Corporate Carbon Footprint (CCF)

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Your presenters for the day

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Agenda

- Introduction to Corporate Carbon Footprint
- Regulatory base
- Methodology
- Implementation
- Q&A

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Introduction

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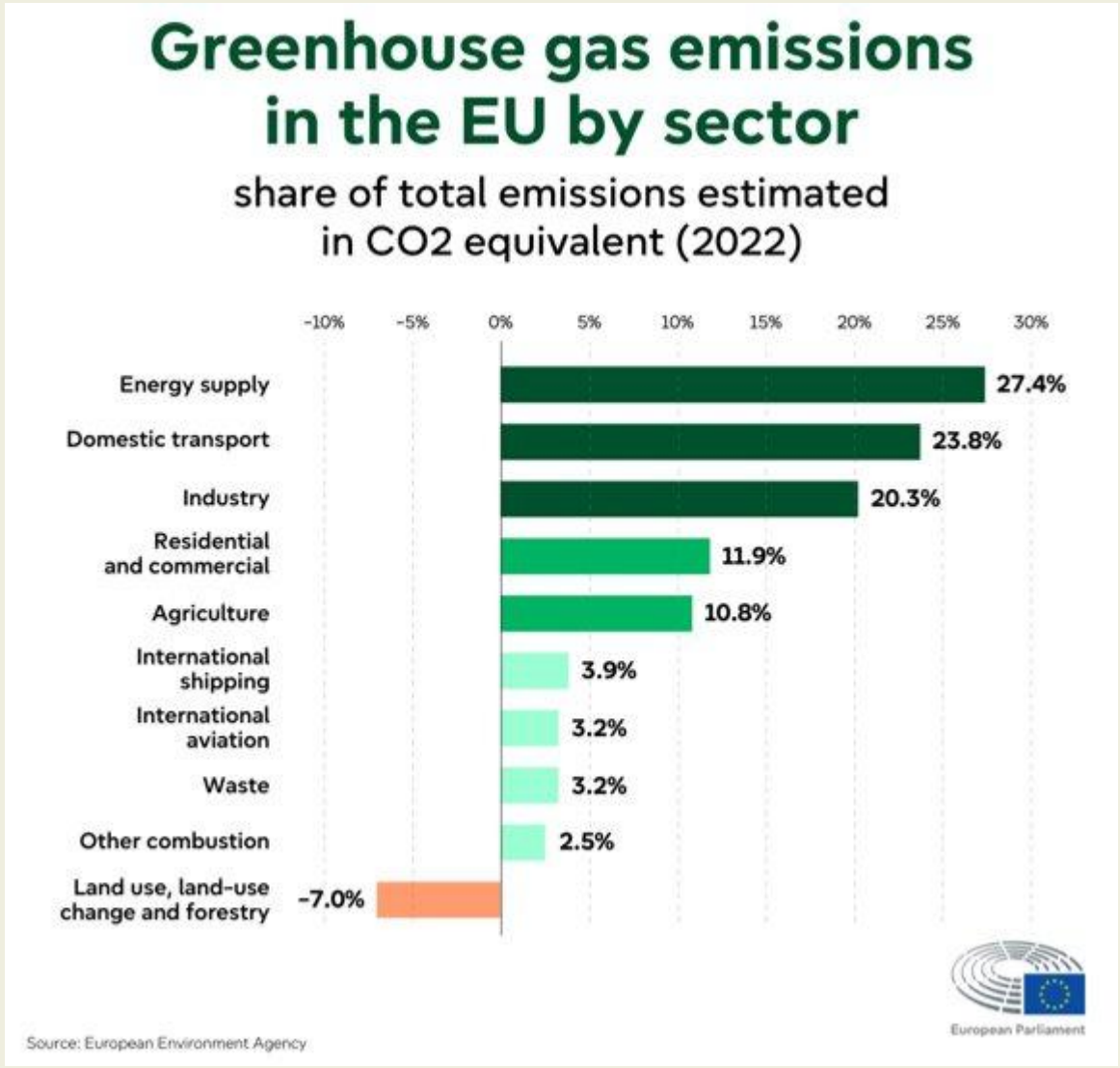
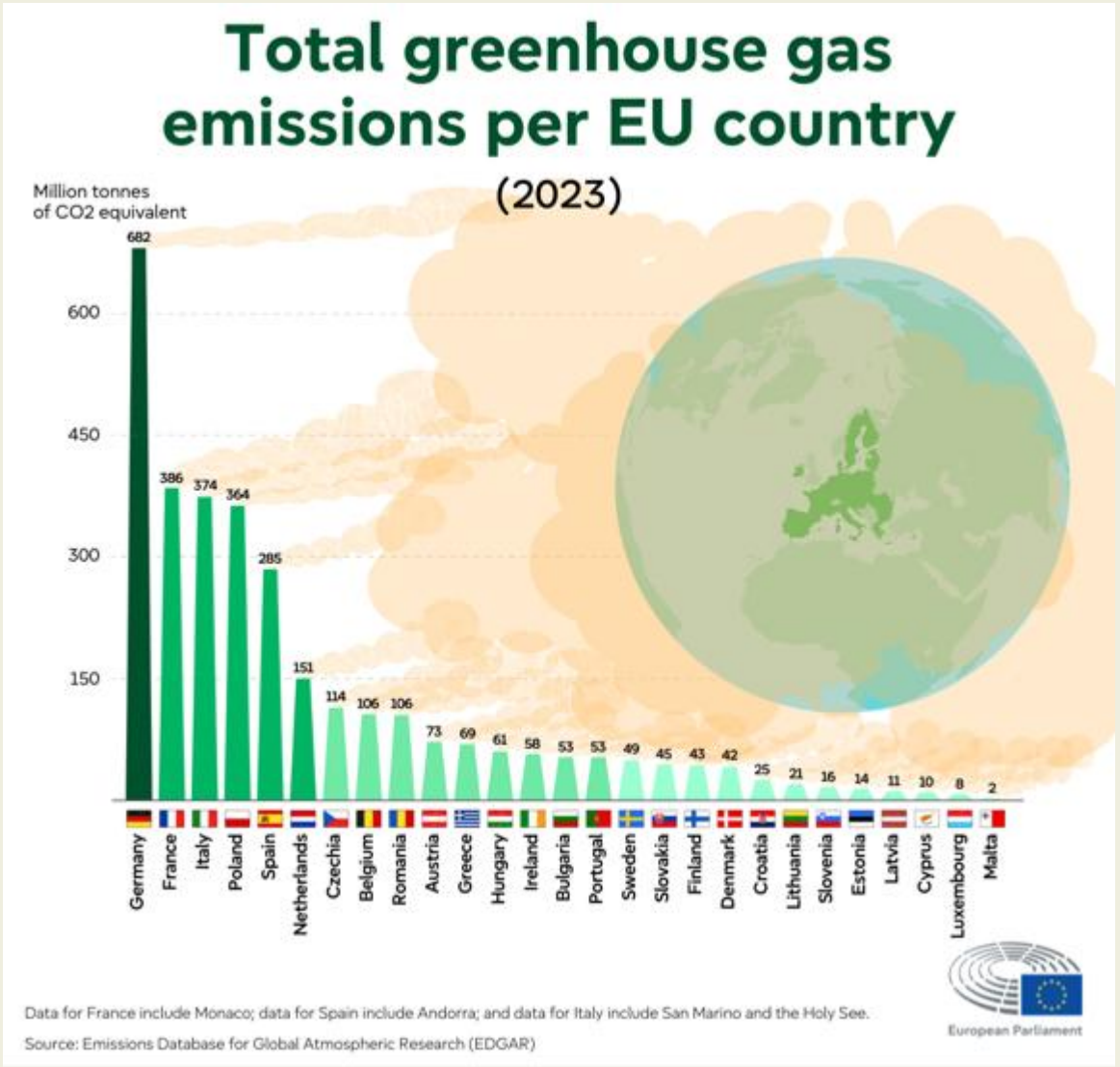
Why is GHG reporting important?





