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Social Farms and Gardens 23 May 2023

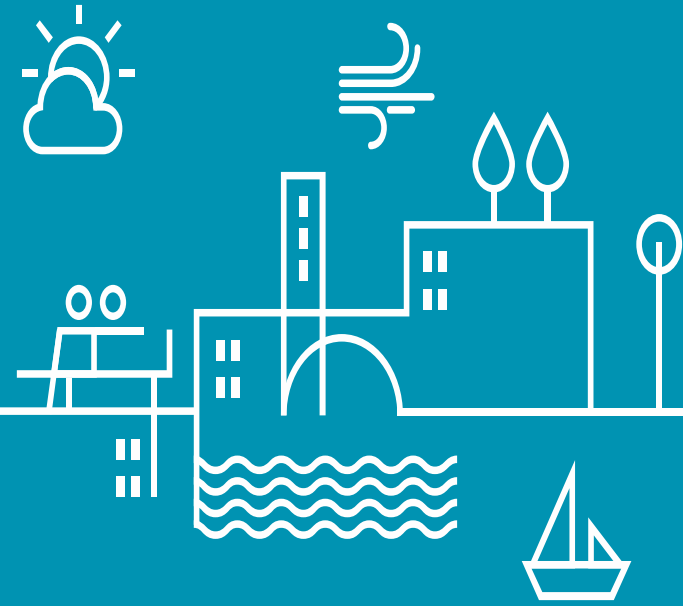


SAFETY
SCHEMES IN
PROCUREMENT



Agenda

- Basics of Carbon Footprints and Net Zero
- Social Farms and Gardens Project
- Approach to Carbon Footprints
- Considerations
- Reflection
- Questions



Carbon Footprint Basics

Understanding your knowledge

How would you rate your understanding of what makes up a **Carbon Footprint**, on a scale of 1 to 5 (5 being I understand the term perfectly)?



1 2 3 4 5

Climate Change & Carbon – Key definitions

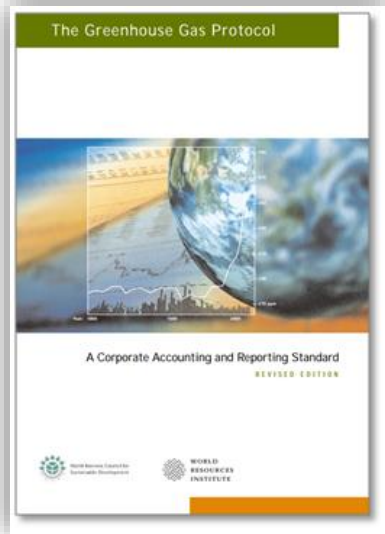
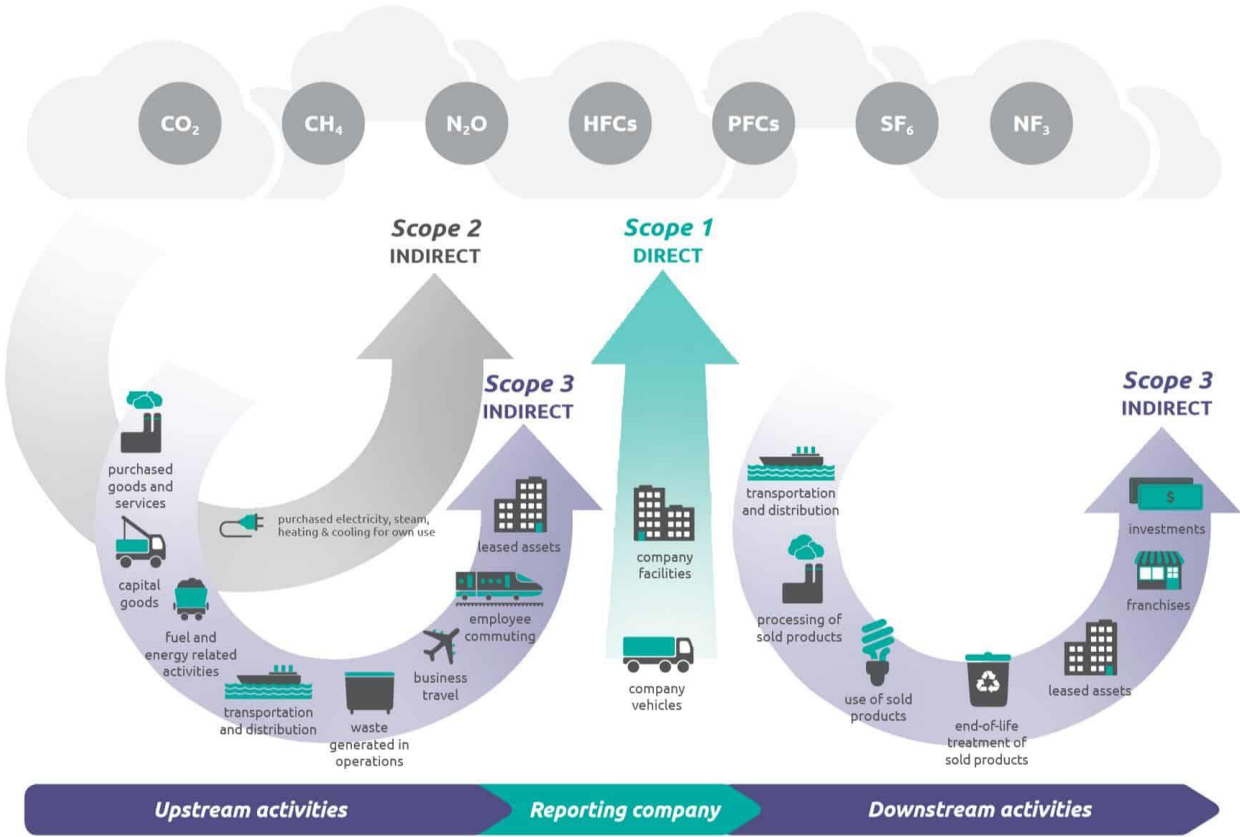
Greenhouse gas – a gas which retains heat in the atmosphere (GHG emissions) – including carbon dioxide, nitrous oxide and methane

