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Product Carbon Footprint
กับการบริหารจัดการ Scope 3 ของ CFO

Live webinar

บรรยายโดย

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สถาบันมาตรฐานอังกฤษ (BSI)

Introduction

What is Carbon Footprint?

Definition of carbon footprint

The sum of greenhouse gas emissions and removal, expressed in CO2 equivalent (CO2e)

ผลรวมของการปล่อยก๊าซเรือนกระจกและการดูดกลับก๊าซเรือนกระจก แสดงในหน่วยเทียบเท่า CO_2 (CO_2e)

คาร์บอนฟุตพริ้นท์องค์กร
(Carbon footprint Organization: CFO)

The sum of the organization's greenhouse gas emissions and removal

ผลรวมของการปล่อยก๊าซเรือนกระจกและการดูดกลับก๊าซเรือนกระจกขององค์กร (CO_2e)

คาร์บอนฟุตพริ้นท์ผลิตภัณฑ์
(Carbon footprint Product: CFP)

The sum of the product's greenhouse gas emissions and removal

ผลรวมของการปล่อยก๊าซเรือนกระจกและการดูดกลับก๊าซเรือนกระจกของผลิตภัณฑ์ (CO_2e)

Overview of Carbon Footprint

Key Standards

คาร์บอนฟุตพริ้นท์องค์กร (Carbon footprint Organization: CFO)

ISO14064-1

The GHG Protocol Corporate Accounting and Reporting Standard

ข้อกำหนดในการคำนวณและรายงานคาร์บอนฟุตพริ้นต์ขององค์กร (องค์การบริหารจัดการก๊าซเรือนกระจก)

คาร์บอนฟุตพริ้นท์ผลิตภัณฑ์ (Carbon footprint Product: CFP)

ISO14067

The Product Life Cycle Accounting and Reporting Standard (GHG protocol)

ข้อกำหนดและแนวทางการคำนวณคาร์บอนฟุตพริ้นต์ของผลิตภัณฑ์ (องค์การบริหารจัดการก๊าซเรือนกระจก)

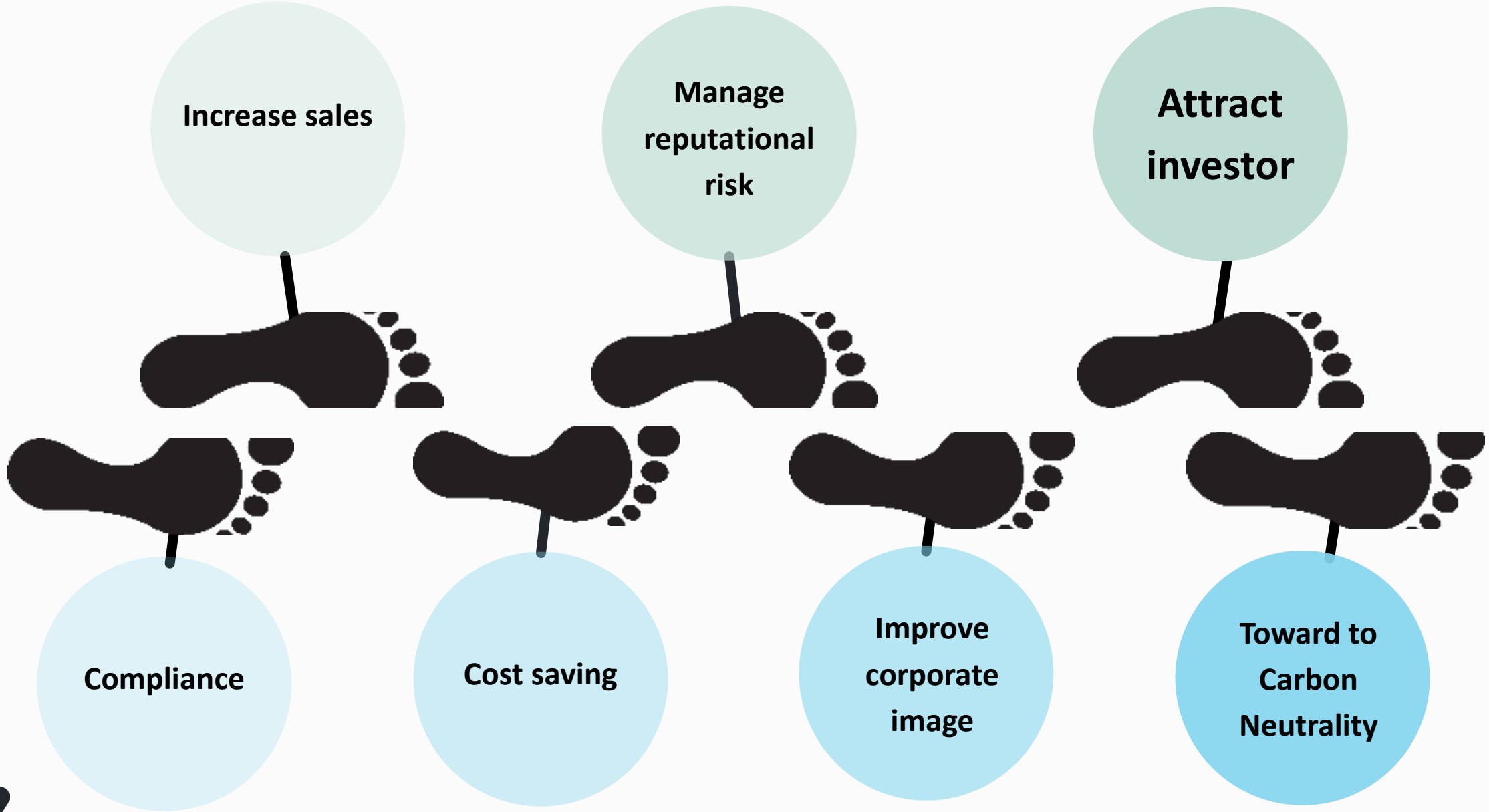
Importance in climate action and sustainability

Why we need carbon footprint ?

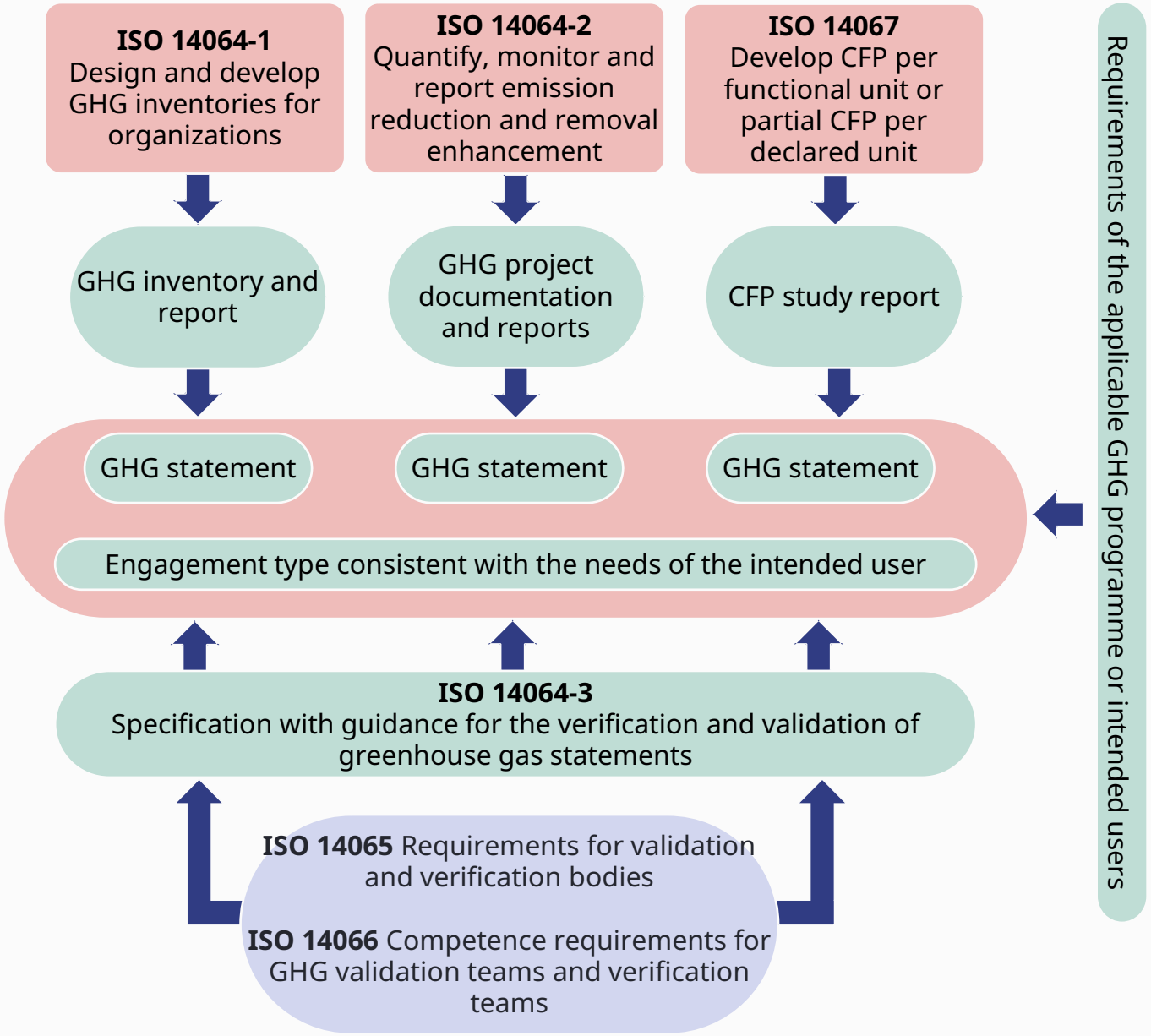
Manage carbon emissions risks and identify areas for improvement

Improve efficiency and reduce costs with reduced energy consumption.

Build credibility by demonstrating environmental responsibility



Relationship of ISO 14060



Why Focus on Product Carbon Footprint (PCF) & Scope 3 Emissions?

Major Contribution to Total Emissions

- Scope 3 emissions often represent over 70% of a company’s total carbon footprint.
- PCF accounts for a product's full life-cycle impact, making it essential for sustainability.

Regulatory & Market Pressures

- Increasing regulations (e.g., CSRD, SEC climate disclosure rules).
- Customers and investors demand transparency in supply chain emissions.

