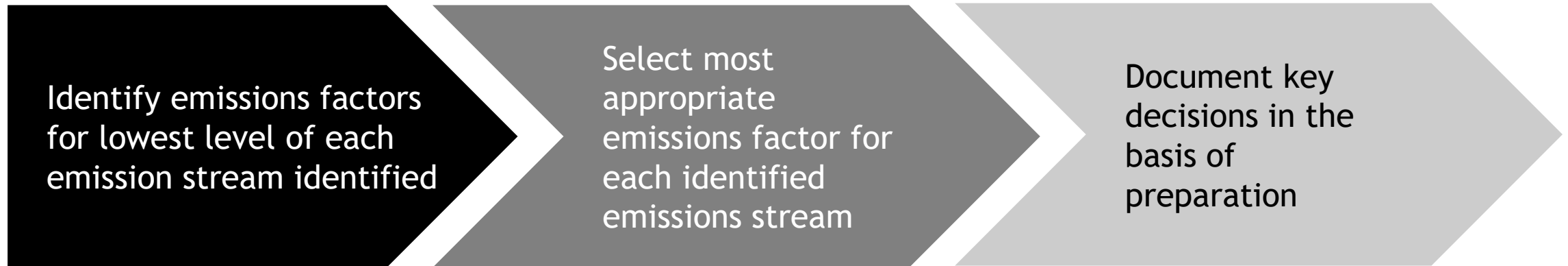
What is an emissions factor?

Definition

A factor allowing GHG emissions to be estimated from a unit of available activity data (e.g. tonnes of fuel consumed, tonnes of product produced) and absolute GHG emissions

GHG Protocol A Corporate Accounting and Reporting Standard, Page 97

How to select emissions factor



Global Warming Potential (GWP) of different GHG gasses

- ▶ Not all greenhouse gases are equal
- ▶ Entity should use GWP from latest assessment report published by Intergovernmental Panel on Climate Change (IPCC)
- ▶ Currently [Sixth Assessment report \(AR6\)](#)
- ▶ Common GHG in AR6 are shown in the table

Industrial designation or common name	Chemical formula	GWP values for 100-year time horizon (AR6)
Carbon Dioxide	CO ₂	1
Methane - non-fossil	CH ₄	27
Nitrous Oxide	N ₂ O	273
Nitrogen trifluoride	NF ₃	17,400
Sulfur Hexafluoride	SF ₆	24,300
Hydrofluorocarbons (HFCs)		
HFC-143	CH ₂ FCHF ₂	364
HFC-143A	CH ₃ CF ₃	5,810
Perfluorinated Compounds		
PFC-116	C ₂ F ₆	12,400



Step 8: Apply calculation tool

Step 8: Apply a calculation tool

STEP
8

Apply calculation
tool

a

Consider if entity is required to use specified calculation tool

b

Input underlying data into the tool to calculate the entity's carbon footprint



Step 9: Roll up data to corporate level

Step 9: Roll-up data to corporate level

STEP
9

Roll-up data to
corporate level

a

Identify any emissions that need to be eliminated for group reporting

b

Calculate total group emissions

Roll-up data to corporate level

- ▶ When the reporting entity rolls up the emissions data for all other entities (or value chains) it must:
 - Include the correct proportion of emissions for that entity (i.e. the approach used may change the proportion of emissions to be included)
 - Identify any emissions that need to be eliminated for group reporting (i.e. if there is trading between group entities then the emissions should be reported in the correct category for the whole group that is reporting)



Step 10: Report emissions

Step 10: Report emissions

STEP
10

Report emissions

a

Document all key material estimates and judgements

b

Report under relevant framework

c

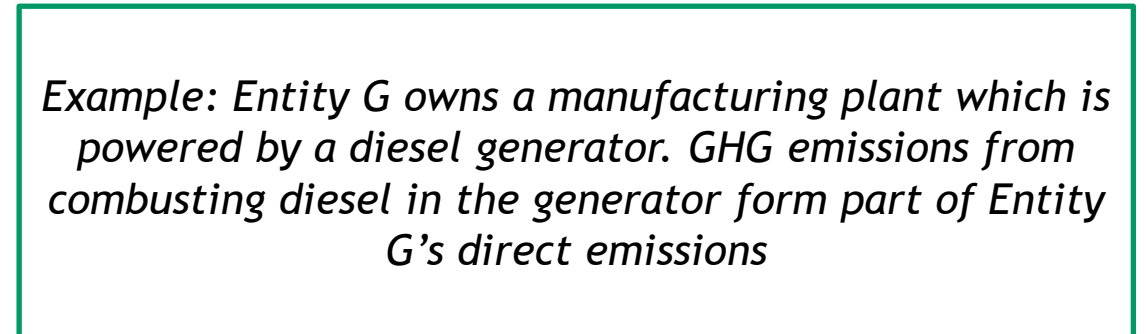
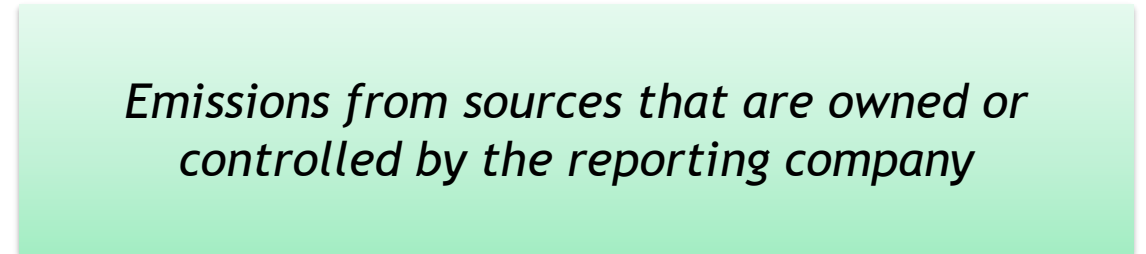
Identify and document improvements required for future year, particularly areas where more/different data required



Scope 1 emissions

Scope 1 emissions

What are scope 1 emissions?



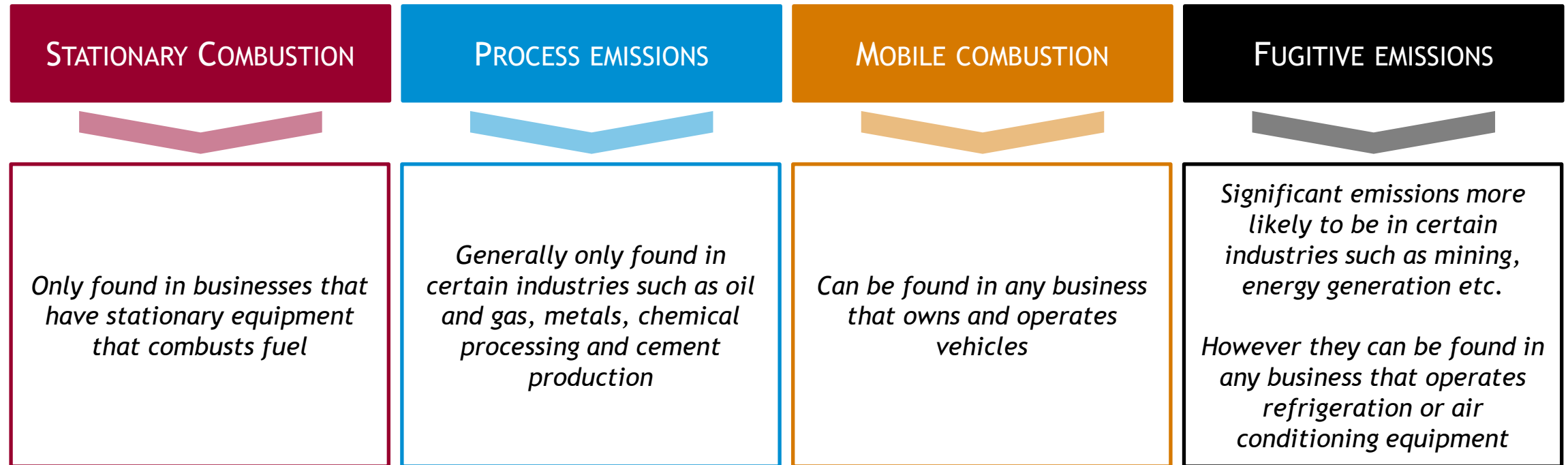
Scope 1 emissions

Categories of Scope 1 emissions

STATIONARY COMBUSTION	PROCESS EMISSIONS	MOBILE COMBUSTION	FUGITIVE EMISSIONS
<p>These emissions are the result of the combustion of fuels in stationary equipment</p>	<p>These emissions are the result of processing or manufacturing chemicals and materials</p>	<p>These emissions are the result of combustion of fuels in company owned mobile combustion devices</p>	<p>These emissions are the result of intentional or unintentional releases of GHGs that are not physically controlled</p>
<p><i>Examples include combustion of fuels in stationary equipment such as boilers, furnaces, burners, turbines, heaters, incinerators, engines, flares, etc.</i></p>	<p><i>Examples include CO₂ emissions from the calcination step in cement manufacturing, CO₂ from catalytic cracking in petrochemical processing, PFC emissions from aluminium smelting.</i></p>	<p><i>Examples include combustion of fuels in transportation devices such as automobiles, trucks, buses, trains, aeroplanes, boats, ships, barges, vessels, etc.</i></p>	<p><i>Examples include intentional and unintentional releases such as equipment leaks from joints, seals, packing, gaskets; CH₄ emissions from coal mines or cattle farming; HFC emissions from air-conditioners or refrigerators etc</i></p>

Scope 1 emissions

Sources of significant Scope 1 emissions



Scope 1 emissions

Sources of Scope 1 emissions - examples (derived from Appendix D, pages 92-93, of the GHG Protocol Corporate Standard)

		STATIONARY COMBUSTION	PROCESS EMISSIONS	MOBILE COMBUSTION	FUGITIVE EMISSIONS
ENERGY	Energy generation	<input checked="" type="checkbox"/> e.g. Boilers and turbines used to produce electricity	<input type="checkbox"/> Uncommon	<input checked="" type="checkbox"/> e.g. Own truck used to transport fuels	<input checked="" type="checkbox"/> e.g. Leakage of CH ₄ from transmission and storage facilities
	Oil and gas	<input checked="" type="checkbox"/> e.g. Use of process heaters, engines, turbines, flares, incinerators	<input checked="" type="checkbox"/> e.g. process vents, equipment vents maintenance/turnaround activities	<input checked="" type="checkbox"/> e.g. Own ship/truck/train used to transport oil	<input checked="" type="checkbox"/> e.g. leaks from pressurised equipment, wastewater treatment
	Coal mining	<input checked="" type="checkbox"/> e.g. Use of explosives, mine fires	<input type="checkbox"/> Uncommon	<input checked="" type="checkbox"/> e.g. Own truck/train used to transport coal	<input checked="" type="checkbox"/> e.g. CH ₄ emissions from coal mines and coal piles
METALS	Aluminium	<input checked="" type="checkbox"/> e.g. Bauxite to aluminium processing, coke baking, lime, soda ash	<input checked="" type="checkbox"/> e.g. Carbon anode oxidation, electrolysis, PFC	<input checked="" type="checkbox"/> e.g. Own ship/truck/train used to transport goods pre and post smelter	<input checked="" type="checkbox"/> e.g. Fuel line CH ₄ , HFC and PFC, SF ₆ , cover gas
	Iron and steel	<input checked="" type="checkbox"/> e.g. Coke, coal and carbonate fluxes, boilers, flares	<input checked="" type="checkbox"/> e.g. Crude iron oxidation, consumption of reducing agent	<input checked="" type="checkbox"/> e.g. Own ship/truck/train used to transport goods	<input checked="" type="checkbox"/> e.g. CH ₄ , N ₂ O
CHEMICALS	Nitric acid, Ammonia, Adipic acid, Urea, and Petrochemicals	<input checked="" type="checkbox"/> e.g. Boilers, flaring, reductive furnaces, flame reactors, steam reformers	<input checked="" type="checkbox"/> e.g. Oxidation/reduction of substrates, impurity removal, N ₂ O byproducts, catalytic cracking, myriad other emissions individual to each process	<input checked="" type="checkbox"/> e.g. Own ship/truck/train used to transport raw materials and finished products	<input checked="" type="checkbox"/> e.g. HFC use, storage tank leakage













Scope 1 emissions

Sources of Scope 1 emissions - examples (derived from Appendix D, pages 92-93, of the GHG Protocol Corporate Standard) (cont)

		STATIONARY COMBUSTION	PROCESS EMISSIONS	MOBILE COMBUSTION	FUGITIVE EMISSIONS
MINERALS	Cement and lime	<input checked="" type="checkbox"/> e.g. Clinker kiln, drying of raw materials, production of electricity	<input checked="" type="checkbox"/> e.g. Calcination of limestone	<input checked="" type="checkbox"/> e.g. Quarry operations, onsite transport	<input type="checkbox"/>
WASTE	Landfills, Waste combustion, Water services	<input checked="" type="checkbox"/> e.g. Incinerators, boilers, flaring	<input checked="" type="checkbox"/> e.g. Sewage treatment, nitrogen loading	<input checked="" type="checkbox"/> e.g. Transportation of waste products in own vehicles	<input checked="" type="checkbox"/> e.g. CH ₄ and CO ₂ from waste and animal product decomposition
PAPER	Pulp and paper	<input checked="" type="checkbox"/> e.g. Production of steam and electricity, fossil fuel derived emissions from calcination of calcium carbonate in lime kilns, drying products with infrared driers fired with fossil fuels	<input type="checkbox"/> Uncommon	<input checked="" type="checkbox"/> e.g. Transportation of raw materials, products and waste in own vehicles, operation of harvesting equipment	<input checked="" type="checkbox"/> e.g. CH ₄ and CO ₂ from waste
ELECTRONICS	Semiconductor production	<input checked="" type="checkbox"/> e.g. Oxidation of volatile organic waste, production of electricity	<input checked="" type="checkbox"/> e.g. C ₂ F ₆ , CH ₄ , CHF ₃ , SF ₆ , NF ₃ , C ₃ F ₈ , C ₄ F ₈ , N ₂ O used in wafer fabrication, CF ₄ created from C ₂ F ₆ and C ₃ F ₈ processing	<input checked="" type="checkbox"/> e.g. Transportation of raw materials, products and waste in own vehicles, operation of harvesting equipment	<input checked="" type="checkbox"/> e.g. CH ₄ and CO ₂ from waste

Scope 1 emissions

Sources of Scope 1 emissions - examples (derived from Appendix D, pages 92-93, of the GHG Protocol Corporate Standard) (cont)

		STATIONARY COMBUSTION	PROCESS EMISSIONS	MOBILE COMBUSTION	FUGITIVE EMISSIONS
OTHER	Service business	 Uncommon	 Uncommon	 e.g. Transportation in vehicles owned by the business	 e.g. Leakage of HFC from refrigerators and air conditioners
	Office based businesses	 Uncommon	 Uncommon	 e.g. Transportation in vehicles owned by the business	 e.g. Leakage of HFC from refrigerators and air conditioners
	Retailer	 Uncommon	 Uncommon	 e.g. Transportation of goods in vehicles owned by the business	 e.g. Leakage of HFC from refrigerators and air conditioners

Measurement of Scope 1 emissions

Stationary combustion

Combustion of fuels in stationary equipment including solid, gaseous and liquid fuels. Examples include natural gas combusted in hot water system, diesel combusted in an on-site generator, etc.

Example: data used to measure stationary combustion emissions - fuel data (stationary equipment)

Data	Description
Primary	Quantity of fuel combusted (or purchased) measured in tonnes, kilojoules or litres (for example).
Secondary	The amount spent on each type of fuel for this category, for example LPG expense.
Estimation	Estimates based on management/facility manager understanding of usage or benchmarks may be considered where possible depending on the activity.

Measurement of Scope 1 emissions

Process emissions

Emissions from physical or chemical processes such as production of cement or aluminium and waste processing

- ▶ The data required to calculate emissions resulting from chemical and industrial processes are highly specific based on the particular process
- ▶ Additional sector-specific guidance and tools are also provided by GHG Protocol for some processes in this category.

Measurement of Scope 1 emissions

Mobile combustion

Combustion of fuels in transportation assets within the organisation's boundary (e.g. company owned cars, trucks, etc)

Example: data used to measure mobile combustion emissions - fuel data (e.g. vehicles)

Data	Description
Primary	Litres of fuel combusted (or purchased). This may be obtained from fleet for fuel card records or fuel purchase receipts. Distance travelled (km); type of fuel and type of vehicle (eg. small car) also required to estimate usage.
Secondary	The amount spent on fuel. Type of fuel and type of vehicle (eg. small car) also required to estimate usage.
Estimation	Estimates based on management/facility manager understanding of usage or benchmarks may be considered where possible depending on the activity.

Measurement of Scope 1 emissions

Fugitive emissions

Intentional and unintentional releases such as equipment leaks from refrigeration and air-conditioning as well as from activities such as, coal, oil and gas mining and some agricultural activities

Example: data used to measure fugitive emissions - refrigerant data

Data	Description
Primary	Quantity (kg) of refrigerant topped up in an air-conditioning or refrigeration unit, noting type of refrigerant, from maintenance records.
Secondary	N/A
Estimation	Leakage assumptions can be made based on the specifications of the unit. Type of unit (e.g. large coldroom), type of refrigerant and capacity of refrigerant in kg will be required for this estimate. Type and capacity can be found on the compliance plate of all air-conditioning and refrigeration units.

Measurement of Scope 1 emissions

Industry guidance - applicability to Scope 1 emissions

Source: [GHG Protocol Standards & Guidance](#)



Potential Emissions from Fossil Fuel Reserves

The first-ever global guidance for measuring and reporting the potential greenhouse gas (GHG) emissions from the fossil fuel reserves held by oil, coal and gas companies.

Best for: Fossil Fuel Companies



Land Sector and Removals Guidance

About the *Land Sector and Removals Guidance*

Best for: Companies and Organizations



Agriculture Guidance

The GHG Protocol Agricultural Guidance, a supplement to the Corporate Standard, is the first ever global guidance to measure GHG emissions for the agriculture sector. It covers all agricultural subsectors, including livestock, crop production, and land use change.

Best for: Companies and Organizations

Online learning product:

[Corporate Standard Training Webinar](#)

2025 Emission factors for Scope 1 in Australia

<https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2025.pdf>

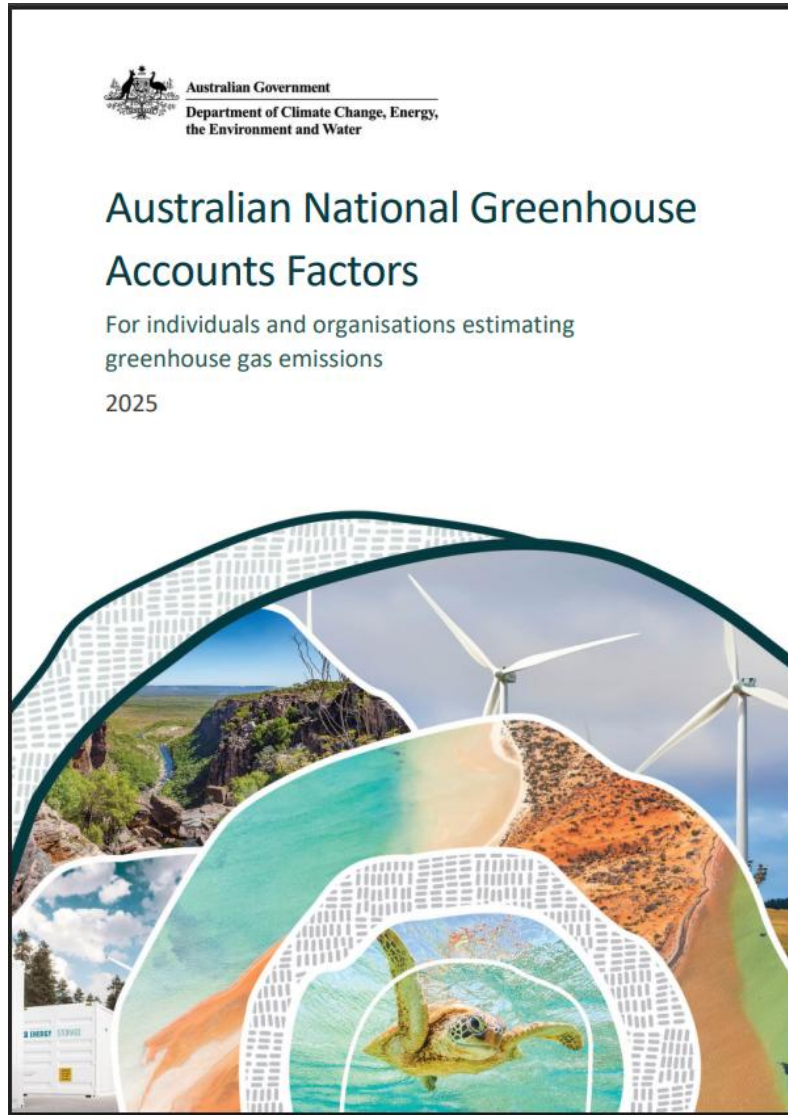


Table 9 Direct (scope 1) and indirect (scope 3) emission factors for the consumption of transport fuels in different transport equipment

Transport type	Fuel combusted	Energy Content factor (GJ per unit of fuel)	Scope 1 Emission Factor (kg CO ₂ -e/GJ CO ₂)	Scope 1 Emission Factor (kg CO ₂ -e/GJ CH ₄)	Scope 1 Emission Factor (kg CO ₂ -e/GJ N ₂ O)	Scope 1 Emission Factor (kg CO ₂ -e/GJ) Combined gases	Scope 3 Emission Factor (kg CO ₂ -e/GJ)
Cars and light commercial vehicles	Gasoline	34.2	67.4	0.02*	0.2*	67.62	17.2
Cars and light commercial vehicles	Diesel oil	38.6	69.9	0.01*	0.5*	70.41	17.3
Cars and light commercial vehicles	Liquefied petroleum gas (LPG)	26.2	60.2	0.5*	0.3*	61.00	20.2
Cars and light commercial vehicles	Fuel oil	39.7	73.6	0.08	0.5	74.18	18.0
Cars and light commercial vehicles	Ethanol	23.4	0.0	0.2*	0.2*	0.4	NE
Cars and light commercial vehicles	Biodiesel	34.6	0.0	0.8	1.7	2.5	NE
Cars and light commercial vehicles	Renewable diesel	38.6	0.0	0.01*	0.5*	0.51	NE

Example

Activity Data	Total	Unit	Conversion Factor	Unit	Emissions Factor	Unit	Source	CO ₂ e	Tonnes CO ₂ e
Petrol	1,000.00	L	34.2	GJ/KL	67.62	Kg CO ₂ e/GJ	NGA 2024	2312.604	2.31
Diesel	500.00	L	38.6	GJ/KL	70.41	Kg CO ₂ e/GJ	NGA 2024	1358.913	1.36
								3671.517	3.67

Table 9 Direct (scope 1) and indirect (scope 3) emission factors for the consumption of transport fuels in different transport equipment

Transport type	Fuel combusted	Energy Content factor (GJ per unit of fuel)	Scope 1 Emission Factor (kg CO ₂ -e/GJ) CO ₂	Scope 1 Emission Factor (kg CO ₂ -e/GJ) CH ₄	Scope 1 Emission Factor (kg CO ₂ -e/GJ) N ₂ O	Scope 1 Emission Factor (kg CO ₂ -e/GJ) Combined gases	Scope 3 Emission Factor (kg CO ₂ -e/GJ)
Cars and light commercial vehicles	Gasoline	34.2	67.4	0.02*	0.2*	67.62	17.2
Cars and light commercial vehicles	Diesel oil	38.6	69.9	0.01*	0.5*	70.41	17.3
Cars and light commercial vehicles	Liquefied petroleum gas (LPG)	26.2	60.2	0.5*	0.3*	61.00	20.2
Cars and light commercial vehicles	Fuel oil	39.7	73.6	0.08	0.5	74.18	18.0
Cars and light commercial vehicles	Ethanol	23.4	0.0	0.2*	0.2*	0.4	NE
Cars and light commercial vehicles	Biodiesel	34.6	0.0	0.8	1.7	2.5	NE
Cars and light commercial vehicles	Renewable diesel	38.6	0.0	0.01*	0.5*	0.51	NE



Latest emission factors available for Australia

<https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2025.pdf>

- ▶ 2025 emission factors were released in late 2025
- ▶ Still based on AR5
- ▶ Related to 2024 data
- ▶ Important to use the **very latest NGA factors**, even if published a day before mandatory sustainability report (including carbon footprint) is published
- ▶ Required to **restate comparatives** based on latest appropriate NGA factors

Australian National Greenhouse Accounts Factors

For individuals and organisations estimating
greenhouse gas emissions

2025





Scope 2 emissions

Scope 2 emissions

What are Scope 2 emissions

SCOPE
2
EMISSIONS

Electricity

Heating /
cooling

Steam

INDIRECT EMISSIONS

(only from purchased electricity, heating/cooling, steam)

Emissions that are a consequence of the operations of the reporting company, but occur at sources owned or controlled by another company.

Example: Entity H purchases electricity from the local power company to power its manufacturing plant. Emissions from purchased electricity forms part of Entity H's indirect emissions.

Measurement of Scope 2 emissions

Permitted calculation methods

LOCATION-BASED METHOD

“A method to quantify scope 2 GHG emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries”


MARKET-BASED METHOD

“A method to quantify the scope 2 GHG emissions of a reporter based on GHG emissions emitted by the generators from which the reporter contractually purchases electricity bundled with contractual instruments, or contractual instruments on their own”

Measurement of Scope 2 emissions

Collection of data

Electricity data - most common Scope 2 emissions


Data	Description	Precision
Primary	Kilowatt hours (kWh) of consumed electricity from meter readings or electricity invoices for each site.	Higher
Secondary	The amount spent on electricity usage, dissected by site.	
Estimation	Estimates based on management/facility manager understanding of usage or benchmarks may be considered where possible.	

Measurement of Scope 2 emissions

Collection of data

Location-based method

The location-based method involves applying emission factors based on the geographical location of operating activities. The emissions factor hierarchy therefore depends on geographical appropriateness and specificity:


Emission factors	Indicative examples	Precision
State / Jurisdictional	Australian National Greenhouse Accounts (NGA) Factors, US Energy Information Administration (US EIA), etc	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">Higher</div>  <div style="margin-top: 10px;">Lower</div> </div>
Global / Country specific	International Energy Agency Factors	
Regional average	Use of estimates by identifying jurisdictions with similar infrastructure and energy mix, or taking an average of the global region in the absence of alternative information	

Measurement of Scope 2 emissions

Collection of data

Market-based method

Calculation of Scope 2 emissions using the market-based method requires the application of the following emission factor data hierarchy:

Emission factors	Indicative examples	Precision
Energy attribute certificates	Renewable Energy Certificates	
Contracts for electricity	PPAs	
Supplier/Utility emission rates	Emission rate allocated and disclosed to retail electricity users	
Residual mix (subnational or national)	Residual Mix Factor (RMF) calculated by the Australian Government	
Other grid-average emission factors	Australian location-based factors (by state) IEA national electricity emission factors	

Source: Adapted from The GHG Protocol, [Scope 2 Guidance](#), p48

2025 emission factors for Scope 2 in Australia

<https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2025.pdf>

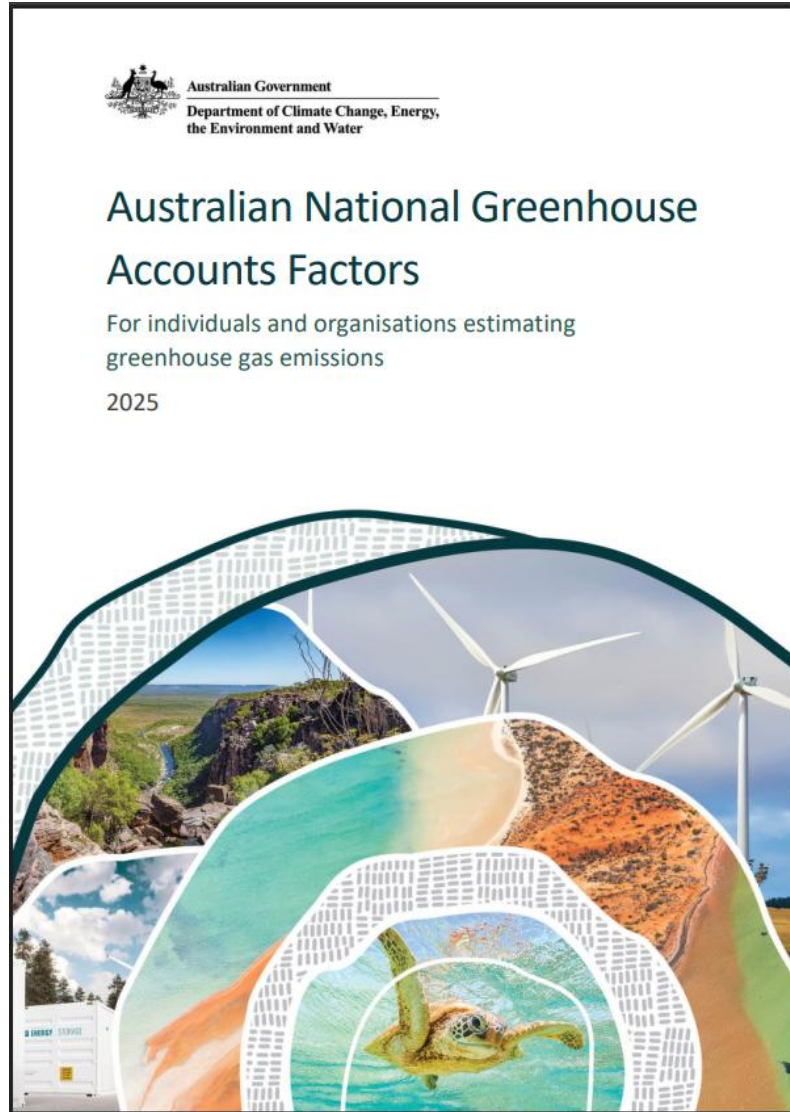


Table 1 Indirect (scope 2 and scope 3) location-based emission factors associated with the consumption and losses of purchased or acquired electricity

State, Territory or grid description	Scope 2 Emission Factors (kg CO ₂ -e/kWh)	Scope 3 Emission Factors (kg CO ₂ -e/kWh)
New South Wales and Australian Capital Territory	0.64	0.03
Victoria	0.78	0.09
Queensland	0.67	0.09
South Australia	0.22	0.04
Western Australia - South West Interconnected System (SWIS)	0.50	0.06
Western Australia - North Western Interconnected System (NWIS)	0.56	0.09
Tasmania	0.20	0.03
Northern territory - Darwin Katherine Interconnected System (DKIS)	0.56	0.09
National	0.62	0.07

Sources: Primary data sources comprise National Greenhouse and Energy Reporting (Measurement) Determination 2008 (Schedule 1), Australian Energy Statistics, Clean Energy Regulator, and AEMO data and Department of Climate Change, Energy, the Environment and Water.