Carbon emissions – usually refers to emissions of carbon dioxide – but terms can sometimes be used interchangeably with greenhouse gases

Carbon footprint – a measurement of greenhouse gases

Global Warming Potential is a measure of how much energy (heat) the emissions of 1 ton of gas will absorb over a given period of time.

Greenhouse Gas Accounting & Carbon Footprint



Understanding your knowledge

How would you rate your understanding of the term **Net Zero**, on a scale of 1 to 5 (5 being I understand the term perfectly)?



Understanding your knowledge

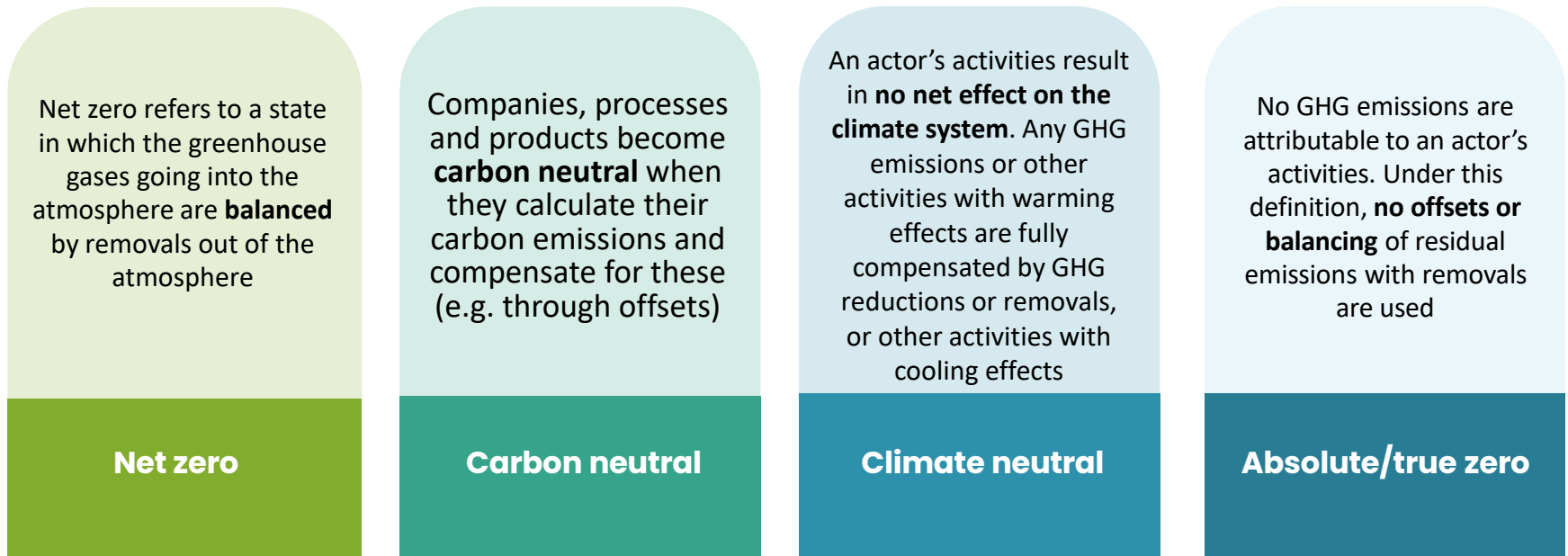
How would you rate your understanding of the term **Carbon Neutral**, on a scale of 1 to 5 (5 being I understand the term perfectly)?