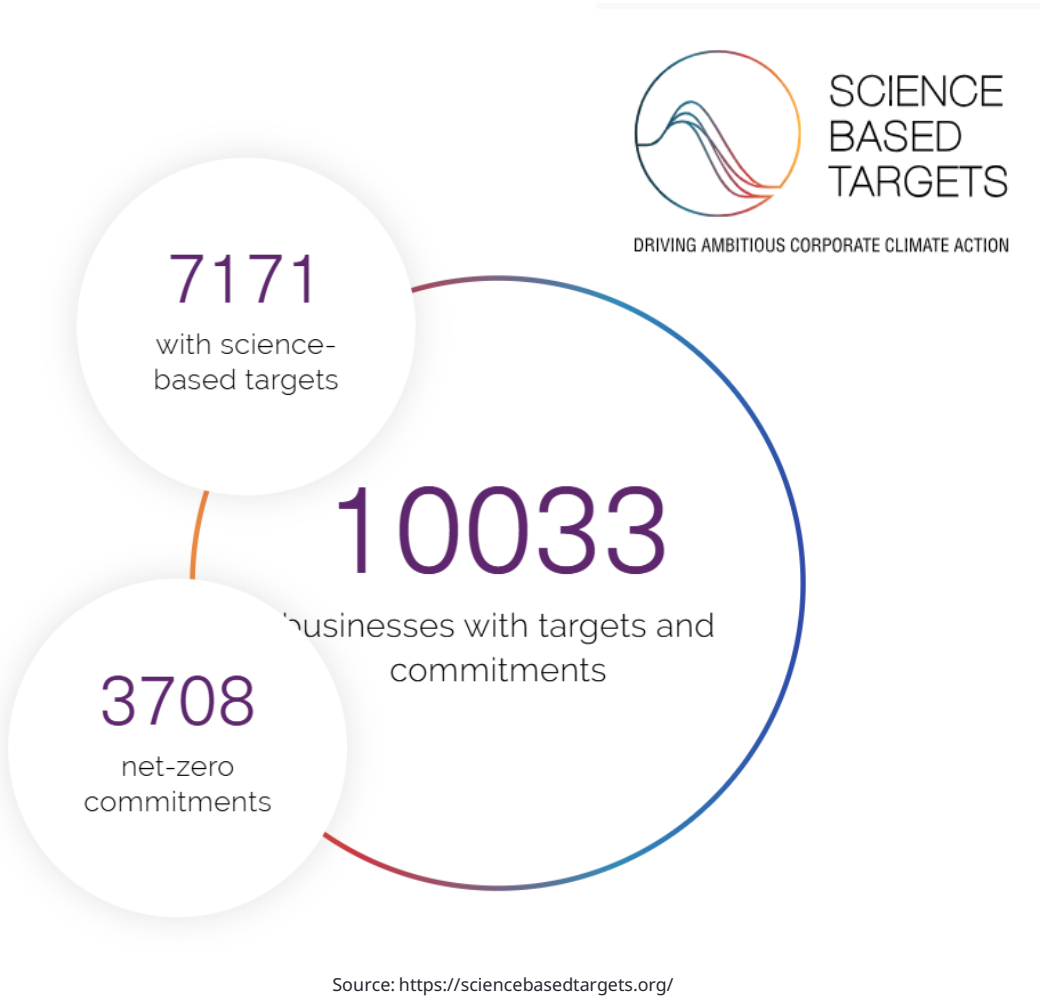
Why Focus on Product Carbon Footprint (PCF) & Scope 3 Emissions?

Cost Reduction & Efficiency Gains

- Identifying and reducing Scope 3 emissions can lead to lower energy and material costs.
- Improves operational efficiency and competitiveness.

Sustainability & Net-Zero Commitments

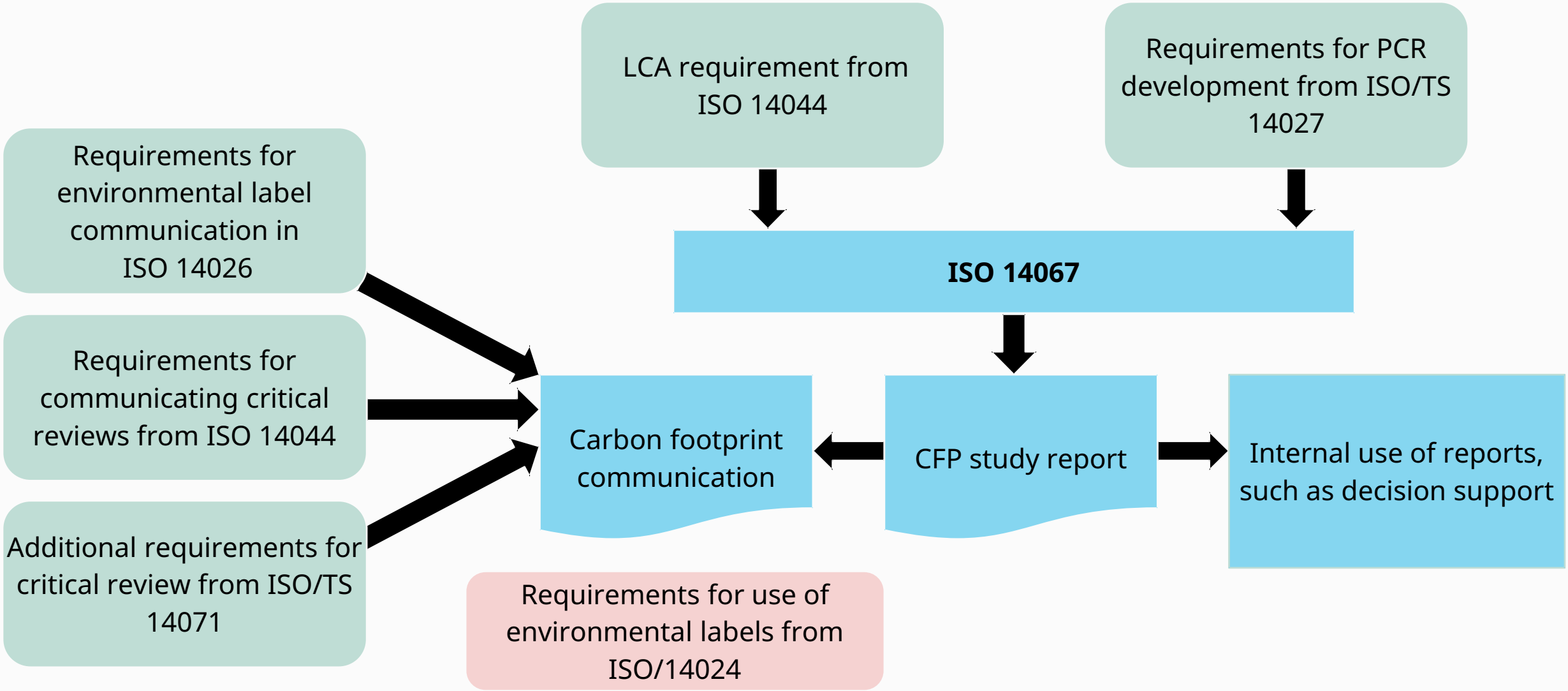
- Companies setting Science-Based Targets (SBTi) need tc manage Scope 3 emissions.
- Reducing PCF helps align with climate goals and sustainability reporting.



Source: https://sciencebasedtargets.org/

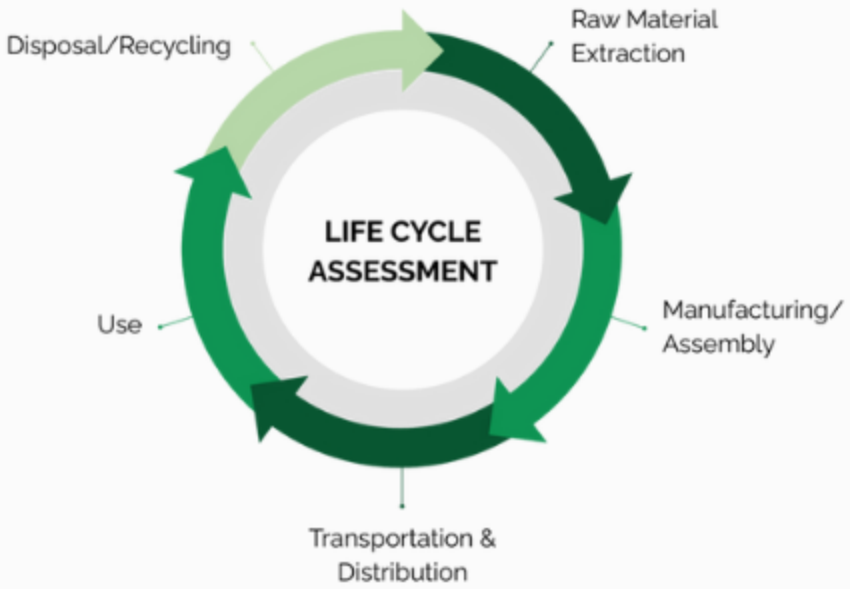
Understanding Product Carbon Footprint (PCF)

Relationship between ISO 14067 and standards outside the Greenhouse Gas Management family

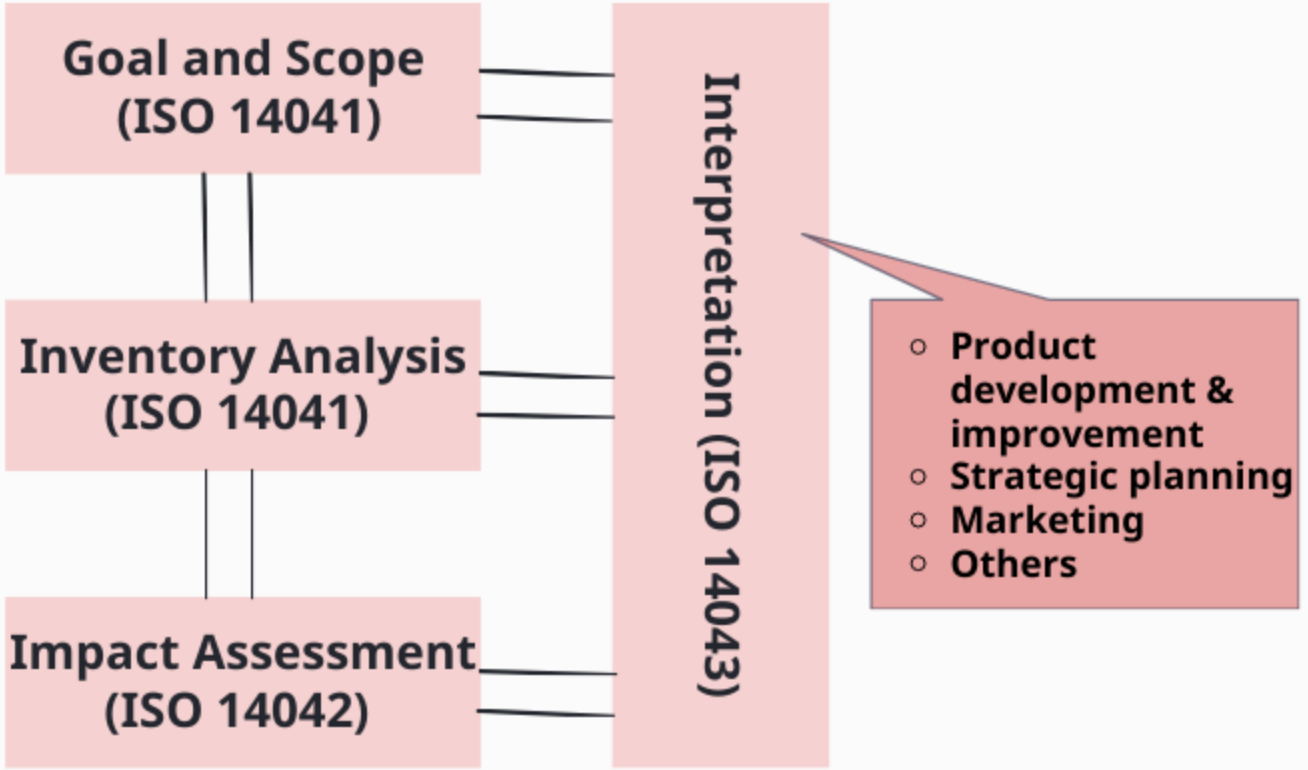


Four Phases of LCA

LCA คือการประเมินผลกระทบต่อสิ่งแวดล้อมที่เกิดขึ้นตลอดวัฏจักรชีวิต ตั้งแต่แหล่งที่มาของวัตถุดิบจนถึงสิ้นอายุการใช้งานของผลิตภัณฑ์