Example

Location Based Method					
Activity	Year	Emission Fact Unit	Electricity Consumption	CO ₂ e	Source
Emissions from consumption of purchased electricity from a grid- Victoria	2024	0.77 kg CO ₂ -e/kWh	5000	3850	NGA 2024

Table 1 Indirect (scope 2 and scope 3) emission factors from consumption of purchased or acquired electricity

State, Territory or grid description	Scope 2 Emission Factors (kg CO ₂ -e/kWh)	Scope 3 Emission Factors (kg CO ₂ -e/kWh)
New South Wales and Australian Capital Territory	0.66	0.04
Victoria	0.77	0.09
Queensland	0.71	0.10
South Australia	0.23	0.05
Western Australia - South West Interconnected System (SWIS)	0.51	0.06
Western Australia - North Western Interconnected System (NWIS)	0.61	0.09
Tasmania	0.15	0.03
Northern territory - Darwin Katherine Interconnected System (DKIS)	0.56	0.07
National	0.63	0.07

Sources: Primary data sources comprise National Greenhouse and Energy Reporting (Measurement) Determination 2008 (Schedule 1), Australian Energy Statistics, Clean Energy Regulator, and AEMO data and Department of Climate Change, Energy, the Environment and Water.



Example

Market Based Method						
Activity	Year	Emission Factor	Unit	Electricity Consumption	CO ₂ e	Source
Residual Mix Factor for the market-based method	2024	0.81	kg CO ₂ -e/kWh	5000	4050	NGA 2024

Table 2 Indirect (scope 2 and scope 3) emission factors from consumption of purchased or acquired electricity: market-based factors

Residual Mix Factor for the market-based method	Scope 2 Emission Factors (kg CO ₂ -e/kWh)	Scope 3 Emission Factors (kg CO ₂ -e/kWh)
National	0.81	0.11

National Greenhouse Accounts Factors 2024



Latest emission factors available for Australia

<https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2025.pdf>

- ▶ 2025 emission factors were released in late 2025
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Australian National Greenhouse Accounts Factors

For individuals and organisations estimating
greenhouse gas emissions

2025



Scope 3 emissions

Scope 3 emissions

What are Scope 3 emissions?



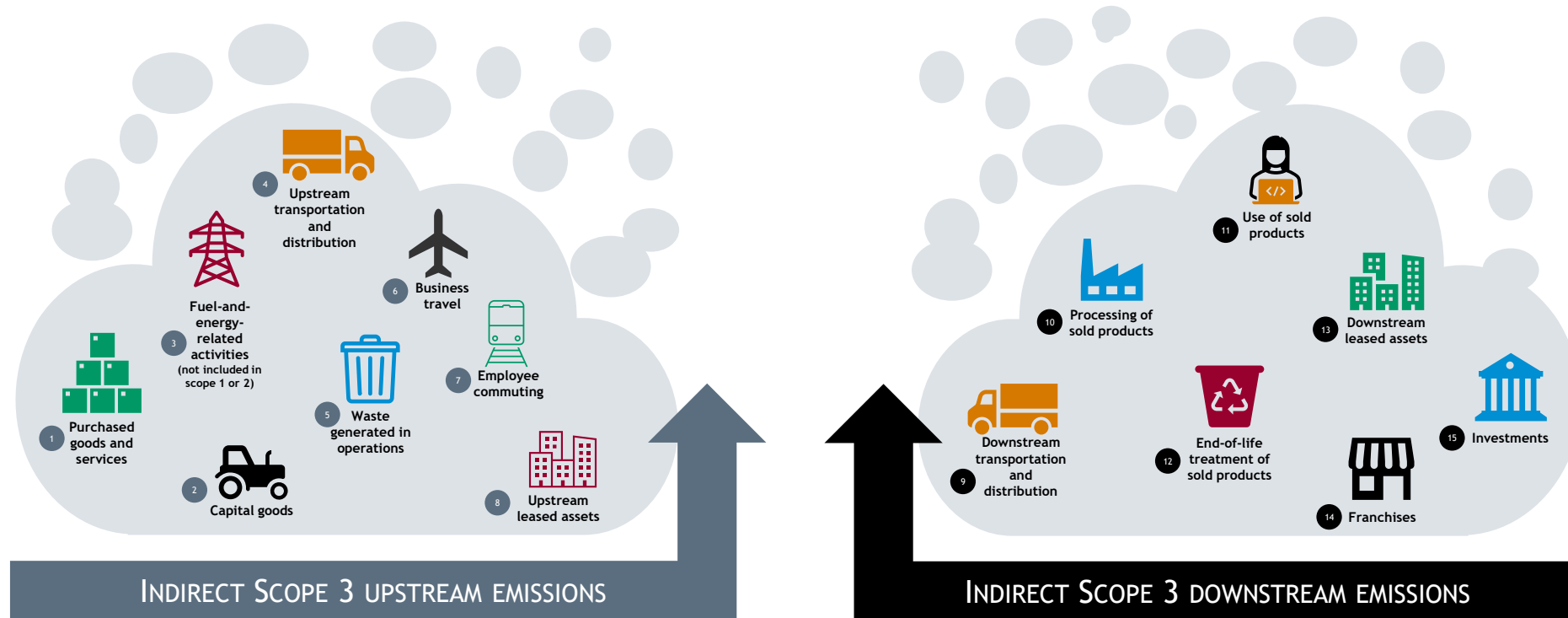
INDIRECT EMISSIONS (that are not Scope 2 emissions)

Emissions that are a consequence of the operations of the reporting company, but occur at sources owned or controlled by another company.

Example: Entity K purchases goods that it sells in its business. Emissions to manufacture and transport the goods purchased form part of Entity K's indirect emissions

Scope 3 emissions

Categories of Scope 3 emissions





Upstream Scope 3 emissions



Category 1 - Purchased goods and services

Category 1 - Purchased goods and services



- ▶ Residual category of upstream Scope 3 emissions - will cover at end of upstream emissions section



Category 2 - Capital goods

Category 2 - Capital goods

Overview



CATEGORY 2 CAPITAL GOODS							
<p>What emissions are included?</p> <p>Capital goods include the extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year</p>	<p>Minimum boundary includes</p> <p>All upstream (cradle-to-gate) emissions of purchased capital goods</p> <p>Emissions that may be applicable</p> <p>None</p> <p>Emissions included incurred during</p> <table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✗</td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)	✓	✓	✗
Past year(s)	Current year	Future year(s)					
✓	✓	✗					

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33- 34.

Category 2 - Capital goods

Calculation methodologies - same as for Category 1 purchased goods and services



Calculation method	Notes on data used	Description of data required
Supplier-specific method	All data is specific to the supplier's product	Collect product-level, cradle-to-gate GHG inventory data directly from goods suppliers.
Hybrid method	Scope 1 & 2 data specific to supplier's product, all other upstream emissions either supplier specific or average	Use a combination of supplier-specific activity data (where available) and secondary data to fill the gaps. This method involves: <ul style="list-style-type: none"> Collecting allocated scope 1 & 2 emission data directly from suppliers Calculating upstream emissions of goods and services from suppliers' activity data on the amount of materials, fuel, electricity, used, distance transported, and waste generated from the production of goods and services and applying appropriate emission factors using secondary data to calculate upstream emissions wherever supplier-specific data is not available.
Average-data method	All emissions are based on secondary process data	Estimate emissions for goods and services by collecting data on the mass or other relevant units of goods purchased and multiplying by the relevant secondary (e.g., industry average) emission factors (e.g., average emissions per unit of good).
Spend-based method	All emissions are based on secondary data	Estimate emissions for goods by collecting data on the economic value of goods purchased and multiplying it by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods).

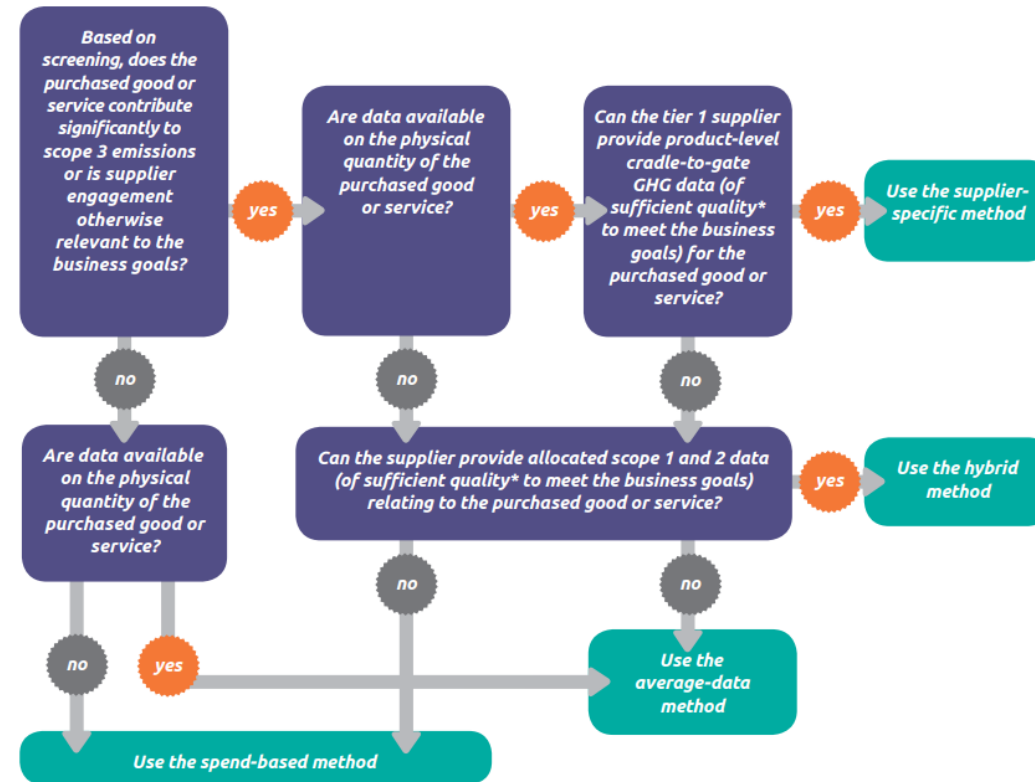
Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 37

Category 2 - Capital goods

Selection of calculation methodology - same as for Category 1 purchased goods and services



Figure [1.2] Decision tree for selecting a calculation method for emissions from purchased goods and services



Note * Companies should collect data of sufficient quality to ensure that the inventory:

- most appropriately reflects the GHG emissions of the company
- supports the company's business goals for conducting a GHG inventory
- serves the decision-making needs of users, both internal and external to the company.

For more information on how to determine whether data is of sufficient quality, see section 7.3 of the *Scope 3 Standard*

Source: World Resources Institute

Category 2 - Capital goods

Collection of data - methodology - same as for Category 1 purchased goods and services



Calculation method	Activity data needed
Supplier-specific method	Quantities or units of each good or service purchased.
Hybrid method	<p>For each supplier, reporting entities should collect as much of the following activity data relating to the good or service purchased as is available (if data is unavailable for certain activities, secondary data can be used to fill the gaps):</p> <ul style="list-style-type: none"> • Allocated scope 1 and scope 2 data (including emissions from electricity use and fuel use and any process and fugitive emissions). For guidance on allocating emissions, refer to chapter 8 of the Scope 3 Standard • Mass or volume of material inputs (e.g., bill of materials), mass or volume of fuel inputs used, and distance from the origin of the raw material inputs to the supplier (the transport emissions from the supplier to the reporting entity is calculated in category 4 so it should not be included here) • Quantities of waste output other emissions.
Average-data method	Mass or number of units of purchased goods or services for a given year (e.g., kg, hours spent).
Spend-based method	Amount spent on purchased goods or services, by product type, using market values (e.g., dollars).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 24-33

Category 2 - Capital goods

Selection of emissions factor - same as for Category 1 purchased goods and services



Cradle-to-gate emission factors of the purchased goods or services per unit of economic value (e.g., kg CO2 e/\$)

Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 33



Category 2 - Capital goods

Workbook Question 5

Background

- ▶ Supermarket A is in the process of calculating its Scope 3 GHG emissions.

Question

- ▶ Which of the following emissions would it include within Scope 3 Category 2 Capital Goods (select all that apply)?
 - Emissions to grow and manufacture the food that it purchased during the year from third-party suppliers
 - Emissions from the transport of food by third-party shipping companies from third-party suppliers to Supermarket A's warehouse
 - Emissions from the shipping food from Supermarket A's warehouses to supermarkets in its own trucks
 - Emissions from the construction of three new supermarkets during the reporting period
 - Emissions from the manufacturing of refrigerators that Supermarket A purchased during the reporting period from third-party suppliers
 - Emissions from using the refrigerators during the reporting period
 - Emissions from the manufacturing of delivery trucks purchased during the reporting period
 - Emissions from delivering food to customers in the delivery trucks that it purchased during the year



Category 2 - Capital goods

Workbook Question 5 (cont)

Suggested Solution

- ▶ The following emissions **would not** be classified as Scope 3, Category 2:
 - Emissions incurred in growing and manufacturing the food sold by Supermarket A would be included within Category 1 Purchased Goods and Services because it does not meet the criteria to be categorised in Categories 2-8
 - Emissions from the transport of food by third-party shipping companies from the third-party supplier to Supermarket A's warehouse because they would be classified as part of Scope 3 Category 4 Upstream Transportation and Distribution
 - Emissions from shipping food from Supermarket A's own warehouses to its Supermarkets would be included as part of Scope 1 (direct) emissions because Supermarket A owns and operates the delivery trucks and therefore directly incurs the emissions when it burns the fuel
 - Emissions from the electricity used by Supermarket A's refrigerators would be accounted for as part of Scope 2 emissions. Any fugitive emissions released by the refrigerators during the reporting period would be accounted for as part of Scope 1 emissions.
 - Emissions from delivering food to customers would be included as part of Scope 1 (direct) emissions because Supermarket A owns and operates the delivery trucks and therefore directly incurs the emissions when it burns the fuel.



Category 2 - Capital goods

Workbook Question 5 (cont)

Suggested Solution

- ▶ The following emissions **would** be classified as Scope 3, Category 2 because they relate to the acquisition of capital goods during the reporting period:
 - Emissions from the construction of three new supermarkets, including emissions for all the inputs to the buildings
 - Emissions from third parties manufacturing the refrigerators and delivering them to Supermarket A
 - Emissions from third parties manufacturing the delivery trucks.
 - Note: the emissions from manufacturing refrigerators, trucks or the inputs to the new buildings could have been released into the atmosphere in prior reporting periods. Supermarket A must account for the emissions in the reporting period that it purchased the capital goods.



Category 3 - Fuel and energy related activities



Fuel-and-energy-related activities
(not included in scope 1 or 2)

Category 3 - Fuel and energy related activities

Overview

CATEGORY 3 FUEL-AND-ENERGY RELATED ACTIVITIES <small>(not included in scope 1 or 2)</small>	
What emissions are included?	Minimum boundary includes
Fuel and energy related activities include the extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in scope 1 or scope 2 , including:	
a Upstream emissions of purchased fuels (extraction, production, and transportation of fuels consumed by the reporting company)	All upstream (cradle-to-gate) emissions of purchased fuels (from raw material extraction up to the point of, but excluding combustion)
b Upstream emissions of purchased electricity (extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling consumed by the reporting company)	All upstream (cradle-to-gate) emissions of purchased electricity. This includes raw material extraction up to the point of, but excluding, combustion by a power generator
c Transmission and distribution (T&D) losses (generation of electricity, steam, heating and cooling that is consumed (i.e., lost) in a T&D system) - reported by end user	All upstream (cradle-to-gate) emissions of energy consumed in a T&D system, including emissions from combustion
d Generation of purchased electricity that is sold to end users (generation of electricity, steam, heating, and cooling that is purchased by the reporting company and sold to end users) - reported by utility company or energy retailer only	For generation of purchased electricity that is sold to end users: Emissions from the generation of purchased energy
Emissions that may be applicable	Emissions included incurred during
None	Past year(s)
	Current year
	Future year(s)
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid #27ae60; padding: 5px; text-align: center;">✓</div> <div style="border: 1px solid #27ae60; padding: 5px; text-align: center;">✓</div> <div style="border: 1px solid #c0392b; padding: 5px; text-align: center;">✗</div> </div>

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 34.

Category 3 - Fuel and energy related activities

Calculation methodologies

Calculation Method	Category 3A, Purchased fuels	Category 3B, Purchased electricity	Category 3C, T&D losses	Category 3D, Electricity sold to end users
Supplier-specific method	Collecting data from fuel providers on upstream emissions (extraction, production and transportation) of fuel consumed by the reporting entity	Collecting data from electricity providers on upstream emissions (extraction, production, and transportation) of electricity consumed by the reporting entity	Collecting data from electricity providers on T&D loss rates of grids where electricity is consumed by the reporting entity	Collecting emissions data from power generators
Average-data method	Estimating emissions by using secondary (e.g., industry average) emission factors for upstream emissions per unit of consumption (e.g., kg CO ₂ e/kWh)	Estimating emissions by using secondary (e.g., industry average) emission factors for upstream emissions per unit of consumption (e.g., kg CO ₂ e/kWh).	Estimating emissions by using average T&D loss rates (e.g., national, regional, or global averages, depending on data availability).	Estimating emissions by using grid average emission rates.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 40 - 47

Category 3 - Fuel and energy related activities

Collection of data

Calculation method	Category 3A, Purchased fuels	Category 3B, Purchased electricity	Category 3C, T&D losses	Category 3D, Electricity sold to end users
Supplier-specific method	Quantities and types of fuel consumed.	Total quantities of electricity, steam, heating, and cooling purchased and consumed per unit of consumption (e.g., MWh), broken down by supplier, grid region, or country.	Electricity, steam, heating, and cooling per unit of consumption (e.g., MWh), broken down by grid region or country.	Quantities and specific source (e.g., generation unit) of electricity purchased and re-sold.
Average-data method	Quantities and types of fuel consumed.	Total quantities of electricity, steam, heating, and cooling purchased and consumed per unit of consumption (e.g., MWh), broken down by supplier, grid region, or country.	Electricity, steam, heating, and cooling per unit of consumption (e.g., MWh), broken down by grid region or country.	Quantities and specific source (e.g., generation unit) of electricity purchased and re-sold.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 40 - 47

Category 3 - Fuel and energy related activities

Emissions factor

Calculation method	Category 3A, Purchased fuels	Category 3B, Purchased electricity	Category 3C, T&D losses	Category 3D, Electricity sold to end users
Supplier-specific method	Fuel-provider-specific emission factors for extraction, production, and transportation of fuels per unit of fuel consumed (e.g., kg CO ₂ e/kWh), by fuel type and country/region	Utility-specific emission factors for extraction, production and transportation of fuels consumed per MWh of electricity, steam, heating, or cooling generated. Ensure the factor does not include emissions from combustion	Utility-specific T&D loss rate (%), specific to the grid where energy is generated and consumed	Specific CO ₂ , CH ₄ , and N ₂ O emissions data for generation units from which purchased power is produced
Average-data method	average emission factors for upstream emissions per unit of consumption (e.g., kg CO ₂ e/kWh)	Grid-region, country, or regional emission factors for extraction, production, and transportation of fuels per unit of consumption (e.g., kg CO ₂ e/kWh) of electricity, steam, heating, or cooling generated. Ensure the factor does not include emissions from combustion	<ul style="list-style-type: none"> Country average T&D loss rate (%), or Regional average T&D loss rate (%), or Global average T&D loss rate (%) 	Grid average emission factor for the origin of purchased power

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 40 - 47

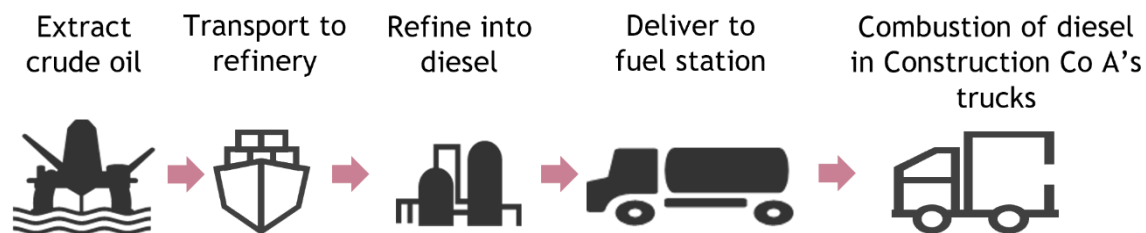


Category 3a - Fuel and energy related activities

Workbook Question 6

Background

- ▶ Construction Co A (CCA) purchases diesel to run the trucks it uses to assist with the construction of buildings for third-party customers. The upstream value chain for the purchased diesel is as follows:



Question

- ▶ For each of the emissions associated with the fuel that CCA used in its trucks, decide which category the emissions should be included in?



Category 3a - Upstream emissions of purchased fuels

Workbook Question 6 (cont)

Suggested Solution

	Emissions are Scope 1 Direct GHG Emissions	Emissions are Scope 3 Category 3a Upstream emissions of purchased fuels
CCA's share of emissions from extracting the crude oil	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>
Combustion of diesel in CCA's own trucks	✓ <input type="checkbox"/>	✗ <input type="checkbox"/>
CCA's share of emissions from transporting the crude oil to the refinery	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>
CCA's share of emissions from refining the crude oil into diesel	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>
CCA's share of the emissions for transporting diesel to fuel station	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>

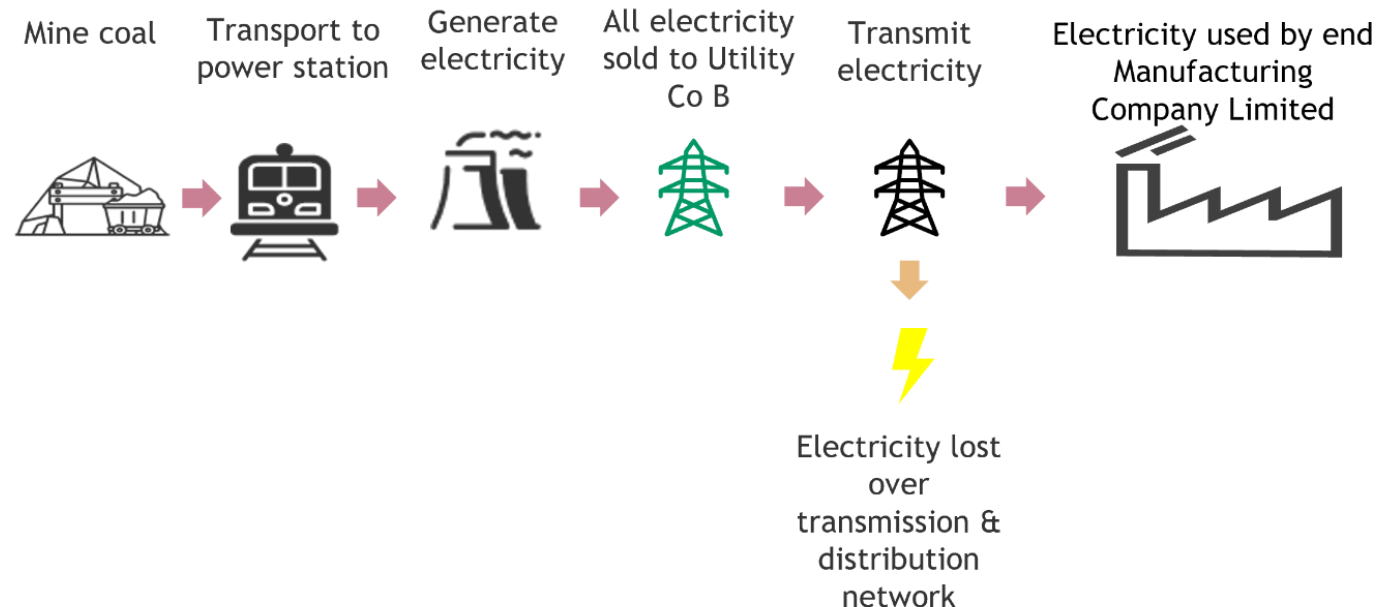


Category 3b & c - Purchased electricity & T&D losses

Workbook Question 7

Background

- ▶ Manufacturing Company Limited (MCL) purchases electricity from Utility Company B in Jurisdiction D. Electricity in Jurisdiction D is generated at coal-fired power plants by Jurisdiction D's government. However, the grid operator sells the electricity to utility companies to sell to the end users. The upstream value chain for the purchased electricity is as follows:



Question

- ▶ For each of the emissions associated with the electricity that MCL used in its operations, decide which category the emissions should be included in?



Category 3b & c - Purchased electricity & T&D losses

Workbook Question 7 (cont)

Suggested Solution

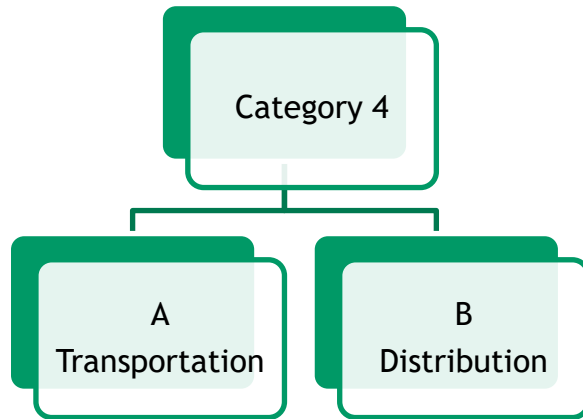
	Emissions are Scope 1 Direct GHG Emissions	Emissions are Scope 2 Purchased Electricity	Emissions are Scope 3 Category 3b Upstream emissions of purchased electricity	Emissions are Scope 3 Category 3c T&D losses
MCL's share of emissions from coal mining	✗ <input type="checkbox"/>	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>	✗ <input type="checkbox"/>
MCL's share of emissions from the generation of electricity	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>	✗ <input type="checkbox"/>	✗ <input type="checkbox"/>
MCL's share of emissions from coal mining	✗ <input type="checkbox"/>	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>	✗ <input type="checkbox"/>
MCL's share of electricity lost during transmission	✗ <input type="checkbox"/>	✗ <input type="checkbox"/>	✗ <input type="checkbox"/>	✓ <input type="checkbox"/>



Category 4 - Upstream transportation and distribution

Category 4 - Upstream transportation and distribution

Overview



CATEGORY 4 UPSTREAM TRANSPORTATION AND DISTRIBUTION		
What emissions are included?	Minimum boundary includes	
<p>Transportation and distribution <u>of</u> products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company)</p>	<p>The scope 1 and scope 2 emissions of transportation and distribution providers that occur during use of vehicles and facilities (e.g., from energy use)</p>	
	<p>Emissions that may be applicable</p>	
	<p>The life cycle emissions associated with manufacturing vehicles, facilities, or infrastructure</p>	
	<p>Emissions included incurred during</p>	
	<p>Past year(s)</p> <p>✓</p>	<p>Current year</p> <p>✓</p>
		<p>Future year(s)</p> <p>✗</p>
<p>Transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company)</p>		

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 35.