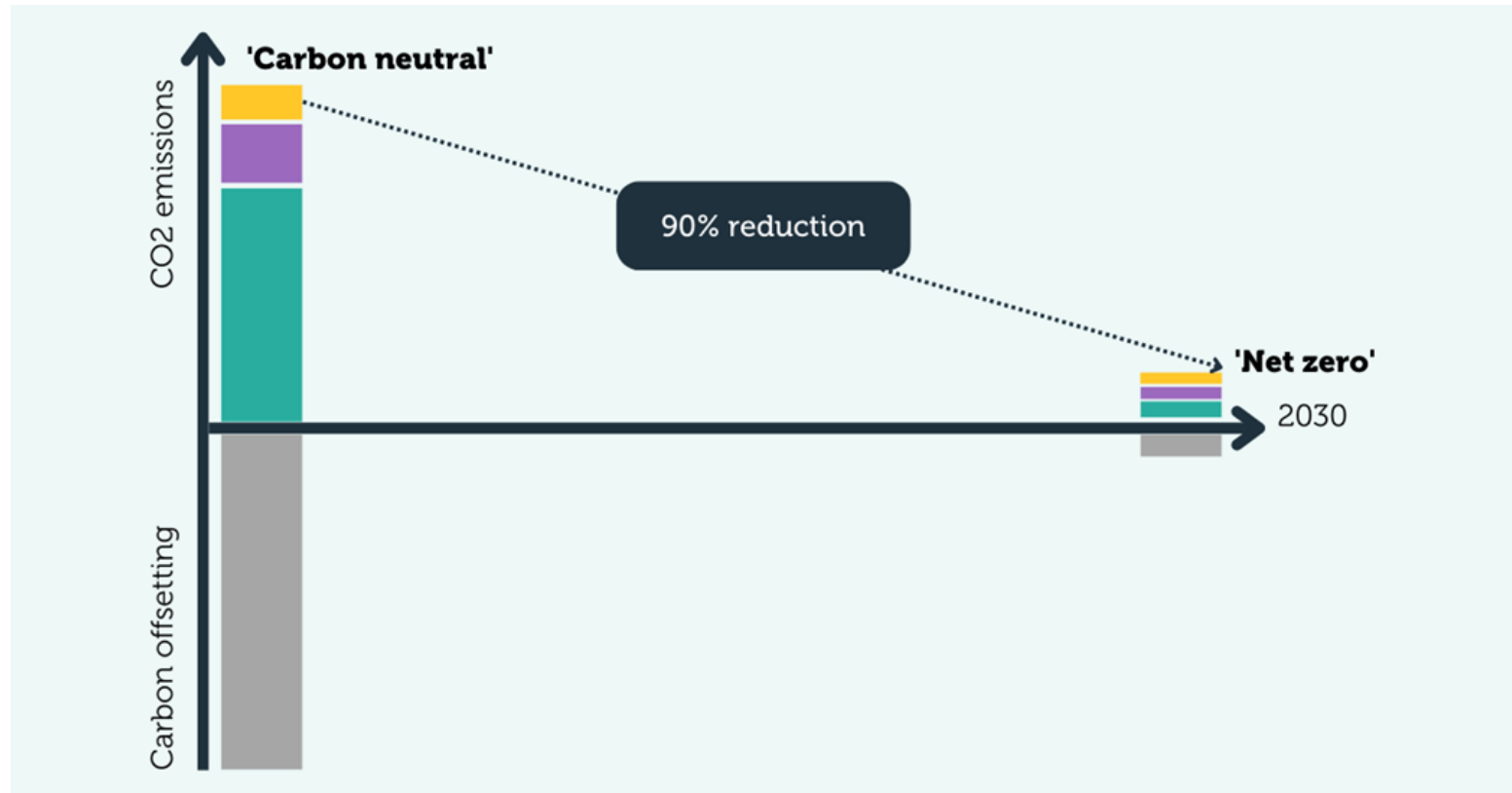
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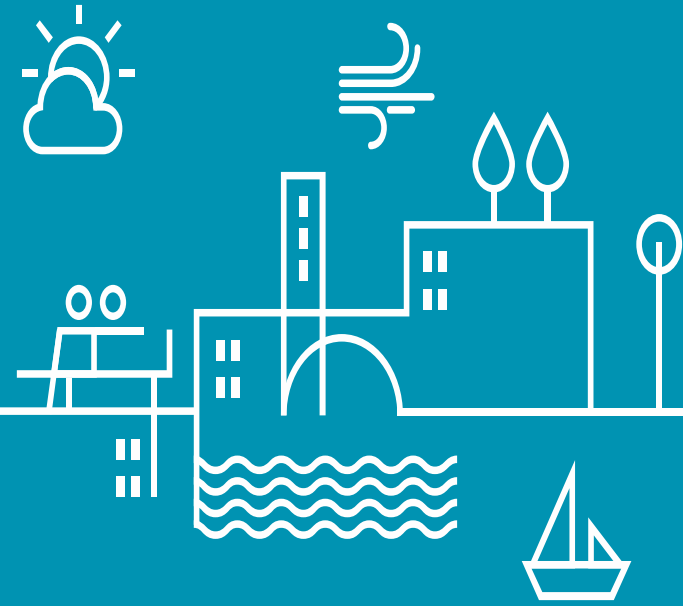
What does net zero mean?