https://stich.culturalheritage.org/life-cycle-assessment-explained/



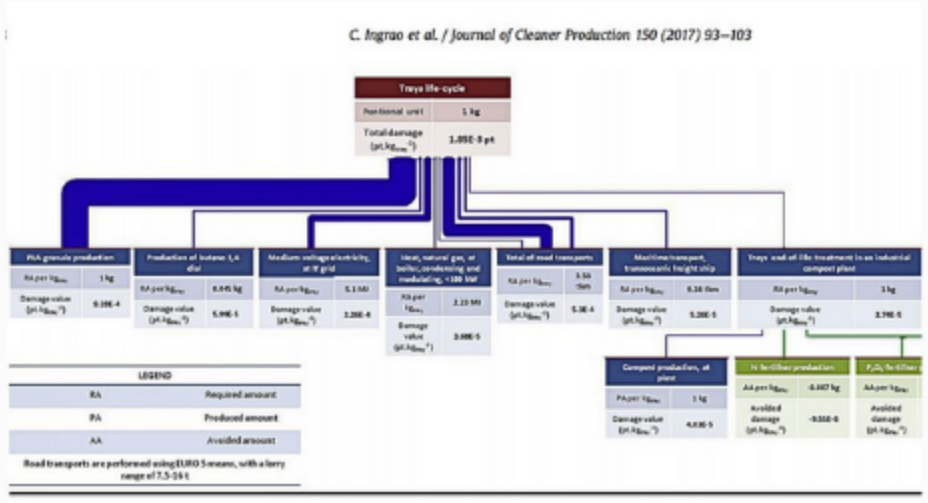
Available at : www. Afnor.fr

Goal and Scope definition (การกำหนดเป้าหมายและขอบเขต)

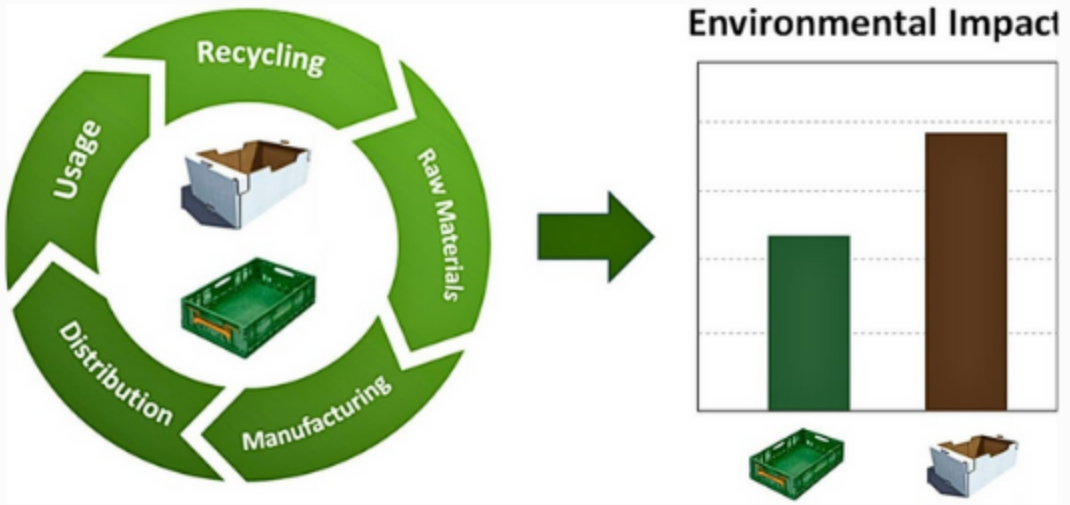
วัตถุประสงค์ของการศึกษา LCA

เป้าหมายของการประยุกต์ใช้ LCA ควรมีการกำหนดไว้อย่างชัดเจนตั้งแต่เริ่มต้น เนื่องจากเป้าหมาย
ดังกล่าวมีอิทธิพลอย่างมีนัยสำคัญต่อขั้นตอนต่อไป

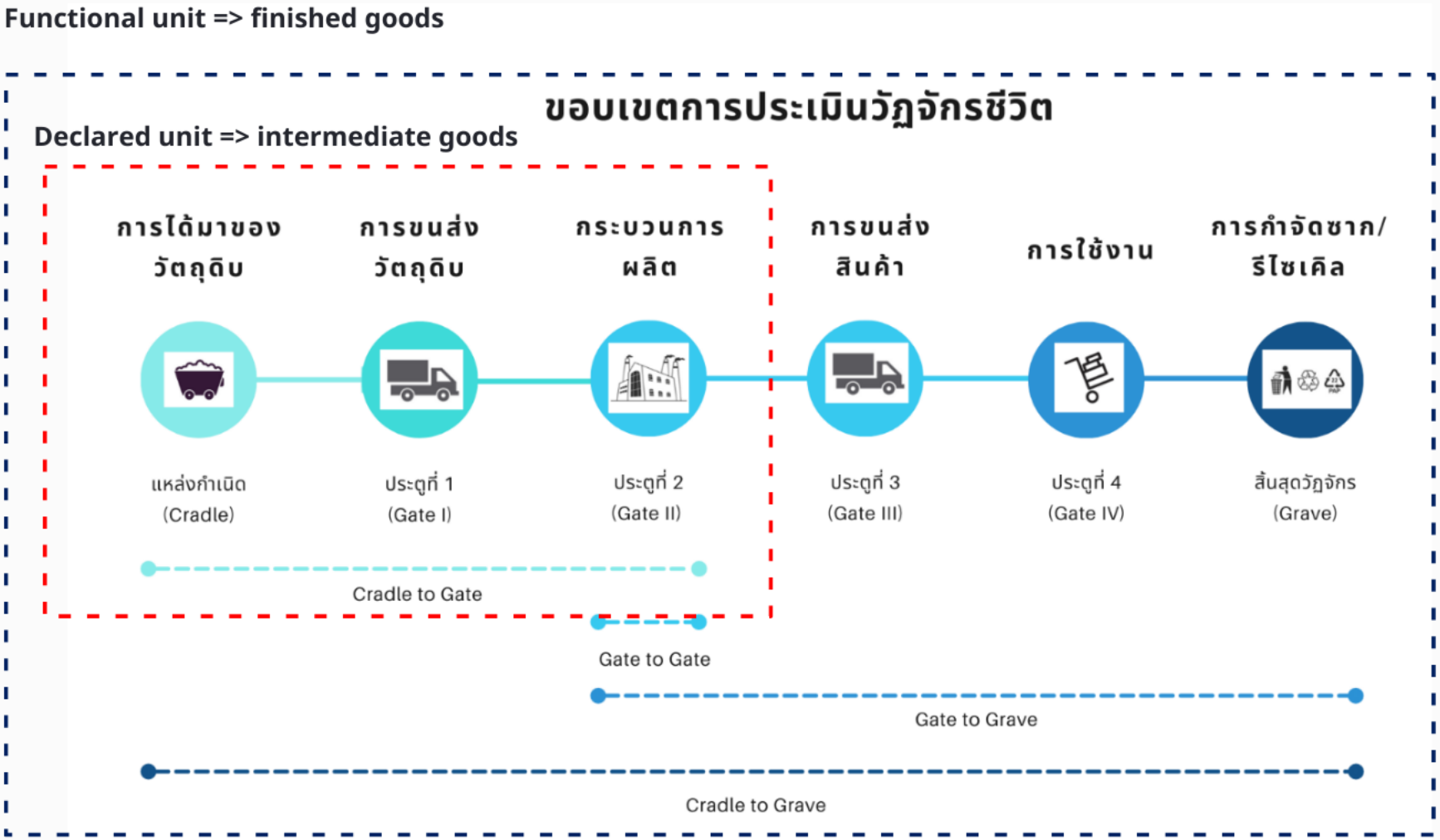
การระบุ ENV Hotspot เพื่อเป็นแนวทางสำหรับการปรับปรุงในอนาคต