Category 4a - Upstream transportation

Calculation methodologies

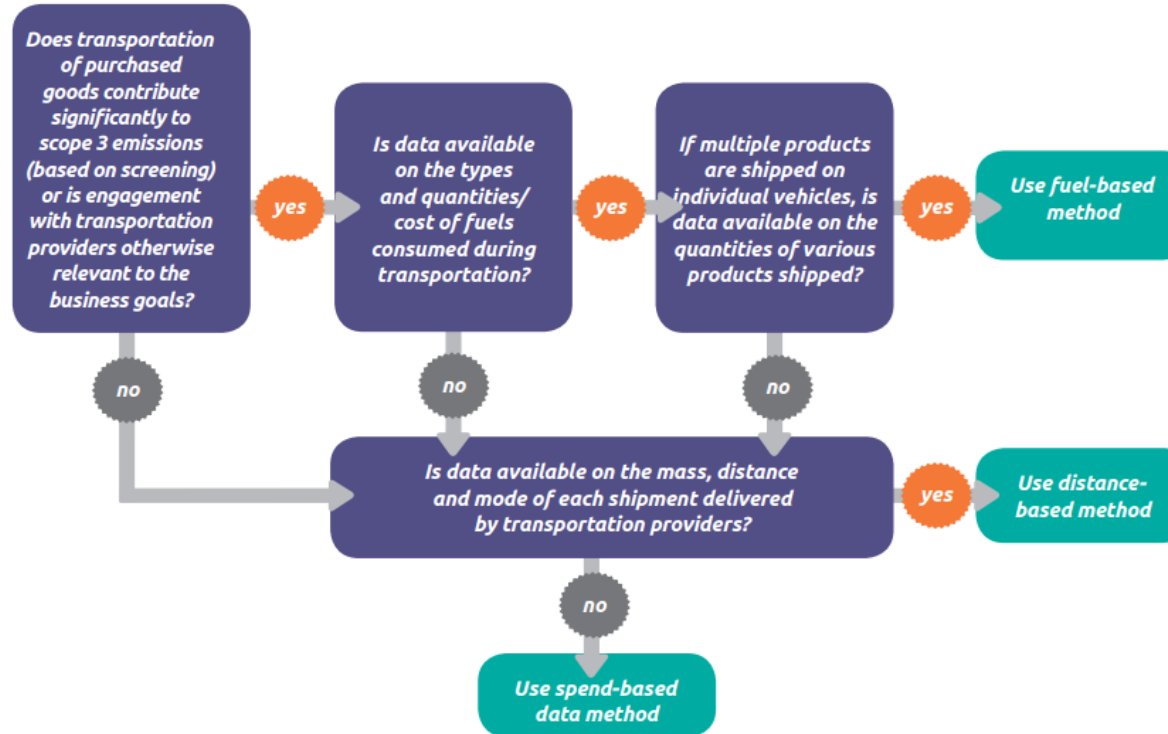
Calculation method	Description
Fuel-based method	Determining the amount of fuel consumed (i.e., scope 1 and scope 2 emissions of transport providers) and applying the appropriate emission factor for that fuel
Distance-based method	Determining the mass, distance, and mode of each shipment, then applying the appropriate mass-distance emission factor for the vehicle used
Spend-based method	Determining the amount of money spent on each mode of business travel transport and applying secondary emission factors.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 51

Category 4a - Upstream transportation

Selection of calculation methodology

Figure [4.1] Decision tree for selecting a calculation method for emissions from upstream transportation



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 51

Category 4a - Upstream transportation and distribution

Collection of data

Calculation method	Data quality	Activity data needed
Fuel-based method	Primary data	<ul style="list-style-type: none"> Quantities of fuel (e.g., diesel, gasoline, jet fuel, biofuels) consumed Quantities of fugitive emissions (e.g., from air conditioning and refrigeration).
	Secondary data	<ul style="list-style-type: none"> Amount spent on fuels & average price Distance travelled & vehicle fuel efficiency (L/t/km) Volume and/or mass of purchased goods in the vehicle Information on whether the products are refrigerated in transport.
Distance-based method	Primary data	<p>Entities should collect data on the distance travelled by transportation suppliers. This data may be obtained by:</p> <ul style="list-style-type: none"> Actual distances provided by transportation supplier. Each leg of the transportation supply chain should be collected separately.
	Secondary data	<ul style="list-style-type: none"> Shortest theoretical distance if actual distance is unavailable Mass or volume of the products sold Online maps or calculators/published port-to-port travel distances.
Spend-based method	Secondary data only	Amount spent on transportation by type (e.g. road, rail, air, barge), using market values (e.g., dollars)

Category 4a - Upstream transportation and distribution

Emissions factors

Calculation method	Emissions factor
Fuel-based method	<ul style="list-style-type: none"> Fuel emission factors, expressed in units of emissions per unit of energy consumed (e.g., kg CO₂e/litres, CO₂e/Btu) For electric vehicles (if applicable), electricity emission factors, expressed in units of emissions per unit of electricity consumed (e.g., kg CO₂e/kWh) Fugitive emission factors, expressed in units of emissions per unit (e.g., kg CO₂e/kg refrigerant leakage)
Distance-based method	Emission factor by mode of transport (e.g., rail, air, road) or vehicle types (e.g., articulated lorry, container vessel), expressed in units of greenhouse gas (CO ₂ , CH ₄ , N ₂ O, or CO ₂ e) per unit of mass (e.g., tonne) or volume (e.g., TEU) travelled (e.g., kilometre).
Spend-based method	<ul style="list-style-type: none"> Cradle-to-gate emission factors of the transportation type per unit of economic value (e.g., kg CO₂e/\$) Where applicable, inflation data to convert market values between the year of the environmentally extended input-output (EEIO) emissions factors and the year of the activity data.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 52 - 65

Category 4b - Distribution

Calculation methodologies

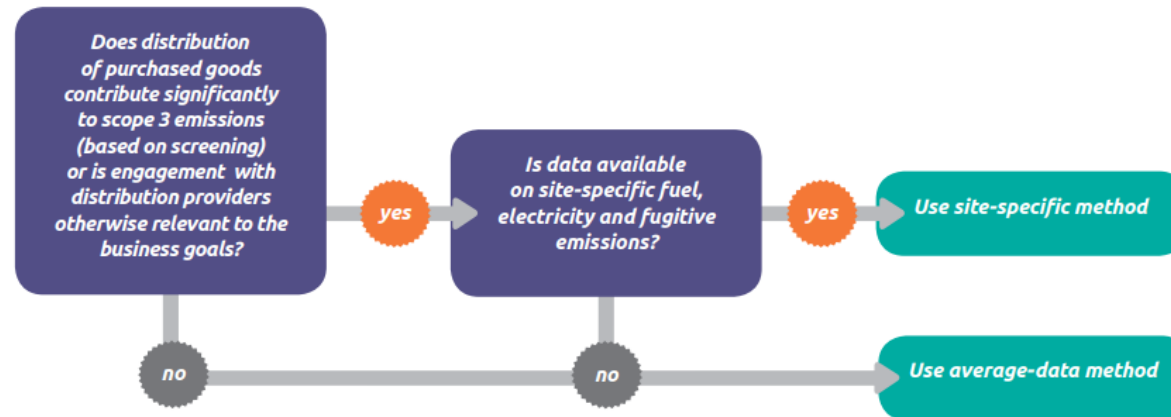
Calculation method	Description
Site-specific method	Involves site-specific fuel, electricity, and fugitive emissions data and applying the appropriate emission factors
Average-data method	Involves estimating emissions for each distribution activity, based on average data (such as average emissions per pallet or cubic meter stored per day)

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 66

Category 4b - Distribution

Selection of calculation methodology

Figure [4.2] Decision tree for selecting a calculation method for emissions from upstream distribution



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 67

Category 4b - Distribution

Collection of data

Calculation method	Activity data needed
Site-specific method	<ul style="list-style-type: none"> • Site-specific fuel and electricity use • Site-specific fugitive emissions (e.g., air conditioning or refrigerant leakage) • The average occupancy rate of the storage facility (i.e., average total volume of goods stored)
Average-data method	<p>Entities should collect data based on throughput:</p> <ul style="list-style-type: none"> • Volume of purchased goods that are stored (e.g., square meters, cubic meters, pallet, TEU) or number of pallets needed to store purchased goods • Average number of days that goods are stored

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 67 - 70

Category 4b - Distribution

Emissions factors

Calculation method	Emissions factor
Site-specific method	<ul style="list-style-type: none"> • Site-specific fuel and electricity use • Site-specific fugitive emissions (e.g., air conditioning or refrigerant leakage) • The average occupancy rate of the storage facility (i.e., average total volume of goods stored)
Average-data method	<p>Entities should collect data based on throughput:</p> <ul style="list-style-type: none"> • Volume of purchased goods that are stored (e.g., square meters, cubic meters, pallet, TEU) or number of pallets needed to store purchased goods • Average number of days that goods are stored

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 67 - 70

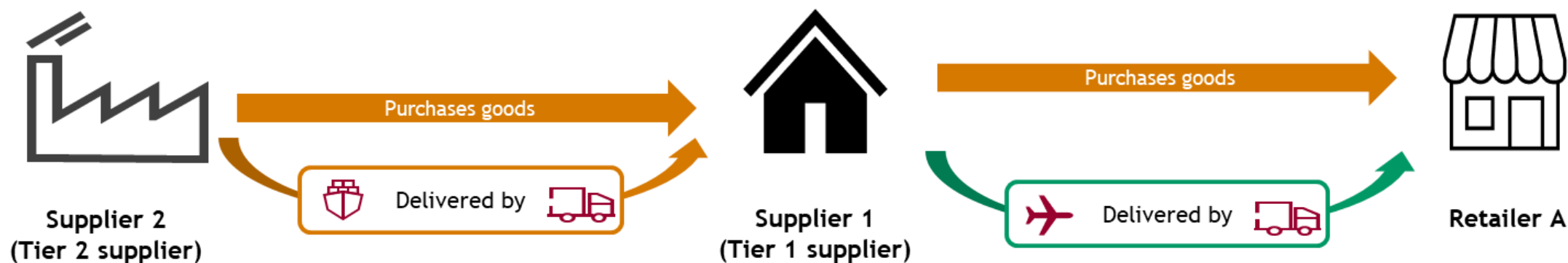


Category 4 - Upstream transportation and distribution

Workbook Question 8

Background

- ▶ Retailer A purchases goods from Supplier 1, and Supplier 1 purchases the goods from Supplier 2. Supplier 1 organises and pays for the delivery of the goods to Retailer A. The goods are shipped via both air and road transport using third-party couriers.



Question

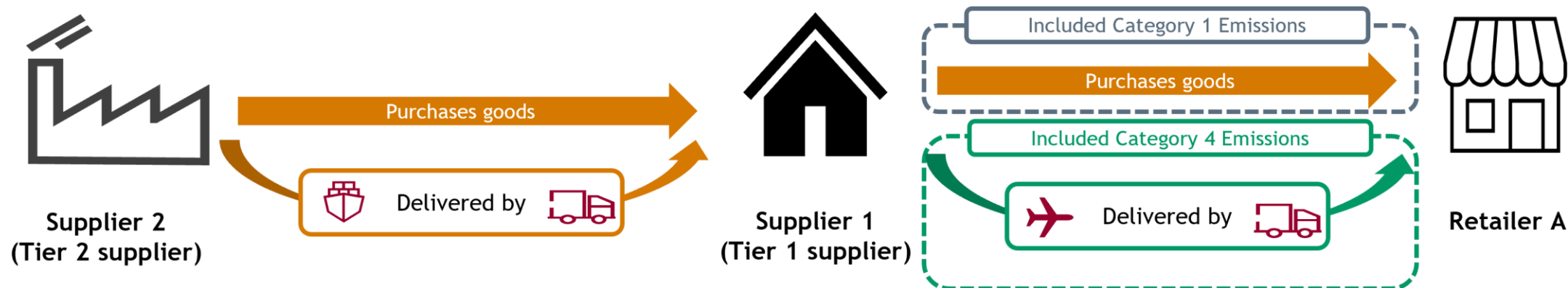
- ▶ What emissions should Retailer A include as part of Scope 3 Category 4?



Category 4 - Upstream transportation and distribution

Workbook Question 8 (cont)

Suggested Solution



- ▶ Retailer A only includes the emissions from the air and road transport for the purchase of goods from Supplier 1 in its Category 4 emissions. It does not include the emissions associated with Supplier 2 delivering the goods to Supplier 1 because Supplier 2 is not a Tier 1 supplier of Retailer A. These emissions would instead be included within the cradle-to-gate emissions for the purchased goods included within Category 1.
- ▶ Note: Retailer A would need to include the same emissions under Scope 3 Category 4 if Retailer A (instead of Supplier 1) had paid a third party to ship the goods.



Category 4 - Upstream transportation and distribution

Workbook Question 9

Background

- ▶ Continuing from Workbook Question 8 above, assume that Supplier 1 agrees to store the goods it sold to Retailer A in its own warehouse for a period of six months prior to delivery.

Question

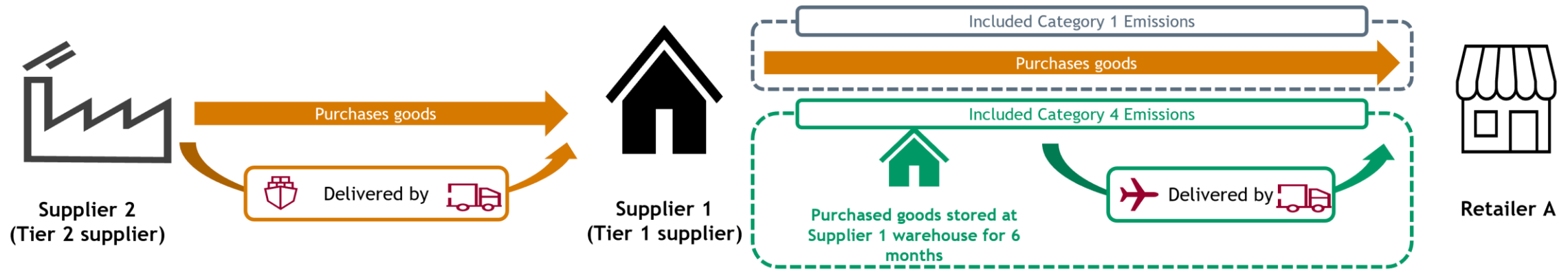
- ▶ What emissions should Retailer A include as part of Scope 3 Category 4?



Category 4 - Upstream transportation and distribution

Workbook Question 9 (cont)

Suggested Solution



- ▶ In addition to emissions from transporting the purchased goods from Supplier 1, Retailer A would also need to include the emissions from storing the goods it purchased from Supplier 1 in Supplier 1's warehouse for the six-month period (e.g. a share of the electricity consumed by the warehouse during the period of storage).

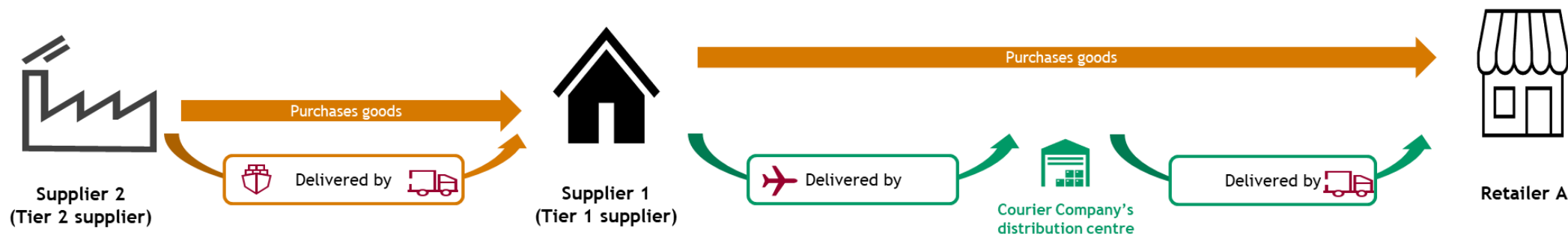


Category 4 - Upstream transportation and distribution

Workbook Question 10

Background

- ▶ Continuing from Workbook Question 8 above, assume that when the goods were shipped to Retailer A they were processed through the courier company's airport distribution centre.



Question

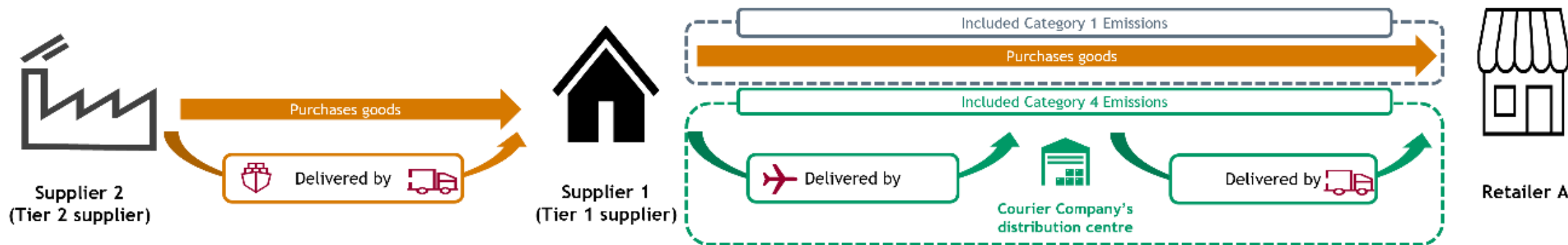
- ▶ What emissions should Retailer A include as part of Scope 3 Category 4?



Category 4 - Upstream transportation and distribution

Workbook Question 10 (cont)

Suggested Solution



- ▶ In addition to emissions from transporting the purchased goods from Supplier 1, Retailer A would also need to include its share of the emissions from the courier company's distribution centre.

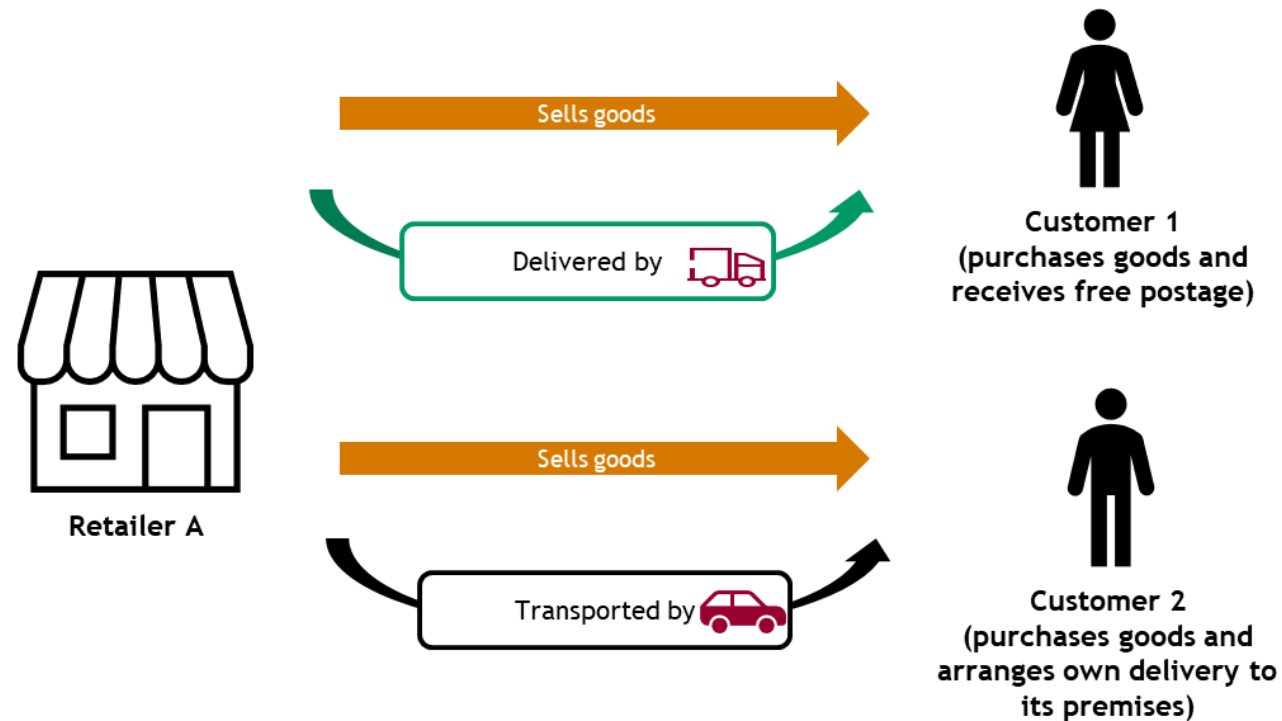


Categories 4 & 9 - Upstream & downstream transportation and distribution

Workbook Question 11

Background

- ▶ Retailer A sold goods to Customer 1 and also arranged to post the goods and bear the cost of shipping. Retailer A uses a third-party courier company to post the goods to Customer A
- ▶ Retailer A sold goods to Customer 2, however, it did not bear the cost of shipping because Customer 2 arranged their own delivery.



Question

- ▶ What emissions should Retailer A include as part of Scope 3 Category 4 and Scope 3 Category 9?

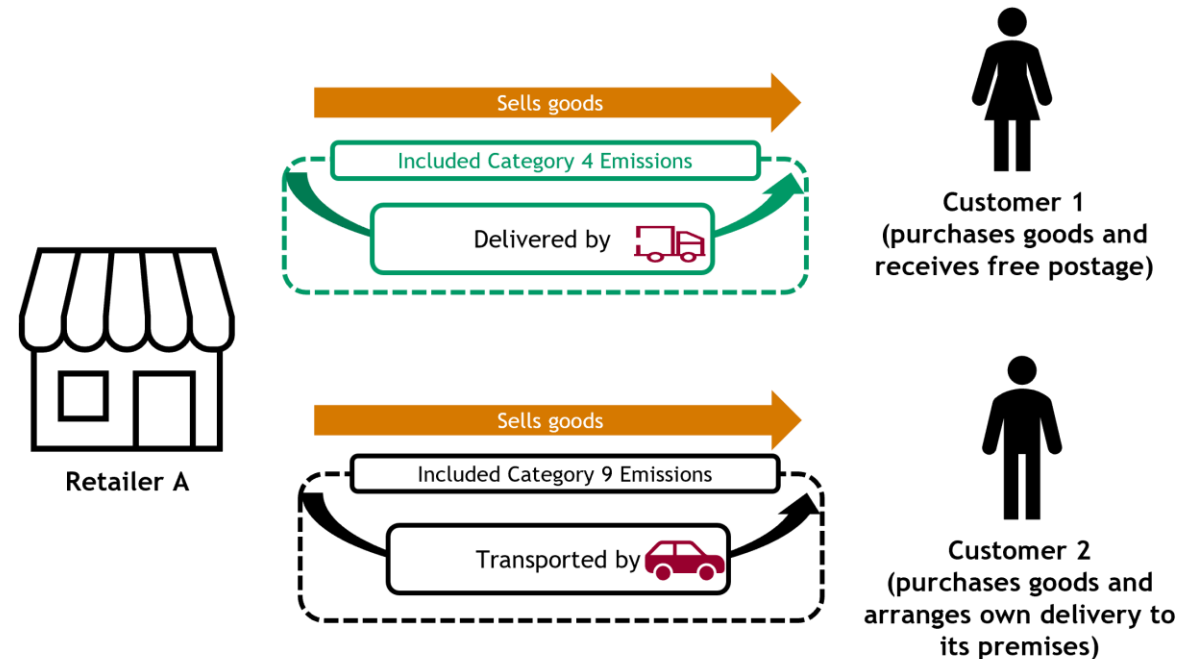


Categories 4 & 9 - Upstream & downstream transportation and distribution

Workbook Question 11 (cont)

Suggested Solution

- ▶ In this scenario, Retailer A would include the emissions for transporting the goods that it sold to Customer 1 as part of its Category 4 because it paid for and arranged a third-party courier company to deliver the goods.
- ▶ Retailer A still needs to account for the emissions associated with Customer 2, but these emissions are instead included within Category 9 downstream transportation and distribution because Retailer A neither delivered the products itself in vehicles it owned or controlled nor did it pay for a third party to deliver the goods.
- ▶ Note: emissions for the goods that Retailer A sold to Customers 1 & 2 would have been included within the emissions in Category 1 purchased goods and services.



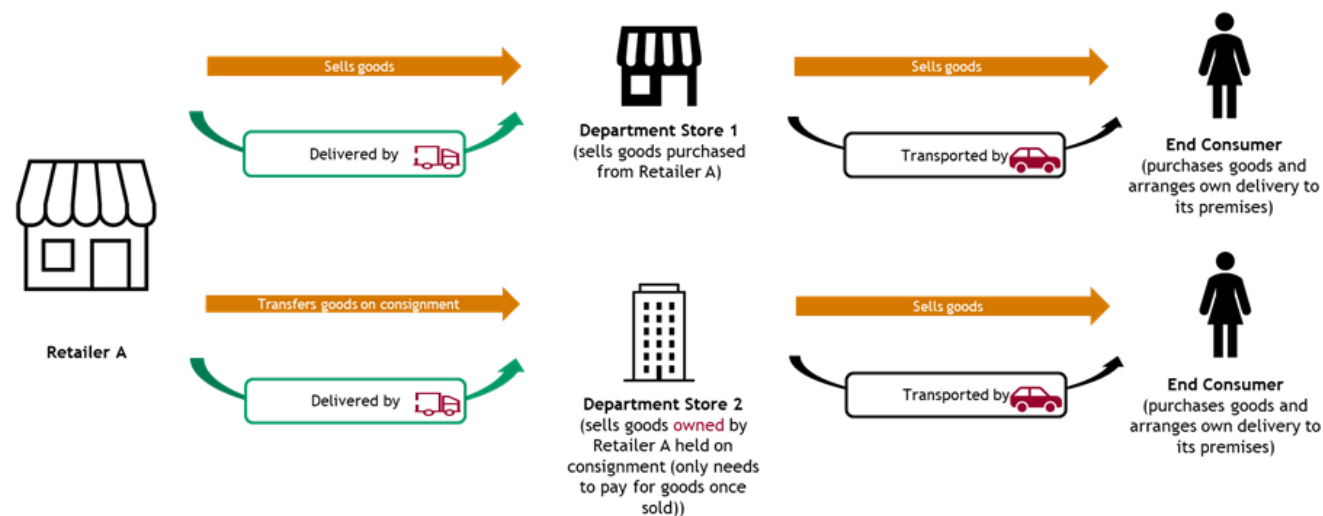


Categories 4 & 9 - Upstream & downstream transportation and distribution

Workbook Question 12

Background

- ▶ Retailer A sold goods to Department Store 1 and also paid for delivery by a third party courier. Department Store 1 then sold the goods to the End Consumer (who transported the goods home in their vehicle).
- ▶ Retailer A transferred goods on consignment (i.e. Retailer A retains ownership of the goods) to Department Store 2. The goods were transferred from its warehouse to Department Store 2 using a third-party courier company. Department Store 2 then sells the goods to the End Consumer (who transported the goods home in their vehicle) on behalf of Retailer A. Department Store 2 is required to pay Retailer A for the goods once sold to End Consumer, and Retailer A pays Department Store 2 for shelf space.



Question

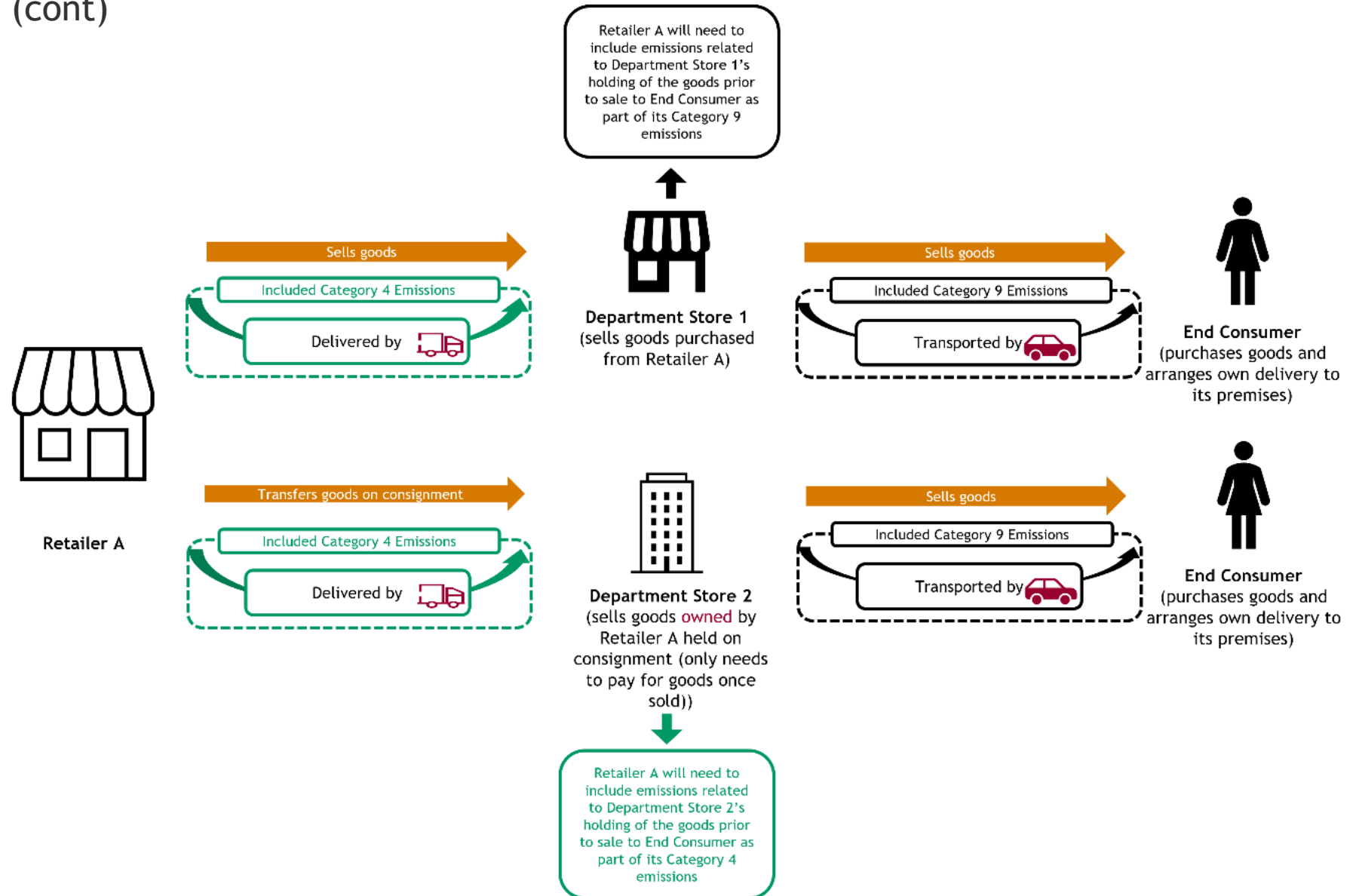
- ▶ What emissions should Retailer A include as part of Scope 3 Category 4 and Scope 3 Category 9?



