

Carbon Accounting Report 2023

Wenaas Workwear AS

This report provides an overview of the organization's greenhouse gas (GHG) emissions, which is an integrated part of the organisation's climate strategy. GHG emissions accounting is a fundamental tool in identifying tangible measures to reduce GHG emissions. The annual GHG emissions accounting report enables the organization to benchmark performance indicators and evaluate progress over time.

Consolidation approach used for the GHG emissions accounting: scope 1, 2 and 3 (partial). This report comprises the following organizational units: scope 1 includes Wenaas company cars in all units. Scope 2 includes all the energy, electricity and heating in warehouses, stores, and offices in all units. In scope 2 Wenaas has also included electric train on downstream distribution from our headquarters logistic center to Norwegian customers.

For scope 3 we have included emissions we believe have the greatest impact within our supply chain and directly related to our products. Scope 3 has the major emissions, adding up to 99% of Wenaas total emissions. Apparently scope 3, upstream transportation and distribution count for most of the emissions of 53%, followed by downstream transportation at 39%. In terms of purchased goods and services the emissions only count for 7%, however Wenaas has started to gather this kind of data from key suppliers on materials and fabrics. A continuous process and the basis for making a transparent footprint of the materials of Wenaas Brand products. With that said, several measures have already been initiated to reduce water and renewable energy in both production (tier 1) and in the choice of sustainable certifications (tier 2 & 3). Listed below are the areas within scope 3.

- *Purchased goods and services* in total 7 key suppliers on own brand within textiles and glove fabrics (polyester, cotton, wool, acrylic, viscose, Lenzing FR, wool, nitrile, and latex).
- *Upstream transportation and distribution* for sea containers, air, and trucks.
- *Downstream transportation and distribution* to include trucks and rail freight for local, longer distances and European bulk transportation.
- *Waste* specified in each category (organic-, wood-, residual-, mixed-, plastic- and EE waste).
- *End-of-life treatment of sold products* are emissions related to residual waste of destruction of textiles through third party. An agreement we handle for some of our customers to secure textiles is submitted for destruction and not removed from the waste stream.
- *IT and Communication* are emission mostly related to IT equipment implementation of AutoStore project in our logistic center in Norway.
- *Packaging* are emissions on outbound packaging. A combination of FSC mix certified cartons and plastic bags.

The input is based on consumption data from internal and external sources, which has then been converted into tonnes CO₂-equivalents (tCO₂e) using generic and/or specific emission factors. The GHG emissions accounting is based on the international standard; *A Corporate Accounting and Reporting Standard*, developed by the Greenhouse Gas Protocol Initiative (GHG Protocol). The GHG Protocol is the most widely used and recognized international standard for measuring greenhouse gas emissions on a company level, and is the basis for the ISO standard 14064-I.