Often used interchangeably, the following terms actually represent very different approaches to decarbonisation and combatting climate change. These terms can apply to (can apply to different actors – e.g. countries, corporations, cities, regions etc



Journey to Net Zero





Social Farms and Gardens Project

Social Farms & Gardens



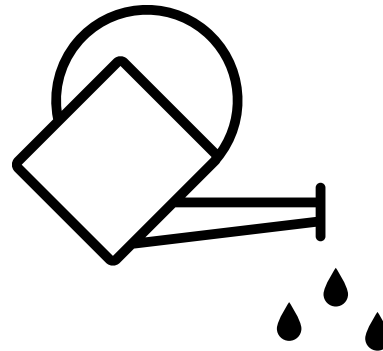
Social Farms and Garden Project

- Develop Carbon Footprints for multiple farms
- Identify barriers to Net Zero
- Recommend opportunities for improvement
- Demonstrate potential carbon benefits of using local foods hubs to supply public

Participants



Ash and Elm



Richard Edwards



Hooma Hu

Intensity Ratios

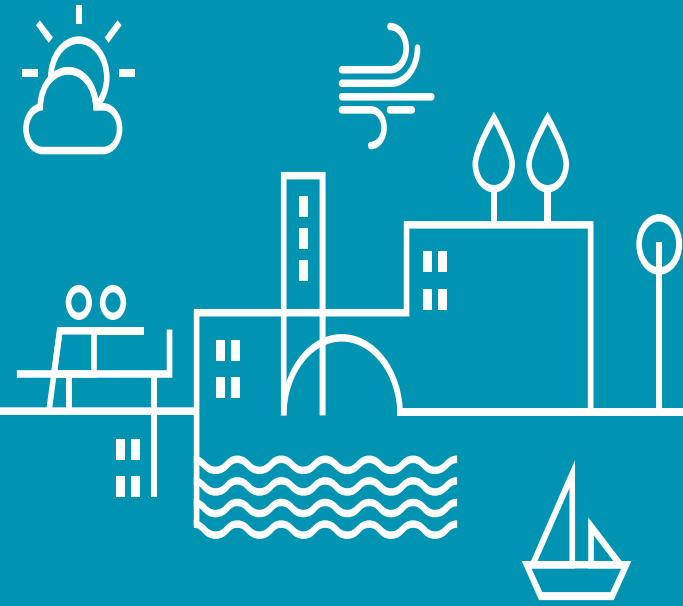
- Ash and Elm – 1 kg CO₂e per kg of Food and Flowers produced
- Richard Edwards – 5 kg CO₂e per kg of Vegetables produced
- Hooma Hu – 24 kg CO₂e per Number of Vegetable Boxes sold

POSITIVES

- Renewables
- Off grid water supply
- Local Transportation
- Resource Efficiency

OPPORTUNITIES FOR IMPROVEMENT

- Data Quality/Availability
- Waste data
- Packaging
- Purchased Goods
- Material Use
- Use and end of life of products sold
- Material specific conversion factors



Approach to Carbon Footprints

Process



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- Discuss Organisation processes
- Determine sources
- Identify baseline year
- Determine Boundary

Organisation

- Determine data availability
- Collect activity data from invoices, receipts, internal tracking systems for each source

