Cosmoproject
HEALTH & BEAUTY

Carbon Footprint

Carbon Footprint

The organisation's carbon footprint

Integrated measurement that quantifies an Organisation's direct and indirect greenhouse gas (GHG) emissions.

- **Direct emissions**: fixed or mobile combustion processes
- **Indirect emissions**: consumption of energy carriers imported from outside (e.g. electricity) and all emissions generated by the supply and distribution chain, waste, employee travel, etc.

The main international reference protocol that describes the methodology for calculating an organisation's GHG emissions is the *GHG Protocol*. Created in the late 1990s by the *World Resources Institute and the World Business Council for Sustainable Development*, it defines the international standard for corporate GHG accounting and reporting. The *Corporate Standard*, published in 2001, and subsequently updated with further guidelines, clarifies how companies can measure the emissions generated by their activities and account for them throughout their value chains.

The *GHG Protocol* divided direct and indirect emissions into three areas: Scope 1, Scope 2 and Scope

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The organisation's carbon footprint

- **Scope 1 Emissions**: they represent the organisation's direct emissions. They correspond to the emissions generated by combustion processes (either fixed or mobile) and also include the so-called "fugitive" emissions of refrigerant gases or methane from organic deposits.
- **Scope 2 emissions**: these represent indirect emissions generated by the use of energy imported from outside, such as electricity purchased from the grid or heat and/or steam for HVAC or process uses.
- **Scope 3 emissions**: These represent all other indirect emissions generated by the organisation as a consequence of its activities, but which are not under the direct control of the organisation itself. For example, emissions related to the distribution of the products or services provided, as well as those related to the procurement of raw materials from suppliers, fall into this category.

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The organisation's carbon footprint is based on the international standard ISO 14064:2018, part 1

- ISO 14064 is an international standard that provides guidelines and requirements for the quantification, monitoring, reporting and verification of greenhouse gas (GHG) emissions.
- The standard establishes the requirements necessary to account for direct and indirect GHG emissions and any removals by the organisation
- It considers emissions throughout the value chain, from the sourcing of raw materials to the distribution of the manufactured product or service rendered.
- It is necessary to define a reference year that serves as a performance comparison for subsequent calculations.
- It provides for the development of an improvement (mitigation) plan

Carbon Footprint

The organisation's carbon footprint

There are four main phases that characterise the Carbon Footprint:

1. Definition of the objective of the study, the field of application, the organisational and operational boundaries of the Organisation to be analysed;
2. Inventory analysis, i.e. the quantification of the flows of material and energy throughout the entire activity of the Organisation, therefore both incoming and outgoing;
3. Analysis of the organisation's environmental impact, a phase in which the flows of substances and energy identified during the inventory are sorted, classified and transformed into GHG emissions, with the help of appropriate coefficients;
4. Interpretation of the results, carried out on the basis of the methodological assumptions adopted.

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The Analysis by Cosmoproject

Reporting unit: Cosmoproject S.p.A. as a whole, having its production site located in Italy, in Strada Mazzabue 5 in the municipality of Sorbolo Mezzani (PR).

Reporting period: 2022 and 2023

Reference flow: All products made by the Cosmoproject organisation in the years 2022 and 2023.

Baseline year: 2023

Exclusions: use and end-of-life of the products sold

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Methodology

The calculation methodology used is based on the multiplication of the “Activity data”, which quantifies the activity, and the corresponding “Emission factor”:

GHG Emission = Activity Data * EF

where:

- “GHG emission” is the quantification of GHG emitted by the activity, expressed in terms of tonnes of CO2 eq.
- “Activity data” is the quantity, generated or used, describing the activity, expressed in terms of energy (kWh), mass (Kg or ton), distance (km) and volume (m3 or l).
- “EF” is the emission factor that can transform the quantity into the resulting GHG emission, expressed in CO2 eq emitted per unit of given activity.

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Emission factor databases

As regards the emission factors, the most recent and updated values from the main internationally recognised databases were used. In particular, this study referred to the following sources:

- Intergovernmental Panel On Climate Change (IPCC) - IPCC, 2006. Guidelines for National Greenhouse Gas Inventories
- National Inventory Report 2023 – Italian Greenhouse Gas Inventory 1990-2021 (ISPRA)
- Residial Mix Emission Factor - AIB (Association of Issuing Bodies)
- United States Envirormental Protection Agency
- International Panel Climate Change (100-year GWPs from IPCC Fifth Assessment Report (AR5), 2014)
- Ecoinvent Database version 3.9.1

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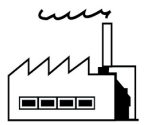
System boundary: from the supplier's to the customer's gate