การเปรียบเทียบผลกระทบต่อสิ่งแวดล้อมของผลิตภัณฑ์เพื่อเป็นแนวทางในการตัดสินใจ

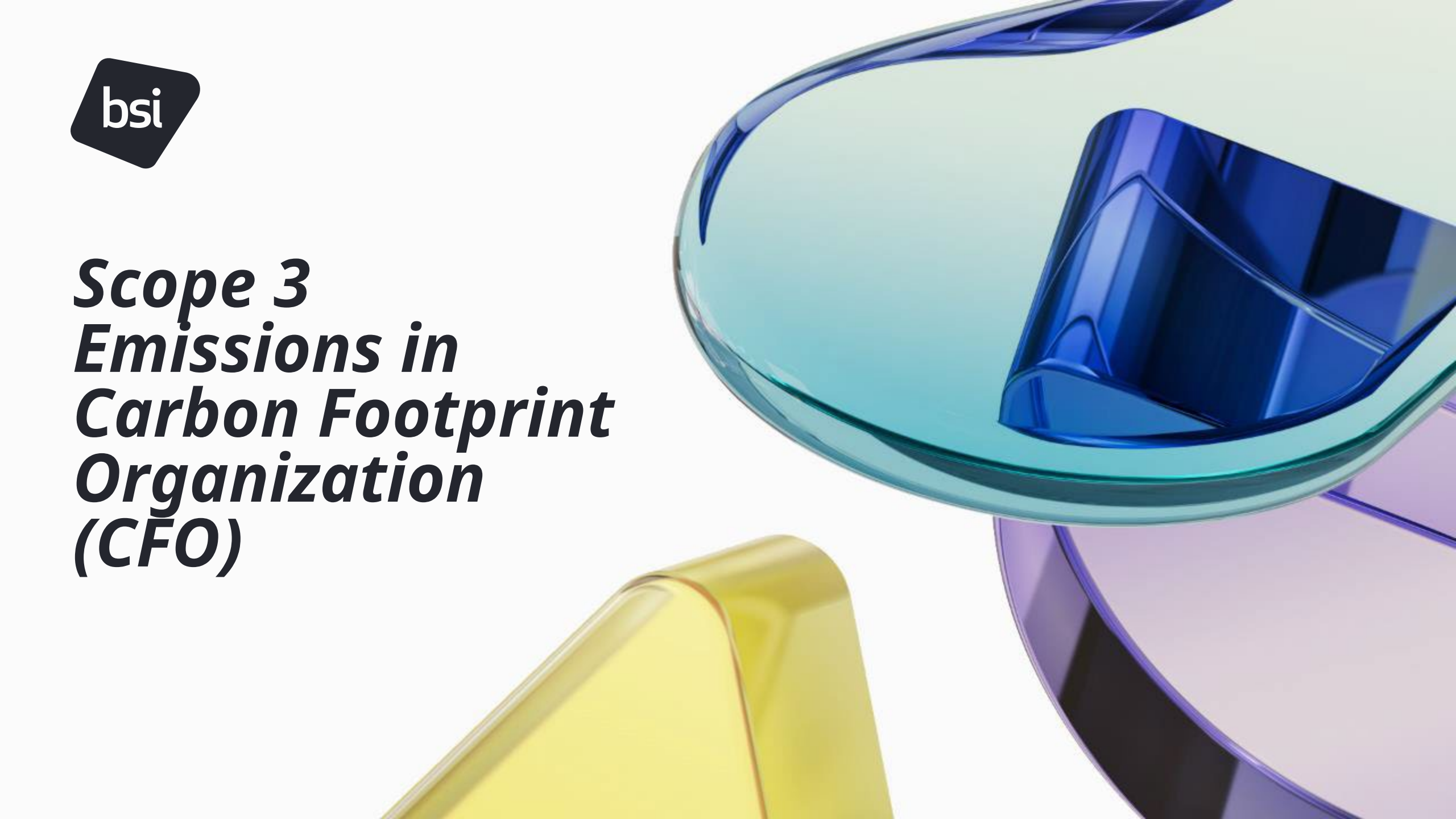


การกำหนดขอบเขตระบบ



- Data
  - What is needed?
  - Primary VS secondary
- Availability
- Assumption
- Geography
  - Location
  - Geographical differences
- Time
  - Product lifetime
  - Technology advancements

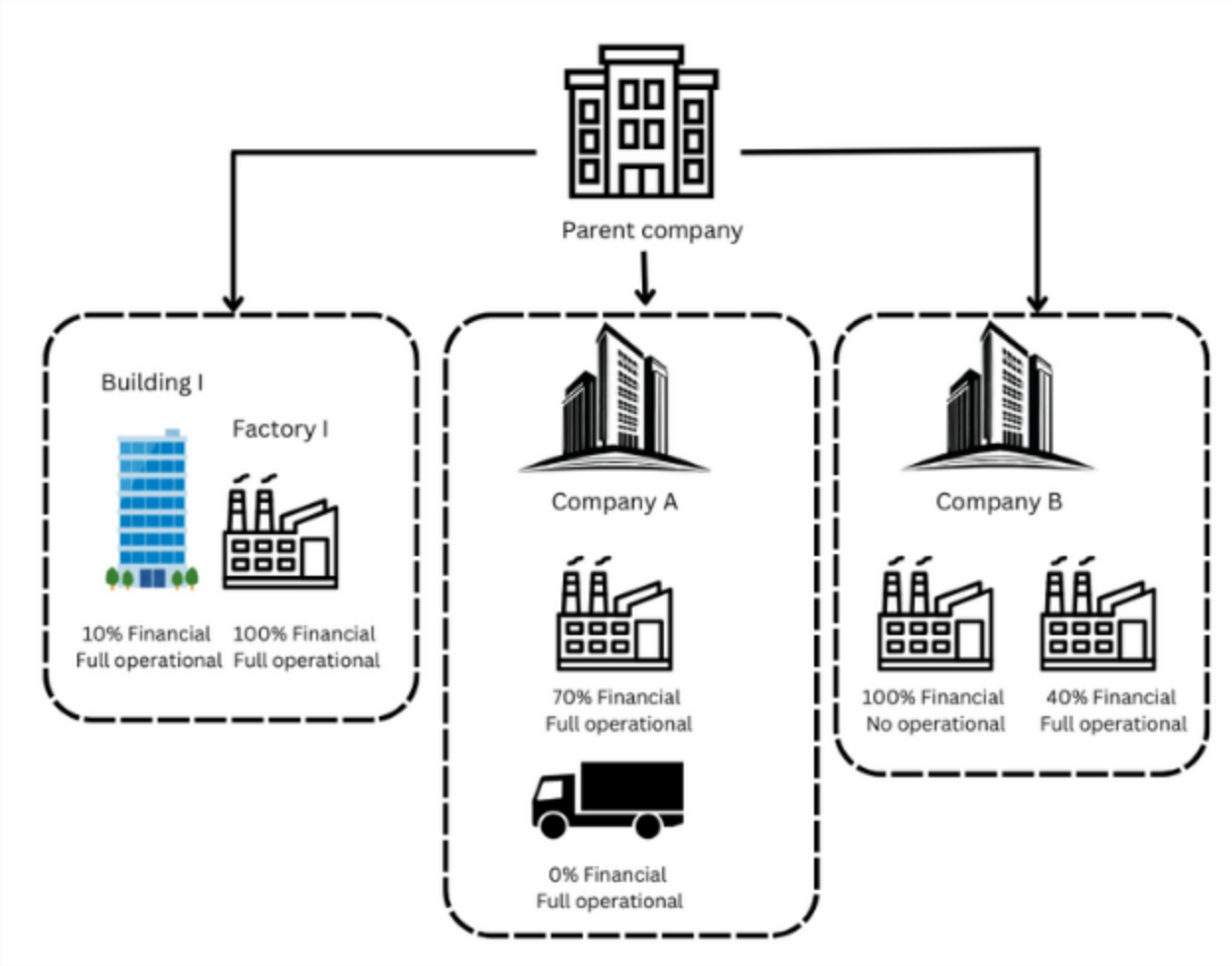
Scope 3 Emissions in Carbon Footprint Organization (CFO)



Carbon Footprint Organization

Principles – Clause 4

- Relevance
- Completeness
- Consistency
- Accuracy
- Transparency



Clause 5.1 – Defining the Scope of the Organization

- Scope definition is divided into two types:
  - Control approach
    - Financial and operational controls
  - Equity share

ISO Net Zero Guidelines Case Study Report: Reframing Net Zero as a Journey

Scope of GHG reporting

- **SCOPE I:** direct greenhouse gas (GHG) emissions from sources **that are owned or controlled by an organization**. These emissions come from activities that directly burn fossil fuels or release GHGs on-site.
- **SCOPE II:** indirect greenhouse gas (GHG) emissions from the purchase of electricity, steam, heating, or cooling that an organization consumes. **These emissions occur at the facility where the energy is generated**, but they are accounted for **by the organization using the energy**.
- **SCOPE III:** all other indirect greenhouse gas (GHG) emissions that occur in **the value chain of an organization**, both upstream and downstream. **These emissions are not owned or controlled by the company** but are a result of its activities.

ISO Net Zero Guidelines Case Study Report: Reframing Net Zero as a Journey

Calculation of GHG emissions

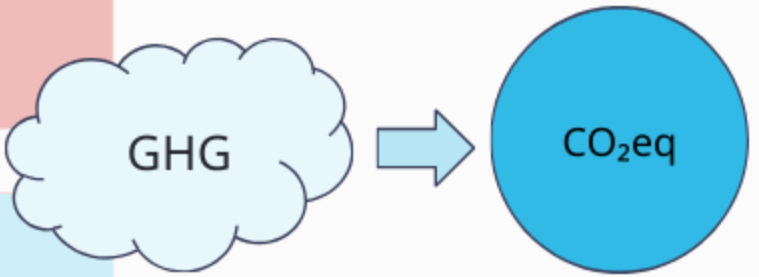
Activity Data : ข้อมูลกิจกรรม

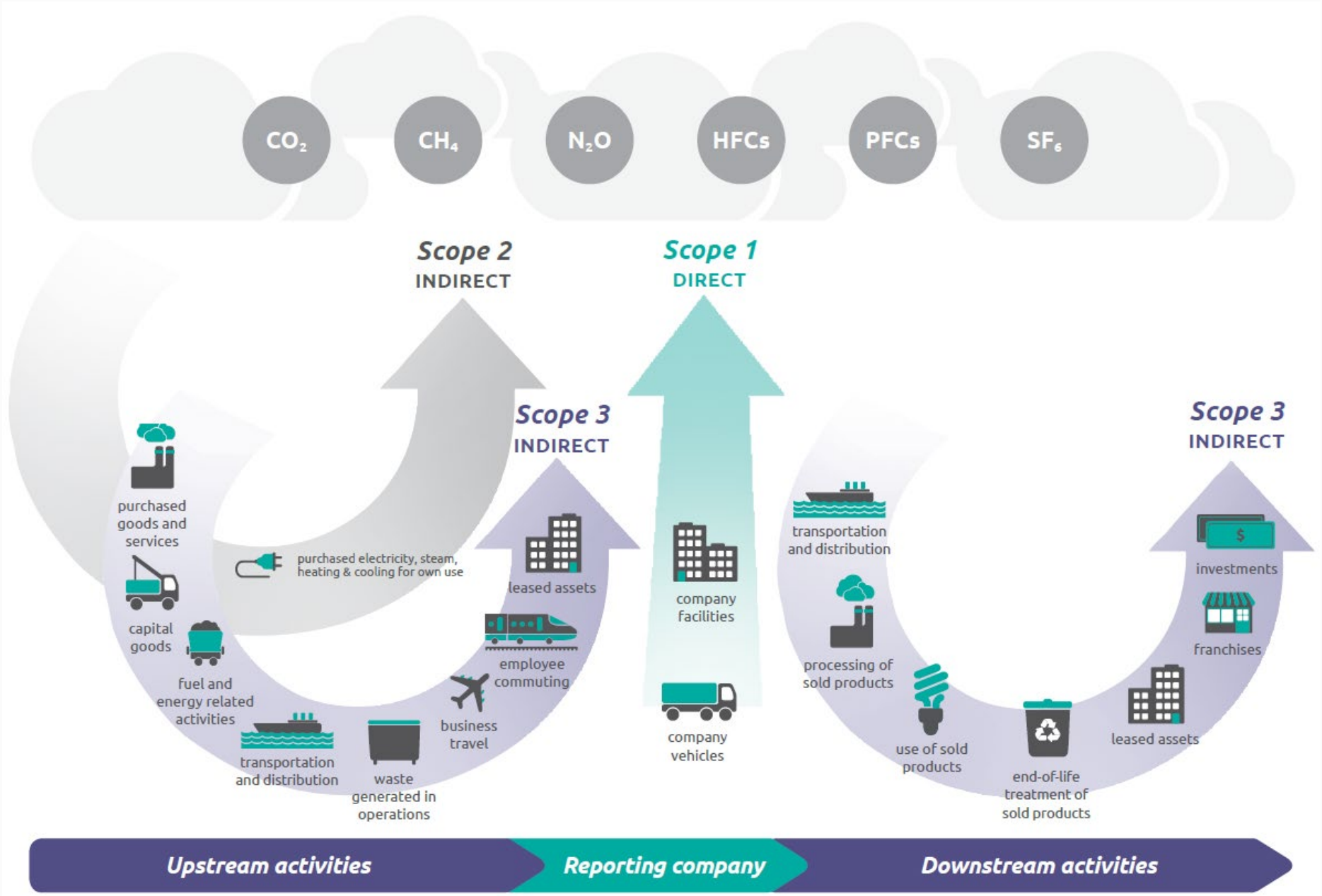
Emission factor : ค่าการปล่อยก๊าซเรือนกระจก