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- Review data collected
- Determine any gaps
- Calculate emissions for each category of Scope 1, 2 and 3 emissions, as applicable

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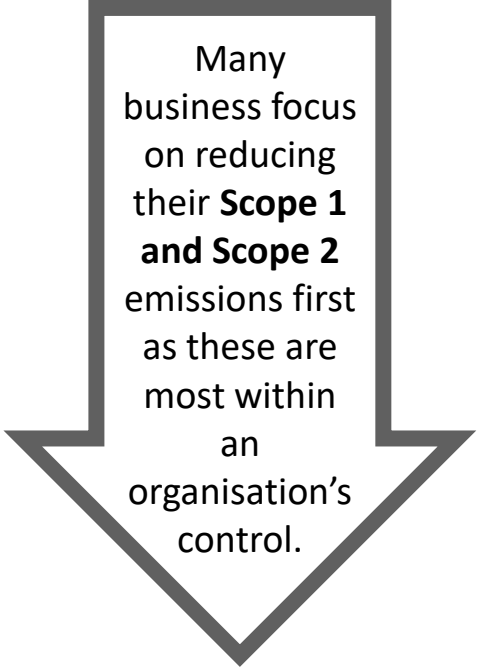
- Provide opportunities for improvement
- Recommend next steps for carbon footprint/Net Zero