Regulatory base

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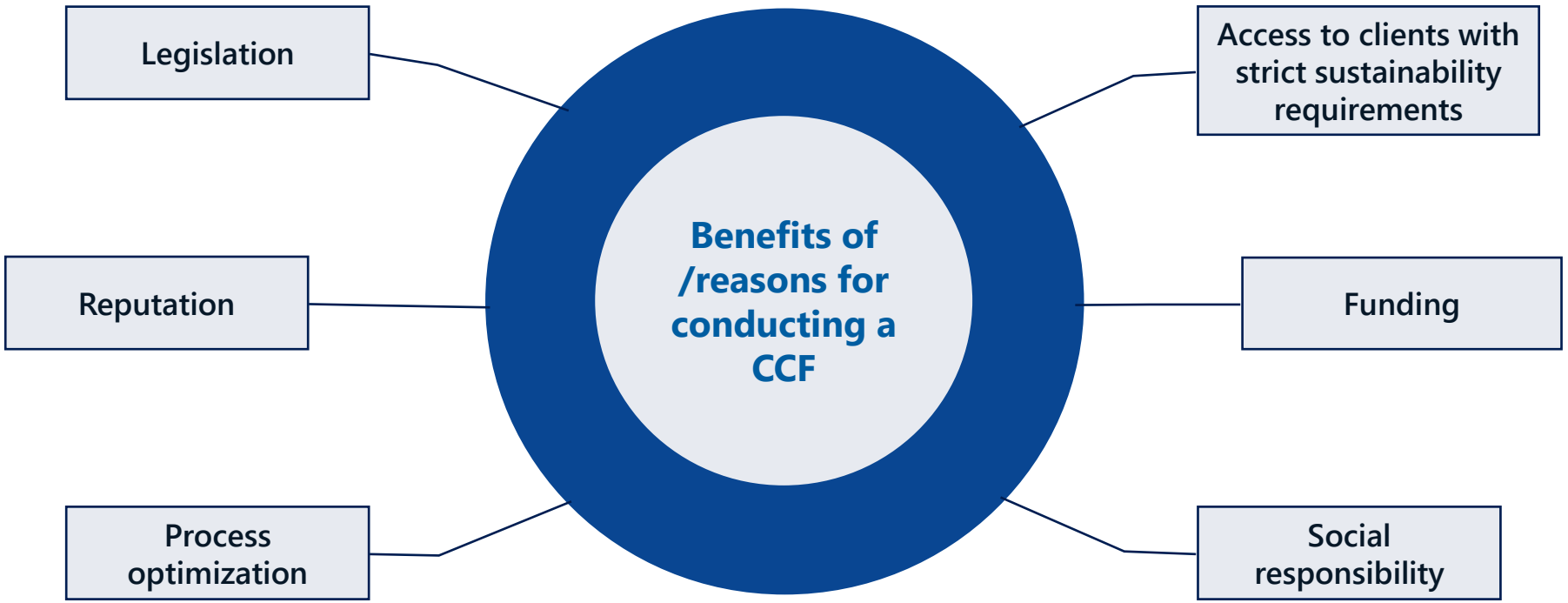
EU path to Climate Neutrality

Topical standards (ESRS) – E1 is mandatory

Standards	Environment	Social	Governance
Topic specific standards	**E1 Climate change**	**S1 Own workforce**	**G1 Business conduct**
	E2 Pollution	**S2 Workers in the value chain**	
	E3 Water and marine resources	**S3 Affected communities**	
	E4 Biodiversity and ecosystems	**S4 Consumer and end-users**	
	E5 Resource use and circular economy		

Why is GHG reporting important?