Supplier

UPSTREAM

GHG emissions from production of (scope 3)
- Raw materials
- Packaging
- Other materials

GHG emissions from transport of (scope 3)
- Raw materials
- Packaging
- Other materials

CORE

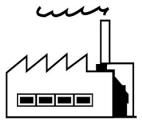
EMISSIONS FROM ENERGY CONSUMPTION (scope 1 and scope 2)
- Electricity
- Natural gas
- Automotive fuels

FUGGITIVE EMISSIONS F-Gas (scope 1)

EMISSIONS FROM (scope 3)
- Business trips
- Company cars
- Employee commuting
- Waste (transport and processing)

DOWNSTREAM

GHG emissions from distribution of finished products (scope 3)



Customer

System boundaries

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Upstream Analysis

Product type	Production		Transport		Total	
	2022	2023	2022	2023	2022	2023
Raw materials	6.828,6	6.140,8	132,0	107,2	6.960,6	6.248,1
Packaging	2.835,7	3.432,8	130,3	96,1	2.965,9	3.529,0
Auxiliary materials	22,2	27,7	76,2	62,3	98,3	90,0
TOTAL (t CO2 eq)	**9.686,5**	**9.601,4**	**338,4**	**265,6**	**10.024,9**	**9.867,0**

emissioni di GHG fase UpStream

This phase takes into consideration the impact, in terms of GHG emissions, of the procurement phases (production and transport) of raw materials, semi-finished products, packaging and consumables purchased by the Organisation.

- Raw materials: substances, preparations and compounds necessary for the production of different products
- Packaging: materials for product packaging
- Auxiliary materials: consumables such as polyethylene bags, toilet and absorbent paper, caps, gloves, etc.

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CORE analysis

Stationary combustion	year 2022	year 2023
Natural gas consumption (Sm^3):	216.966	233.572
Natural gas consumption (kWh):	2.109.111	2.270.537
Emission Factors (kg/kWh)		
CO_2	0,202	
CH_4	1,80E-05	
N_2O	3,60E-07	
CO_2 eq	0,203	
Emission factor databases	IPCC 2006 - GWP 100 IPCC Fifth Assessment Report, 2014 (AR5) - JRC	
Overall emissions (t CO_2 eq)	**427,2**	**459,9**
Var % 2022-2023		**+7,7%**

Mobile combustion	anno 2022	anno 2023
Diesel consumption (litres):	8.100	20.704
Diesel consumption (kWh):	80.218	205.042
Emission Factors (kg/kWh)		
CO_2	0,267	
CH_4	1,40E-05	
N_2O	1,40E-05	
CO_2 eq	0,271	
Emission factor databases	IPCC 2006 - GWP 100 IPCC Fifth Assessment Report, 2014 (AR5) - JRC	
Emissioni complessive (t CO_2 eq)	**21,7**	**55,5**
Var % 2022-2023		**+155,6%**

Direct emissions of scope 1 and indirect emissions of scope 2

Supply type	kWh 2022	kWh 2023
Total Electricity	3.276.350	3.364.632
of which		
Electricity from RTN	*1.856.439*	*1.258.164*
Electricity from RTN with GO	*1.048.787*	*1.309.517*
Self-produced electricity	*371.124*	*796.951*

Indirect emissions (Scope 2)	2022	2023
Emission Factors (g/kWh) – Location Based		
CO_2	289,2	236,3
CH_4	6,75E-01	6,95E-01
N_2O	1,16E+00	1,20E+00
CO_2 eq	291,1	238,2
Emission factor databases	ISPRA - National Inventory Report 2023 - Italian Greenhouse Gas Inventory 1990-2021	
Emission Factors (g/kWh) - Market Based		
CO_2	457,1	500,6
Emission factor databases	AIB (Association of Issuing Bodies)	
Emissions (t CO2 eq)		
Location Based overall emissions (t CO_2 eq)	**845,7**	**611,6**
	Var %	**-27,7%.**
Market Based overall emissions (t CO_2 eq)	**848,7**	**629,8**
	Var %	**-25,8%**

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CORE analysis

Category	Ton CO2 eq 2022	Ton CO2 eq 2023
Waste produced	171,0	767,8
Business trips	3,3	9,1
Rental cars	29,4	30,5
Staff commuting	508,1	508,1

- Waste produced: impact generated by the transport of the waste to the collection centre and any impact of the processing phases if foreseen
- Business trips: staff travel for work purposes
- Rental cars: impact generated by company cars with long-term rental contracts
- Staff Commuting: Impact of Staff Commuting Modes (2023 Survey Available)