Reporting Year Energy and GHG Emissions

Emission source	Description	Consumption	Unit	Energy (MWh)	Emissions tCO ₂ e	% share
Transportation total				254.7	65.3	0.1 %
Diesel	Company cars	4,072.0	liters	40.4	10.8	-
Diesel	Company car	1,362.0	liters	13.5	3.6	-
Diesel	Company cars	1,400.0	liters	13.9	3.7	-
Petrol	1 company car (PHEV).	1,554.7	liters	14.3	3.6	-
Petrol	Company cars	16,427.5	liters	151.5	38.5	-
Diesel (NO)	Truck	2,159.0	liters	21.2	4.9	-
Scope 1 total				254.7	65.3	0.1 %
Electricity total				923.7	16.7	-
Electricity Norway	Consumption electricity office	795,486.0	kWh	795.5	4.9	-
Electricity Norway	Electric train - downstream distribution	61,211.0	kWh	61.2	0.4	-
Electricity Netherlands	Consumption electricity warehouse with 6 solar panels on the roof.	25,735.0	kWh	25.7	8.0	-
Electricity Netherlands	Consumption electricity PHEV car	509.0	kWh	0.5	0.2	-
Electricity Sweden	Consumption electricity office	27,000.0	kWh	27.0	0.3	-
Electricity UK	Consumption electricity warehouse & office	13,806.0	kWh	13.8	2.8	-
District heating location total				67.7	0.6	-
District heating NO/Oslo	Consumption district heating of office	67,716.0	kWh	67.7	0.6	-
Scope 2 total				991.5	17.3	-
Purchased goods and services total				-	8,647.6	7.3 %
Cotton fabric, conventional (T1-4)	Cotton composition	14,087.0	kg	-	138.2	0.1 %
Cotton fabric, conventional (T1-4)	Cotton composition >50%	43,010.0	kg	-	421.9	0.4 %
Cotton fabric, conventional (T1-4)	Cotton composition >70%	91,554.0	kg	-	898.1	0.8 %
Cotton fabric, conventional (T1-4)	Cotton composition >74%	41,444.0	kg	-	406.6	0.3 %
Cotton fabric, conventional (T1-4)	Cotton composition 100% Cotton	80,769.0	kg	-	792.3	0.7 %
Polyester fabric (T1-4)	Polyester composition	13,940.0	kg	-	154.6	0.1 %
Polyester fabric (T1-4)	Polyester composition >65%	132,811.0	kg	-	1,472.9	1.2 %
Polyester fabric (T1-4)	Polyester composition >50%	7,287.0	kg	-	80.8	0.1 %
Viscose/Rayon fabric (T1-4)	FR viscose composition >50%	31,396.0	kg	-	496.4	0.4 %
Acrylic fabric (T1-4)	Modacrylic (35-50%)	4,612.0	kg	-	59.8	0.1 %
Nitrile gloves (A1-A3)	Item 289, 299, 11300	25,721.0	kg	-	159.2	0.1 %
Tencel fabric (T1-4)	LenzingFR composition >50-65%	2,363.0	kg	-	23.5	-
Polyester fabric, recycled (T1-4)	Polyester composition >65%	7,224.0	kg	-	60.8	0.1 %
Leather, goat (T1-4)	100% Goatskin Leather (lining in Para aramid, polyester, and glass)	67,203.0	kg	-	1,326.6	1.1 %
Polyurethane fabric (T1-4)	>50% Polyurethane (mixed with nylon and polyester)	27,729.0	kg	-	411.8	0.3 %
Polypropylene fabric (T1-4)	Modacrylic composition >50%	64,250.0	kg	-	700.3	0.6 %
Latex	Item 11200	1,848.0	kg	-	5.1	-
Leather, cow (T1-4)	100% Cowhide Split Leather (lining in Para Aramid and polyester)	28,534.0	kg	-	1,024.4	0.9 %
Wool, fine (T1-4)	Wool composition	73.0	kg	-	2.9	-
Lyocell fabric (T1-4)	LenzingFR composition >50-70%	835.0	kg	-	11.5	-