Methodology

CCF Definition

A globally recognized standard that quantifies the **total greenhouse gas (GHG) emissions** by a company's operations.

- **"Snapshot"** of a **company's current GHG emissions**
- Disclose results in **sustainability reports** or **non-financial statements**

GREENHOUSE GAS PROTOCOL

2 prevalent standards, **ISO 14064-1** and **GREENHOUSE GAS PROTOCOL**

ISO 14064

Categorized into:

- **Scope 1** (direct emissions)
- **Scope 2** (indirect emissions from purchased energy)
- **Scope 3** (all other indirect emissions along the value chain)

Climate Change as Single Impact Category

The CCF is designed specifically to measure a **company's contribution to climate change**, which is caused by the release of GHGsinto the atmosphere.

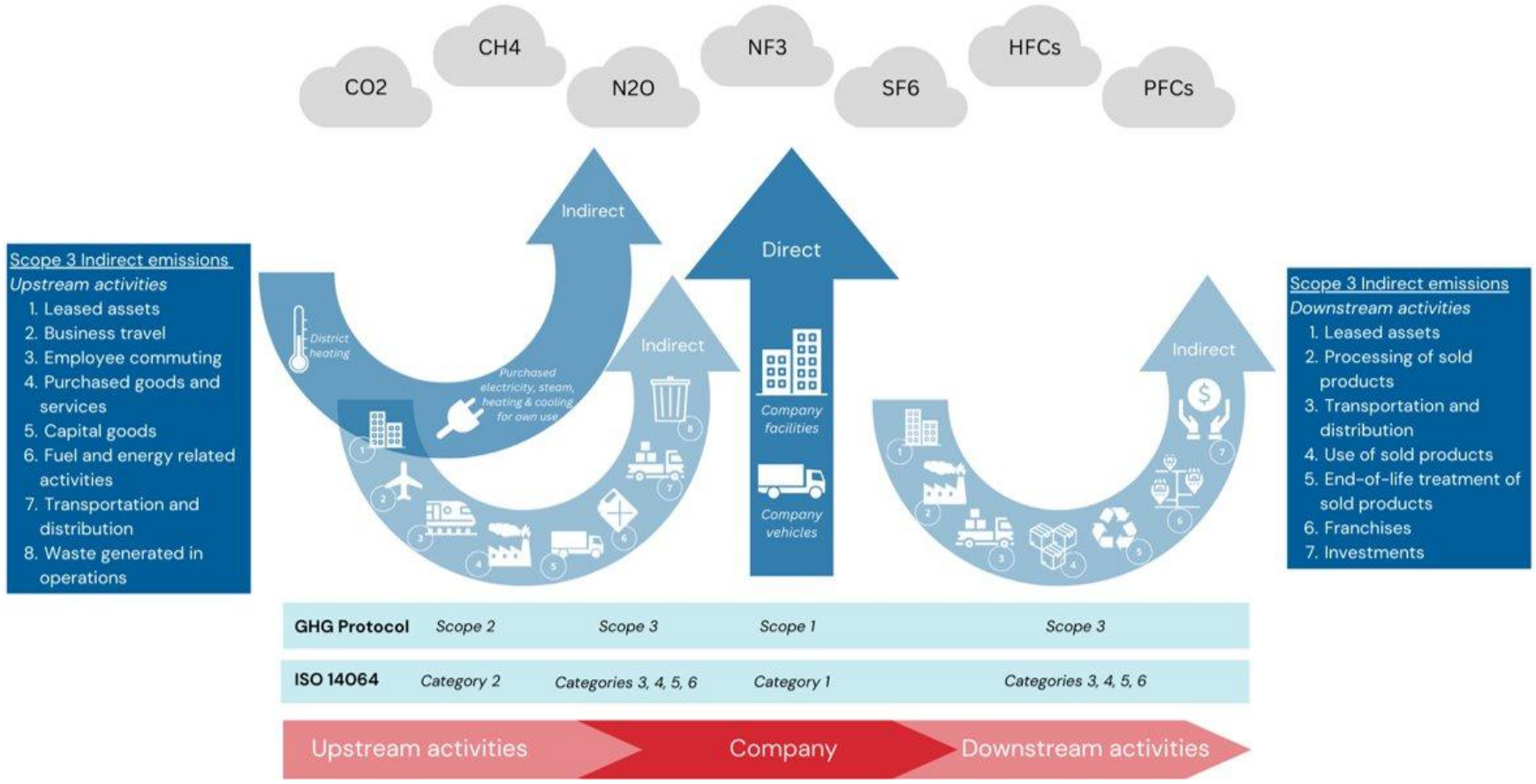
This focus allows companies to:

- **Track and reduce** their climate-related impacts
- Align with **global targets** (e.g., Paris Agreement, SBTi)
- **Communicate clearly** with stakeholders on carbon performance

Single Impact Category

Impact category	Indicator	Unit	Model
Climate change - overall	Global warming pot ential – total (GWP-total)	kg CO2-eqv.	Baseline data model of 100 years of the IPCC, based on IPCC 2013

Scope 1, Scope 2 & Scope 3 Emissions



Implementation

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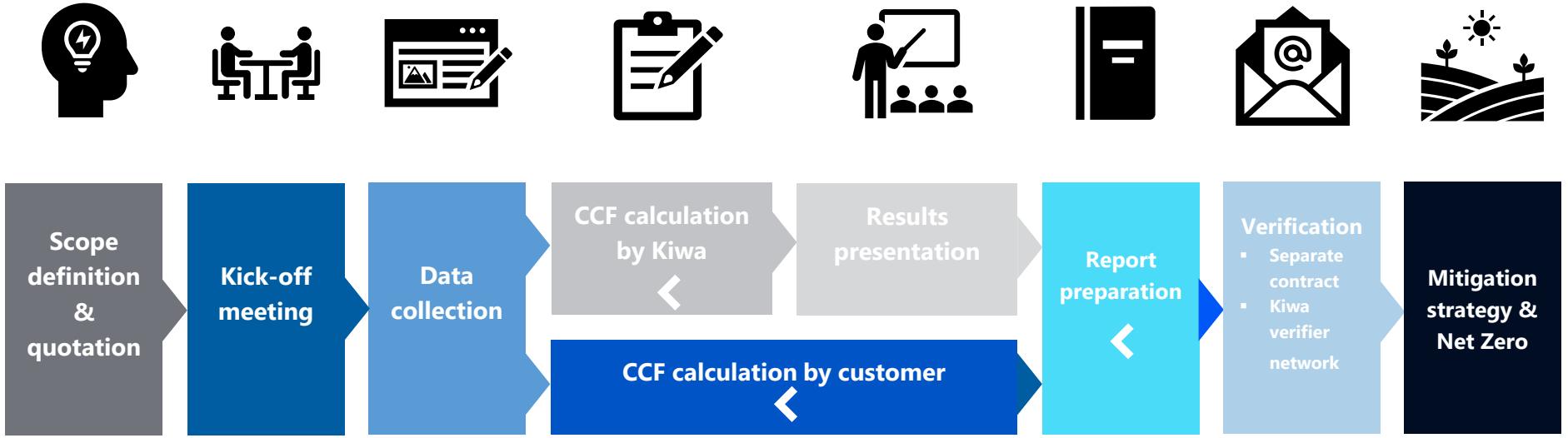
CCF Process at Kiwa



Setting Boundaries

Boundaries determine the emission sources to include in a GHG inventory.

- **Organisational boundaries**

  Determine the business divisions (e.g. entities, subsidiaries) to include in the GHG inventory

- **Operational boundaries**

  Determine the emission sources (e.g. fuel, electricity, business travel etc.) to include in the GHG inventory

→ Avoids double counting of emissions and omissions

Consolidation Approach

There are different consolidation approaches in order to determine organisational boundaries. The approaches are **linked to the financial and organiational structure** of the company, stakeholder needs, reporting requirements and the overall objective of the CCF.