Organisation

- Review Carbon Footprint and recommendations
- Develop action plan

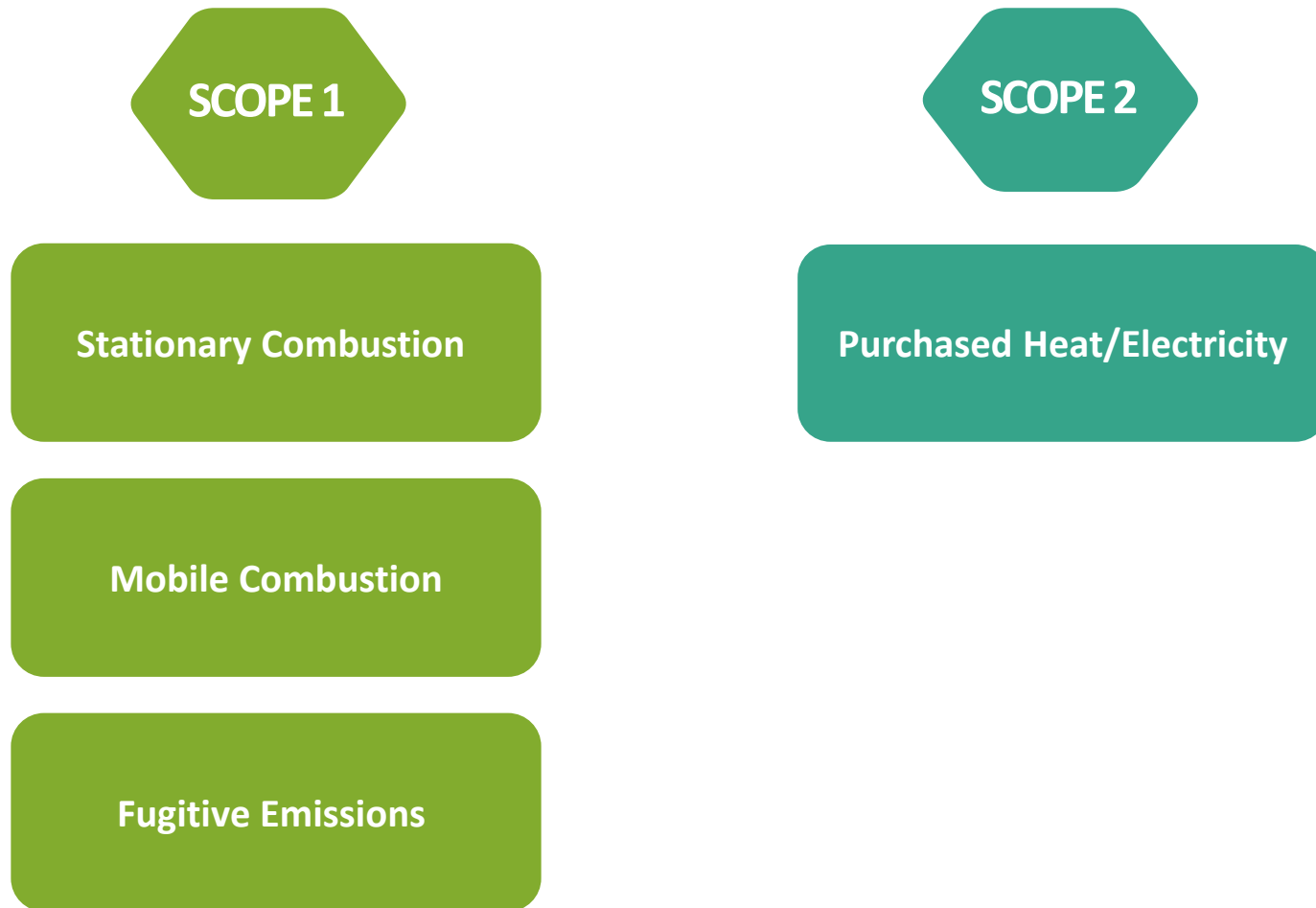
Carbon Footprinting

- 1 Select a baseline period (usually 12 months)
- 2 Identify energy sources (electricity, gas, fuels etc.)
- 3 Collect energy data (HH, AMR, Meter Reads, Invoices)
- 4 Select carbon conversion factors for energy types
- 5 Calculate carbon emissions for energy types



Many business focus on reducing their **Scope 1 and Scope 2** emissions first as these are most within an organisation's control.

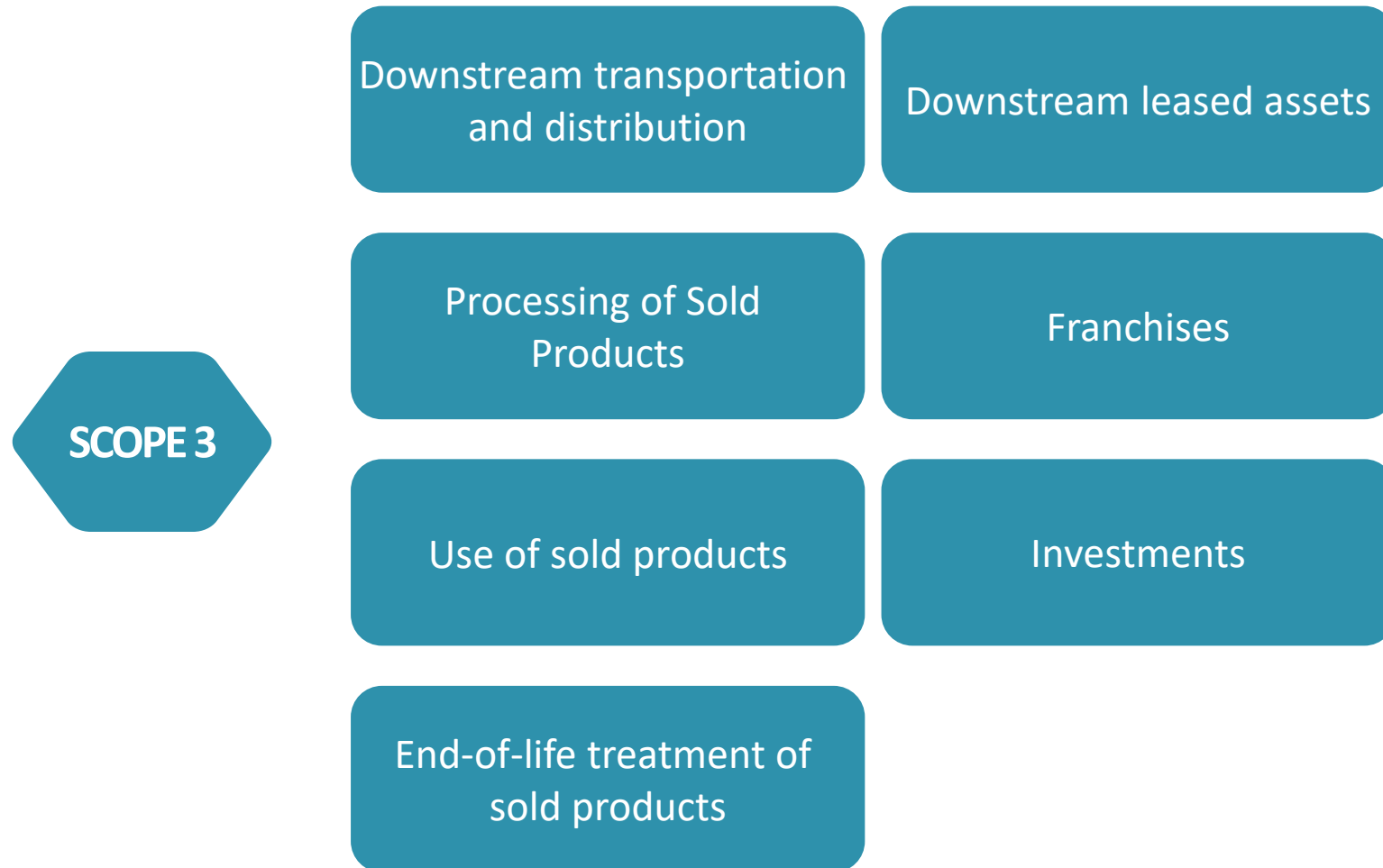
Scope 1 and 2: Source Categories



Upstream Scope 3 (More accessible)