Upstream transportation and distribution total			-	62,745.7	53.2 %
Sea Container 5000-7999 TEU	Both FCL & LCL	3,149,020,423.0 tkm	-	52,903.5	44.8 %
Truck with trailer 33t+	European suppliers	1,102,567.0 km	-	1,006.3	0.9 %
Air Intercontinental freight	Due to congestion	13,620,795.0 tkm	-	8,835.8	7.5 %
Waste total			-	25.5	-
Organic waste, anaerobic digestion	Aerobic, biological treatment - Oslo	124.0 kg	-	-	-
Organic waste, anaerobic digestion	Aerobic, biological treatment Måndalen	2,090.0 kg	-	-	-
Wood waste, recycled	Processing wood - Oslo	5.3 kg	-	-	-
Wood waste, recycled	Wood waste Netherlands	1,060.0 kg	-	-	-
Residual waste, incinerated	Residual waste - Oslo	667.0 kg	-	0.4	-
Residual waste, incinerated	Residual waste Måndalen	33,624.0 kg	-	18.5	-
Residual waste, incinerated	Residual waste Scotland	320.0 kg	-	0.2	-
Residual waste, incinerated	Residual waste Netherlands	1,620.0 kg	-	0.9	-
Mixed waste, recycled	Mixed waste Måndalen	94,415.0 kg	-	2.0	-
Residual waste, landfill	Residual waste Måndalen	6,846.0 kg	-	3.4	-
Paper waste, recycled	Paper waste Scotland	647.0 kg	-	-	-
Paper waste, recycled	Paper waste Netherlands	1,540.0 kg	-	-	-
Paper waste, recycled	Office paper - Oslo	207.0 kg	-	-	-
Wood waste, incinerated	Wood waste Scotland	180.0 kg	-	-	-
EE waste, recycled	Electrical waste Måndalen	280.0 kg	-	-	-
Plastic waste, recycled	Foil plastic and mixed plastic packaging - Oslo	17.6 kg	-	-	-
Downstream transportation and distribution total			-	46,314.6	39.3 %
Truck 3.5-7.5t	Local distribution	4,984,368.0 km	-	2,420.4	2.1 %
Truck with trailer 33t+	Longer distribution distance	34,482,917.0 km	-	31,472.6	26.7 %
Truck with trailer 33t+	European bulk distribution	40,095.0 km	-	36.6	-
Rail freight	Train Diesel	12,385.0 tCO ₂ e	-	12,385.0	10.5 %
End-of-life treatment of sold products total			-	12.4	-
Residual waste, incinerated	Residual waste (destruction on behalf of customers)	22,550.0 kg	-	12.4	-
Scope 3 IT and Communication total			-	144.5	0.1 %
Desktop computer all-in-one	Client incl. network	23.0 Qty	-	9.5	-
Computer mouse, optical	Client	32.0 Qty	-	0.2	-
Printer, laser, color	Client	39.0 Qty	-	2.5	-
Server	Server, storage incl. devices	54.0 Qty	-	92.3	0.1 %
Lenovo ThinkPad L14 (A1-3)	Client	17.0 Qty	-	7.7	-
Smartphone	Client	26.0 Qty	-	2.0	-
Headphones, Jabra Evolve2 55 (A1-3)	Client, incl. airpods	38.0 Qty	-	0.1	-
Keyboard	Client, incl. barcode readers	45.0 Qty	-	1.4	-
Monitor 27"	Client	72.0 Qty	-	28.4	-
Power adapter, laptop	Client, incl. network adapters	78.0 Qty	-	0.4	-
Scope 3 - Packaging total			-	21.6	-
Paper, mixed	Outbound packaging (FSC mix certified)	24,709.0 kg	-	21.4	-
Plastic packaging waste, recycled	Outbound packaging	5,123.0 kg	-	0.1	-
Scope 3 total			-	117,911.9	99.9 %
Total			1,246.2	117,994.4	100.0 %
kj			4,486,357,310.4		

Reporting Year Market-Based GHG Emissions

Category	Unit	2023
Electricity Total (Scope 2) with Market-based calculations	tCO ₂ e	446.9
Scope 2 Total with Market-based electricity calculations	tCO ₂ e	447.5
Scope 1+2+3 Total with Market-based electricity calculations	tCO ₂ e	118,424.6

The above provides a comprehensive summary of the GHG emissions accounting of Wenaas Workwear AS for the reporting year. It illustrates the scopes and scope 3 categories included, along with the respective emission sources. The table presents consumption data and its corresponding reporting unit (e.g., kg, liters, kgCO₂e, km), consumption data converted into energy (MWh) and tCO₂e, and the % share each emission source represented in the overall GHG emissions accounting.