Global warming potential (GWP) : ค่าศักยภาพก่อให้เกิดภาวะโลกร้อน

Activity Data x Emission factor x GWP = GHG emission (CO_2eq)

แปลงข้อมูลกิจกรรมให้เป็นปริมาณการปล่อยก๊าซเรือนกระจก





Source: GHG protocol guideline

Classified indirect emission for Scope 3

Other indirect GHG emission

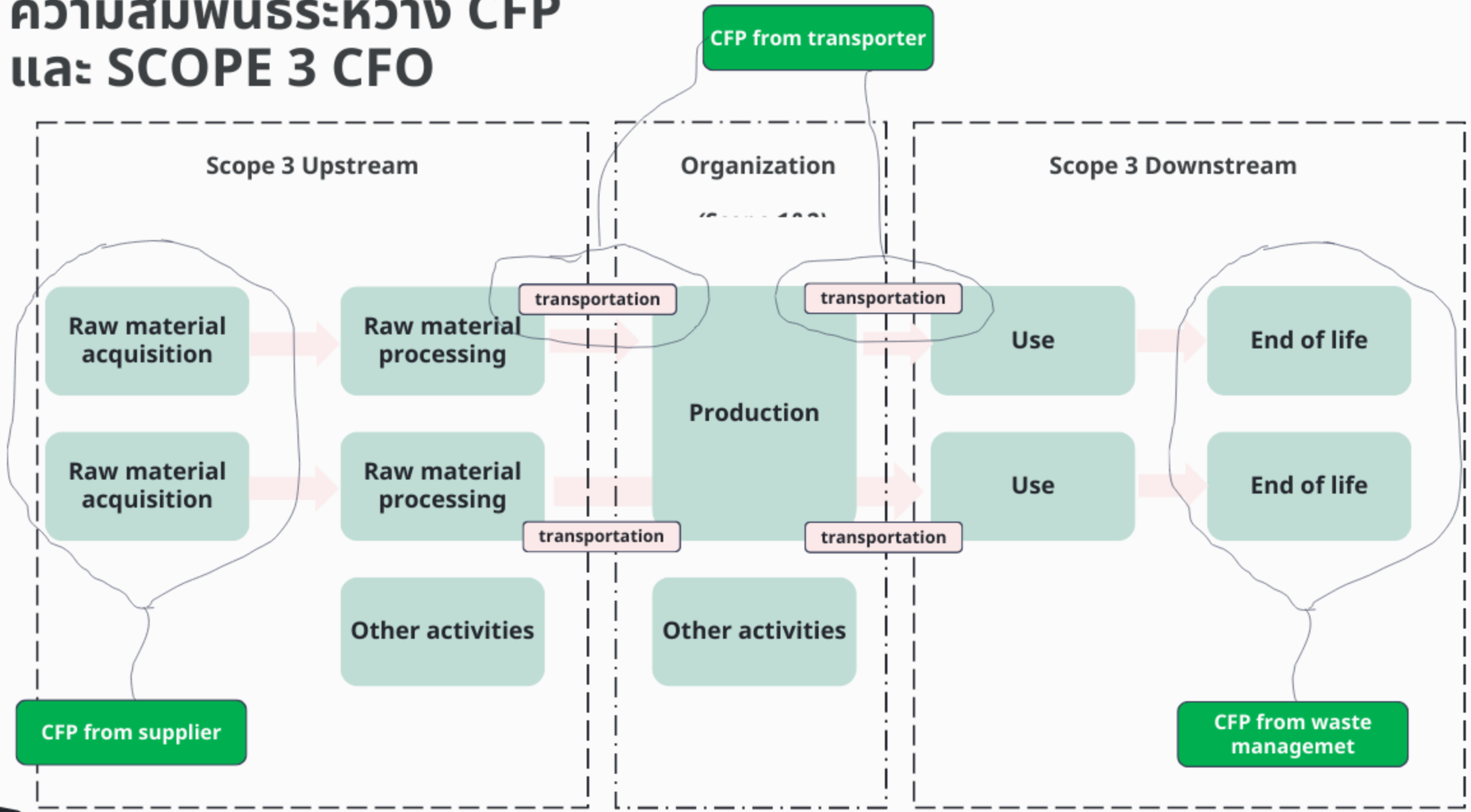
Upstream

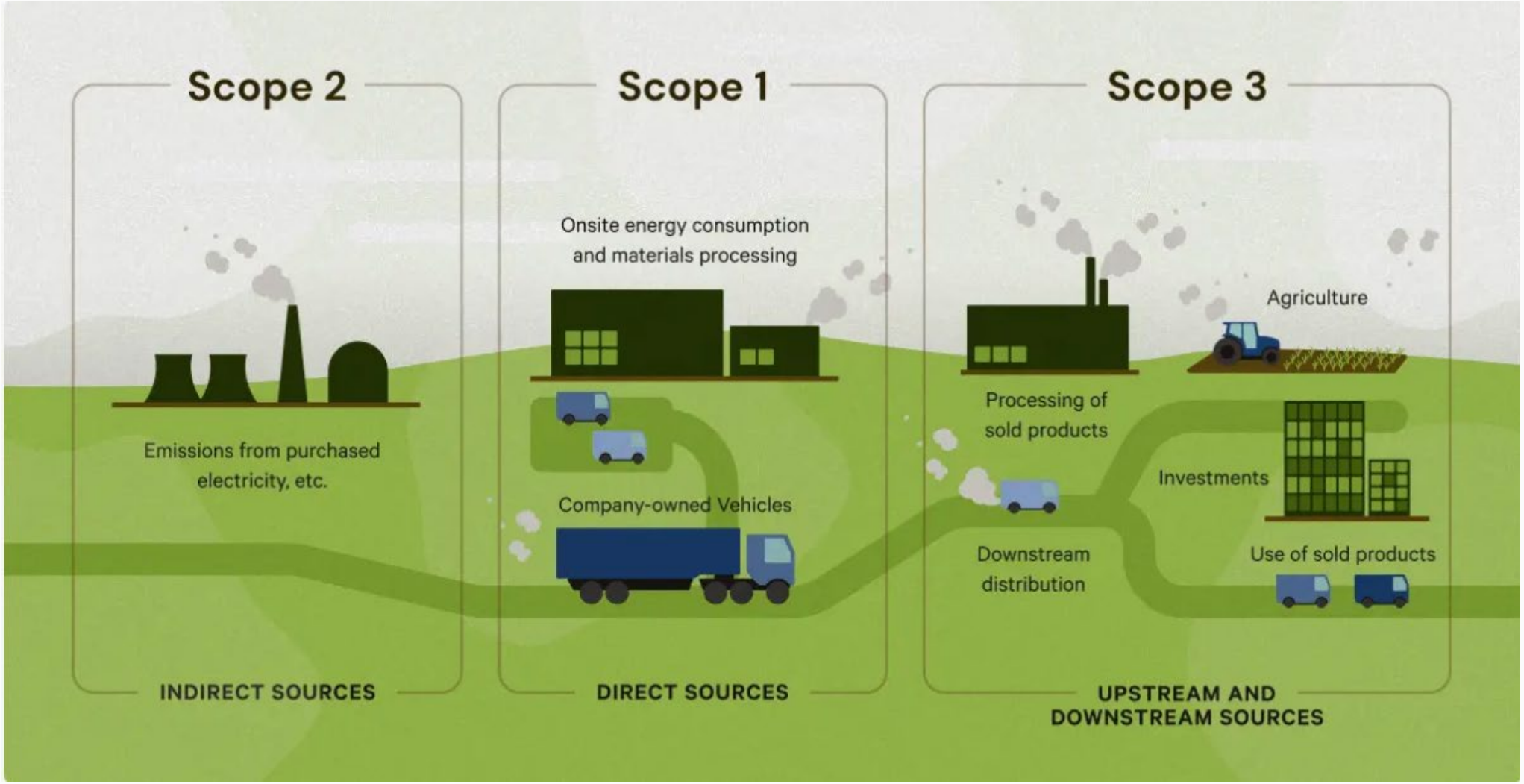
- Purchased goods and services
- Capital goods
- Fuel and energy related activities (not included in scope 1 or scope 2)
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased asset