Downstream Scope 3 (Less Accessible)



Scope 3

Improving Scope 3 data over-time – ‘completeness’ of the inventory is important

Most complex and most accurate



Supplier Specific Data

Relies exclusively on emissions and emission factors from third parties – e.g., product-specific carbon footprints and/or life cycle data



Hybrid

Relies on a combination of emissions and emission factors provided by third parties – using spend-based data to fill gaps



Average data

Relies on average consumption and default emission factors by activity, e.g., KgCO₂e per mile travelled for commuting



Spend-based

Relies on activity data from a company’s general ledger and industry average emission factors, e.g., Quantis Scope 3 Evaluator

Least complex and least accurate

Scope 1 and 2 Data

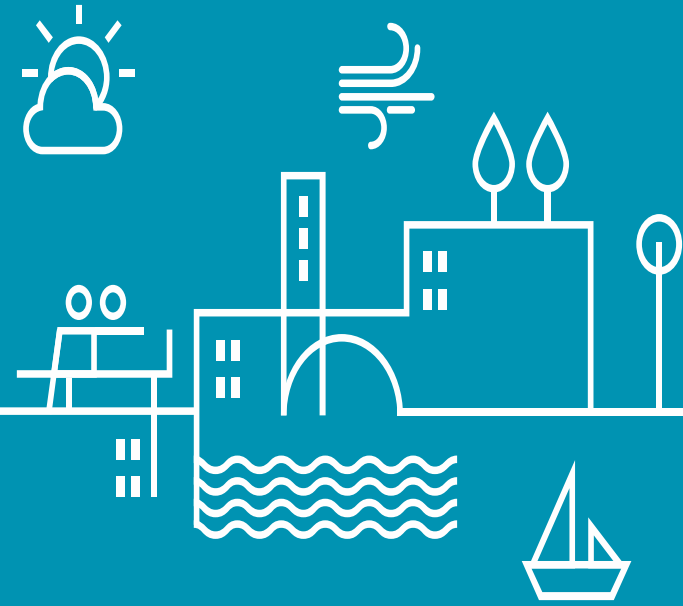
Scope	Category	Data to Collect	Acceptable Sources
Scope 1	Stationary Combustion	Amount Fuel Used (kWh, m3, litres)	<ul style="list-style-type: none"> • Meter readings • Invoices
	Mobile Combustion	Amount of Fuel Used (Litres, m3)	<ul style="list-style-type: none"> • Invoices • Receipts • level readings
	Fugitive Emissions	Amount of refrigerant leaked	<ul style="list-style-type: none"> • Maintenance Records • Leak tests
Scope 2	Purchased Energy	Amount of purchased energy	<ul style="list-style-type: none"> • Invoices • Meter Readings

Upstream Scope 3 Data

Scope	Category	Data to Collect	Acceptable Sources
Scope 3 Upstream	Purchased goods and Services	<ul style="list-style-type: none"> Type of good/service Quantity of good used (kg, tonnes, litres, etc) Amount spent of service 	<ul style="list-style-type: none"> Internal Tracking systems Invoices Receipts
	Capital Goods	<ul style="list-style-type: none"> Type of good Quantity of good used (kg, tonnes, litres, etc) 	<ul style="list-style-type: none"> Internal Tracking systems Invoices Receipts
	Fuel- and energy-related activities	Same as Scope 1	
	Upstream transportation and distribution	<ul style="list-style-type: none"> Type of travel (vehicle, air, train) Quantity of fuel used or Distance Travelled (kilometres) 	<ul style="list-style-type: none"> Supplier Data Invoices Internal Tracking Systems
	Waste generated in operations	<ul style="list-style-type: none"> Types of waste (General, plastics, paper, etc) Amount of waste (kg, tonnes) 	Internal Tracking Systems
	Business travel	<ul style="list-style-type: none"> Type of travel (vehicle, air, train) Quantity of fuel used or Distance Travelled (kilometres) 	Internal Tracking Systems
	Employee commuting	<ul style="list-style-type: none"> Type of travel (vehicle, air, train) Quantity of fuel used or Distance Travelled (kilometres) 	Internal Tracking Systems
	Upstream leased assets	Scope 1 and 2 data from leased assets	Same as Scope 1 and 2