Summarized, Wenaas Workwear tCO₂e emissions per scope for 2023:

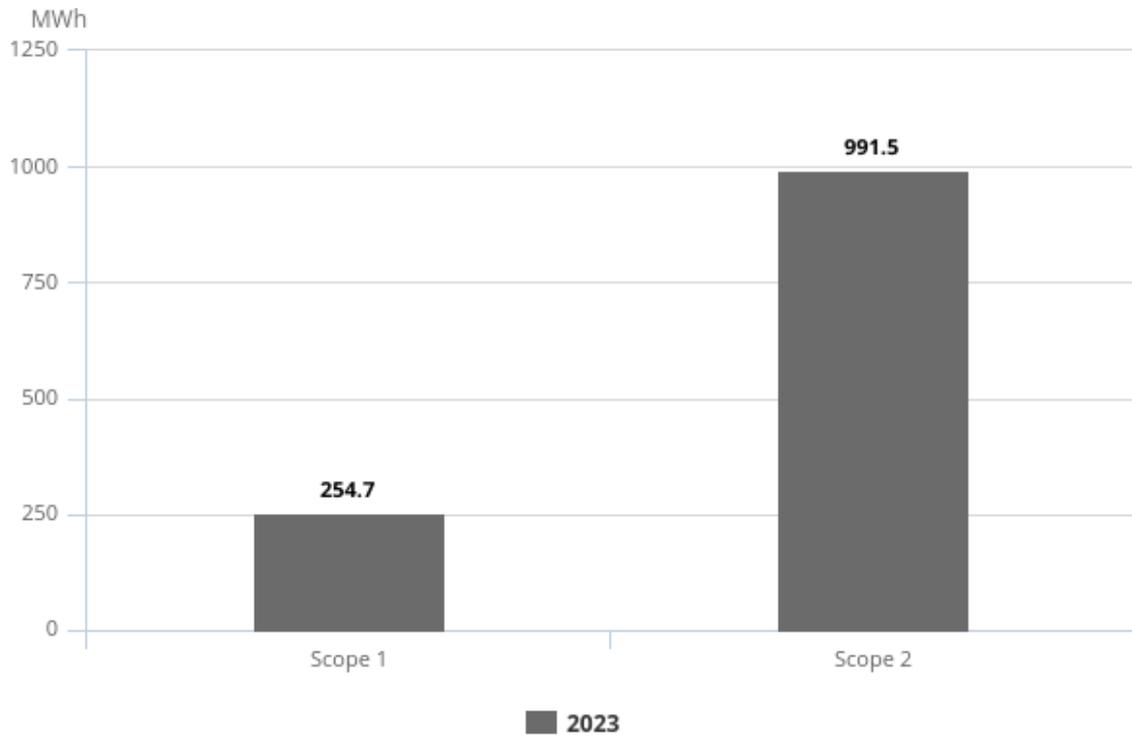
- *Scope 1*: 65,3 tCO₂e
- *Scope 2*: 17,3 tCO₂e
- *Scope 3*: 117 911,9 tCO₂