Categories 4 & 9 - Upstream & downstream transportation and distribution

Workbook Question 12 (cont)

Suggested Solution





Categories 4 & 9 - Upstream & downstream transportation and distribution

Workbook Question 12 (cont)

Suggested Solution (cont)

- ▶ In this scenario, Retailer A would include the emissions for transporting the goods that it sold to Department Store 1 and that it transferred on consignment to Department Store 2 as part of its Category 4 emissions. This is because it paid for and arranged for a third-party courier company to deliver the goods.
- ▶ Retailer A would also include the emissions associated with storing the goods held on consignment with Department Store 2 as part of its Category 4 emissions. This is because Retailer A is required to pay for shelf space within Department Store 2.
- ▶ Retailer A must also account for the emissions associated with Department Store 1 holding the product that it purchased from Retailer A prior to sale to End Consumer. These emissions are included as part of Category 9 downstream transportation and distribution.
- ▶ Retailer A must also account for the emissions associated with the delivery of the goods to the End Consumer. In this case, it would account for the emissions to transport the goods from Department Store 1 and Department Store 2 to End Consumers in their private vehicles as part of Category 9 downstream transportation and distribution.
- ▶ Note that emissions for the goods that Retailer A sold to Department Store 1 and transferred on consignment to Department Store 2 would have been included within the emissions in Category 1 purchased goods and services.



Categories 4 & 9 - Upstream & downstream transportation and distribution

Workbook Question 12 (cont)

Suggested Solution (cont)

- ▶ Consider why the emissions from the department stores selling the inventory are categorised differently for Department Stores 1 & 2
 - Emissions from Department Store 2's holding/retailing of the goods are classified as Category 4 because Retailer A is purchasing them via the consignment arrangement and the shelf space.
 - Department Store 1 instead classifies its holding/retailing of the goods within Category 9 because the goods were purchased directly from Retailer A (i.e. these emissions are downstream from the point of sale).



Category 5 - Waste generated in operations



Category 5 - Waste generated in operations

Overview

CATEGORY 5 WASTE GENERATED IN OPERATIONS						
What emissions are included?	Minimum boundary includes					
Disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company)	The scope 1 and scope 2 emissions of waste management suppliers that occur during disposal or treatment					
	Emissions that may be applicable					
	Emissions from transportation of waste					
	Emissions included incurred during					
	<table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)		
Past year(s)	Current year	Future year(s)				

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 35.

Category 5 - Waste generated in operations

Calculation methodologies

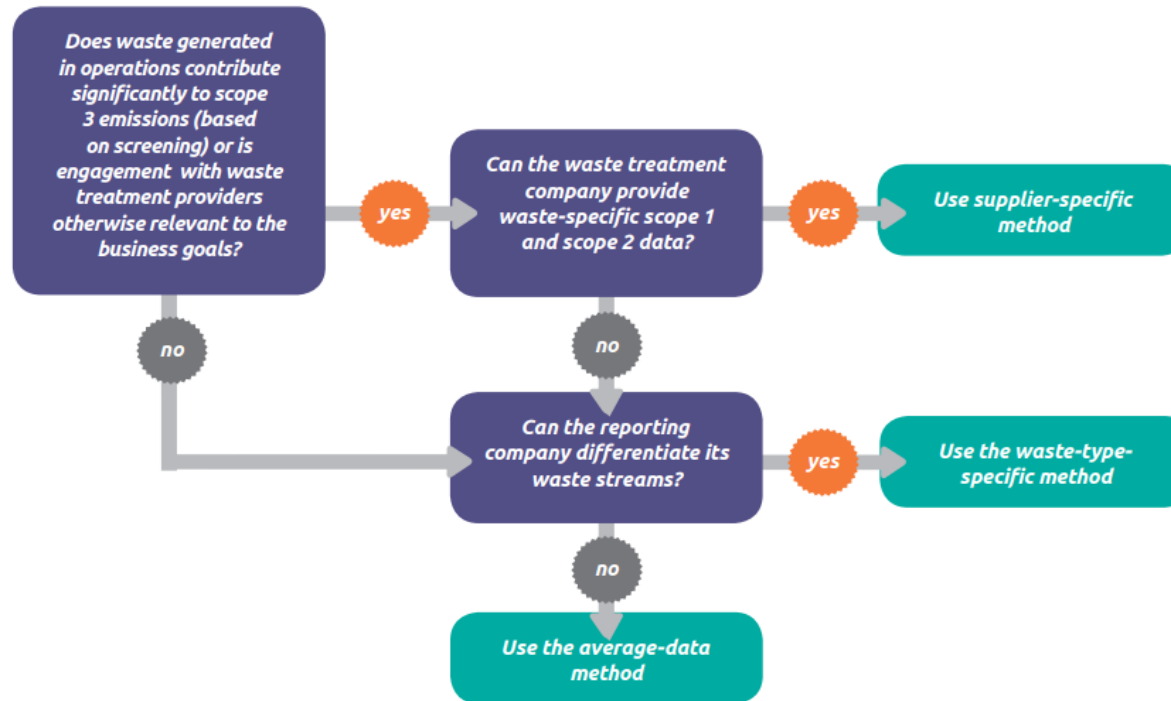
Calculation method	Description
Supplier-specific method	Collecting waste-specific scope 1 and scope 2 emissions data directly from waste treatment entities (e.g., for incineration, recovery for recycling)
Waste-type-specific method	Using emission factors for specific waste types and waste treatment methods
Average-data method	Estimating emissions based on total waste going to each disposal method (e.g., landfill) and average emission factors for each disposal method.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 73

Category 5 - Waste generated in operations

Selection of calculation methodology

Figure [5.2] Decision tree for selecting a calculation method for emissions from waste generated in operations



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 73



Category 5 - Waste generated in operations

Collection of data

Calculation method	Activity data needed
Supplier-specific method	<ul style="list-style-type: none"> Allocated scope 1 and scope 2 emissions of the waste-treatment entity (allocated to the waste collected from the reporting entity).
Waste-type-specific method	<ul style="list-style-type: none"> Waste produced (e.g., tonne/ cubic meter) and type of waste generated in operations For each waste type, specific waste treatment method applied (e.g., landfilled, incinerated, recycled).
Average-data method	<ul style="list-style-type: none"> Total mass of waste generated in operations Proportion of this waste being treated by different methods (e.g., percent landfilled, incinerated, recycled).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 74 - 76



Category 5 - Waste generated in operations

Emissions factor

Calculation method	Activity data needed
Supplier-specific method	The reporting company collects emissions data from waste treatment companies, so no emission factors are required (the company would have already used emission factors to calculate the emissions).
Waste-type-specific method	Waste type-specific and waste treatment-specific emission factors. The emission factors should include end-of-life processes only. Emission factors may include emissions from the transportation of waste.
Average-data method	Average waste treatment specific emission factors based on all waste disposal types. The emission factors should include end-of-life processes only.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 74 - 76

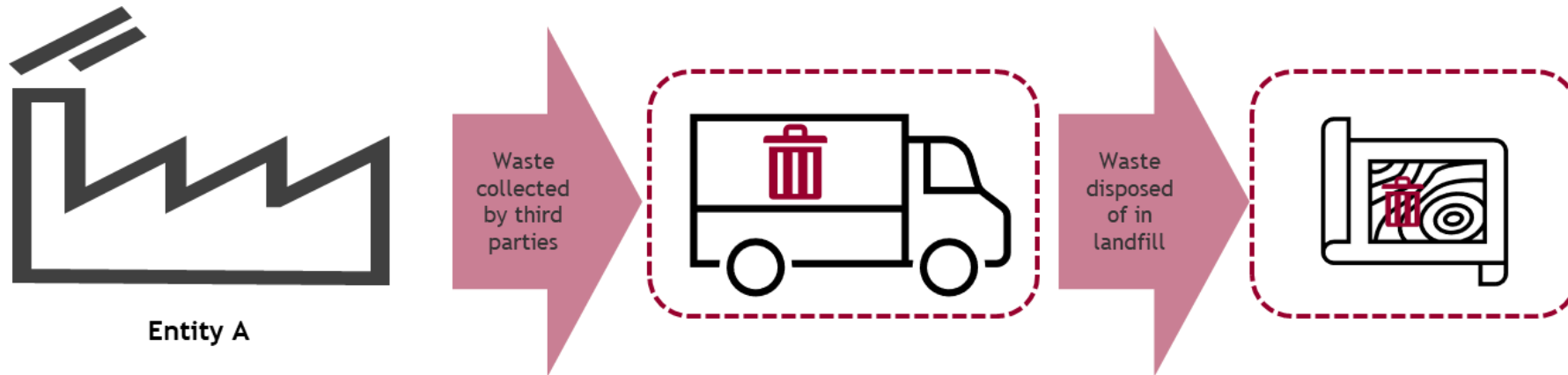


Category 5 - Waste generated in operations

Workbook Question 13

Background

- ▶ Entity A is a professional services firm. It generates solid waste during the year that is sent to landfill via third parties.



Question

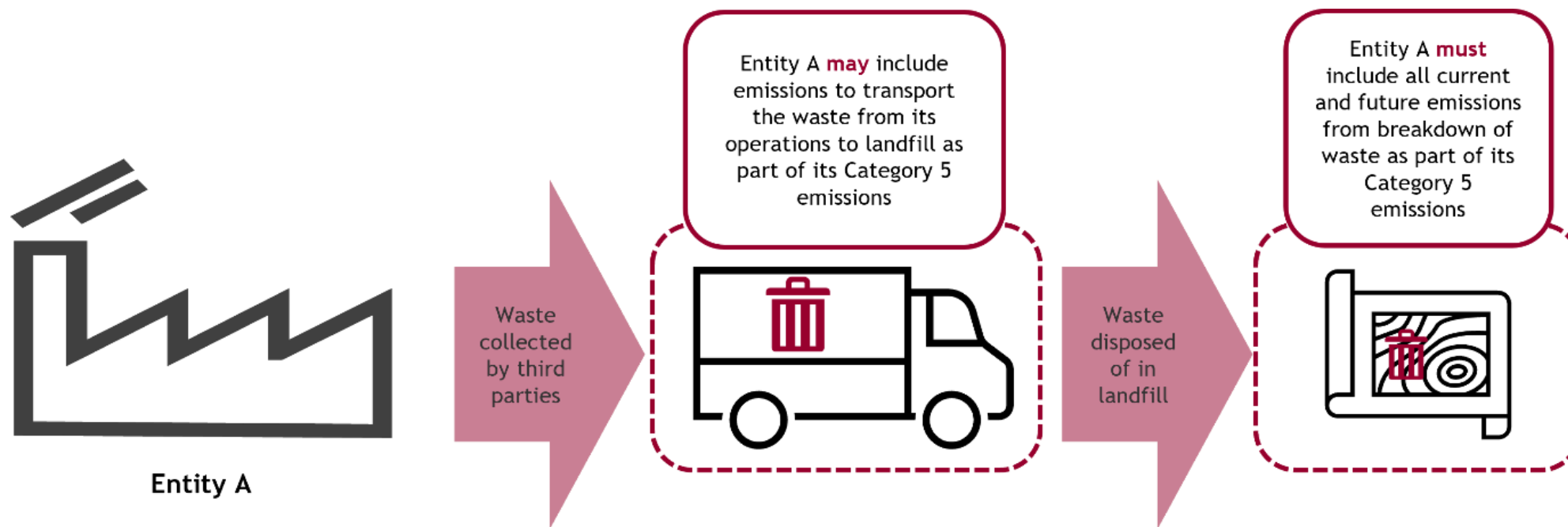
- ▶ What emissions should Entity A include as part of Scope 3 Category 5?



Category 5 - Waste generated in operations

Workbook Question 13 (cont)

Suggested Solution



- ▶ Entity A must account for all current and future emissions (i.e. because the solid waste takes many years to break down) from the waste sent to landfill in the current year. Depending on whether Entity A is measuring emissions in accordance with particular sustainability reporting frameworks (e.g. IFRS Sustainability Disclosure Standards, ESRS), it may need to include emissions for transporting the waste from its operations to that landfill site.

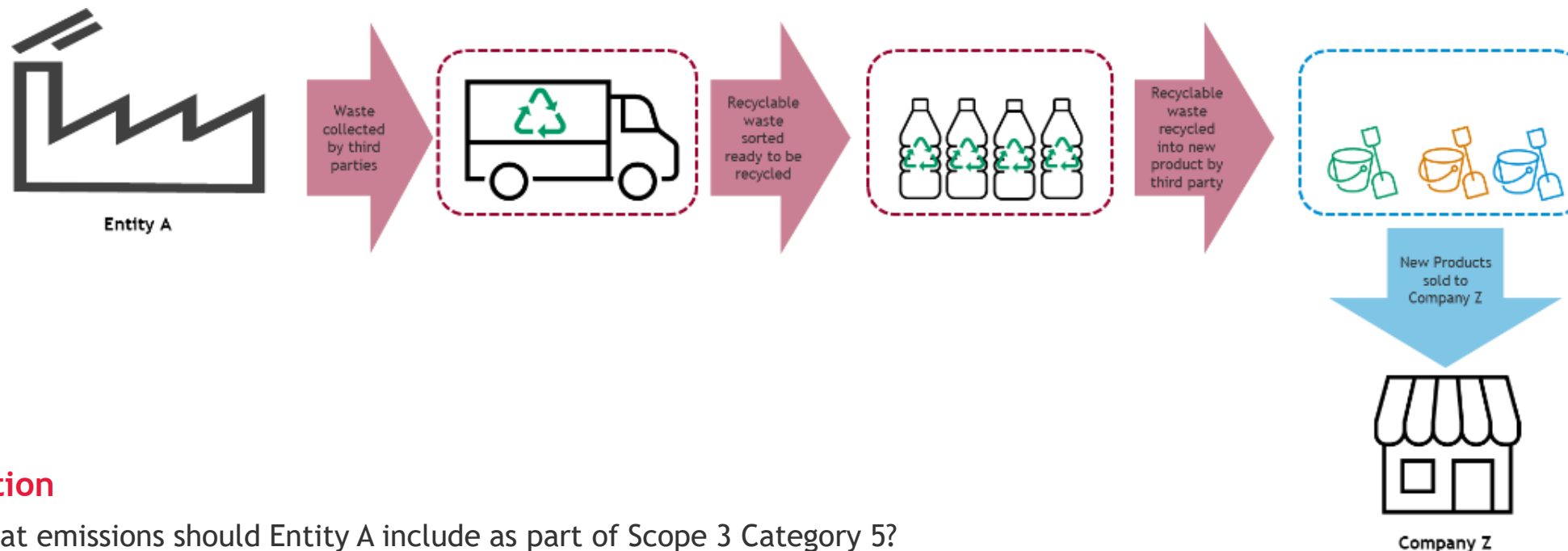


Category 5 - Waste generated in operations

Workbook Question 14

Background

- ▶ Entity A is a professional services firm. It generates recyclable waste during the year that is collected by a third party and transported to a recycling facility. The recyclable waste is sorted and recycled into new products. Company Z purchased goods manufactured from the recycled waste disposed of by Entity A.



Question

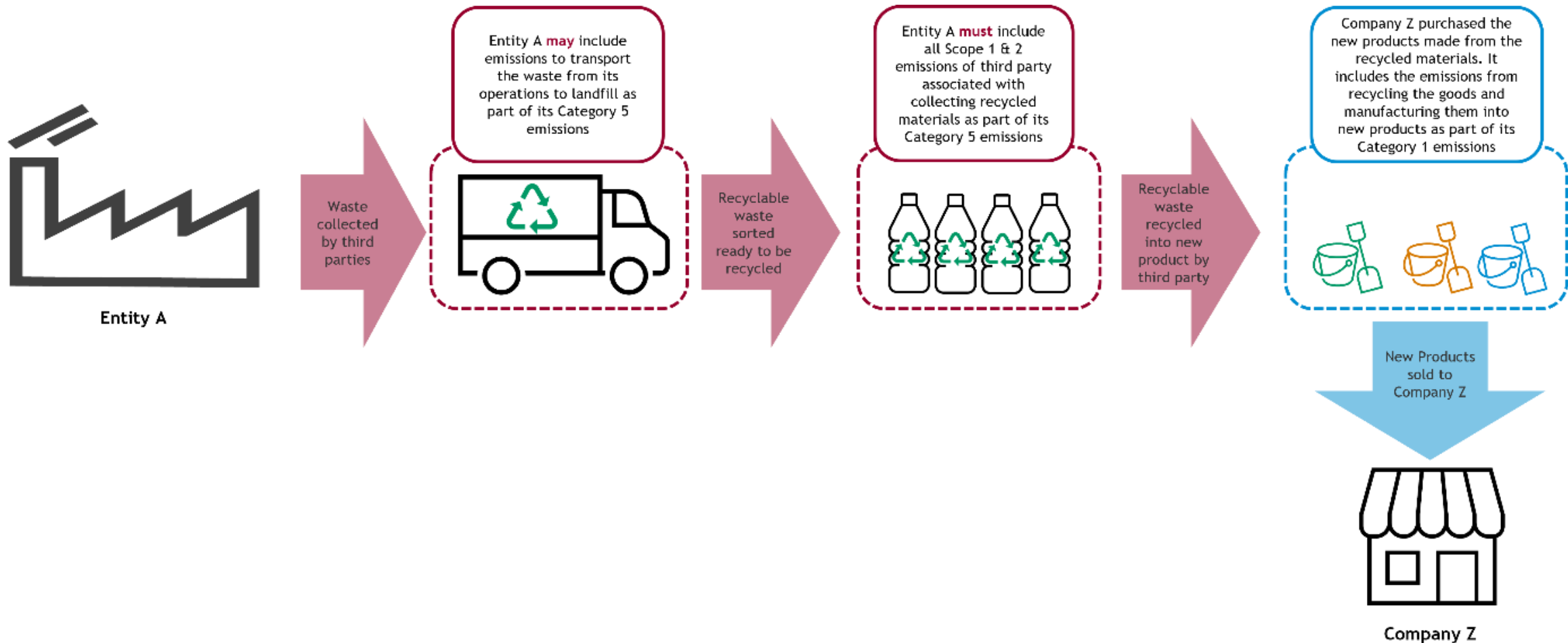
- ▶ What emissions should Entity A include as part of Scope 3 Category 5?



Category 5 - Waste generated in operations

Workbook Question 14 (cont)

Suggested Solution





Category 5 - Waste generated in operations

Workbook Question 14 (cont)

Suggested Solution (cont)










- ▶ Entity A must account for the emissions associated with collecting the materials to be recycled. It should not account for the emissions associated with processing the old materials into new products that are eventually sold to Company Z. This is because Company Z would account for the emissions associated with manufacturing the product that it purchased (i.e. including recycling the waste into new materials that can be used to manufacture different products) and would include those emissions as part of its Scope 3 Category 1 emissions.
- ▶ Depending on whether the entity is measuring emissions in accordance with particular sustainability reporting frameworks (e.g. IFRS Sustainability Disclosure Standards, ESRS), it may need to include emissions for transporting the waste from its operations to the recycling plant.



Category 6 - Business travel

Category 6 - Business travel

Overview

CATEGORY 6 BUSINESS TRAVEL							
What emissions are included?	Minimum boundary includes						
<p>Transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company)</p>	<p>The scope 1 and scope 2 emissions of transportation carriers that occur during use of vehicles (e.g., from energy use)</p>						
	<p>Emissions that may be applicable</p> <p>The life cycle emissions associated with manufacturing vehicles or infrastructure</p>						
	<p>Emissions included incurred during</p> <table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)			
	Past year(s)	Current year	Future year(s)				
							

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 35.

Category 6 - Business travel

Calculation methodologies

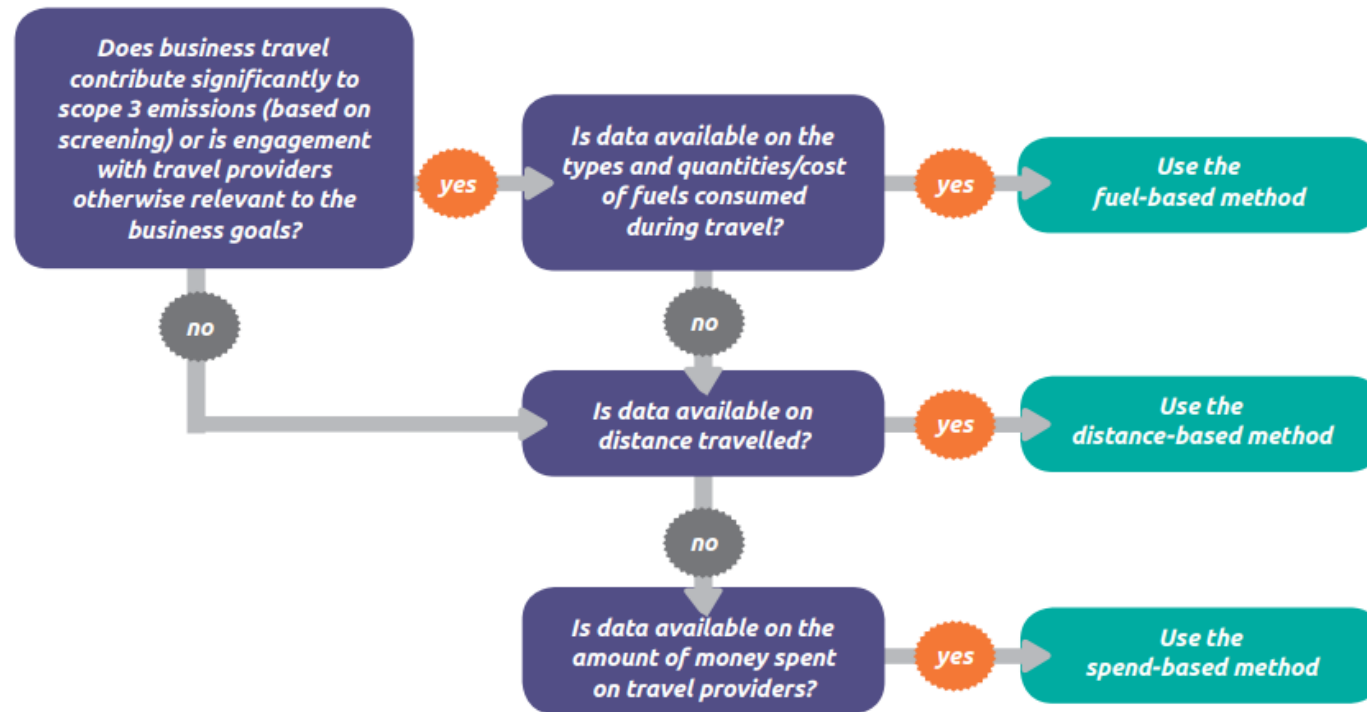
Calculation method	Description
Fuel-based method	<p>The calculation methodology for the fuel-based method is the same as for category 4 (Upstream transport and distribution). For guidance on calculating emissions using this method, refer to the guidance for category 4 (Upstream transport and distribution).</p> <p>Entities may <u>optionally</u> collect data on the number of hotel nights incurred during business travel by hotel type. Under this method, they add the number of hotel nights and the emissions factor of the hotel (as shown in the distance-based method below) to the fuel-based method in category 4 (Upstream transport and distribution).</p>
Distance-based method	<p>If data on fuel use is unavailable, entities may use the distance-based method.</p> <p>The distance-based method involves multiplying activity data (i.e., vehicle-kilometres or person-kilometres travelled by vehicle type) by emission factors (typically default national emission factors by vehicle type). Vehicle types include all categories of aircraft, rail, subway, bus, automobile, etc.</p>
Spend-based method	<p>If it is not possible to use either the fuel- or distance-based methods, entities may use the spend-based method. The calculation method is same as the spend-based method described in Category 4: Upstream Transportation and Distribution, with the difference that the activity data is the amount spent on business travel by type/mode of transport. Refer to the spend-based method in Category 4 for a description of this method.</p> <p>Entities may <u>optionally</u> collect data on the number of hotel nights incurred during business travel by hotel type.</p>

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 81 - 86

Category 6 - Business travel

Selection of calculation methodology

Figure [6.1] Decision tree for selecting a calculation method for emissions from business travel



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 82

Category 6 - Business travel

Collection of data

Calculation method	Data quality	Activity data needed
Fuel-based method	Primary data	<ul style="list-style-type: none"> Quantities of fuel (e.g., diesel, gasoline, jet fuel, biofuels) consumed Quantities of fugitive emissions (e.g., from air conditioning and refrigeration) <u>Optional</u>: the number of hotel nights incurred by hotel type.
	Secondary data	<ul style="list-style-type: none"> Amount spent on fuels & average price Distance travelled & vehicle fuel efficiency (L/t/km)
Distance-based method	Primary data	<p>Entities should collect data on the distance travelled by transportation suppliers. This data may be obtained by:</p> <ul style="list-style-type: none"> Total distance travelled by each mode of transport (air, train, bus, car, etc.) for employees in the reporting year. Countries of travel Specific types of vehicles used for travel from transport providers <u>Optional</u>: the number of hotel nights incurred by hotel type. <p>Data should be expressed as km travelled, or km/person, for a particular vehicle type (e.g., passenger-kilometre) and then summed to obtain total annual kilometres or person-kilometres travelled by each vehicle type used by the entity.</p>
	Secondary data	<ul style="list-style-type: none"> Distance per route, summed or extrapolated to obtain total annual km per mode of transport Online maps or calculators.
Spend-based method	Secondary data only	<p>Amount spent on transportation by type (e.g. road, rail, air, barge), using market values (e.g., dollars).</p> <p><u>Optional</u>: Spend incurred on hotel stays.</p>

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 81 - 86



Category 6 - Business travel

Emissions factor

Calculation method	Emissions factor
Fuel-based method	<ul style="list-style-type: none"> Fuel emission factors, expressed in units of emissions per unit of energy consumed (e.g., kg CO₂e/litres, CO₂e/Btu) For electric vehicles (if applicable), electricity emission factors, expressed in units of emissions per unit of electricity consumed (e.g., kg CO₂e/kWh) Fugitive emission factors, expressed in units of emissions per unit (e.g., kg CO₂e/kg refrigerant leakage)
Distance-based method	<ul style="list-style-type: none"> Emission factors for each mode of transport (e.g., aircraft, rail, metro, bus, taxi, bus), expressed in units of greenhouse gas (CO₂, CH₄, N₂O, HFC, or CO₂e) emitted per kilometre or per passenger-kilometre travelled. Companies may optionally use emission factors for hotel stays by hotel type (e.g., kilograms of CO₂e emitted per hotel night).
Spend-based method	<ul style="list-style-type: none"> Cradle-to-gate emission factors of the transportation type per unit of economic value (e.g., kg CO₂e/\$) Where applicable, inflation data to convert market values between the year of the environmentally extended input-output (EEIO) emissions factors and the year of the activity data.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 81 - 86



Category 6 - Business travel

Workbook Question 15

Background

- ▶ Entity A takes its finance team to a three-day conference. On the first day of the conference, the finance team met at the office before leaving for the airport as a group.

Question

- ▶ Which of the following emissions would it include within Scope 3 Category 6 (select all that apply)?
 - Emissions associated with the finance team employees travelling to the office on the first day of the conference
 - Emissions associated with the taxi used to transport the finance team from the office to the airport
 - Emissions for the plane used to transport the finance team to and from the conference
 - Emissions for the taxi used to transport the finance team from the airport to the hotel where the conference is held
 - Emissions for the hotel stay for the finance team
 - Emissions for two finance team members who stayed in the hotel for an additional three nights (at own expense) to go sightseeing
 - Emissions from the food consumed by the finance team during the conference



Category 6 - Business travel

Workbook Question 15 (cont)

Suggested Solution

- ▶ The following emissions **would not** be classified as Scope 3, Category 6:
 - Emissions associated with the finance team employees travelling to the office on the first day of the conference. These emissions will need to be captured by Entity A, but would instead form part of emissions from employee commuting
 - Emissions for three nights' accommodation for two finance team members who decided to stay for a private holiday after the conference finished. These are not business-related emissions
 - Emissions from the food consumed by the finance team during the conference because these emissions would be included within Category 1 purchased goods and services since it does not meet the definition of business travel.

- ▶ The following emissions **would** be classified as Scope 3, Category 6 because relate to business-related travel:
 - Emissions associated with the taxi used to transport the finance team from the office to the airport
 - Emissions for the plane used to transport the finance team to and from the conference
 - Emissions for the taxi used to transport the finance team from the airport to the hotel where the conference is held
 - Emissions for the hotel stay for the finance team.