Downstream

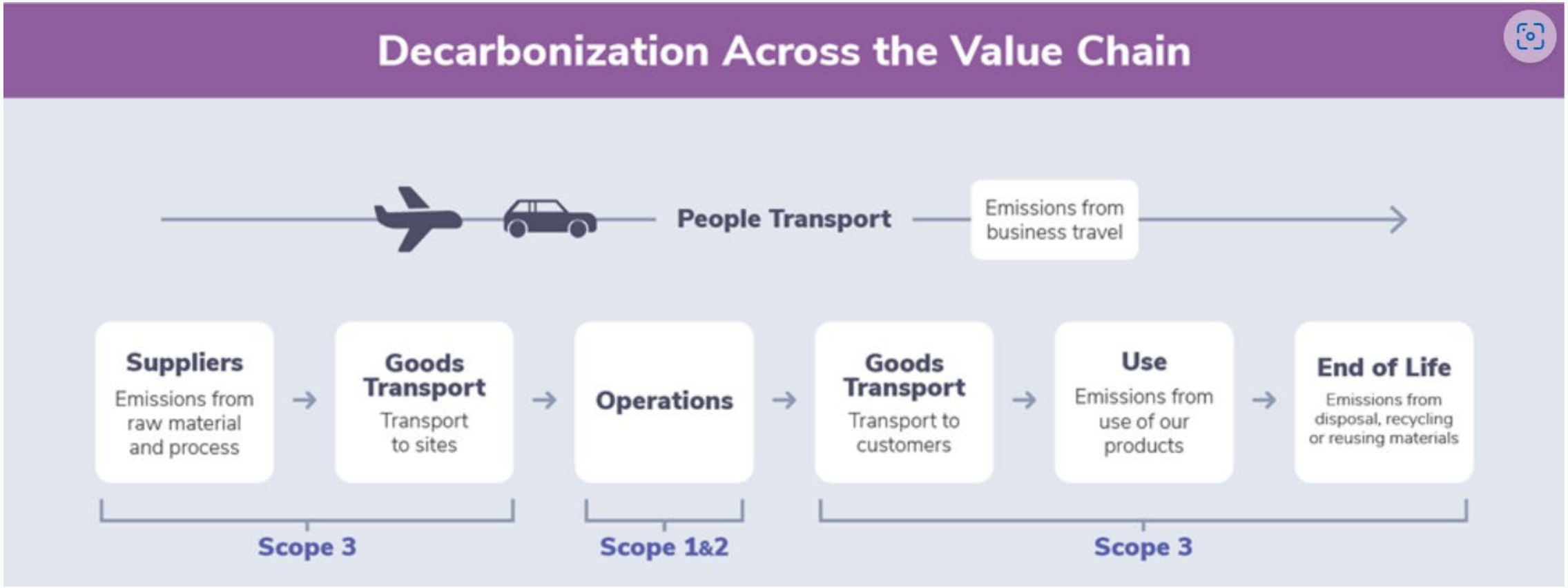
- Downstream transportation and distribution
- Processing of sold products
- Uses of sold products
- End-of-life treatment of sold products
- Downstream leased asset
- Franchises
- Investments

ความสัมพันธ์ระหว่าง CFP และ SCOPE 3 CFO





Source: https://www.regrow.ag/post/scope-3-in-the-spotlight-of-climate-action



Source: https://www.esgtoday.com/guest-post-four-steps-to-calculate-and-report-scope-3-emissions/

Business goals of a scope 3 inventory

Before accounting for scope 3 emissions, companies should consider which business goal or goals they intend to achieve.

Business goal	*Description*
Identify and understand risks and opportunities associated with value chain emissions	• Identify GHG-related risks in the value chain • Identify new market opportunities • Inform investment and procurement decisions
Identify GHG reduction opportunities, set reduction targets, and track performance	• Identify GHG "hot spots" and prioritize reduction efforts across the value chain • Set scope 3 GHG reduction targets • Quantify and report GHG performance over time
Engage value chain partners in GHG management	• Partner with suppliers, customers, and other companies in the value chain to achieve GHG reductions • Expand GHG accountability, transparency, and management in the supply chain • Enable greater transparency on companies' efforts to engage suppliers • Reduce energy use, costs, and risks in the supply chain and avoid future costs related to energy and emissions • Reduce costs through improved supply chain efficiency and reduction of material, resource, and energy use
Enhance stakeholder information and corporate reputation through public reporting	• Improve corporate reputation and accountability through public disclosure • Meet needs of stakeholders (e.g., investors, customers, civil society, governments), enhance stakeholder reputation, and improve stakeholder relationships through public disclosure of GHG emissions, progress toward GHG targets, and demonstration of environmental stewardship • Participate in government- and NGO-led GHG reporting and management programs to disclose GHG-related information

Source: https://ghgprotocol.org/scope-3-calculation-guidance-2

Identify and understand risks and opportunities associated with value chain emissions

- GHG emissions from corporate activities are increasingly becoming a mainstream management issue for businesses.
- Potential liabilities from GHG exposure arise from unstable resource and energy costs, future resource scarcity, environmental regulations, changing consumer preferences, scrutiny from investors and shareholders, as well as reputational risk from other stakeholders.

Type of risk	*Examples*
Regulatory	GHG emissions-reduction laws or regulations introduced or pending in regions where the company, its suppliers, or its customers operate
Supply chain costs and reliability	Suppliers passing higher energy- or emissions-related costs to customers; supply chain business interruption risk
Product and technology	Decreased demand for products with relatively high GHG emissions; increased demand for competitors' products with lower emissions
Litigation	GHG-related lawsuits directed at the company or an entity in the value chain
Reputation	Consumer backlash, stakeholder backlash, or negative media coverage about a company, its activities, or entities in the value chain based on GHG management practices, emissions in the value chain, etc.

Source: Source: Source: https://ghgprotocol.org/scope-3-calculation-guidance-2

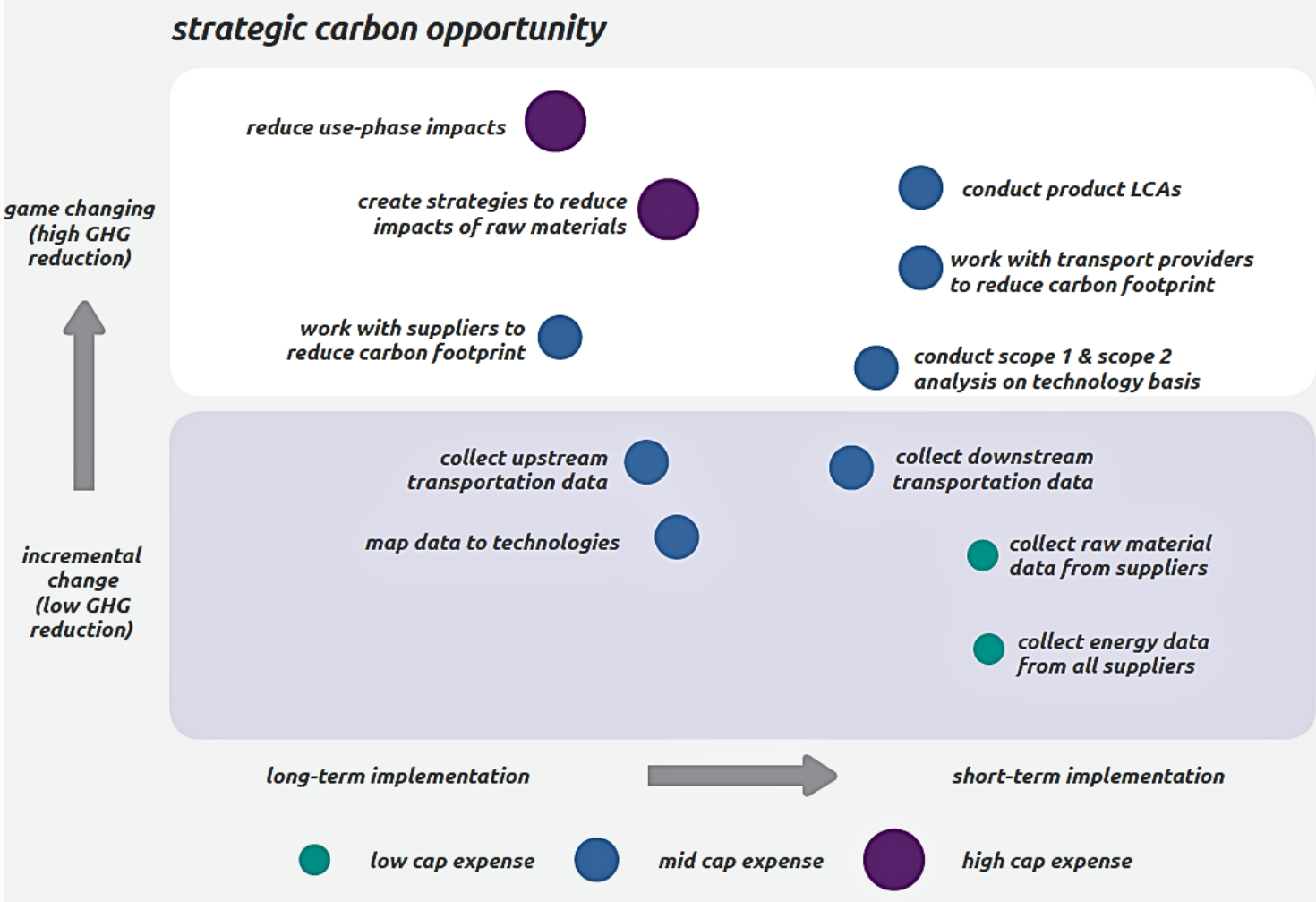
Identify GHG reduction opportunities, set reduction targets, and track performance

Companies can also use the results of the scope 3 inventory to identify new market opportunities for producing and selling goods and services with lower GHG emissions.

Type of opportunity	*Examples*
Efficiency and cost savings	A reduction in GHG emissions often corresponds to decreased costs and an increase in companies' operational efficiency.
Drive innovation	A comprehensive approach to GHG management provides new incentives for innovation in supply chain management and product design.
Increase sales and customer loyalty	Low-emissions goods and services are increasingly more valuable to consumers, and demand will continue to grow for new products that demonstrably reduce emissions throughout the value chain.
Improve stakeholder relations	Improve stakeholder relationships through proactive disclosure and demonstration of environmental stewardship. Examples include demonstrating fiduciary responsibility to shareholders, informing regulators, building trust in the community, improving relationships with customers and suppliers, and increasing employee morale.
Company differentiation	External parties (e.g. customers, investors, regulators, shareholders, and others) are increasingly interested in documented emissions reductions. A scope 3 inventory is a best practice that can differentiate companies in an increasingly environmentally-conscious marketplace.