Annual GHG Emissions

Category	Description	2023	2023	2023	% change from previous year
Transportation total		65.3	65.3	65.3	-
Diesel	Company cars	10.8	10.8	10.8	-
Diesel	Company car	3.6	3.6	3.6	-
Diesel	Company cars	3.7	3.7	3.7	-
Petrol	1 company car (PHEV).	3.6	3.6	3.6	-
Petrol	Company cars	38.5	38.5	38.5	-
Diesel (NO)	Truck	4.9	4.9	4.9	-
Scope 1 total		65.3	65.3	65.3	-
Electricity location-based total		16.7	16.7	16.7	-
Electricity Norway	Consumption electricity office	4.9	4.9	4.9	-
Electricity Norway	Electric train - downstream distribution	0.4	0.4	0.4	-
Electricity Netherlands	Consumption electricity warehouse with 6 solar panels on the roof.	8.0	8.0	8.0	-
Electricity Netherlands	Consumption electricity PHEV car	0.2	0.2	0.2	-
Electricity Sweden	Consumption electricity office	0.3	0.3	0.3	-
Electricity UK	Consumption electricity warehouse & office	2.8	2.8	2.8	-
District heating location total		0.6	0.6	0.6	-
District heating NO/Oslo	Consumption district heating of office	0.6	0.6	0.6	-
Scope 2 total		17.3	17.3	17.3	-
Purchased goods and services total		8,647.6	8,647.6	8,647.6	-
Cotton fabric, conventional (T1-4)	Cotton composition	138.2	138.2	138.2	-
Cotton fabric, conventional (T1-4)	Cotton composition >50%	421.9	421.9	421.9	-
Cotton fabric, conventional (T1-4)	Cotton composition >70%	898.1	898.1	898.1	-
Cotton fabric, conventional (T1-4)	Cotton composition >74%	406.6	406.6	406.6	-
Cotton fabric, conventional (T1-4)	Cotton composition 100% Cotton	792.3	792.3	792.3	-
Polyester fabric (T1-4)	Polyester composition	154.6	154.6	154.6	-
Polyester fabric (T1-4)	Polyester composition >65%	1,472.9	1,472.9	1,472.9	-
Polyester fabric (T1-4)	Polyester composition >50%	80.8	80.8	80.8	-
Viscose/Rayon fabric (T1-4)	FR viscose composition >50%	496.4	496.4	496.4	-
Acrylic fabric (T1-4)	Modacrylic (35-50%)	59.8	59.8	59.8	-
Nitrile gloves (A1-A3)	Item 289, 299, 11300	159.2	159.2	159.2	-
Tencel fabric (T1-4)	LenzingFR composition >50-65%	23.5	23.5	23.5	-
Polyester fabric, recycled (T1-4)	Polyester composition >65%	60.8	60.8	60.8	-
Leather, goat (T1-4)	100% Goatskin Leather (lining in Para aramid, polyester, and glass)	1,326.6	1,326.6	1,326.6	-
Polyurethane fabric (T1-4)	>50% Polyurethane (mixed with nylon and polyester)	411.8	411.8	411.8	-
Polypropylene fabric (T1-4)	Modacrylic composition >50%	700.3	700.3	700.3	-
Latex	Item 11200	5.1	5.1	5.1	-
Leather, cow (T1-4)	100% Cowhide Split Leather (lining in Para Aramid and polyester)	1,024.4	1,024.4	1,024.4	-
Wool, fine (T1-4)	Wool composition	2.9	2.9	2.9	-
Lyocell fabric (T1-4)	LenzingFR composition >50-70%	11.5	11.5	11.5	-
Upstream transportation and distribution total		62,745.7	62,745.7	62,745.7	-