Category 7 - Employee commuting

Category 7 - Employee commuting

Overview



EMPLOYEE COMMUTING							
What emissions are included?	Minimum boundary includes						
Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company)	The scope 1 and scope 2 emissions of employees and transportation providers that occur during use of vehicles (e.g., from energy use)						
	Emissions that may be applicable						
	Emissions from employees working remotely						
	Emissions included incurred during						
	<table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)			
Past year(s)	Current year	Future year(s)					

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 35.



Category 7 - Employee commuting

Calculation methodologies

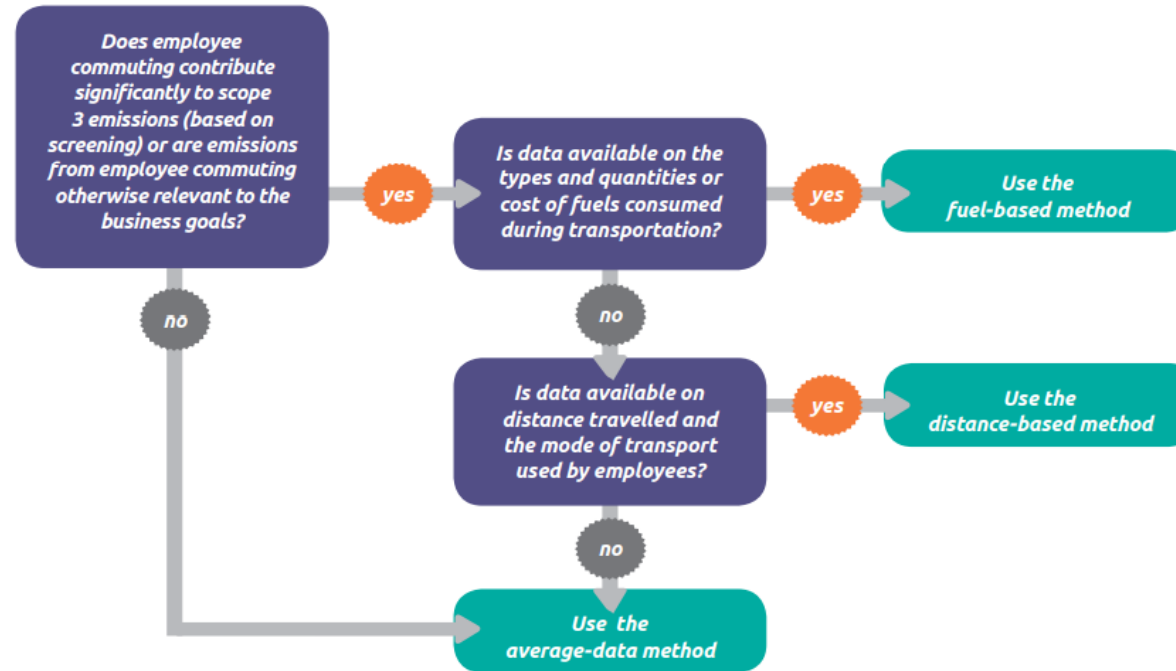
Calculation method	Description
Fuel-based method	Determining the amount of fuel consumed during commuting and applying the appropriate emission factor for that fuel.
Distance-based method	Collecting data from employees on commuting patterns (e.g., distance travelled and mode used for commuting) and applying appropriate emission factors for the modes used.
Average-data method	Estimating emissions from employee commuting based on average (e.g., national) data on commuting patterns.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 87

Category 7 - Employee commuting

Selection of calculation methodology

Figure [7.1] Decision tree for selecting a calculation method for emissions from employee commuting



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 88



Category 7 - Employee commuting

Collection of data

Calculation method	Activity data needed
Fuel-based method	<ul style="list-style-type: none"> Quantities of fuel consumed (e.g., diesel, gasoline, jet fuel) Amount spent on fuel <p>If the fuel-based method is used to calculate emissions from commuting on public transport, then emissions need to be allocated to the employee(s).</p>
Distance-based method	<ul style="list-style-type: none"> Total distance travelled by employees over the reporting period (e.g., passenger-kilometres travelled) Mode of transport used for commuting (e.g., train, subway, bus, car, bicycle).
Average-data method	<p>Entities should collect data on:</p> <ul style="list-style-type: none"> Number of employees Average distance travelled by an average employee per day Average breakdown of transport modes used by employees Average number working days per year.



Category 7 - Employee commuting

Emissions factor

Calculation method	Activity data needed
Fuel-based method	<ul style="list-style-type: none"> Fuel emission factors, expressed in units of emissions per unit of energy consumed (e.g., kg CO₂e/litres, CO₂e/Btu) For electric vehicles (if applicable), electricity emission factors, expressed in units of emissions per unit of electricity consumed (e.g., kg CO₂e/kWh) Fugitive emission factors, expressed in units of emissions per unit (e.g., kg CO₂e/kg refrigerant leakage)
Distance-based method	<ul style="list-style-type: none"> Emission factors for each mode of transport (usually expressed in units of greenhouse gas (CO₂, CH₄, N₂O, or CO₂e) emitted per passenger-kilometres travelled)
Average-data method	<ul style="list-style-type: none"> Emission factors for each mode of transport (usually expressed as kilograms of GHG emitted per passenger per kilometre travelled)




Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 88 - 91



Category 8 - Upstream leased assets

Category 8 - Upstream leased assets

Overview

CATEGORY 8		UPSTREAM LEASED ASSETS		
<p>What emissions are included?</p> <p>Operation of assets leased by the reporting company (lessee) in the reporting year and not included in scope 1 and scope 2 - reported by lessee</p>	<p>Minimum time boundary includes</p> <p>The scope 1 and scope 2 emissions of lessors that occur during the reporting company's operation of leased assets (e.g., from energy use)</p>			
	<p>Emissions that may be applicable</p> <p>The life cycle emissions associated with manufacturing or constructing leased assets</p>			
	<p>Emissions included incurred during</p>			
	<p>Past year(s)</p> <p></p>	<p>Current year</p> <p></p>	<p>Future year(s)</p> <p></p>	

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 35.

Category 8 - Upstream leased assets

Calculation methodologies

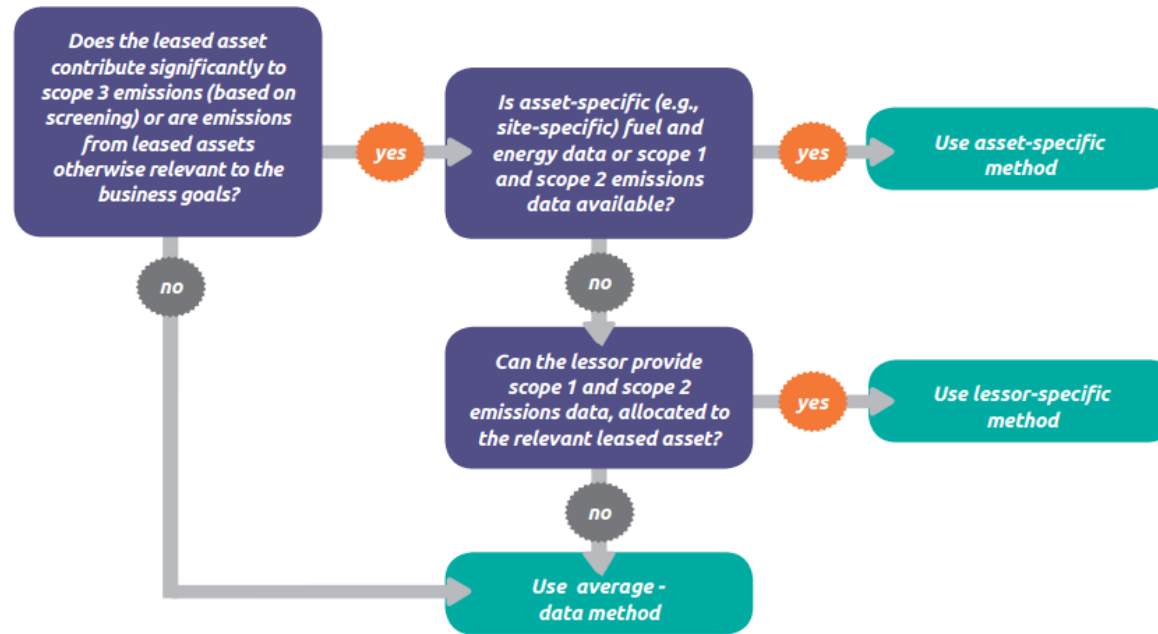
Calculation method	Description
Asset-specific method	Collecting asset-specific (e.g., site-specific) fuel and energy use data and process and fugitive emissions data or scope 1 and scope 2 emissions data for individual leased assets.
Lessor-specific method	Collecting the scope 1 and scope 2 emissions from lessor(s) and allocating emissions to the relevant leased asset(s).
Average-data method	Estimating emissions for each leased asset, or groups of leased assets, based on average data, such as average emissions per asset type or floor space.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 94 - 95

Category 8 - Upstream leased assets

Selection of calculation methodology

Figure [8.1] Decision tree for selecting a calculation method for emissions from upstream leased assets



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 95

Category 8 - Upstream leased assets

Collection of data

Calculation method	Activity data needed
Asset-specific method	<p>Where leased assets don't fall within the organisational boundary as a result of the consolidation approach applied, entities should collect scope 1 and scope 2 emissions data, or activity data on:</p> <ul style="list-style-type: none"> • Asset-specific fuel use and electricity, steam, heating and cooling use • Activity data related to non-combustion emissions (i.e., industrial process or fugitive emissions).
Lessor-specific method	<p>Where leased assets don't fall within the organisational boundary as a result of the consolidation approach applied, entities should collect lessors' total scope 1 and scope 2 emissions data, or activity data on:</p> <ul style="list-style-type: none"> • Lessor's total fuel use and electricity use • Lessor's fugitive emissions (e.g., from refrigerants) • Lessor's process emissions (if applicable).
Average-data method	<p>Where leased assets don't fall within the organisational boundary as a result of the consolidation approach applied, entities should collect data on:</p> <ul style="list-style-type: none"> • Floor space of each leased building • Number of leased buildings, by building type (e.g., office, retail, warehouse, factory, etc.) • Number and type of leased assets other than buildings that give rise to scope 1 or scope 2 emissions (e.g., entity cars, trucks).

Category 8 - Upstream leased assets

Emissions factor

Calculation method	Emissions factor
Asset-specific method	<ul style="list-style-type: none"> • Site or regionally specific emission factors for energy sources (e.g., electricity and fuels) per unit of consumption (e.g., kg CO₂e/kWh for electricity, kg CO₂e/litre for diesel) • Emission factors of fugitive and process emissions
Lessor-specific method	<ul style="list-style-type: none"> • Site or regionally specific emission factors for energy sources (e.g., electricity and fuels) per unit of consumption (e.g., kg CO₂e/kWh for electricity, kg CO₂e/litre for diesel) • Emission factors of fugitive and process emissions
Average-data method	<ul style="list-style-type: none"> • Average emission factors by floor space, expressed in units of emissions per square meter, square foot occupied (e.g., kg CO₂e/m²/year) • Average emission factors by building type, expressed in units of emissions per building (e.g., kg CO₂e/small office block/year) • Emission factors by asset type, expressed in units of emissions per asset (e.g., kg CO₂e/car/year)

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 95 - 101

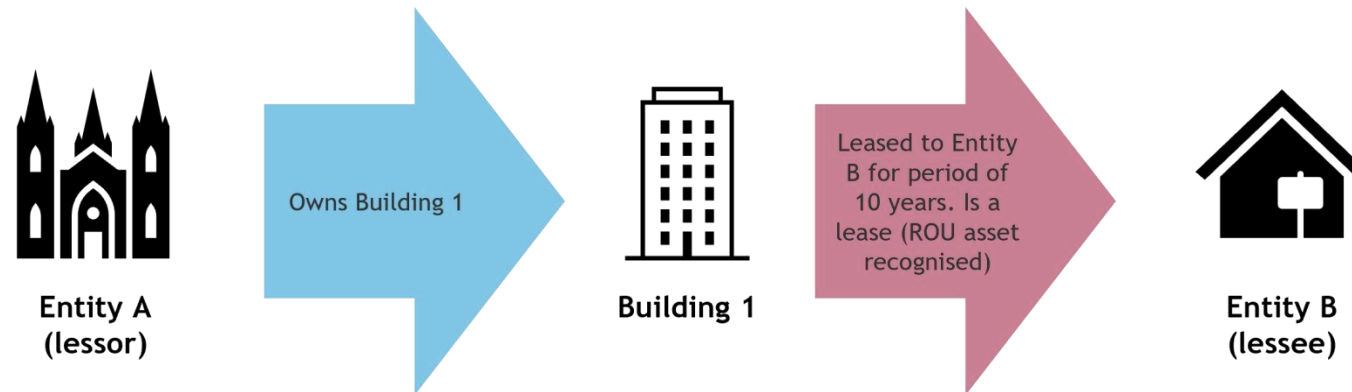


Category 8 - Upstream leased assets

Workbook Question 16

Background

- ▶ Entity B leases Building 1 from Entity A for 10 years. On the commencement date of the lease, Building 1 was 5 years old and was expected to have a useful life of 50 years.



- ▶ Entity B accounts for the lease in accordance with IFRS 16. On initial recognition of the lease, it recognises a right-of-use asset and a corresponding lease liability.
- ▶ Entity B is directly responsible for paying the electricity provider for all electricity used within the building. Entity B does not directly combust any fuel during the period of use of the building.
- ▶ When Building 1 was constructed, an air conditioning system was installed. Fugitive emissions are released from the air conditioning system.
- ▶ Entity B uses the operational control approach to determine its organisational boundary for GHG emissions.



Category 8 - Upstream leased assets

Workbook Question 16 (cont)

Question

- ▶ What emissions should Entity B (the lessee) include as part of Scope 3 Category 8?



Category 8 - Upstream leased assets

Workbook Question 16 (cont)

Suggested Solution

- ▶ In this scenario, Entity B determines that it has operational control of the lease. Therefore Entity B recognises any direct emissions associated with fuel combustion as its own Scope 1 emissions or purchased electricity as its own Scope 2 emissions if it is directly responsible for the emissions
- ▶ Assuming Entity B includes the lifecycle emissions for the construction of the building, on the date of inception of the lease Entity B would recognise its share of the emissions to construct the building. One approach may be for Entity B to recognise 20% (10 years / 50 years) of the emissions to construct the building within Scope 3 Category 8. Diversity in practice exists as to how lifecycle emissions are measured for leased assets
- ▶ Entity B would also need to include the Scope 1 and Scope 2 emissions that Entity A recognises in relation to Building 1 as part of its Scope 3 Category 8 emissions. In this example, Entity B would include the fugitive emissions released from the air conditioner in Building 1 as part of its Scope 3 Category 8 emissions each year. This is because Entity A would recognise fugitive emissions from the air conditioning system as part of its Scope 1 emissions, but it would not have recognised any emissions from purchased electricity because Entity B is directly responsible for those emissions
- ▶ Entity B would have included the emissions from purchased electricity used in Building 1 in each reporting period as part of its own Scope 2 emissions because it is directly responsible for those emissions
- ▶continued next slide



Category 8 - Upstream leased assets

Workbook Question 16 (cont)

Suggested Solution (cont)

► The table below summarises the emissions Entity B would recognise in each reporting period:

	Scope 1	Scope 2	Scope 3, Category 8
On initial recognition of lease			Diversity exists in practice as to how lifecycle emissions are measured for leased assets. One approach may be for Entity B to recognise 20% of the emissions (10 years / 50 years).
Subsequent recognition	Recognise any Scope 1 emissions for fuel combustion (not applicable in this example)	Recognise Scope 2 emissions for the electricity used in building because Entity B is directly responsible for the emissions	Include fugitive emissions from air conditioning unit in Building 1. Entity A would have recognised these as part of its own Scope 1 emissions.
On date modification of the lease (if applicable)			If the lease term was extended or renewed, on the date of the modification Entity B would need to include additional emissions to account for a longer period of use of the building.






Category 1 - Purchased goods and services



Category 1 - Purchased goods and services

Overview

CATEGORY 1	PURCHASED GOODS AND SERVICES	
What emissions are included?	Minimum boundary includes	
Purchased goods and services include the extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2 - 8	All upstream (cradle-to-gate) emissions of purchased goods and services	
	Emissions that may be applicable	
	None	
	Emissions included incurred during	
	Past year(s)	Current year
		

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 34



Category 1 - Purchased goods and services

Calculation methodologies

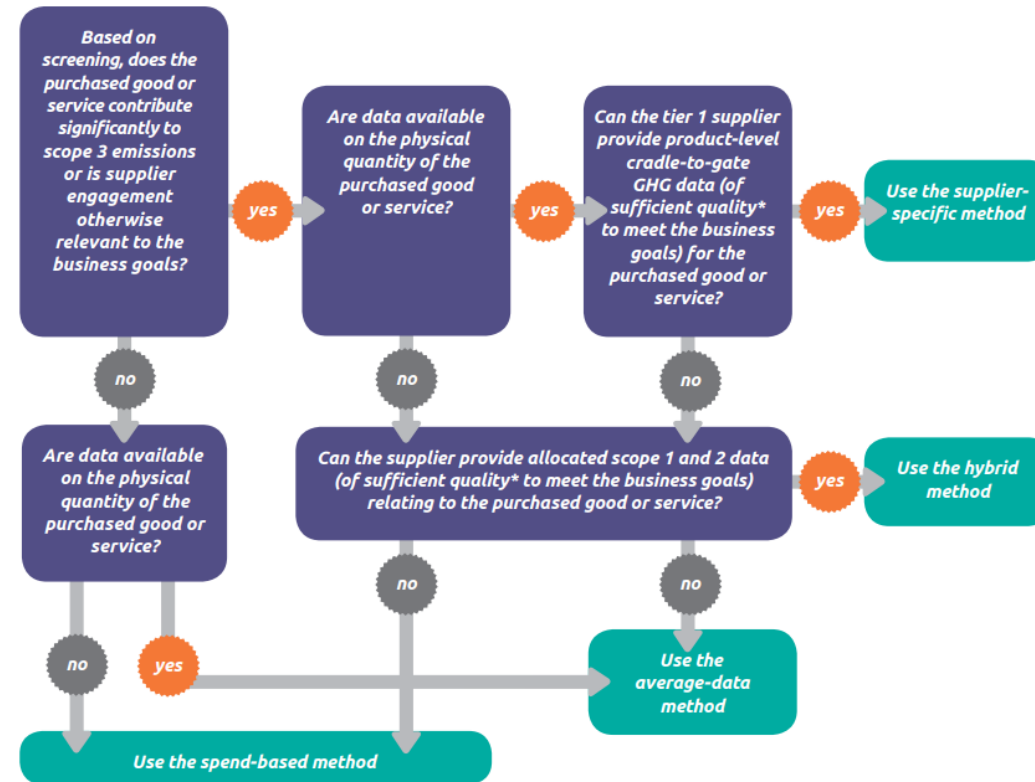
Calculation method	Notes on data used	Description of data required
Supplier-specific method	All data is specific to the supplier's product	Collect product-level, cradle-to-gate GHG inventory data directly from goods suppliers.
Hybrid method	Scope 1 & 2 data specific to supplier's product, all other upstream emissions either supplier specific or average	Use a combination of supplier-specific activity data (where available) and secondary data to fill the gaps. This method involves: <ul style="list-style-type: none"> Collecting allocated scope 1 & 2 emission data directly from suppliers Calculating upstream emissions of goods and services from suppliers' activity data on the amount of materials, fuel, electricity, used, distance transported, and waste generated from the production of goods and services and applying appropriate emission factors using secondary data to calculate upstream emissions wherever supplier-specific data is not available.
Average-data method	All emissions are based on secondary process data	Estimate emissions for goods and services by collecting data on the mass or other relevant units of goods purchased and multiplying by the relevant secondary (e.g., industry average) emission factors (e.g., average emissions per unit of good).
Spend-based method	All emissions are based on secondary data	Estimate emissions for goods by collecting data on the economic value of goods purchased and multiplying it by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 37

Category 1 - Purchased goods and services

Selection of calculation methodology

Figure [1.2] Decision tree for selecting a calculation method for emissions from purchased goods and services



Note * Companies should collect data of sufficient quality to ensure that the inventory:

- most appropriately reflects the GHG emissions of the company
- supports the company's business goals for conducting a GHG inventory
- serves the decision-making needs of users, both internal and external to the company.

For more information on how to determine whether data is of sufficient quality, see section 7.3 of the *Scope 3 Standard*

Source: World Resources Institute



Category 1 - Purchased goods and services

Collection of data

Calculation method	Activity data needed
Supplier-specific method	Quantities or units of each good or service purchased.
Hybrid method	<p>For each supplier, reporting entities should collect as much of the following activity data relating to the good or service purchased as is available (if data is unavailable for certain activities, secondary data can be used to fill the gaps):</p> <ul style="list-style-type: none"> • Allocated scope 1 and scope 2 data (including emissions from electricity use and fuel use and any process and fugitive emissions). For guidance on allocating emissions, refer to chapter 8 of the Scope 3 Standard • Mass or volume of material inputs (e.g., bill of materials), mass or volume of fuel inputs used, and distance from the origin of the raw material inputs to the supplier (the transport emissions from the supplier to the reporting entity is calculated in category 4 so it should not be included here) • Quantities of waste output other emissions.
Average-data method	Mass or number of units of purchased goods or services for a given year (e.g., kg, hours spent).
Spend-based method	Amount spent on purchased goods or services, by product type, using market values (e.g., dollars).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 24-33

Category 1 - Purchased goods and services

Emissions factor



Cradle-to-gate emission factors of the purchased goods or services per unit of economic value (e.g., kg CO2 e/\$)

Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 33



Category 1 - Purchased goods and services

Workbook Question 3

Background

- ▶ Manufacturer A manufactures and sells lawnmowers.

Question

- ▶ Which of the following emissions would it include within Scope 3 Category 1 purchased goods and services (select all that apply)?
 - Emissions from the production of the motors used in each lawn mower that were purchased from third parties
 - Emissions from the transport of the lawn mower motors from the third-party supplier to Manufacturer A's manufacturing facility
 - Emissions from the shipping of the lawnmowers to customers - shipping cost paid for by Manufacturer A's customers
 - Emissions from the production of bolts used in each of the lawnmowers that were purchased from third parties
 - Emissions from the production of consumables used in the manufacturing facility
 - Emissions from the manufacturing of desks that were purchased to use in Manufacturer A's head office
 - Emissions from the electricity used in Manufacturer A's manufacturing facility
 - Emissions from the production of tea and coffee that was purchased for Manufacturer A's employees to drink



Category 1 - Purchased goods and services

Workbook Question 3 (cont)

Suggested Solution

- ▶ The following emissions would not be classified as Scope 3, Category 1:
 - Emissions from the transport of the lawn mower motors from the third-party supplier to Manufacturer A's manufacturing facility because they would be classified as part of Scope 3 Category 4 Upstream Transportation and Distribution
 - Emissions from the shipping of lawnmowers to customers where the customer pays for the shipping cost because the emissions are downstream emissions that meet the definition of Scope 3 Category 9 Downstream Transportation and Distribution
 - Emissions from the manufacturing of desks that were purchased to use in Manufacturer A's head office because these emissions meet the definition of Scope 3 Category 2 Capital Goods
 - Emissions from the electricity used in Manufacturer A's manufacturing facility because these emissions would be accounted for as part of Scope 2 emissions.



Category 1 - Purchased goods and services

Workbook Question 3 (cont)

Suggested Solution

- ▶ The following emissions would be classified as Scope 3, Category 1 because they are upstream emissions that do not fall into Categories 2-8:
 - Emissions from the production of the motors used in each lawn mower that were purchased from third parties
 - Emissions from the production of bolts used in each of the lawnmowers that were purchased from third parties
 - Emissions from the production of consumables used in the manufacturing facility
 - Emissions from the production of tea and coffee that was purchased for Manufacturer A's employees to drink



Category 1 - Purchased goods and services

Workbook Question 4

Background

- ▶ Accounting Firm B is in the process of identifying its Scope 3 Category 1 emissions.

Question

- ▶ Which of the following emissions should be categorised as part of Category 1 (select all that apply)?
 - Emissions incurred by staff when they commute to the office
 - Emissions from staff flying to attend training in another jurisdiction
 - Emissions associated with the storage of client data in the cloud
 - Emissions associated with the coffee that staff drink that they purchased from a cafe on the way into the office
 - Emissions from the computers used by staff in the office purchased two years ago
 - Emissions associated with staff subscriptions to online tax resources



Category 1 - Purchased goods and services

Workbook Question 4 (cont)

Suggested Solution

- ▶ The following emissions would not be classified as Scope 3, Category 1:
 - Emissions incurred by staff when they commute to the office because they would be classified as part of Scope 3 Category 7 Employee Commuting
 - Emissions from staff flying to attend training in another jurisdiction because the emissions that meet the definition of Scope 3 Category 6 Business Travel
 - Emissions associated with the coffee that staff drink that they purchased from a cafe on the way into the office because Accounting Firm B's staff incurred these emissions in a private capacity
 - Emissions from staff using computers purchased two years ago would be included as part of Accounting Firm B's Scope 2 emissions because the computers require electricity to operate. The emissions associated with the manufacturing of the computers would have been included in Accounting Firm B's Scope 3, Category 2 emissions in the year that they initially purchased the computers.

- ▶ The following emissions would be classified as Scope 3, Category 1 because they are upstream emissions that do not fall into Categories 2-8:
 - Emissions associated with the storage of client data in Microsoft's cloud
 - Emissions associated with staff subscriptions to online tax resources.



Downstream Scope 3 emissions






Category 9 - Transportation and distribution of sold products

Category 9 - Transportation and distribution of sold products

Overview



DOWNSTREAM TRANSPORTATION AND DISTRIBUTION

What emissions are included?	Minimum boundary includes				
<p>Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company)</p>	<p>The scope 1 and scope 2 emissions of transportation providers, distributors, and retailers that occur during use of vehicles and facilities (e.g., from energy use)</p>				
	<p>Emissions that may be applicable</p>				
	<p>The life cycle emissions associated with manufacturing vehicles, facilities, or infrastructure</p>				
	<p>Emissions included incurred during</p>				
<p>Past year(s)</p>	<p>Current year</p>	<p>Future year(s)</p>			
					

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 36.

Category 9 - Transportation and distribution of sold products

Calculation methodologies & selection of emissions factors



- ▶ The calculation methodologies for Category 9 are the same as for Category 4 Upstream Transportation and Distribution
- ▶ Refer to section 'Category 4 - Upstream transportation and distribution' for further information and examples on how to calculate Category 9 emissions

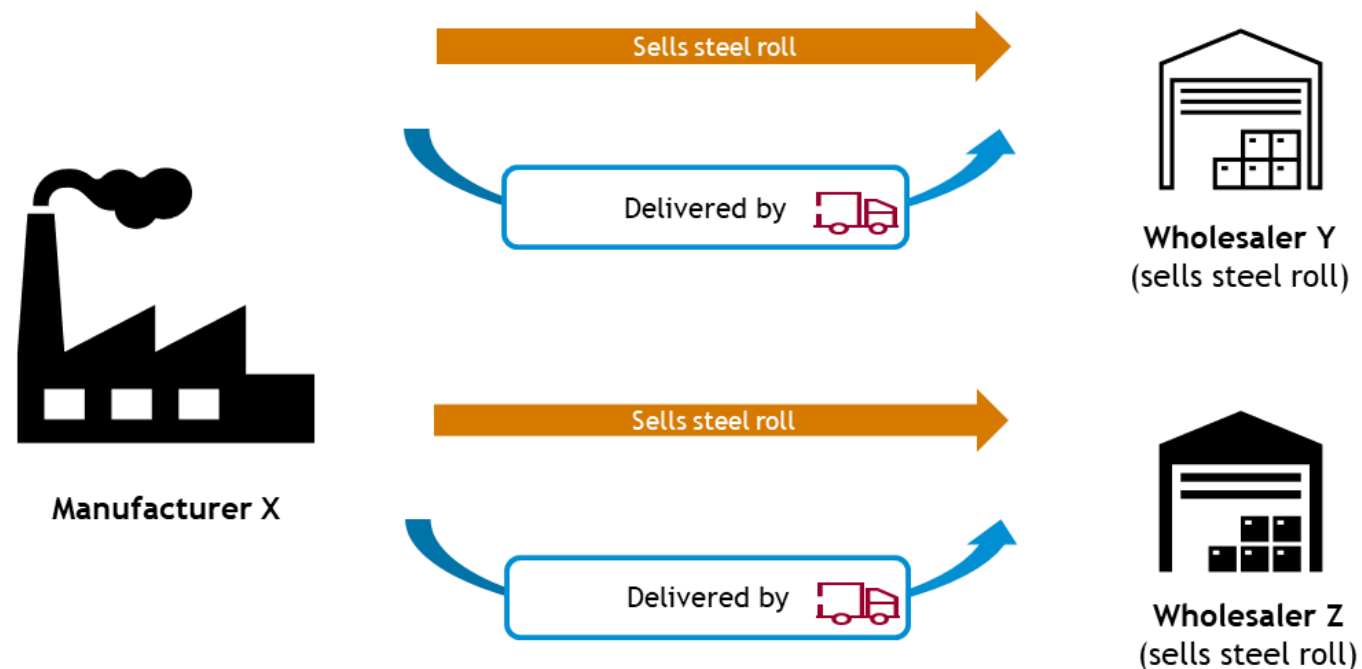


Category 9 - Transportation and distribution of sold products

Workbook Question 17

Background

- ▶ Manufacturer X manufactures rolls of steel. Manufacturer X sells its steel to Wholesaler Y and Wholesaler Z, who each have a large range of customers that use the steel rolls to produce a wide variety of products. Manufacturer X is uncertain about who the end users of the steel are or how the end users will use the steel.
- ▶ Wholesaler Y and Wholesaler Z pay third-party companies to transport the goods from Manufacturer X's warehouse and its own premises.