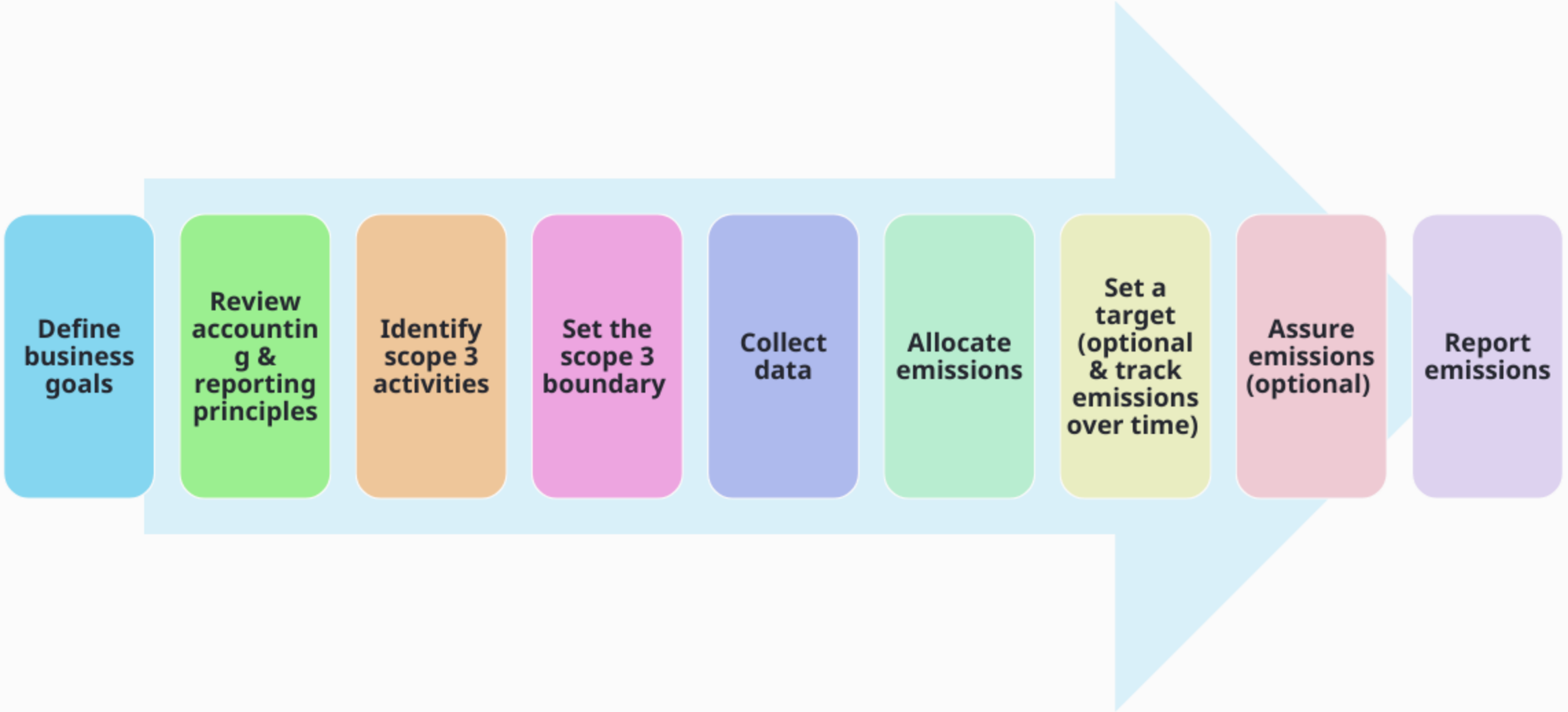
Source: Source: https://ghgprotocol.org/scope-3-calculation-guidance-2

SC Johnson: Assessing scope 3 reduction opportunities



Source: https://ghgprotocol.org/scope-3-calculation-guidance-2

Summary of Steps and Requirements



Source: Adapted from https://ghgprotocol.org/scope-3-calculation-guidance-2

“Managing and Reducing Scope 3 Emissions

Challenges in Scope 3 Management

Data availability and accuracy:

[illegible]

Supply chain complexity:

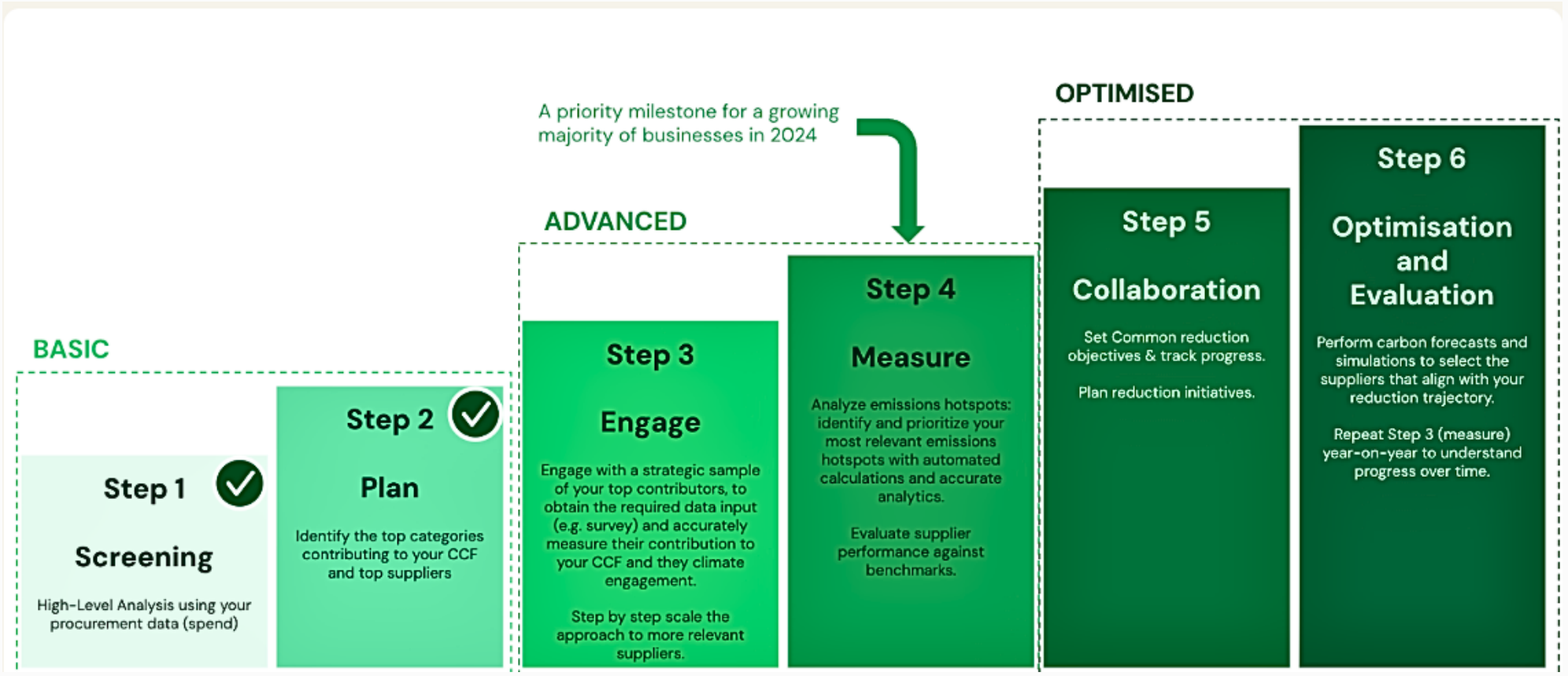
[illegible]

Lack of control over external emissions:

[illegible]