Sea Container 5000-7999 TEU	Both FCL & LCL	52,903.5	52,903.5	52,903.5	-
Truck with trailer 33t+	European suppliers	1,006.3	1,006.3	1,006.3	-
Air Intercontinental freight	Due to congestion	8,835.8	8,835.8	8,835.8	-
Waste total		25.5	25.5	25.5	-
Organic waste, anaerobic digestion	Aerobic, biological treatment - Oslo	-	-	-	-
Organic waste, anaerobic digestion	Aerobic, biological treatment Måndalen	-	-	-	-
Wood waste, recycled	Processing wood - Oslo	-	-	-	-
Wood waste, recycled	Wood waste Netherlands	-	-	-	-
Residual waste, incinerated	Residual waste - Oslo	0.4	0.4	0.4	-
Residual waste, incinerated	Residual waste Måndalen	18.5	18.5	18.5	-
Residual waste, incinerated	Residual waste Scotland	0.2	0.2	0.2	-
Residual waste, incinerated	Residual waste Netherlands	0.9	0.9	0.9	-
Mixed waste, recycled	Mixed waste Måndalen	2.0	2.0	2.0	-
Residual waste, landfill	Residual waste Måndalen	3.4	3.4	3.4	-
Paper waste, recycled	Paper waste Scotland	-	-	-	-
Paper waste, recycled	Paper waste Netherlands	-	-	-	-
Paper waste, recycled	Office paper - Oslo	-	-	-	-
Wood waste, incinerated	Wood waste Scotland	-	-	-	-
EE waste, recycled	Electrical waste Måndalen	-	-	-	-
Plastic waste, recycled	Foil plastic and mixed plastic packaging - Oslo	-	-	-	-
Downstream transportation and distribution total		46,314.6	46,314.6	46,314.6	-
Truck 3.5-7.5t	Local distribution	2,420.4	2,420.4	2,420.4	-
Truck with trailer 33t+	Longer distribution distance	31,472.6	31,472.6	31,472.6	-
Truck with trailer 33t+	European bulk distribution	36.6	36.6	36.6	-
Rail freight	Train Diesel	12,385.0	12,385.0	12,385.0	-
End-of-life treatment of sold products total		12.4	12.4	12.4	-
Residual waste, incinerated	Residual waste (destruction on behalf of customers)	12.4	12.4	12.4	-
Scope 3 IT and Communication total		144.5	144.5	144.5	-
Desktop computer all-in-one	Client incl. network	9.5	9.5	9.5	-
Computer mouse, optical	Client	0.2	0.2	0.2	-
Printer, laser, color	Client	2.5	2.5	2.5	-
Server	Server, storage incl. devices	92.3	92.3	92.3	-
Lenovo ThinkPad L14 (A1-3)	Client	7.7	7.7	7.7	-
Smartphone	Client	2.0	2.0	2.0	-
Headphones, Jabra Evolve2 55 (A1-3)	Client, incl. airpods	0.1	0.1	0.1	-
Keyboard	Client, incl. barcode readers	1.4	1.4	1.4	-
Monitor 27"	Client	28.4	28.4	28.4	-
Power adapter, laptop	Client, incl. network adapters	0.4	0.4	0.4	-
Scope 3 - Packaging total		21.6	21.6	21.6	-
Paper, mixed	Outbound packaging (FSC mix certified)	21.4	21.4	21.4	-
Plastic packaging waste, recycled	Outbound packaging	0.1	0.1	0.1	-
Scope 3 total		117,911.9	117,911.9	117,911.9	-
Total		117,994.4	117,994.4	117,994.4	-
Percentage change		100.0 %	100.0 %	100.0 %	-

Annual energy consumption (MWh) Scope 1 & 2



Annual Market-Based GHG Emissions

Category	Unit	2023	2023	2023
Electricity Total (Scope 2) with Market-based calculations	tCO ₂ e	446.9	446.9	446.9
Scope 2 Total with Market-based electricity calculations	tCO ₂ e	447.5	447.5	447.5
Scope 1+2+3 Total with Market-based electricity calculations	tCO ₂ e	118,424.6	118,424.6	118,424.6
Percentage change		100.0 %	100.0 %	100.0 %

Methodology and sources

The Greenhouse Gas Protocol initiative (GHG Protocol) was developed by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). This analysis is done according to *A Corporate Accounting and Reporting Standard Revised edition*, currently one of four GHG Protocol accounting standards on calculating and reporting GHG emissions. The reporting considers the following greenhouse gases, all converted into CO₂-equivalents: CO₂, CH₄ (methane), N₂O (laughing gas), SF₆, HFCs, PFCs and NF₃.

For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share approach and the control approach. The most common consolidation approach is the control approach, which can be defined in either financial or operational terms.

The carbon inventory is divided into three main scopes of direct and indirect emissions.

Scope 1 includes all direct emission sources. This includes all use of fuels for stationary combustion or transportation, in owned and, depending on the consolidation approach selected, leased, or rented assets. It also includes any process emissions, from e.g. chemical processes, industrial gases, direct methane emissions etc., as well as leakage of refrigerants.

Scope 2 includes indirect emissions related to purchased energy, including electricity and heating/cooling in assets owned/controlled by the organisation.

In January 2015, the GHG Protocol published new guidelines for calculating emissions from electricity consumption. Primarily two methods are used to “allocate” the GHG emissions generated by electricity production to the end consumers on a given grid, namely the location-based and the market-based method. The location-based method reflects the average emission intensity of the grids on which energy consumption occurs, while the market-based method reflects emissions from electricity that companies have purposefully chosen (or not chosen).