Question

- ▶ What emissions should Manufacturer X include as part of Scope 3 Category 9?



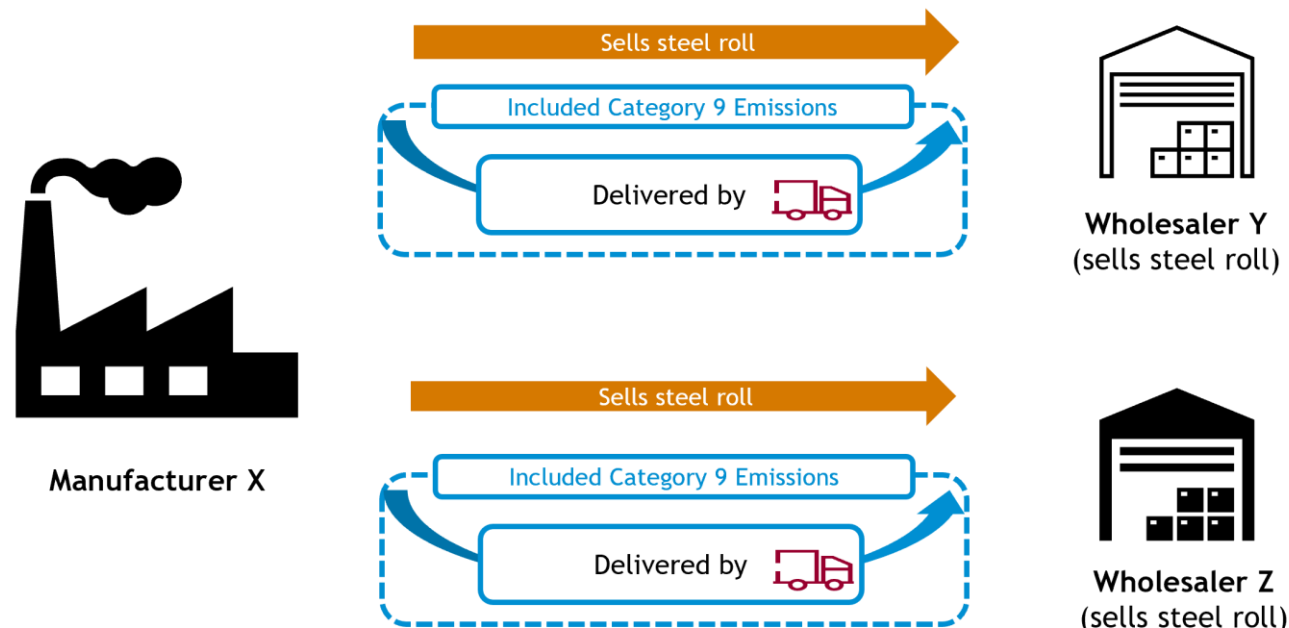
Category 9 - Transportation and distribution of sold products

Workbook Question 17 (cont)

Suggested Solution

▶ Manufacturer X identifies that it sells an intermediary product and it does not have direct knowledge of how the steel rolls are eventually used, nor who the end consumer is. For this reason, Manufacturer X:

- Includes emissions associated with Wholesaler Y and Wholesaler Z transporting the steel rolls to its own premises as part of its Category 9 emissions
- Includes emissions associated with Wholesaler Y and Wholesaler Z storing the steel rolls prior to sale to its own customers as part of its Category 9 emissions
- Does not include emissions associated with the transportation and distribution of steel rolls from Wholesaler Y or Wholesaler Z to end customers as it does not have any information about how its steel rolls are used further down the chain.





Category 10 - Processing of sold products

Category 10 - Processing of sold products

Overview



CATEGORY
10

PROCESSING OF SOLD PRODUCTS						
What emissions are included?	Minimum boundary includes					
Processing of intermediate products sold in the reporting year by downstream companies (e.g., manufacturers)	The scope 1 and scope 2 emissions of downstream companies that occur during processing (e.g., from energy use)					
	Emissions that may be applicable					
	None					
	Emissions included incurred during					
	<table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)		
Past year(s)	Current year	Future year(s)				

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 36.

Category 10 - Processing of sold products

Calculation methodologies



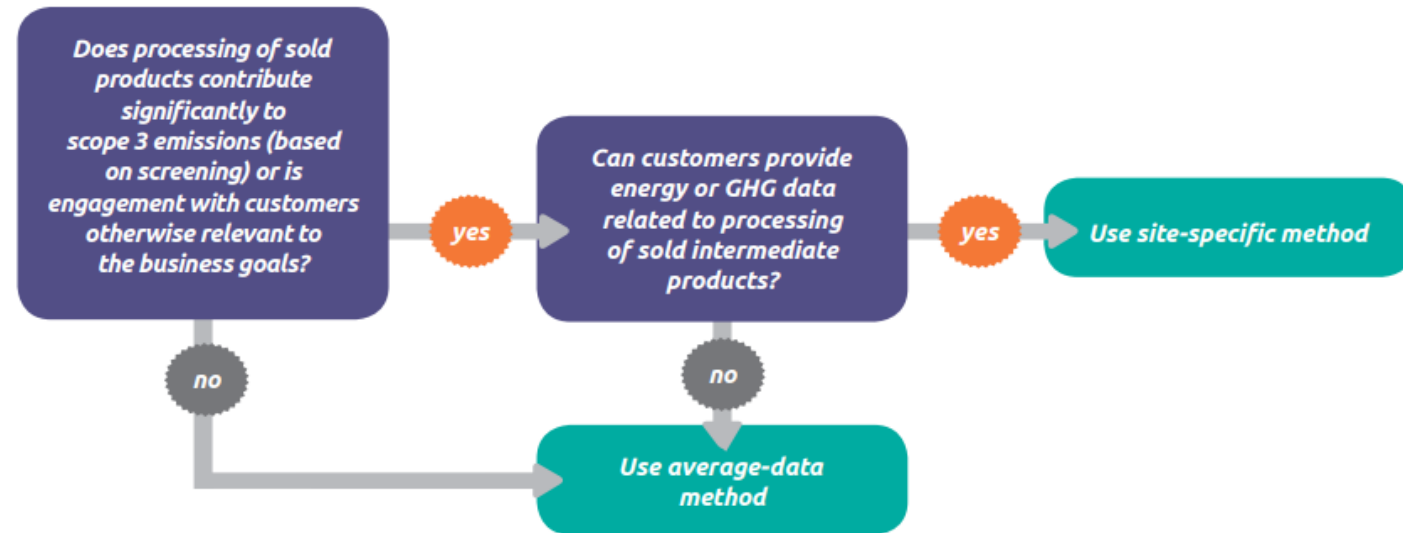
Calculation method	Description
Site-specific method	Determine the amount of fuel and electricity used and the amount of waste generated from processing of sold intermediate products by the third party and applying the appropriate emission factors
Average-data method	Estimate emissions for processing of sold intermediate products based on average secondary data, such as average emissions per process or per product.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 107

Category 10 - Processing of sold products

Selection of calculation methodology

Figure [10.1] Decision tree for selecting a calculation method for emissions from processing of sold products



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 107

Category 10 - Processing of sold products

Collection of data



Calculation method	Activity data needed
Site-specific method	<p>Entities should first collect data on the types and quantities of intermediate goods sold by the reporting entity. Entities should then collect either site-specific GHG emissions data provided by downstream value chain partners or site-specific activity data from downstream processes, including:</p> <ul style="list-style-type: none"> • Quantities of energy (including electricity and fuels) consumed in process(es) • To the extent possible, mass of waste generated in process(es) • If applicable, activity data related to non-combustion emissions (i.e., industrial process or fugitive emissions).
Average data method	<p>For each type of sold intermediate product, entities should collect data on:</p> <ul style="list-style-type: none"> • The process(es) involved in transforming or processing sold intermediate products into an usable state final product, subsequent to sale by the reporting entity • Information needed for allocation (e.g., mass, economic value).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 107 - 111

Category 10 - Processing of sold products

Emissions factor



Calculation method	Activity data needed
Site-specific method	<ul style="list-style-type: none"> • Emission factors for fuels • Emission factors for electricity • To the extent possible, emission factors for waste outputs • If applicable, emission factors related to non-combustion emissions (i.e., industrial process or fugitive emissions).
Average data method	Average emission factors for processing stages required to transform the sold intermediate product into a final product, expressed in units of emissions (e.g., CO ₂ , CH ₄ , N ₂ O) per unit of product (e.g., kg CO ₂ /kg of final product)

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 107 - 111

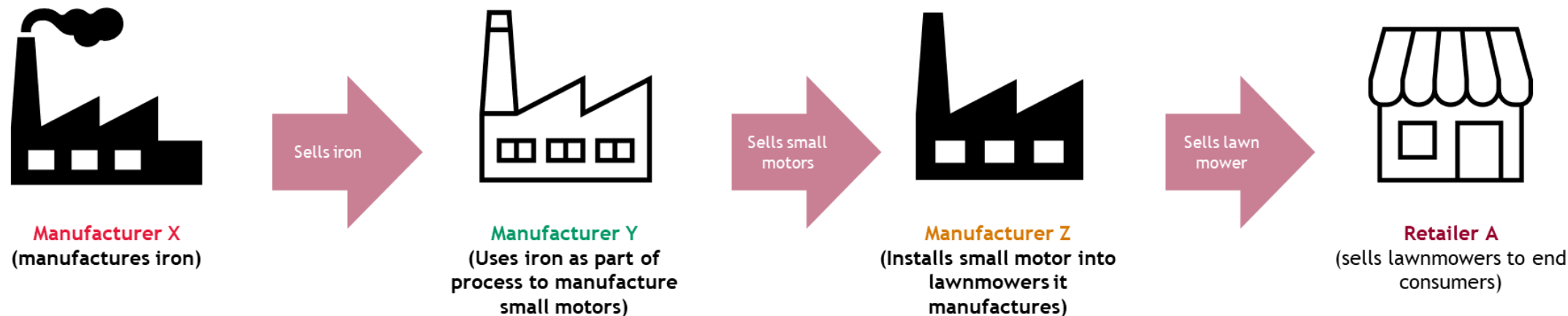


Category 10 - Processing of sold products

Workbook Question 18

Background

- ▶ Manufacturer X manufactures iron. The iron is sold to Manufacturer Y who uses it to manufacture small motors. The small motors are then sold to Manufacturer Z, a lawn mower manufacturer, who then installs them into lawnmowers. Retailer A purchases the final lawnmower from Manufacturer Z to sell to the end customer.



Question

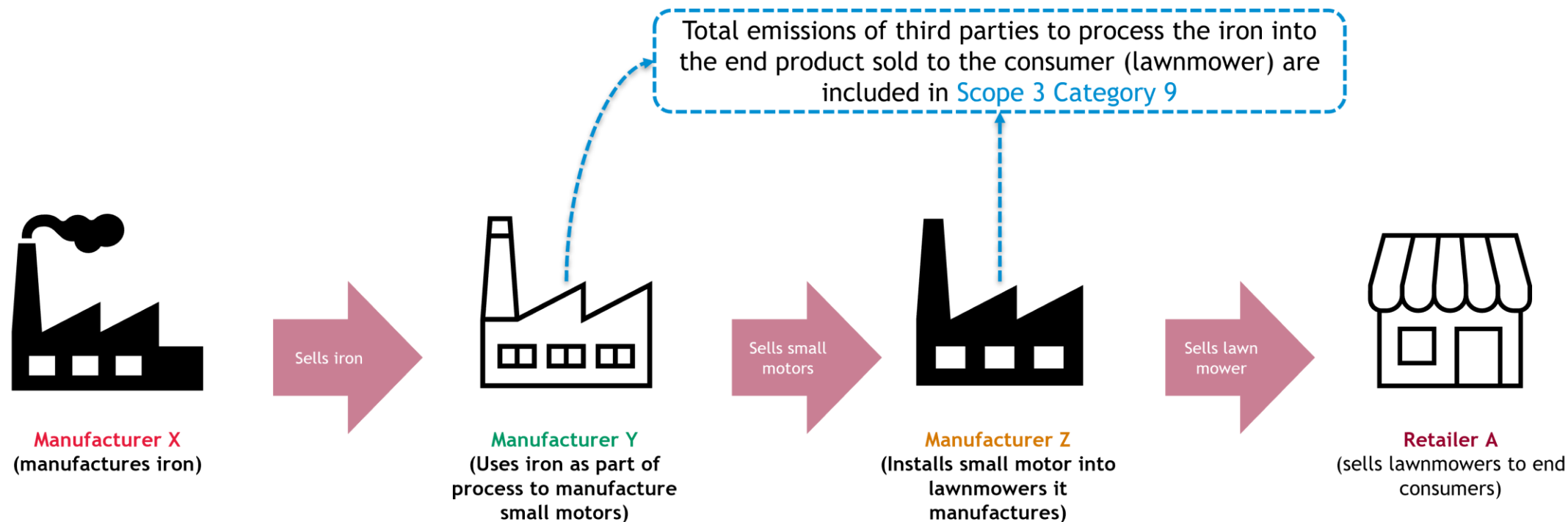
- ▶ What emissions should Manufacturer X include as part of Scope 3 Category 10?



Category 10 - Processing of sold products

Workbook Question 18 (cont)

Suggested Solution



- ▶ In this scenario, Manufacturer X knows that the iron it produces is used in lawnmower motors. It would therefore include a portion of the emissions of Manufacturer Y and Manufacturer Z to produce the lawnmowers as part of its Category 10 downstream emissions from the processing of sold products.



Category 10 - Processing of sold products

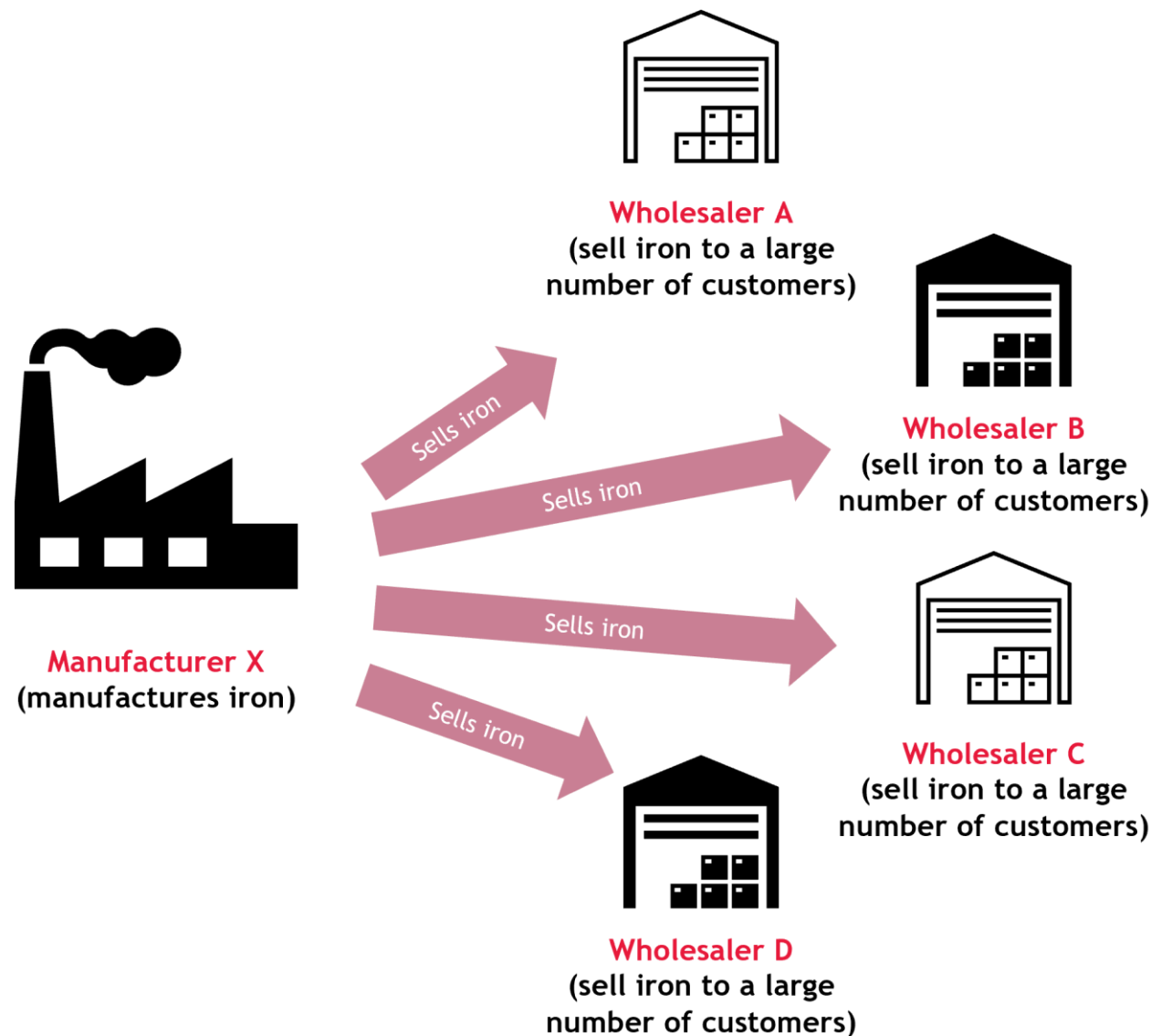
Workbook Question 19

Background

- ▶ Manufacturer X manufactures iron. The iron is sold to Wholesaler A, Wholesaler B, Wholesaler C and Wholesaler D. Each of the wholesalers sells the iron to hundreds of different customers and it is not known what final product the iron is used in by any of the end customers

Question

- ▶ What emissions should Manufacturer X include as part of Scope 3 Category 10?





Category 10 - Processing of sold products

Workbook Question 19 (cont)

Suggested Solution

- ▶ In this example, Manufacturer X does not know how the iron (an intermediate product) is eventually used by the end consumer as there are hundreds of different possibilities.
- ▶ In this case, Manufacturer Z is unable to provide a reasonable estimate of emissions from the use of its sold iron. It would therefore exclude emissions from Category 10 (as well as Categories 9, 11 & 12) in its emissions inventory, and it would also be required to justify why the emissions have been excluded.
- ▶ However, for entities that apply IFRS Sustainability Disclosure Standards or European Sustainability Disclosure Standards, such an omission is unlikely to be appropriate for the reasons noted above.



Category 11 - Use of sold products

Category 11 - Use of sold products

Overview



CATEGORY
11

USE OF SOLD PRODUCTS							
What emissions are included?	Minimum boundary includes						
End use of goods and services sold by the reporting company in the reporting year	The direct use-phase emissions of sold products over their expected lifetime (i.e., the scope 1 and scope 2 emissions of end users that occur from the use of: products that directly consume energy (fuels or electricity) during use; fuels and feedstocks; and GHGs and products that contain or form GHGs that are emitted during use)						
	Emissions that may be applicable						
	The indirect use-phase emissions of sold products over their expected lifetime (i.e., emissions from the use of products that indirectly consume energy (fuels or electricity) during use)						
	Emissions included incurred during						
	<table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)			
Past year(s)	Current year	Future year(s)					

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 36.

Category 11 - Use of sold products

Calculation methodologies



- ▶ Entities should first determine in which categories their products belong. The following products have direct-use phase emissions:
 1. Products that directly consume energy (fuels or electricity) during use: involves breaking down the use phase, measuring emissions per product, and aggregating emissions.
 2. Fuels and feedstocks: involves collecting fuel use data and multiplying them by representative fuel emission factors
 3. Greenhouse gases and products that contain or form greenhouse gases that are emitted during use: involves collecting data on the GHG contained in the product and multiplying them by the percent of GHGs released and GHG emission factors.
- ▶ If an entity sells a large selection of products, or if the use phase of multiple products is similar, it may choose to group similar products and use average statistics for a typical product in the product group. For example, a fast-moving consumer goods entity selling carbonated drinks may decide to group products by packaging types and treat all products within that group with the same use profile
- ▶ (Source: *The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 115*).

Category 11 - Use of sold products

Collection of data



Calculation method for ...	Activity data needed
Direct use-phase emissions from products that directly consume energy (fuels or electricity) during use	<ul style="list-style-type: none"> • Total lifetime expected uses of product(s) • Quantities of products sold • Fuel used per use of product • Electricity consumption per use of product • Refrigerant leakage per use of product
Direct use-phase emissions from fuels and feedstocks	<ul style="list-style-type: none"> • Total quantities of fuels/feedstocks sold
Direct use-phase emissions from greenhouse gases and products that contain or form greenhouse gases that are emitted during use	<ul style="list-style-type: none"> • Total quantities of products sold • Quantities of GHGs contained per product • Percentage of GHGs released throughout the lifetime of the product
Indirect use-phase emissions from products that indirectly consume energy (fuels or electricity) during use	<ul style="list-style-type: none"> • Average number of uses over lifetime of product • Average use scenarios (e.g., weighted average of scenarios) • Fuel consumed in use scenarios • Electricity consumed in use scenarios • Refrigerant leakage in use scenarios • GHGs emitted indirectly in use scenarios

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 116 - 120

Category 11 - Use of sold products

Emissions factor



Calculation method for ...	Emissions factor
Direct use-phase emissions from products that directly consume energy (fuels or electricity) during use	<ul style="list-style-type: none"> • Life cycle emission factors for fuels • Life cycle emission factors for electricity • Global warming potential of refrigerants
Direct use-phase emissions from fuels and feedstocks	<ul style="list-style-type: none"> • Combustion emission factors of fuel/feedstock
Direct use-phase emissions from greenhouse gases and products that contain or form greenhouse gases that are emitted during use	<ul style="list-style-type: none"> • GWP of the GHGs contained in the product, expressed in units of carbon dioxide per unit kilogram of the GHG (e.g., 25 kg CO₂e/kg)
Indirect use-phase emissions from products that indirectly consume energy (fuels or electricity) during use	<ul style="list-style-type: none"> • Combustion emission factors of fuels and electricity

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 116 - 120

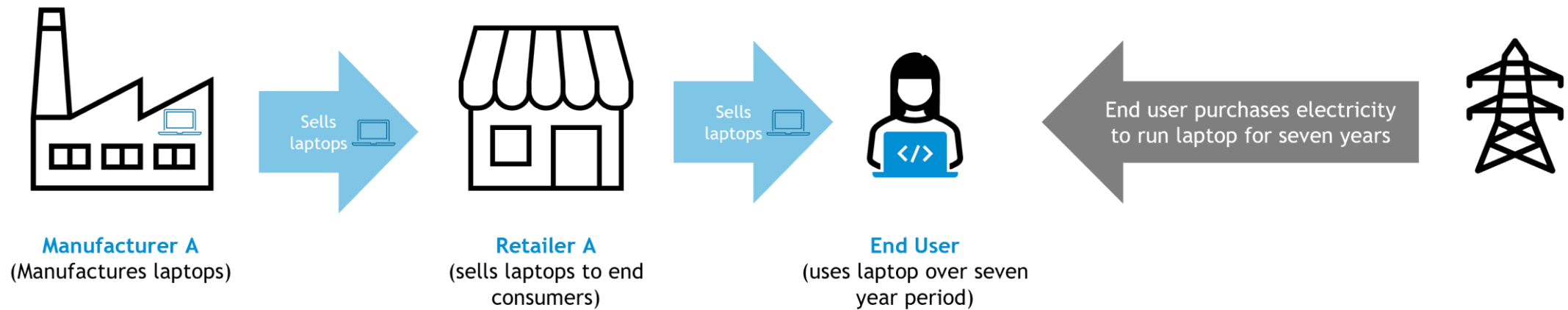


Category 11 - Use of sold products

Workbook Question 20

Background

- ▶ Manufacturer A sells laptops to Retailer A, who sells the laptops to the end user. The laptops have an expected useful life of seven years at the point of sale.



Question

- ▶ What emissions should Manufacturer A include in Category 11 for the use of sold products?



Category 11 - Use of sold products

Workbook Question 20 (cont)

Suggested Solution

- ▶ Manufacturer A reports emissions for the use of the sold product during the period the laptop was sold. The emissions are the total expected Scope 1 and Scope 2 emissions from the end user using the laptop over its expected seven-year useful life
- ▶ It is also important to note that Retailer A would also report the same emissions when it sells the laptops to the end customer.

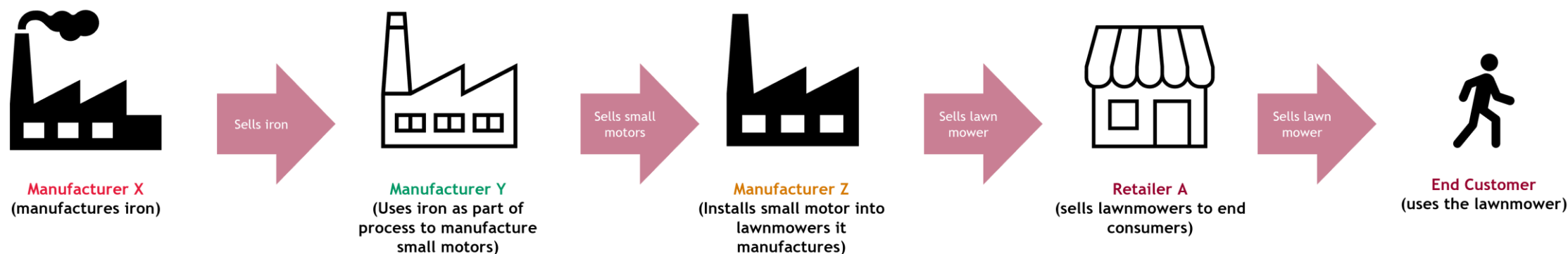


Category 11 - Use of sold products

Workbook Question 21

Background

- ▶ Assume that the facts in this example are the same as Question 18 above.
- ▶ Manufacturer X manufactures iron. The iron is sold to Manufacturer Y who uses it to manufacture small motors. The small motors are then sold to Manufacturer Z, a lawn mower manufacturer, who then installs them into lawnmowers. Retailer A purchases the final lawnmower from Manufacturer Z to sell to End Customer.



Question

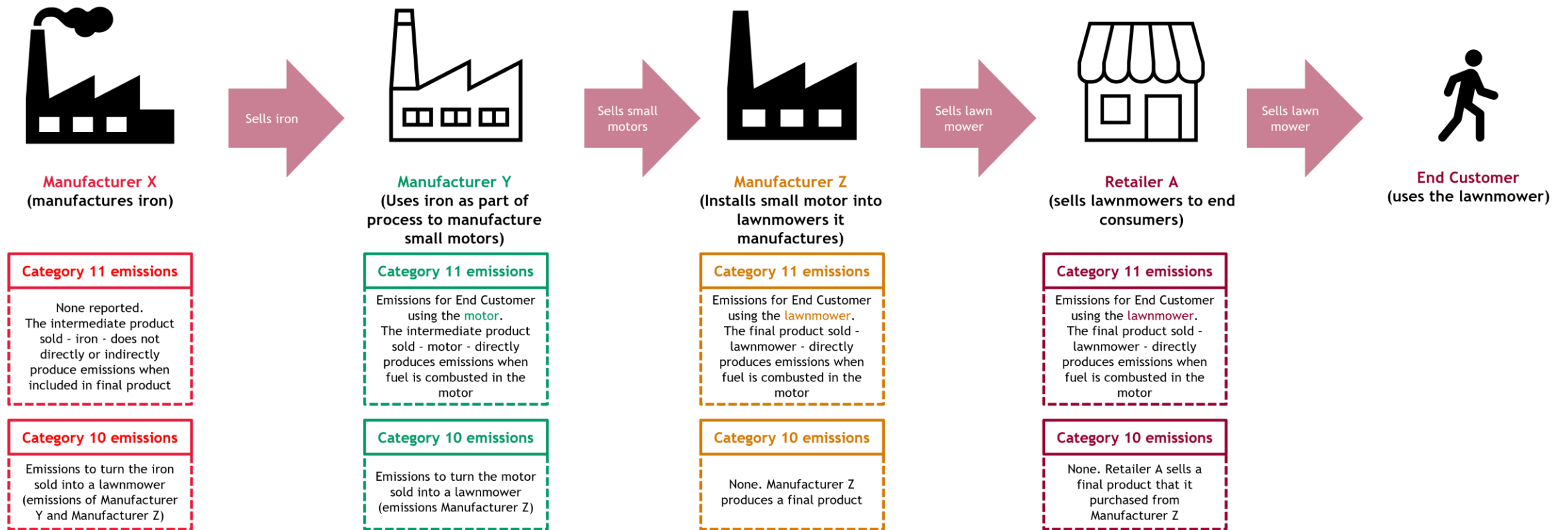
- ▶ What emissions should Manufacturer X, Manufacturer Y, Manufacturer Z and Retailer A include in Category 11 for the use of sold products?