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Downstream analysis

Geographic Area	kg of goods 2022	2022 share %	kg of goods 2023	2023 share %
EU	2.708.685	33,10%	2.805.423	31,97%
IT	5.441.674	66,49%	5.880.859	67,02%
ROW	33.750	0,41%	88.935	1,01%
Overall total	**8.184.110**	100,00%	**8.775.217**	100,00%

Quantities of product distributed and geographical area of destination

Geographic Area	t CO_2 eq tot	2022 share %	t CO_2 eq tot 2023	2023 share %
EU	530,63	62,42%	494,22	53,36%
IT	252,11	29,66%	287,81	31,08%
ROW	67,32	7,92%	144,13	15,56%
Overall total	**850,06**	100,00%	**926,16**	100,00%

GHG emissions related to finished product distribution activities

This phase takes into consideration the impact, in terms of GHG emissions, of the phase of distribution of the products to end customers.
Shipments concern destinations in Italy, Europe and the rest of the world.
To calculate the emission impact, the quantities transported and the distances travelled by road and by ship (reference port Ancona or Livorno) were taken into account, with reference to the individual destinations.

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Summary of results

Scope	Category	Ton CO_2 eq 2022	Ton CO_2 eq 2023	Var % 22-23
Scope 1 direct emissions	Fixed combustion	427,2	459,9	7,7%
	Mobile combustion	21,7	55,5	155,6%
	F-gas	0,0	37,2	n.d.
Scope 2 Indirect emissions	Purchased Electricity	848,7	629,8	-25,8%
Scope 3 Indirect emissions	Purchase of goods and services	9.686,5	9.601,4	-0,9%
	Upstream transport and distribution	338,4	265,6	-21,5%
	Waste produced	171,0	767,8	348,9%
	Business trips	3,3	9,1	175,8%
	Rental cars	29,4	30,5	3,6%
	Staff commuting	508,1	508,1	0,0%
	Downstream transport and distribution	850,1	926,2	9,0%
TOTAL		**12.884,4**	**13.291,2**	**3,2%**
Total	Scope 1	448,9	552,7	23,1%
	Scope 2	848,7	629,8	-25,8%
	Scope 3	11.586,8	12.108,7	4,5%
TOTAL		**12.884,4**	**13.291,2**	**3,2%**

Year	kg CO_2 eq/kg product distributed
2022	1,57
2023	1,51
Variazione %	-3,8%

Despite the slight overall increase, specific GHG emissions per kilogram of product distributed recorded a decrease of almost 4% between 2022 and 2023.

The Organisation's direct Scope 1 emissions account for almost 4% in 2023, a slightly lower value than the indirect Scope 2 emissions calculated using the Market Based methodology. Other indirect emissions (scope 3) represent over 90% of Cosmoproject's overall emissions.