Downstream Scope 3 Data

Scope 3 Downstream	Downstream transportation and distribution	<ul style="list-style-type: none"> • Type of travel (vehicle, air, train) • Quantity of fuel used or • Distance Travelled (kilometres) 	<ul style="list-style-type: none"> • Supplier Data • Invoices • Internal Tracking Systems
	Processing of sold products	How product is processed or made into a new product	Customer reports
	Use of sold products	How products are used/consumed	Customer questionnaires
	End-of-life treatment of sold products	Method of disposal of products	Customer questionnaires
	Downstream leased assets	Scope 1 and 2 data from leased assets	Same as Scope 1 and 2
	Franchises	Scope 1 and 2 data from franchises	Same as Scope 1 and 2
	Investments	Scope 1 and 2 data from investments	Same as Scope 1 and 2



Considerations

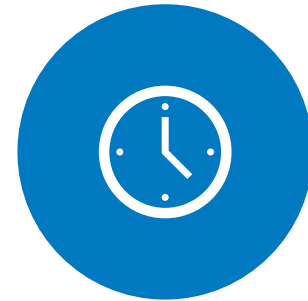
Common Barriers



AVAILABILITY OF
DATA



DATA COLLECTION
PROCEDURES



TIME

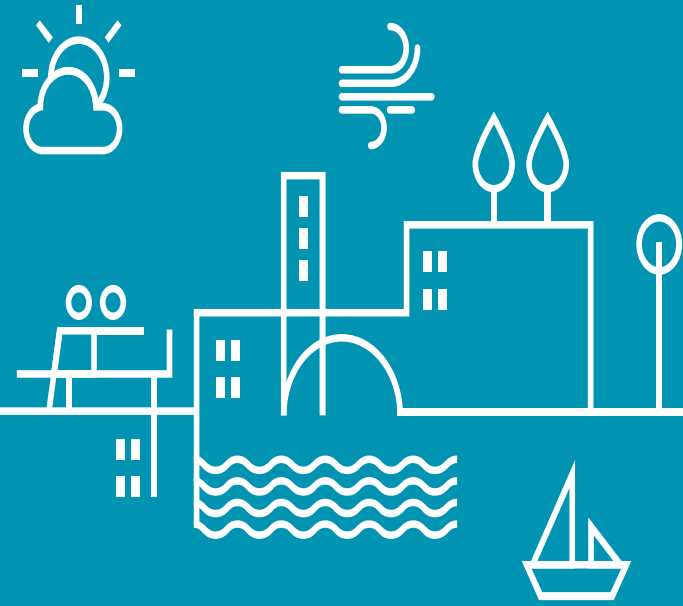
Emissions of a Product



- Raw Materials
- Manufacturing
- Packaging
- Distribution / Deliveries
- Use Phase
- End-of-Life

Types of Greenwashing

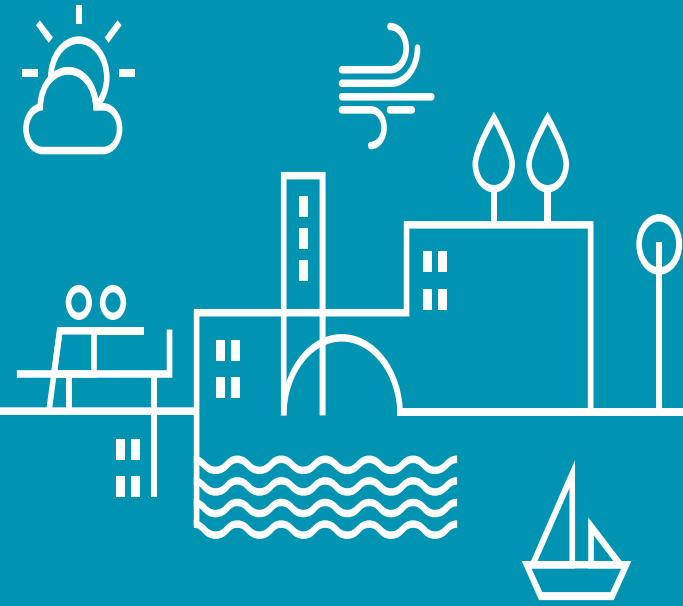




Reflection

Key Takeaways

- NetZero vs Carbon Neutral
- How to develop a carbon footprint
- Data Collection
- Categories of Emissions
- Barriers
- Opportunities for Improvement



Questions

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