Category 11 - Use of sold products

Workbook Question 21 (cont)

Suggested Solution





Category 11 - Use of sold products

Workbook Question 21 (cont)

Suggested Solution (cont)

- ▶ When a reporting entity decides what emissions to include as part of its Category 11 emissions, it determines this based on the emissions of the product that it sold. In this case:
 - **Manufacturer X** - sells iron that is used to manufacture small motors. The iron is an intermediate product that does not release any further direct or indirect emissions when used. For this reason, Manufacturer X does not include any further emissions in Category 11. Remember that Manufacturer X did include emissions in Category 10 for processing the iron into a lawnmower.
 - **Manufacturer Y** - manufactures and sells small motors using iron that it purchased from Manufacturer X. The motors are considered to be an intermediate product, and Manufacturer X includes emissions from the use of the motor by End Customer (over the useful life of the motor) as part of its Category 11 emissions. It is important to remember that Manufacturer Y includes emissions from manufacturing the motor as part of its own Scope 1 and Scope 2 emissions, and it would have included the emissions to process the motor into a lawnmower as part of its Category 10 emissions.
 - **Manufacturer Z** - manufactures and sells lawnmowers using the motors it purchased from Manufacturer Y. Manufacturer Z sells a final product so it includes the expected emissions from End Customer using the lawnmower over its expected useful life as part of its Category 11 emissions.
 - **Retailer A** - purchases finished lawnmowers from Manufacturer Z. Retailer A would include the same emissions in Category 11 as Manufacturer Z for End Customer using the lawnmower that it sold during the year.

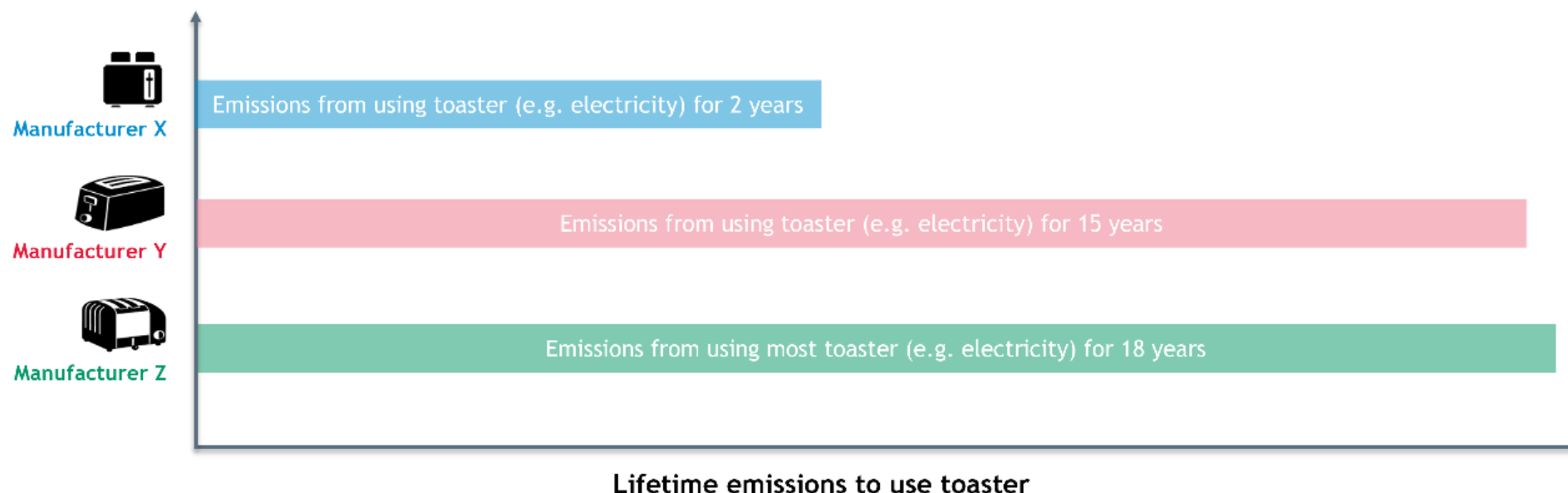


Category 11 - Use of sold products

Workbook Question 22

Background

- ▶ Manufacturer X sells toasters that have an expected life of 2 years, Manufacturer Y sells toasters with an expected useful life of 15 years and Manufacturer Z sells toasters with a useful life of 18 years. Manufacturer Z's toasters are more efficient than Manufacturer X and Y.



Question

- ▶ What emissions should Manufacturer X, Manufacturer Y and Manufacturer Z include as part of Scope 3 Category 11?



Category 11 - Use of sold products

Workbook Question 22 (cont)

Suggested Solution

- ▶ Manufacturer X, Manufacturer Y and Manufacturer Z must report the total expected emissions over the useful life of their toasters for each of the toasters sold during the reporting period
- ▶ Assuming that each of the three manufacturers sold the same number of toasters, Manufacturer Z would show the highest emissions even though its toasters are more durable and the most efficient. In order to properly interpret the emissions disclosed, each of the three manufacturers could consider disclosing additional information, such as the annual emissions from the use of the toasters.



Category 12 - End-of-life treatment of sold products

Category 12 - End-of-life treatment of sold products

Overview






End-of-life treatment of sold products

12

CATEGORY
12

END-OF-LIFE TREATMENT OF SOLD PRODUCTS

What emissions are included?	Minimum boundary includes		
Waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life	The scope 1 and scope 2 emissions of waste management companies that occur during disposal or treatment of sold products		
	Emissions that may be applicable		
	None		
	Emissions included incurred during		
	Past year(s)	Current year	Future year(s)
			

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 36.

Category 12 - End-of-life treatment of sold products

Calculation methodologies



End-of-life
treatment of
sold products

12

- ▶ The calculation methodology for Category 12 is the same as Category 5 Waste Generated in Operations except that the entity should collect data on the mass of the products disposed of instead of the mass of the waste generated in operations
- ▶ If the entity is accounting for intermediary products, then it accounts for the emissions associated with disposing of the intermediary product instead of the final product.

Calculation method	Description
Supplier-specific method	Collecting waste-specific scope 1 and scope 2 emissions data directly from waste treatment entities (e.g., for incineration, recovery for recycling). Unlikely to be available when calculating end-of-life of sold products
Waste-type-specific method	Using emission factors for specific waste types and waste treatment methods. Unlikely to be available when calculating end-of-life of sold products
Average-data method	Estimating emissions based on total waste going to each disposal method (e.g., landfill) and average emission factors for each disposal method.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 74 - 76, 125 - 127

Category 12 - End-of-life treatment of sold products

Collection of data



End-of-life
treatment of
sold products

12

Activity data needed

- Total mass of sold products and packaging from the point of sale by the reporting entity to the end-of-life after consumer use (e.g., packaging used to transport products through to the point of retail and any packaging that is disposed of prior to the end-of-life of the final product)
- Proportion of this waste being treated by different methods (e.g., percent landfilled, incinerated, recycled).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 125

Category 12 - End-of-life treatment of sold products

Emissions factor



End-of-life
treatment of
sold products

12

Calculation method	Emissions factor
Supplier-specific method	The reporting company collects emissions data from waste treatment companies, so no emission factors are required (the company would have already used emission factors to calculate the emissions).
Waste-type-specific method	Waste type-specific and waste treatment-specific emission factors. The emission factors should include end-of-life processes only.
Average-data method	Average waste treatment specific emission factors based on all waste treatment types.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 74 - 76, 125 - 127

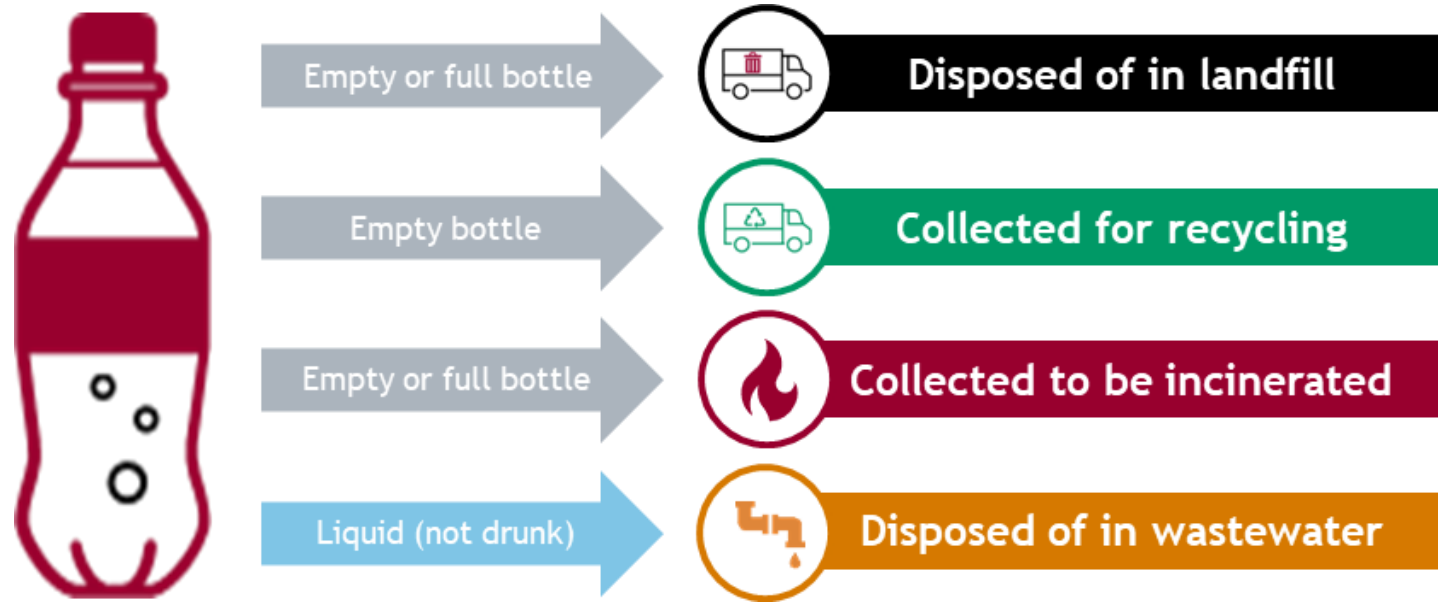


Category 12 - End-of-life treatment of sold products

Workbook Question 23

Background

- ▶ Drink Co. manufactures and sells soft drinks in bottles that can be recycled.



Question

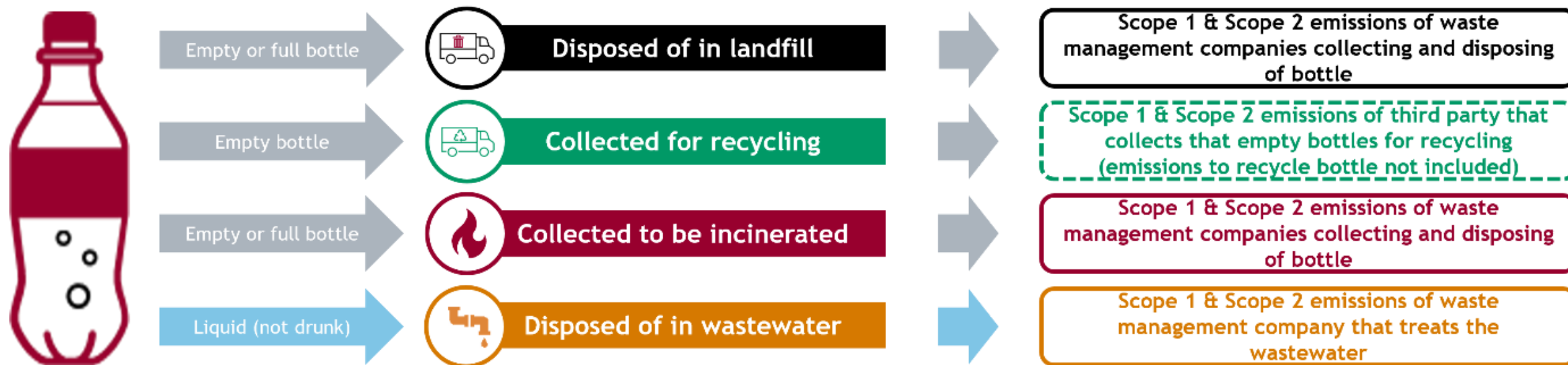
- ▶ What emissions should Drink Co. include in Category 12 for the end-of-life treatment of its sold products?



Category 12 - End-of-life treatment of sold products

Workbook Question 23 (cont)

Suggested Solution





Category 12 - End-of-life treatment of sold products

Workbook Question 23 (cont)

Suggested Solution (cont)

- ▶ Drink Co. includes an estimate of all emissions associated with the disposal of soft drinks and bottles by the end user. Remember that it needs to include an estimate of emissions for the soft drinks that it sold during the reporting period, even if the end user did not consume or dispose of the bottles during the reporting period
- ▶ In order for Drink Co. to estimate the potential emissions it needs to determine how the end user could dispose of the bottles. It determines that some bottles will be disposed of in landfill (either with or without liquid left in the bottle), some will be collected and recycled, some bottles will be collected and incinerated and it also estimates that some of the soft drink will be disposed of in wastewater (i.e. poured down the drain)
- ▶ The Category 12 emissions reported are the Scope 1 & Scope 2 emissions of the third-party waste management companies that collect and dispose of the waste. However, Drink Co. does not include the emissions to recycle the bottles. It only accounts for the emissions associated with collecting the bottles that are (expected to be) recycled.



Category 13 - Downstream of leased assets

Category 13 - Downstream of leased assets

Overview



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What emissions are included?	Minimum boundary includes
<p>Operation of assets owned by the reporting company (lessor) and leased to other entities in the reporting year, not included in scope 1 and scope 2 - reported by lessor</p>	<p>The scope 1 and scope 2 emissions of lessees that occur during operation of leased assets (e.g., from energy use).</p>
	Emissions that may be applicable
	<p>The life cycle emissions associated with manufacturing or constructing leased assets</p>
	Emissions included incurred during
	<div style="background-color: #f15a24; color: white; padding: 2px 5px; font-size: 8px;">Past year(s)</div> <div style="background-color: #546e7a; color: white; padding: 2px 5px; font-size: 8px;">Current year</div> <div style="background-color: #2196f3; color: white; padding: 2px 5px; font-size: 8px;">Future year(s)</div>
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Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 36.

Category 13 - Downstream of leased assets

Calculation methodologies & selection of emissions factors



- ▶ Calculating emissions from downstream leased assets differs from upstream leased assets in that the leased assets are owned by the reporting entity. The availability and access to information depend on the type of asset leased. For example, an entity that leases vehicles may need to request fuel or mileage data from lessees to calculate emissions
- ▶ The calculation methods for upstream and downstream leased assets do not differ
 - For guidance on calculating emissions from Category 13 (Downstream leased assets), refer to the section Category 8 Upstream leased assets.

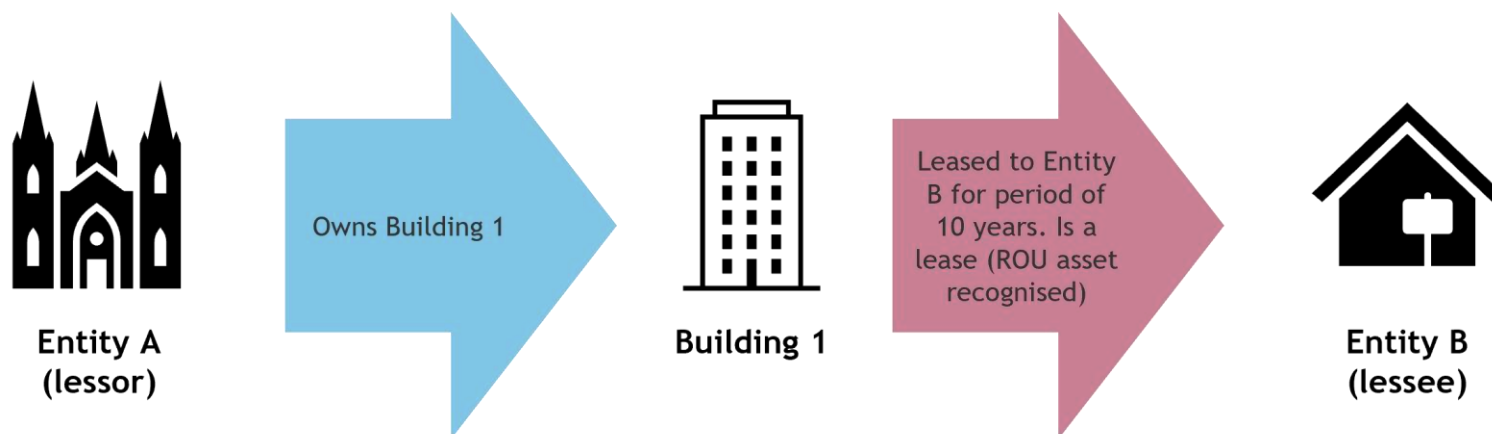


Category 13 - Downstream of leased assets

Workbook Question 24

Background

- ▶ Entity B leases Building 1 from Entity A for 10 years. On the commencement date of the lease, Building 1 was 5 years old and is expected to have a useful life of 50 years.
- ▶ Entity A accounts for the building as an investment property in accordance with IAS 40 Investment Property and it accounts for the lease of Building 1 to Entity B as an operating lease in accordance with IFRS 16 Leases.
- ▶ Entity B is directly responsible for paying the electricity provider for all electricity used within the building. Entity B does not directly combust any fuel during the period of use of the building.
- ▶ When Building 1 was constructed, an air conditioning system was installed. Fugitive emissions are released from the air conditioning system.
- ▶ Entity A uses the operational control approach to determine its organisational boundary for GHG emissions.





Category 13 - Downstream of leased assets

Workbook Question 24 (cont)

Question

- ▶ What emissions should Entity A (the lessor) include as part of Scope 3 Category 13?



Category 13 - Downstream of leased assets

Workbook Question 24 (cont)

Suggested Solution

- ▶ In this scenario, Entity A determines that it does not have operational control of the leased asset (Building 1) during the period of the lease. Therefore Entity A recognises the emissions associated with the purchased electricity (and also if applicable any emissions from fuel consumption) as part of its Scope 13 Category 13 emissions because it is not directly responsible for those emissions (i.e. because the lessee controls the emissions).
- ▶ The Scope 3 Standard is unclear about the classification of the emissions from when Entity A initially constructs or purchases Building 1 (see module 1.14).
- ▶ Entity A would recognise the fugitive emissions released from the air conditioner in Building 1 during each reporting period as part of its Scope 1 emissions.
- ▶ Entity B would have included the emissions from purchased electricity used in Building 1 in each reporting period as part of its own Scope 2 emissions because it is directly responsible for those emissions.
- ▶ *...continued next slide*



Category 13 - Downstream of leased assets

Workbook Question 24 (cont)

Suggested Solution (cont)

► The table below summarises the emissions Entity A would recognise in each reporting period:

	Scope 1	Scope 2	Scope 3, Category 13	Scope 3, Category 2
At date of purchase or construction of building			Diversity exists in practice as to how lifecycle emissions are measured and classified for emissions to construct building that is leased. They are currently presented within Scope 3 Category 13 or Scope 3 Category 2.	
During period property is NOT leased	Include fugitive emissions from air conditioning unit in Building 1.	Recognise Scope 2 emissions for the electricity used in building because Entity A is directly responsible for the emissions		
During period property IS leased	Include fugitive emissions from air conditioning unit in Building 1.		Recognise the emissions that Entity B incurred during the reporting period associated with purchased electricity (direct fuel consumption would also be included here if Entity B had any such emissions) within Scope 3 Category 13	



Category 14 - Franchises

Category 14 - Franchises

Overview



14 Franchises

CATEGORY
14

FRANCHISES							
What emissions are included?	Minimum boundary includes						
Operation of franchises in the reporting year, not included in scope 1 and scope 2 - reported by franchisor	The scope 1 and scope 2 emissions of franchisees that occur during operation of franchises (e.g., from energy use)						
	Emissions that may be applicable						
	The life cycle emissions associated with manufacturing or constructing franchises						
	Emissions included incurred during						
	<table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)			
Past year(s)	Current year	Future year(s)					

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 37.

Category 14 - Franchises

Calculation methodologies



14 Franchises

Calculation method	Description
Franchise-specific method	Collecting site-specific activity data or scope 1 and scope 2 emissions data from franchisees
Average-data method	Estimating emissions for each franchise, or groups of franchises, based on average statistics, such as average emissions per franchise type or floor space

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 130

Category 14 - Franchises

Collection of data



Calculation method	Activity data needed
Franchise-specific method	<ul style="list-style-type: none"> • Scope 1, scope 2, and (optionally) scope 3 emissions data from franchisees • Site-specific fuel use, electricity use, and process and fugitive emissions activity data if applicable
Average-data method	<p>Depending on the type of asset that is franchised, entities may need to collect data on:</p> <ul style="list-style-type: none"> • Floor space of each franchise, by floor space • Number of franchises, by building type • Number of franchise assets that give rise to GHG emissions (e.g., entity cars, trucks)

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 130 - 134

Category 14 - Franchises

Emissions factor



14 Franchises

Calculation method	Activity data needed
Franchise-specific method	<p>If collecting fuel and energy data, companies should also collect:</p> <ul style="list-style-type: none"> • Site- or regionally-specific emission factors for energy sources (e.g., electricity and fuels) per unit of consumption (e.g., kg CO₂e/kWh for electricity, kg CO₂e/litre for diesel) • Emission factors of process emissions and fugitive emissions (e.g., refrigeration and air conditioning) • Upstream emission factors
Average-data method	<p>Depending on the type of asset that is franchised, entities may need to collect data on:</p> <ul style="list-style-type: none"> • Average emission factors by floor space, expressed in units of emissions per area per time period (e.g., kg CO₂e/m² / day) • Average emission factors by building type, expressed in units of emissions per building per time period (e.g., kg CO₂e/small office block/year) • Emission factors by asset type, expressed in units of emissions per asset type per time period (e.g., kg CO₂e/car/year).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 130 - 134



Category 15 - Investments



Category 15 - Investments

Overview

CATEGORY 15 INVESTMENTS						
What emissions are included?	Minimum boundary includes					
Operation of investments (including equity and debt investments and project finance) in the reporting year, not included in scope 1 or scope 2	Dependent on type of investment. Discussed later in more detail later in this module					
	Emissions that may be applicable					
	None					
	Emissions included incurred during					
	<table border="1"> <thead> <tr> <th>Past year(s)</th> <th>Current year</th> <th>Future year(s)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Past year(s)	Current year	Future year(s)		
Past year(s)	Current year	Future year(s)				

Source: Adapted from The GHG Protocol, [Corporate Value Chain \(Scope 3\) Standard](#), pages 33, 37.



Category 15 - Investments

Calculation methodologies - equity investments

Calculation method	Description
Investment-specific method	The investment-specific method involves collecting scope 1 and scope 2 emissions directly from investee entities and allocating these emissions based upon the proportion of the investment.
Average-data method	The average-data method uses environmentally extended input-output (EEIO) data to estimate the scope 1 and scope 2 emissions associated with equity investments. The revenue of the investee entity should be multiplied by the appropriate EEIO emission factor that is representative of the investee entity's sector of the economy. For example, an apparel manufacturer should use an EEIO emission factor for apparel manufacturing. The reporting entity should then use its proportional share of equity to allocate the estimated scope 1 and scope 2 emissions of the investee entity.

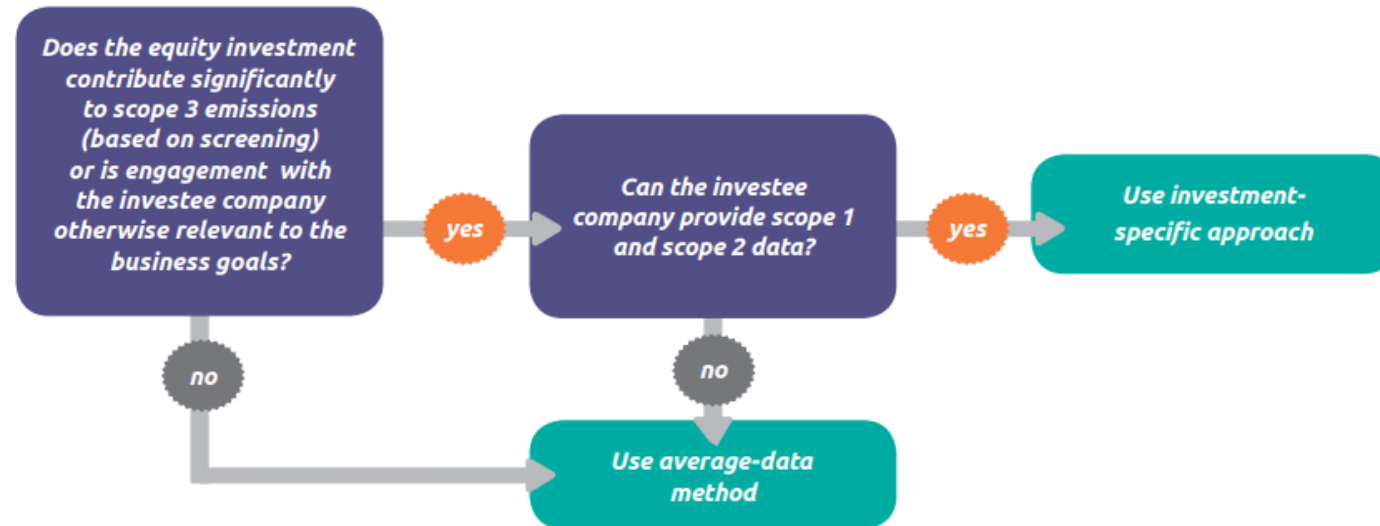
Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 140



Category 15 - Investments

Selection of calculation methodology - equity investments

Figure [15.1] Decision tree for selecting a calculation method for emissions from equity investments



Source: The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), page 141



Category 15 - Investments

Collection of data - equity investments

Calculation method	Activity data needed
Project-specific method	<ul style="list-style-type: none"> • Scope 1 and scope 2 emissions that occur in the reporting year for the relevant projects • The investor's proportional share of total project costs (total equity plus debt)
Average-data method	<ul style="list-style-type: none"> • Sector(s) the investee entity operates in • Revenue of investee entity (if the investee entity operates in more than one sector, the reporting entity should collect data on the revenue for each sector in which it operates) • The investor's proportional share of equity in the investee.

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 141 - 143



Category 15 - Investments

Emissions factor - equity investments

Calculation method	Activity data needed
Project-specific method	The reporting company collects emissions data from investees, thus no emission factors are required
Average-data method	Environmentally extended input-output (EEIO) emission factors for the sectors of the economy that the investments are related to (kg CO ₂ e/\$ revenue).

Source: Adapted from The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#), pages 141 - 143

Category 15 - Investments

Calculation methods - other investments



- ▶ Refer to The GHG Protocol, [Technical Guidance for Calculating Scope 3 Emissions](#) pages 136 - 152 for further information on calculating emissions from investments.

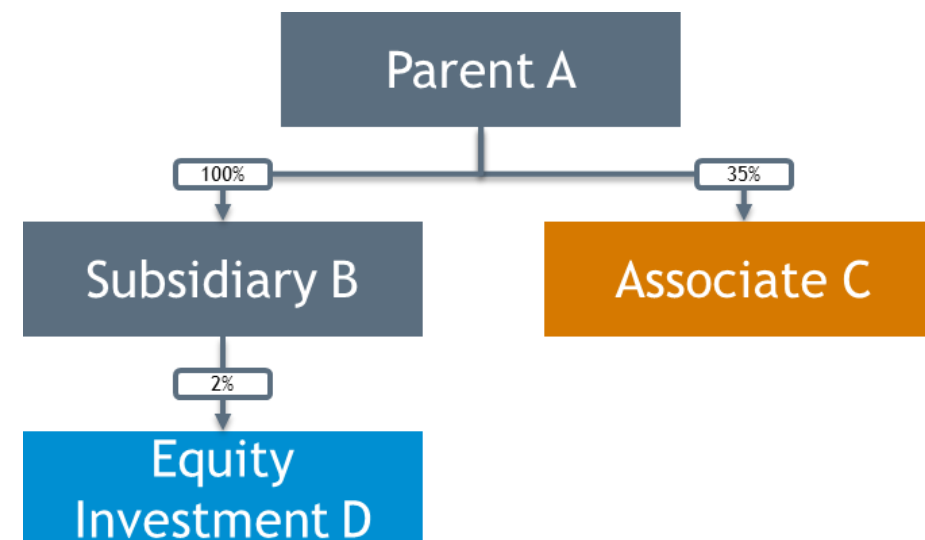


Category 15 - Investments

Workbook Question 25

Background

- ▶ Financial Reporting Group A (FRGA) is in the process of determining its greenhouse gas emissions.
- ▶ FRGA determines that it has:
 - **Financial** and **operational** control over Subsidiary B
 - Neither **financial** or **operational** control over Associate C
 - Neither **financial** or **operational** control over Equity Investment D.



Question

- ▶ How would FRGA's emissions profile differ if it used the equity share approach, financial control approach or operational control approach to determine its organisational boundary, (i.e. what emissions would it include in Scope 1 & 2 or Scope 3 Category 15)?