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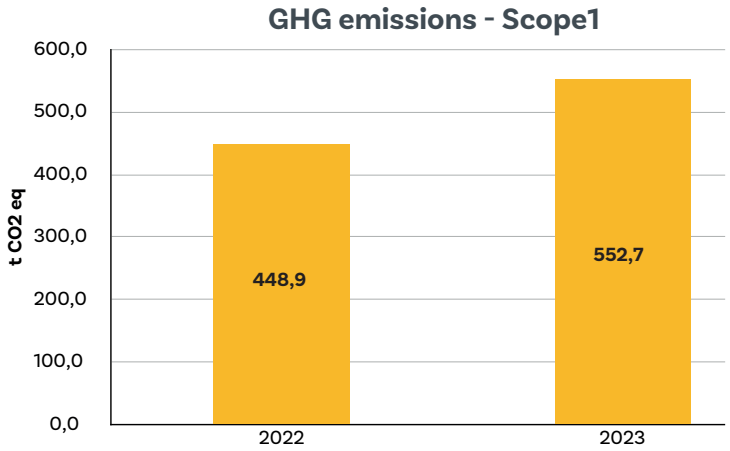
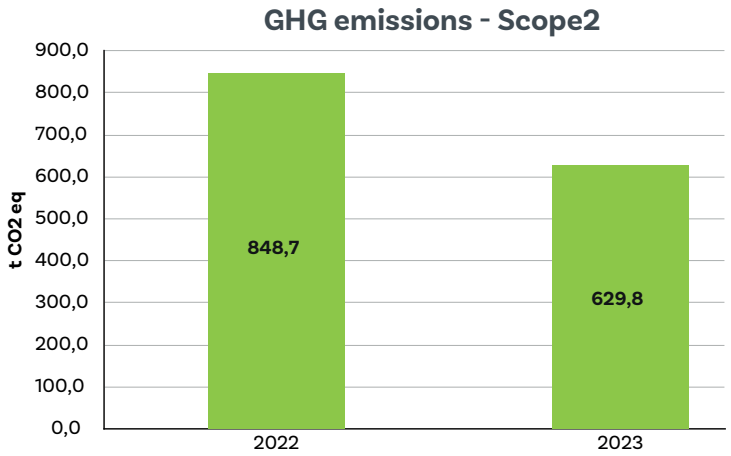
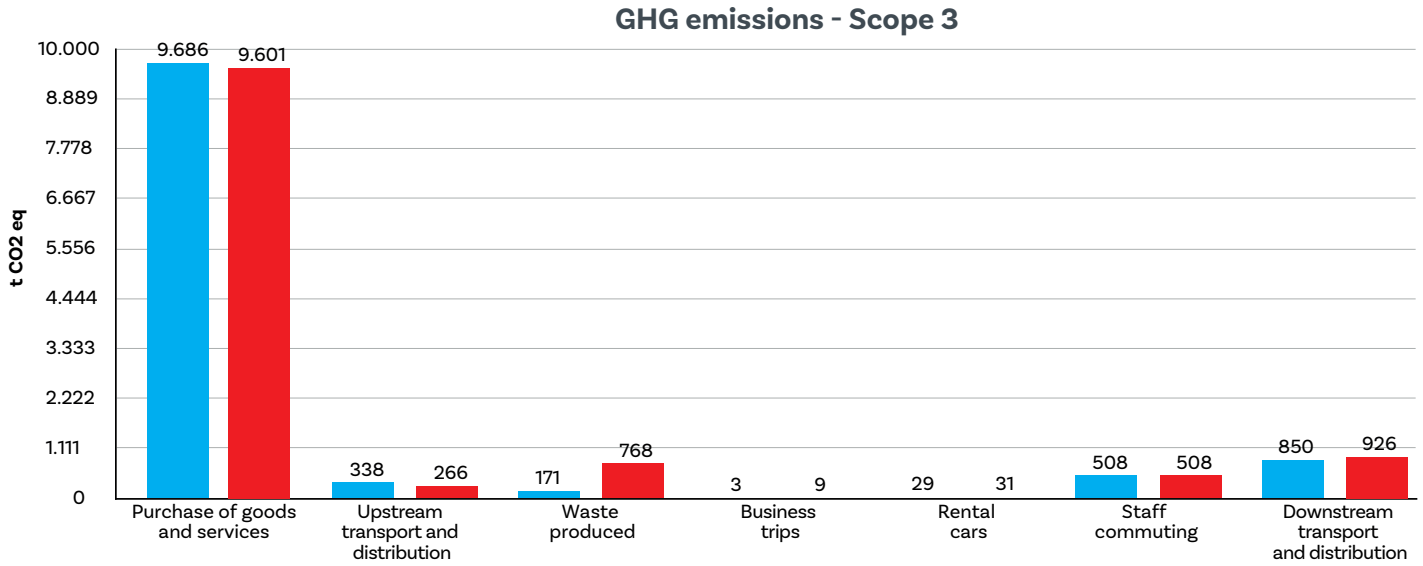
Summary of results







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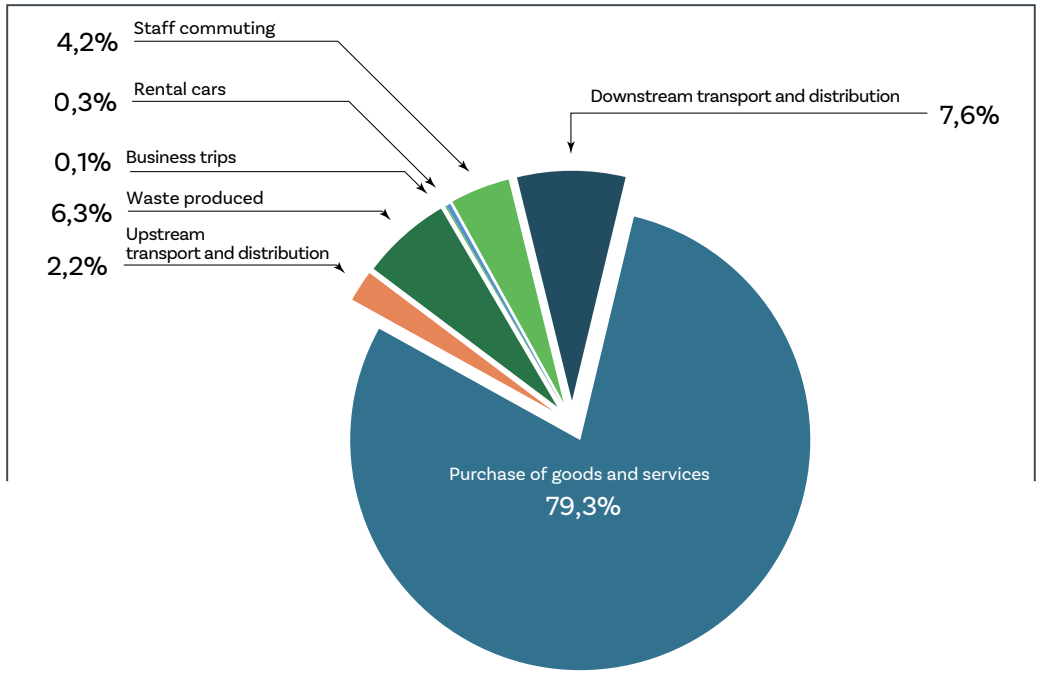
Summary of results