1. Control approach:
   - Operational control
   - Financial control

2. Equity share

Setting Boundaries

The organisational boundary determines which operations to include and to what % these operations are included, depending on the chosen consolidation approach.

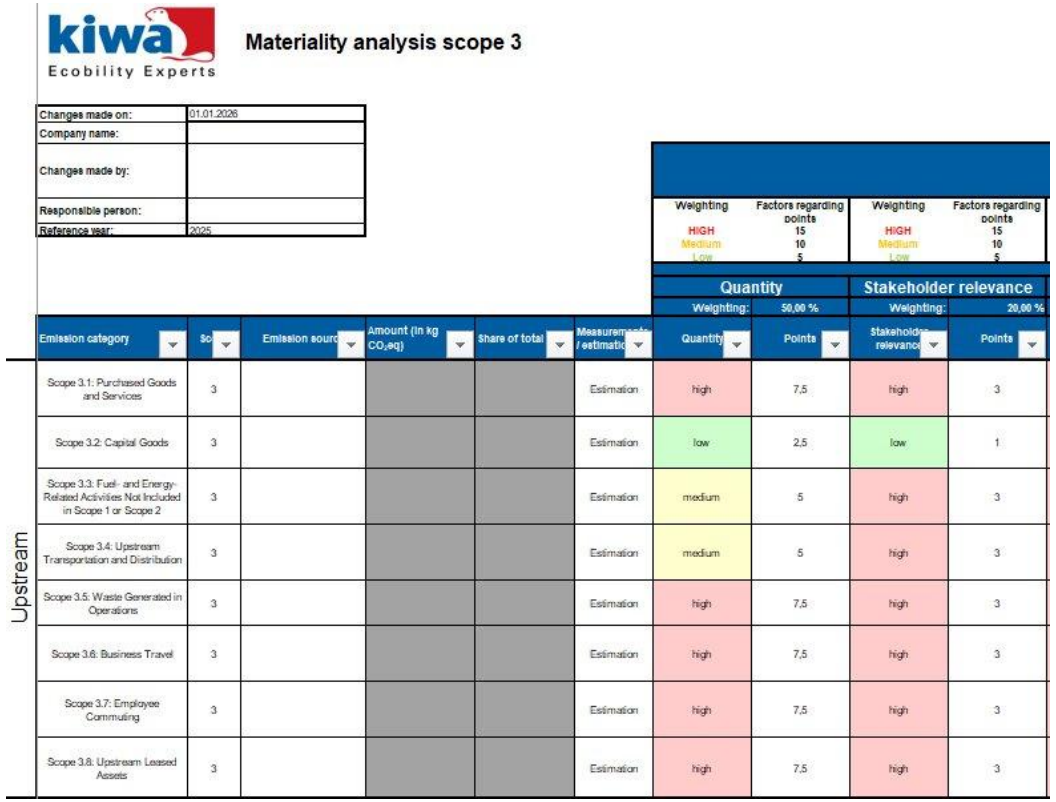
Materiality analysis Scope 3 – Indirect emissions

We provide a template for Scope 3 materiality analysis, covering several criteria.

Evaluation criteria may include the following:

- Share of total emissions
- Influenceability and controllability
- Stakeholder interest and expectations
- Relevance for risk management

As a result of the analysis, material Scope 3 categories are included in the CCF.