Category 15 - Investments

Workbook Question 25 (cont)

Suggested Solution

► FRGA would recognise emissions for each investment as follows:

	EQUITY SHARE APPROACH	FINANCIAL CONTROL APPROACH	OPERATIONAL CONTROL APPROACH
PARENT A	100% of scope 1 & scope 2 & scope 3 emissions	100% of scope 1 & scope 2 & scope 3 emissions	100% of scope 1 & scope 2 & scope 3 emissions
SUBSIDIARY B	100% of scope 1 & scope 2 & scope 3 emissions	100% of scope 1 & scope 2 & scope 3 emissions	100% of scope 1 & scope 2 & scope 3 emissions
ASSOCIATE C	Include 35% share of scope 1 & scope 2 & scope 3 emissions	Include 35% share of Associate C's emissions as part of Scope 3 Category 15	Include 35% share of Associate C's emissions as part of Scope 3 Category 15
EQUITY INVESTMENT D	Include 2% share of Equity Investment D's scope 1 & scope 2 & scope 3 emissions	Include 2% share Equity Investment D's emissions as part of Scope 3 Category 15	Include 2% share Equity Investment D's emissions as part of Scope 3 Category 15

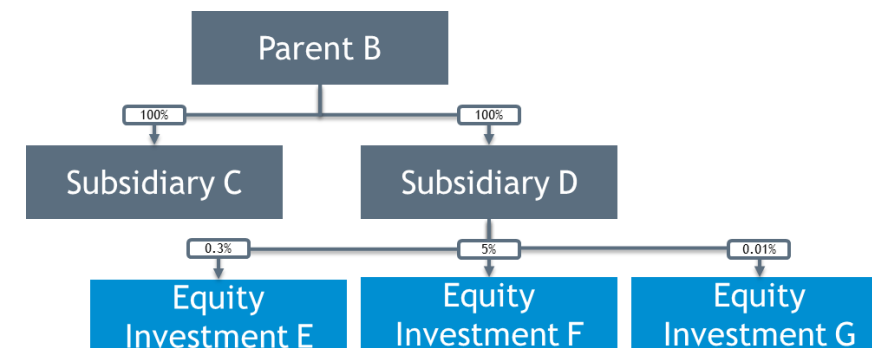


Category 15 - Investments

Workbook Question 26

Background

- ▶ Financial Reporting Group B (FRGB) has the group structure shown on this slide
- ▶ FRGB uses the operational control approach when setting its organisational boundary. It determines that it has operational control over Subsidiary C and Subsidiary D, but it does not have operational control over Equity Investment E, Equity Investment F or Equity Investment G.
- ▶ Equity Investment E operates in the oil and gas industry and is considered to be a significant emitter of greenhouse gases.
- ▶ Equity Investment F and Equity Investment G do not operate in industries that are considered to significantly contribute to greenhouse gas



Questions

- ▶ How would FRGB's emissions profile differ if equity investments were approached, financial control approach or operational control approach? (i.e. what emissions would it include in Scope 1 and Scope 2 Category 15)?
- ▶ How would FRGB's emissions profile differ if equity investments were approached, financial control approach or operational control approach, (i.e. what emissions would it include in Scope 1 and Scope 2 Category 15)?
- ▶ How would FRGB's emissions profile differ if equity investments were approached, financial control approach or operational control approach, (i.e. what emissions would it include in Scope 1 and Scope 2 Category 15)?
- ▶ How would FRGB's emissions profile differ if equity investments were approached, financial control approach or operational control approach, (i.e. what emissions would it include in Scope 1 and Scope 2 Category 15)?



Category 15 - Investments

Workbook Question 26 (cont)

Question

- ▶ How would FRGA's emissions profile differ if it used the equity share approach, financial control approach or operational control approach to determine its organisational boundary, (i.e. what emissions would it include in Scope 1 & 2 or Scope 3 Category 15)?



Category 15 - Investments

Workbook Question 26 (cont)

Suggested Solution

- ▶ FRGB includes the following emissions for its equity investments in its emissions inventory:

	OPERATIONAL CONTROL APPROACH
PARENT B	100% of scope 1 & scope 2 & scope 3 emissions of Parent B
SUBSIDIARY C	100% of scope 1 & scope 2 & scope 3 emissions of Subsidiary C
SUBSIDIARY D	100% of scope 1 & scope 2 & scope 3 emissions of Subsidiary D
EQUITY INVESTMENT E	Include 0.3% share Equity Investment E's emissions as part of Scope 3 Category 15
EQUITY INVESTMENT F	Include 5% share Equity Investment F's emissions as part of Scope 3 Category 15
EQUITY INVESTMENT G	Emissions excluded



Some final comments regarding interaction with AASB S2

Transition reliefs for AASB S2

AASB S2 paragraphs C3 to C5

- ▶ Transition reliefs are designed to **give companies time** to put into place reporting practices and processes **in the first year of application**
- ▶ Temporarily limits disclosures
 - Scope 3
 - Comparatives
- ▶ Temporarily permits companies to use existing approaches to meet certain requirements
 - GHG Protocol not mandated in year 1
 - Can use previous framework to calculate emissions



Specific requirements for Scope 1, 2 and 3 greenhouse gas (GHG) emissions

Specific disclosure requirements

For Scope 1 and 2 emissions

- ▶ A company is required to provide emissions disaggregated between those attributable to:
 - The consolidated accounting group
 - Other investees (e.g. JVs, associates)

For Scope 2 emissions

- ▶ A company is required to provide location-based Scope 2 emissions
- ▶ The company is required to provide information about any contractual instruments necessary to understand the company's Scope 2 emissions
- ▶ Market-based Scope 2 emissions is not required

For Scope 3 emissions

- ▶ A company is required to provide total Scope 3 emissions
- ▶ A company is required to provide a list of emissions categories included in total Scope 3 emissions (no need to provide emissions per category)
- ▶ Additional information about financed emissions if in the:
 - Asset Management Industry
 - Commercial Banking Industry
 - Insurance Industry



Step 1: For NGER entities, start with NGER

Step 1: For NGER entities, start with NGER

- ▶ NGER entities are mandated to use operational control approach
- ▶ What about non-NGER entities? Choice! Financial control the same as financial reporting!

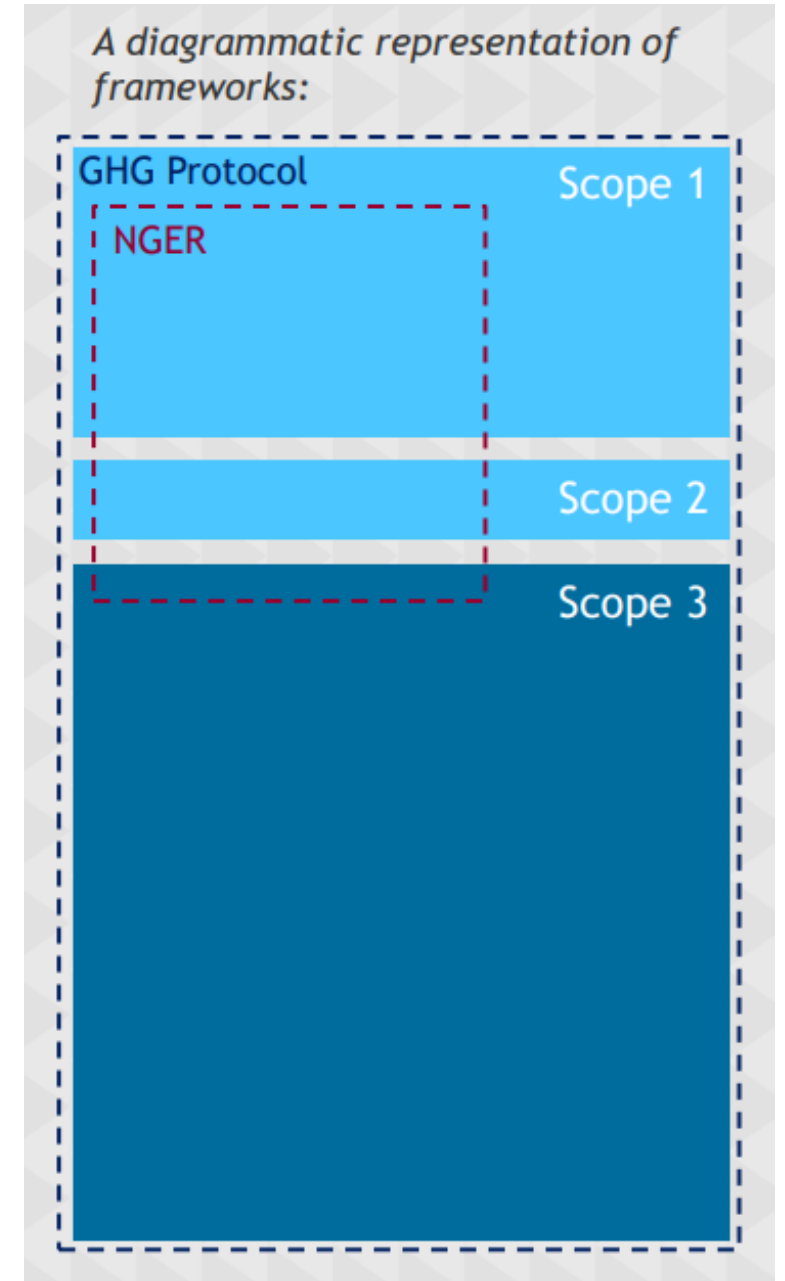




Step 2: Uplift NGER to GHG Protocol

NGER and GHG Protocol Comparison

NGER	GHG Protocol
Only scope 1 and 2	Scope 1, 2 and 3
Size thresholds re facilities	All facilities included
Size thresholds re greenhouse gases	All greenhouse gases included
Can assign operational control to another party	Operational control is a factual assessment



Uplift NGER to GHG Protocol

<https://www.bdo.com.au/en-au/insights/esg-sustainability/why-nger-and-ghg-protocol-aren-t-enough-for-aasb-s2-compliance>

From NGER to GHG Protocol

1. **Remove thresholds:** All GHG emissions must be measured, not just those above NGER limits.
2. **Expand to include all activities:** Shift from facility-level to corporate-level reporting.
3. **Include upstream Scope 3:** Begin accounting for indirect emissions across your value chain. However, can use minimum boundaries outlined in the GHG Protocol.



Step 3: Uplift GHG Protocol to AASB S2

Uplift GHG Protocol to AASB S2

The GHG Protocol: More comprehensive but still voluntary

The [GHG Protocol](#) offers a more comprehensive approach, including Scope 3 emissions and a full value chain perspective. However, its voluntary nature and allowance for optionality - such as the “minimum boundary” concept - mean that businesses can tailor their reporting, potentially omitting material emissions. This flexibility, while useful for internal benchmarking, does not meet the mandatory and prescriptive requirements of AASB S2.

Strategic gap alert: While more comprehensive than NGER, the GHG Protocol allows optional downstream Scope 3 reporting and measurement discretion across all Scope 3 categories. These flexibilities are not permitted under AASB S2, which mandates comprehensive measurement.

Uplift GHG Protocol to AASB S2

<https://www.bdo.com.au/en-au/insights/esg-sustainability/why-nger-and-ghg-protocol-aren-t-enough-for-aasb-s2-compliance>

From GHG Protocol to AASB S2

1. **Eliminate optionality:** Downstream Scope 3 and other GHG emissions reporting is no longer optional.
2. **Eliminate use of minimum boundaries:** Measure all Scope 3 emissions without use of only minimum boundaries.
3. **Disclose differences:** Any divergence between financial reporting and GHG boundaries must be explained.

Finally, while AASB S2 allows for the **application of materiality**, this is not only based on quantitative thresholds. Instead, it requires entities to consider the entire value chain, both upstream and downstream, and also apply a qualitative lens to consider what information is material to investors.



December 2025 amendments to AASB S2

International Sustainability Standards Board (ISSB) approved the final amendments to AASB S2

<https://www.ifrs.org/content/dam/ifrs/supporting-implementation/ifrs-s2/s2-targeted-amendments-at-a-glance.pdf>



December 2025

Targeted amendments to IFRS S2—At a glance

The ISSB has issued amendments to **greenhouse gas emissions disclosure requirements** in IFRS S2 *Climate-related Disclosures*.

What is the purpose of the amendments?

To provide a timely response to specific **application challenges** identified during implementation of IFRS S2

What have the amendments changed?

- Clarify that an entity is permitted to limit measurement and disclosure of Scope 3 Category 15 GHG emissions to financed emissions as defined in IFRS S2
- Permit use of alternative classification systems—beyond the Global Industry Classification Standard—to disaggregate information about financed emissions
- Clarify availability of the jurisdictional relief from using the GHG Protocol Standard, if only part of an entity is required to use a different method for measuring GHG emissions
- Introduce a jurisdictional relief from using GWP values from the latest IPCC Assessment Report for converting GHG emissions

Financed emissions metrics in three **SASB Standards** have been aligned with corresponding amended requirements in IFRS S2

When are the changes effective?



From **1 January 2027**, with early application permitted



Visit [ifrs.org](https://www.ifrs.org)



What help will be available?

Educational material under development about the amendments

Australian Accounting Standards Board (AASB) approved the final amendments to AASB S2

https://www.aasb.gov.au/media/bjnn0kdu/03-0_cm_aasbs2amendments_m217_pp.pdf

▶ Amendment #1

- Clarify that an entity is permitted to limit its measurement and disclosure of Scope 3 Category 15 greenhouse gas emissions to financed emissions
- Consequently, the entity is permitted to exclude from its measurement and disclosure of Category 15 greenhouse gas emissions the emissions associated with financial activities, such as facilitated emissions associated with investment banking activities and emissions associated with insurance and reinsurance underwriting activities

Australian Accounting Standards Board (AASB) approved the final amendments to AASB S2

https://www.aasb.gov.au/media/bjnn0kdu/03-0_cm_aasbs2amendments_m217_pp.pdf

▶ Amendment #2

- Replace the requirement for an entity that participates in commercial banking activities or financial activities associated with the insurance industry to use the Global Industry Classification Standard (GICS) to disaggregate financed emissions information by industry with less prescriptive requirements for the entity to select an industry-classification system that enables it to provide useful information about its exposure to climate-related transition risks

Australian Accounting Standards Board (AASB) approved the final amendments to AASB S2

https://www.aasb.gov.au/media/bjnn0kdu/03-0_cm_aasbs2amendments_m217_pp.pdf

▶ Amendment #3

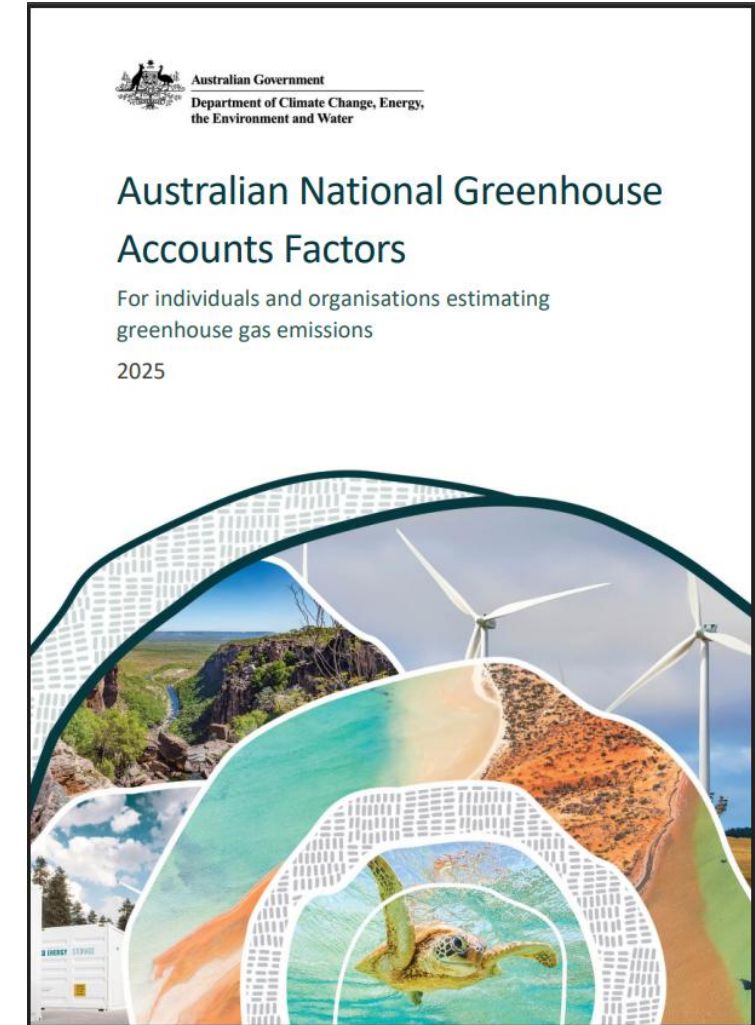
- Clarify that the relief from using the method in the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)* for measuring greenhouse gas emissions is available to an entity when a jurisdictional authority or an exchange on which the entity is listed requires the use of a different method only for the part of the entity to which that jurisdictional authority or exchange requirement applies

Australian Accounting Standards Board (AASB) approved the final amendments to AASB S2

https://www.aasb.gov.au/media/bjnn0kdu/03-0_cm_aasbs2amendments_m217_pp.pdf

▶ Amendment #4

- Provide relief to an entity from using the global warming potential (GWP) values based on a 100-year time horizon from the latest Intergovernmental Panel on Climate Change (IPCC) assessment available at the reporting date when a jurisdictional authority or an exchange on which the entity is listed requires the use of different GWP values for the part of the entity to which that jurisdictional authority or exchange requirement applies





Auditor expectations

Auditor expectations

1. Review the client's Boundary Setting Policy
 - How does the carbon accounting boundary compare to the consolidated reporting group for the purpose of the financial report and the mandatory sustainability report?
 - Understand and document reasons for any differences
2. Review the client's Basis of Preparation
 - Does the Basis of Preparation agree with the measurement principles in AASB S2?
 - Does the Basis of Preparation agree with the measurement principles in the GHG Protocol, to the extent that it does not conflict with AASB S2?
 - Does the Basis of Preparation agree with the measurement principles in NGER, to the extent that it does not conflict with AASB S2?
3. Review the client's reconciliation of the activity data (e.g. petrol and electricity usage) to the client's general ledger
4. Review the actual calculation of the GHG emissions
 - Consider whether the appropriate emission factors have been used
 - Check the mathematical accuracy and completeness of the calculation

**The biggest
risk is the
completeness
of the activity
data!**

**Reconcile the
activity data
to the GL!**



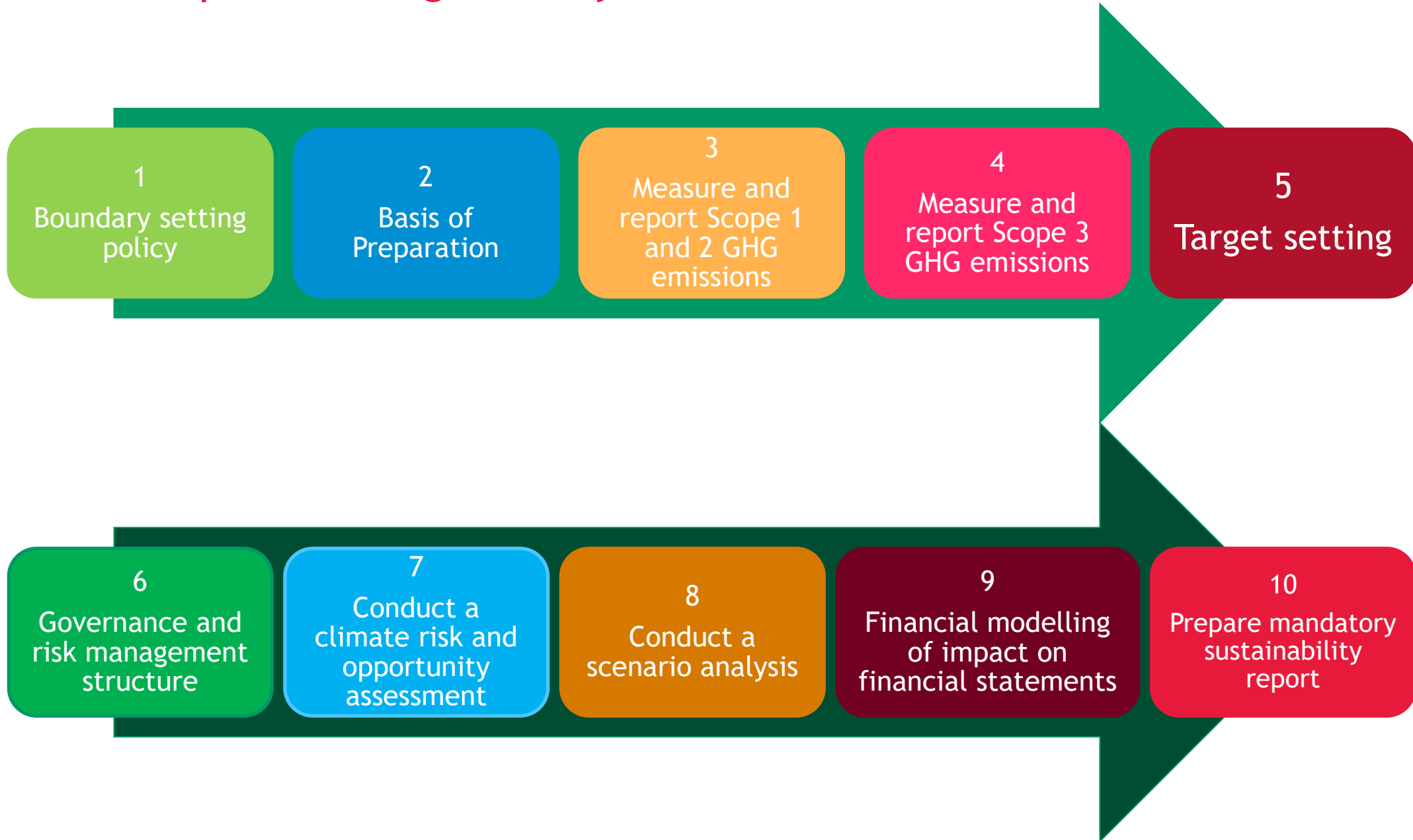


How BDO can help

Best practice roadmap - Group 1 entities

PROJECT STREAMS			Financial year ending on 31 December 2025 or 30 June 2026	Financial year ending on 31 December 2026 or 30 June 2027
1	COMPLIANCE FOCUS: Carbon Footprint Measurement	Scope 1 and 2 emissions	Mandatory calculation and reporting of Scope 1 and 2 GHG emissions, subject to assurance: <ol style="list-style-type: none"> 1. Set carbon inventory boundary 2. Develop a Basis of Preparation (carbon accounting methodology) 3. Measure and report Scope 1 and Scope 2 GHG emissions 	
		Scope 3 emissions	<ol style="list-style-type: none"> 4. Initial measurement (significant estimation) and report internally Scope 3 GHG emissions 5. Set targets in relation to scope 1, 2 and 3 	Mandatory calculation and external reporting of Scope 3 GHG emissions
2	COMPLIANCE FOCUS: Climate-related disclosures	AASB S2 (Mandatory)	Mandatory reporting of all AASB S2 disclosures: <ol style="list-style-type: none"> 6. Establish or improve appropriate governance and risk management structure 7. Conduct a climate risk and opportunity assessment 8. Prepare a scenario analysis 9. Financial modelling of impact on financial statements 10. Prepare first mandatory sustainability report, including a materiality assessment 	Ongoing mandatory reporting of all AASB S2 disclosures
3	STRATEGIC FOCUS: General sustainability-related disclosures	AASB S1 (Voluntary)	<u>Activate sustainability strategy</u> <ul style="list-style-type: none"> • Step 1 - Current state assessment • Step 2 - Materiality assessment (stakeholder engagement) • Step 3 - Identify gaps • Step 4 - Commit and measure to address gap identified • Step 5 - Prepare separate voluntary sustainability report 	

Iterative process to get ready for AASB S2



Register for our 2026 monthly Sustainability webinars

[Register here](#)

Sustainability reporting in 2026: What's changing and what's expected

[Watch](#)

Making the case: Why sustainability should matter to CEOs and Boards
25 February

AASB S2 explained: Climate science meets policy
25 March

Strengthening governance for climate risk and sustainability
29 April

Mandatory climate reporting: Lessons from year one
27 May

Climate risk assessment: What it is and why it matters
24 June

How to conduct a climate risk assessment
29 July

Scenario analysis in practice: Using public data for qualitative and quantitative insights
26 August

Financial modelling for climate risk and opportunity
30 September

Setting metrics and targets that matter
28 October

Decarbonisation: Strategies that drive real change
25 November

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Measuring your organisation's carbon footprint is essential in developing its sustainability roadmap. Join us for this one-day masterclass, where we'll combine theoretical knowledge with case studies and practical experience.

Dates and details

Cost: \$650 (including GST) per person

CPD: Certificate supplied post-completion. Participants are to determine the relevance and amount of time this workshop counts towards their CPD.

Wednesday 13 May 2026
Wednesday 9 September 2026
Wednesday 11 November 2026
9:00am - 5:00pm Melbourne time

[Register now](#)

Previous participant feedback

"...it was brilliant and the best money I have ever spent on knowledge development. I am so grateful that I was able to be at your masterclass. I now get carbon accounting thanks to you".



Carbon Accounting Masterclass Alumni

Dates and details

Cost: Complimentary

CPD: Certificate supplied post-completion. Participants are to determine the relevance and amount of time this workshop counts towards their CPD.

Monday 11 May 2026
Monday 10 August 2026
Monday 9 November 2026

12:00pm - 2:00pm Melbourne time



FINANCIAL REVIEW SUSTAINABILITY LEADERS

PRESENTED BY



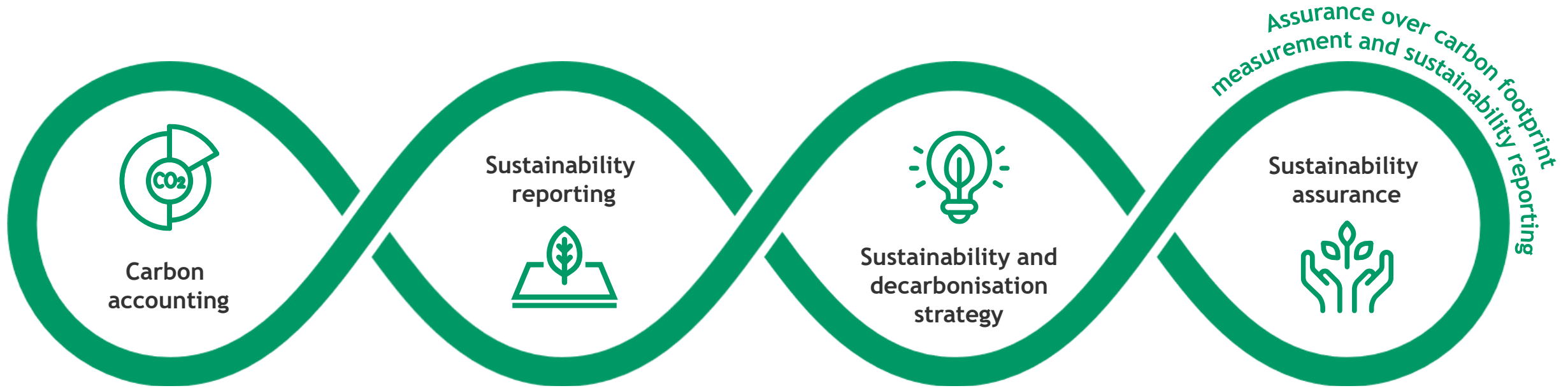
BDO has partnered with the Australian Financial Review as the Presenting and Methodology Partner for the 2026/2027 Sustainability Leaders Program, recognising organisations delivering measurable sustainability impact.

[Find out more about the program](#), BDO's role, and whether your organisation could be a strong entrant.

The screenshot shows the landing page for the Financial Review Sustainability Leaders program. At the top, the logo reads "FINANCIAL REVIEW SUSTAINABILITY LEADERS" with "PRESENTED BY BDO" below it. A navigation menu includes "HOME", "WHY ENTER?", "THE PROCESS", "METHODOLOGY", "FAQ", and a "VISIT AFR.COM" button. The main banner features a textured background with green abstract shapes and the headline "Defining Australia's sustainable future". Below the banner, there are two paragraphs of text: the first describes the program's goal to celebrate organizations with measurable sustainability impact, and the second invites Australasian organizations to share their sustainability innovation. A "Nominations for the 2026 list are opening soon." notice is present. At the bottom of the main content area, there are two buttons: "VIEW ENTRY KIT" and "VISIT AFR.COM". The footer contains copyright information for 2026 The Australian Financial Review and links for "Privacy Policy", "Terms and Conditions", "Contact Us", and "Join Mailing List".

Core sustainability services

A continuous improvement journey



BDO's core sustainability services

Advisory services



Carbon footprint measurement

- Carbon accounting (GHG Protocol)
- Baseline measurements and benchmarking
- Target development (e.g. Science Based Target initiative (SBTi))



Sustainability reporting

1. Mandatory reporting in the annual report:
 - TCFD and IFRS S2 readiness
 - IFRS S1 readiness.
2. Voluntary reporting in separate sustainability reports (e.g. GRI, WEF IBC)



Sustainability and decarbonisation strategy

- Current state assessment (ESG health check)
- Materiality assessment
- ESG risk and opportunity assessment
- Sustainability or decarbonisation strategy development
- ESG priorities and targets identification and communication
- Sustainability roadmap development
- Organisational transformation

Assurance services



Assurance

Third-party assurance over mandatory and voluntary sustainability reporting.

This also includes:

- NGER audits
- Carbon credit audits and certification assurance
- Second-party opinion on sustainable finance products.

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