Organisations who report on their GHG emissions will now have to disclose both the location-based emissions from the production of electricity, and the market-based emissions related to the potential purchase of Guarantees of Origin (GoOs) and Renewable Energy Certificates (RECs).

The purpose of this amendment in the reporting methodology is on the one hand to show the impact of energy efficiency measures, and on the other hand to display how the acquisition of GoOs or RECs affect the GHG emissions. Using both methods in the emissions accounting highlights the effect of both of these types of measures regarding electricity consumption.

The location-based method: The location-based method is based on statistical emissions information and electricity output aggregated and averaged within a defined geographic boundary and during a defined time period. Within this boundary, the different energy producers utilize a mix of energy resources, where the use of fossil fuels (coal, oil, and gas) result in direct GHG-emissions. These emissions are reflected in the location-based emission factor. Most location-based electricity emission factors used in CEMAsys are based on national gross electricity production mixes and are published by the International Energy Agency's statistics (IEA Stat). Emission factors per fuel type are in these calculations based on assumptions in the IEA methodological framework. Emission factors for district heating/cooling are either based on actual (local) production mixes, or average national statistics.

The market-based method: The choice of emission factors when using this method is determined by whether the organisation acquires GoOs/RECs or not. When selling GoOs for renewable electricity or RECs, the supplier guarantees that the same amount of electricity has been produced exclusively from renewable sources, which is assumed to have an emission factor of 0 grams CO₂e per kWh. However, for electricity without GoOs or RECs, the emission factor should instead be based on the remaining electricity supply after all GoOs for renewable electricity and/or RECs have been sold and cancelled. This is called the residual mix, which in most cases is connected to a substantially higher emission factor than the location-based emission

factor.

Scope 3 includes indirect emissions resulting from other value chain activities. The scope 3 emissions are a result of the company's upstream and downstream activities, which are not directly controlled by the organisation. Examples include production of purchased goods and services, business travel, goods transportation, waste handling, use of sold products, etc.

In general, the carbon accounting should include information that stakeholders, both internal and external to the company, need for their decision making. An important aspect of relevance is the selection of an appropriate inventory boundary which reflects the substance and economic reality of the company's business relationships.

Sources:

DEFRA (2023). UK Government GHG Conversion Factors for Company Reporting, [Department for Business, Energy & Industrial Strategy](#) (DEFRA)

IEA (2023). Emission Factors database, International Energy Agency (IEA), Paris.

Ecoinvent 3.8, 3.9.1, and 3.10. Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment.

IMO (2020). Reduction of GHG emissions from ships - Third IMO GHG Study 2014 (Final report). International Maritime Organisation, <https://www.imo.org/en/ourwork/environment/pages/greenhouse-gas-studies-2014.aspx>

IPCC (2007). IPCC Fourth Assessment Report: Climate Change 2007 (AR4). <https://www.ipcc.ch/report/ar4/>

IPCC (2014). IPCC fifth assessment report: Climate change 2013 (AR5 updated version November 2014). <http://www.ipcc.ch/report/ar5/>

AIB (2023). European Residual Mixes 2022, Association of Issuing Bodies.

WBCSD/WRI (2004). The greenhouse gas protocol. A corporate accounting and reporting standard (revised edition). World Business Council on Sustainable Development (WBCSD), Geneva, Switzerland /World Resource Institute (WRI), Washington DC, USA, 116 pp.

WBCSD/WRI (2011). Corporate value chain (Scope 3) accounting and reporting standard: Supplement to the GHG Protocol corporate accounting and reporting standard. World Business Council on Sustainable Development (WBCSD), Geneva, Switzerland /World Resource Institute (WRI), Washington DC, USA, 149 pp.

WBCSD/WRI (2015). GHG protocol Scope 2 guidance: An amendment to the GHG protocol corporate standard. World Business Council on Sustainable Development (WBCSD), Geneva, Switzerland /World Resource Institute (WRI), Washington DC, USA, 117 pp.

The reference list above is not necessarily complete, but contains the most essential references used in CEMAsys. In addition, several local/national sources may be used, depending on the selection of emission factors.