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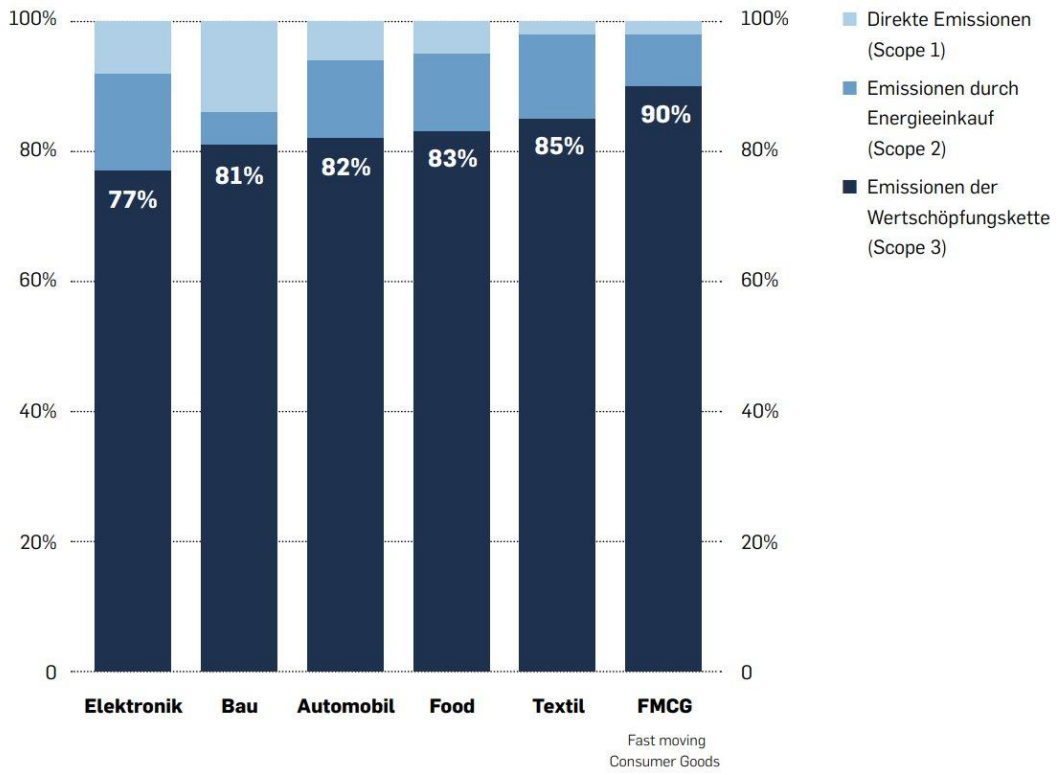
Materiality analysis scope 3

Changes made on:	01.01.2026
Company name:	
Changes made by:	
Responsible person:	
Reference year:	2025

						Weighting	Factors regarding points	Weighting	Factors regarding points
						HIGH	15	HIGH	15
						Medium	10	Medium	10
						Low	5	Low	5
						Quantity		Stakeholder relevance	
						Weighting:	50,00 %	Weighting:	20,00 %
	Emission category	Sc	Emission source	Amount (in kg CO_2eq)	Share of total	Measurement / estimation	Quantity	Points	Stakeholder relevance	Points
Upstream	Scope 3.1: Purchased Goods and Services	3				Estimation	high	7,5	high	3
	Scope 3.2: Capital Goods	3				Estimation	low	2,5	low	1
	Scope 3.3: Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	3				Estimation	medium	5	high	3
	Scope 3.4: Upstream Transportation and Distribution	3				Estimation	medium	5	high	3
	Scope 3.5: Waste Generated in Operations	3				Estimation	high	7,5	high	3
	Scope 3.6: Business Travel	3				Estimation	high	7,5	high	3
	Scope 3.7: Employee Commuting	3				Estimation	high	7,5	high	3
	Scope 3.8: Upstream Leased Assets	3				Estimation	high	7,5	high	3

Scope 3 relevance



- In most sectors Scope 3 emissions account for the largest share of total emissions.
- Exceptions are the energy and transport sector where scope 1 emissions account for the largest share due to direct stationary and mobile combustion of fossil fuels.

Source: UN Global Compact Germany

Building an inventory

The boundaries define which relevant activity data within the system boundary must be collected.