Strategies for Scope 3 Reduction

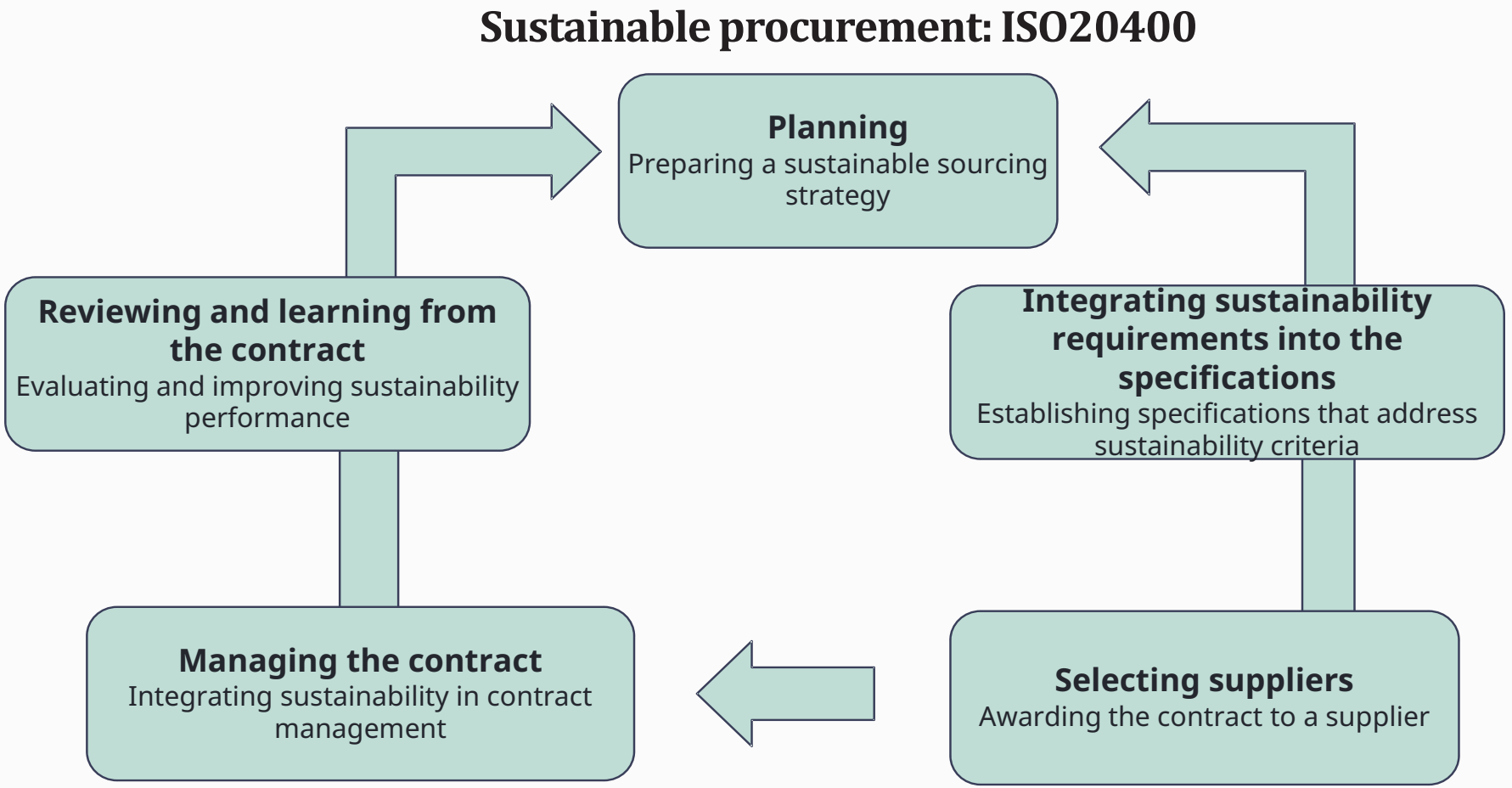
Supplier engagement & collaboration



Source: https://plana.earth/academy/guide-supplier-engagement-decarbonisation

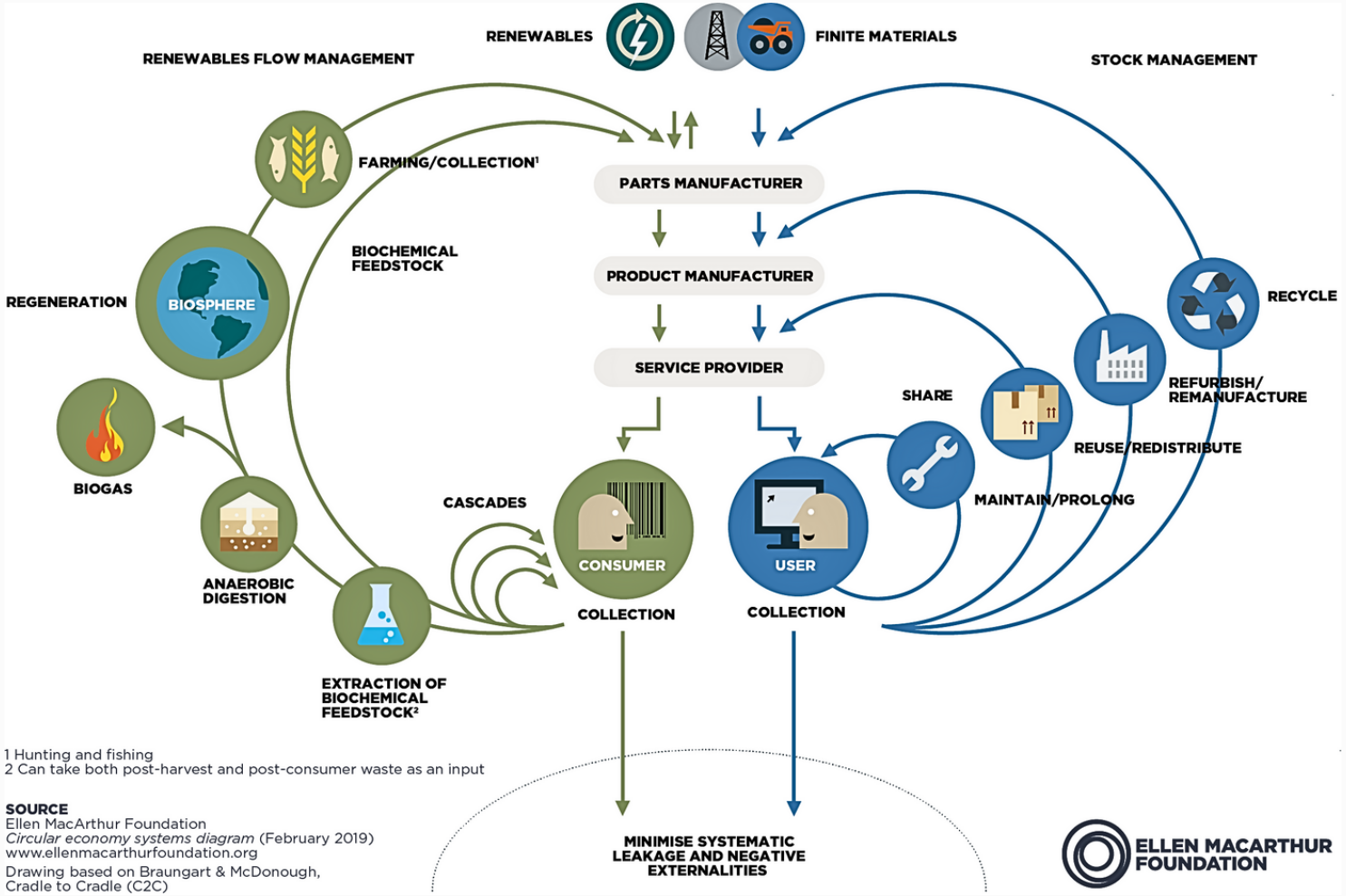
Strategies for Scope 3 Reduction

Sustainable procurement practices



Strategies for Scope 3 Reduction

Circular economy & product design improvements

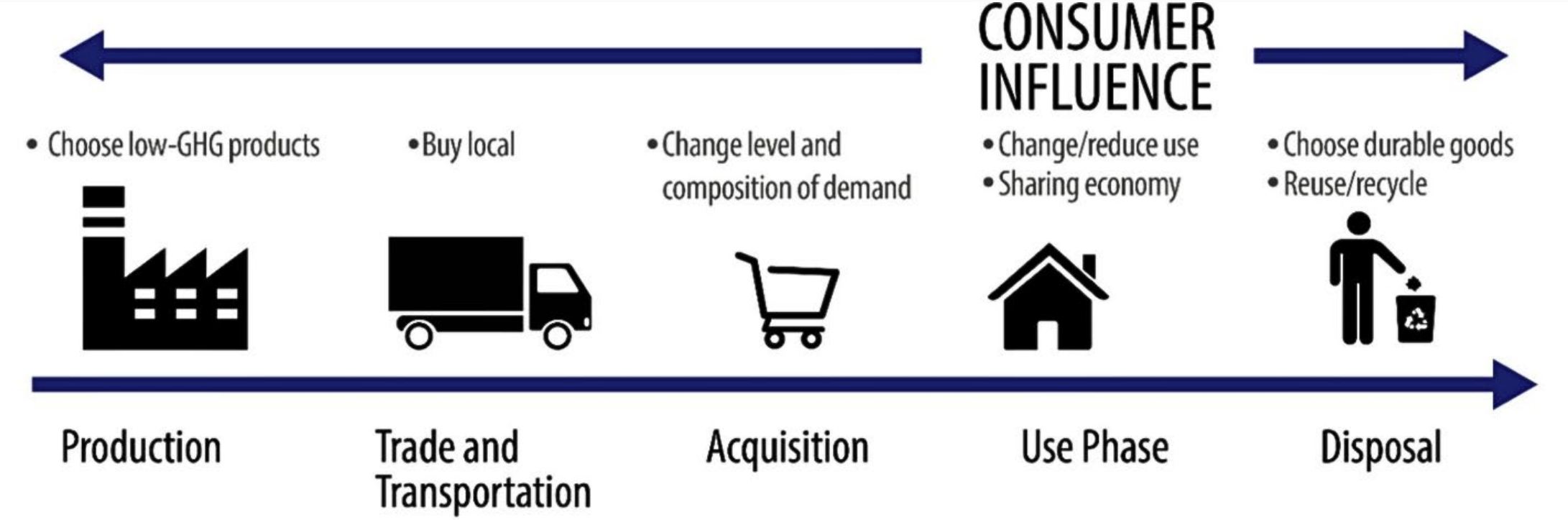


1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input

SOURCE
Ellen MacArthur Foundation
Circular economy systems diagram (February 2019)
www.ellenmacarthurfoundation.org
Drawing based on Braungart & McDonough, Cradle to Cradle (C2C)

Strategies for Scope 3 Reduction

Consumer behavior influence



Source: Moran, D., Wood, R., Hertwich, E., Mattson, K., Rodriguez, J. F. D., Schanes, K., & Barrett, J. (2018). Quantifying the potential for consumer-oriented policy to reduce European and foreign carbon emissions. *Climate Policy*, *20*(sup1), S28–S38. https://doi.org/10.1080/14693062.2018.1551186

Integration with Corporate Carbon Management & Reporting

Integration with Corporate Carbon Management & Reporting

Carbon Footprint Disclosure & Reporting Frameworks

- CDP (Carbon Disclosure Project)
- SBTi (Science-Based Targets Initiative)
- TCFD (Task Force on Climate-related Financial Disclosures)

"

ISO Standards for Carbon Footprint and Scope 3

- ISO 14064 (Organization Level)
- ISO 14067 (Product Level)
- ISO 14068-1 (Carbon Neutrality)

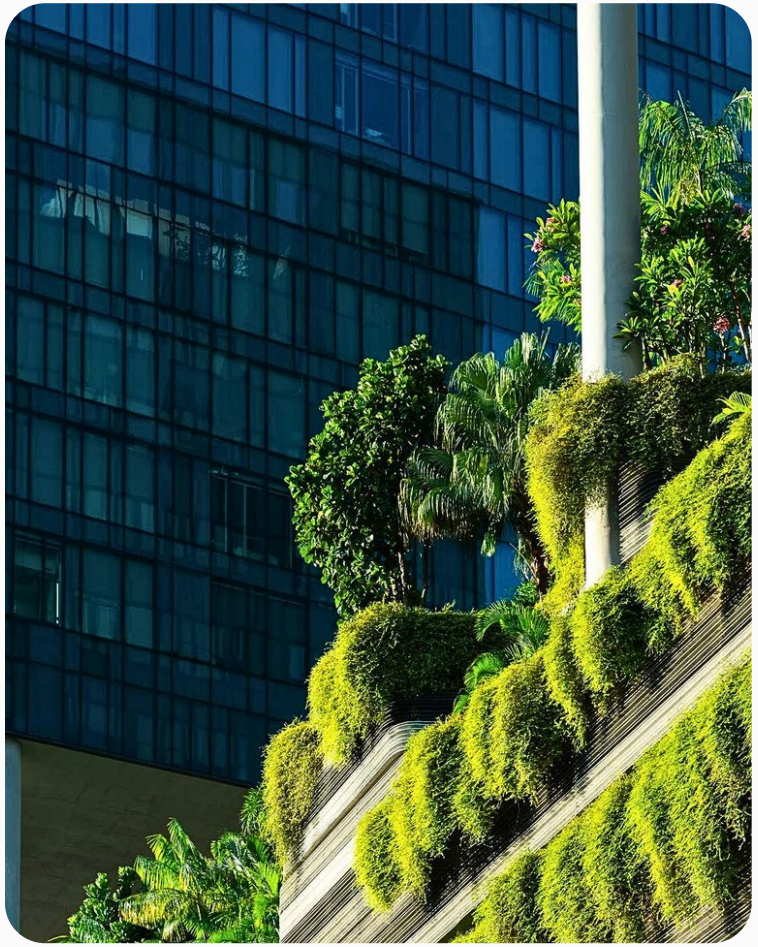
Conclusion & Next Steps

Key Takeaways

- Importance of PCF and Scope 3 emissions
- Role of businesses in reducing emissions
- Strategic actions to improve carbon footprint management

Call to Action

- Implement carbon footprint assessments
- Engage with supply chains for Scope 3 reduction
- Align with global sustainability frameworks



“Q&A

ทบทวนและถามคำถาม

สแกน QR code เป็นเพื่อนกับเราใน Line official ของ BSI

เพื่อไม่ให้พลาดข่าวสารข้อมูลที่เป็นประโยชน์ในสายอาชีพของท่าน

- Free webinars
- Tool และบทความดีๆ