Activity data relates to consumption and emission data on **company activities** that cause GHG emissions. They form the basis for calculating GHG emissions. Reference is the base year‘s and previous year‘s inventory.

Availability and data sources:

- Primary data: meter readings, invoices, measurements high data quality
- Secondary data: average or general data lower data quality

For **Scope 3** data availability and quality can vary greatly depending on the Scope 3 category.

The effort for data collection processes can be very high thus the use of **secondary data and estimations** may be necessary due to availability and dependence on the provision of data from suppliers and service providers

Activity data for direct emissions

Type of Emission	Description	Examples	Data Source	Department
Direct emissions from stationary combustion	Combustion of fuels in stationary sources, e.g., boilers, furnaces, turbines	Natural gas, Biogas, Coal, Heating oil	Meter readings, Invoices	Real estate, Operations, Finance, Purchasing
Direct emissions from mobile combustion	Emissions from the combustion of fuels in company owned/controlled (e.g. leased) mobile combustion sources (e.g.,cars, forklifts, trucks, ...)	Diesel, Petrol, Natural Gas	Invoices, Fuel cards	Fleet, Finance, Purchasing

Activity data for Scope 3 emissions - upstream

Type of Emission	Emissions from...	Data Source
3.1 Purchased goods and services	...manufacturing goods and services procured	Supplier surveys, life cycle assessment
3.2 Capital goods	...production of machinery and other capital items	Supplier surveys
3.3 Fuel- and energy-related activities	...fuel extraction, production, and transport	Energy invoices, Fuel reports
3.4 Upstream transportation and distribution	...transporting goods before they reach the company	Transport reports
3.5 Waste generated in operations	...waste disposal and treatment processes	Waste records
3.6 Business travel	...employee travel for business purposes	Travel expense reports
3.7 Employee commuting	...from employees traveling to and from work	Employee surveys

Emission factor - definition

An **emission factor (EF)** is a coefficient that quantifies the greenhouse gas emissions associated with a specific activity, process, or input, typically expressed in units like kg CO_2e per unit of activity (e.g., per kWh, per km, per kg of material).

- **Formula:**

$$EF = \frac{\text{Total Emissions (kg } CO_2e)}{\text{Total Activity (e.g., energy consumed, material used, distance traveled)}}$$

Seven main GHGs (based on Kyoto Protocol): CO_2, CH_4 (methane), N_2O (nitrous oxide), and fluorinated gases (HFCs, PFCs, SF_6, NF3) and biogenic GHG emissions

Units: kg CO_2e per unit of activity (e.g., kg CO_2e/kWh, kg CO_2e/liter of fuel)

Fuel	Unit	kg CO_2e	kg CO_2e of CO_2 per unit	kg CO_2e of CH_4 per unit	kg CO_2e of N_2O per unit
Coal (industrial)	tonnes	2396,48	2.371,91	7,64	16,93
	kWh (Net CV)	0,34	0,33611	0,00109	0,00240
	kWh (Gross CV)	0,32	0,31931	0,00103	0,00228

CCF Verification/ Validation

- We offer accredited Verification and Validation according to ISO 14064-3 and other standards in the ISO 14060 family
- A strict separation of consulting and verification & validation activities
- Auditor network in different regions and industries
- Involves checking the data collection, calculation, processes, and report and compliances with the relevant standards and protocols

R<THINK: web-based environmental software

- Software to create calculations according to:
  - CCF according to ISO 14064 and the GHG Protocol
  - LCA/EPD/PCF according to ISO 14040/44, ISO 14025/EN 15804/EN 50693,ISO 14067
- Database options tailored to your needs (DEFRA, UBA, ecoinvent and more!)
- Excel interfaces for efficient calculation
- Third-party verification
- Real time results on environmental impacts

Thank you for your attention!

Any Questions?

Follow us through LinkedIn for more info & future updates

If you are interested in additional information or a quotation, please contact us at:

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