Breakdown of GHG indirect emissions of Scope 3 (2022)



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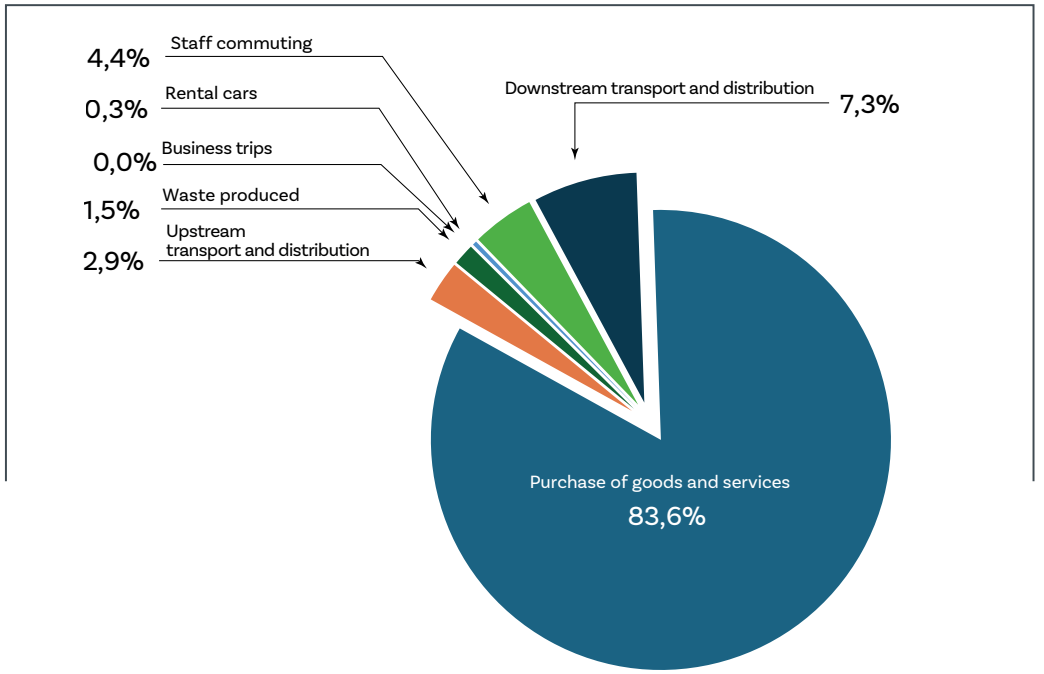

Analysing Scope 3 indirect emissions in more detail, it can be seen that the production of raw materials, packaging materials and auxiliary goods absorbs over 70% of emissions in both years. The distribution phase of finished products is responsible for approximately 6% of the Organisation's overall emissions, while the impact of waste production and staff home-work mobility take on similar shares of just over 5%.

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Ideas for improvement

Direct action

- Monitoring tools: an operational tool that can allow the organisation to calculate GHG emissions (scope 1, 2 and 3) over the months. This would allow monitoring the trend of emissions with a reduced time step and would allow, if necessary, specific improvement measures to be implemented without waiting for the final reporting of the calendar year.
- Fuel shift: change of fuel of company vehicles powered by diesel and petrol towards low or zero environmental impact traction modes
- GHG Emission Offsetting: Support for Local Projects Capable of Generating Carbon Capture

Indirect action

- Indirect actions concern areas that are not under the direct operational control of Cosmoproject and therefore are about the organisation's supply and distribution chain. Qualification of suppliers, through the collection of specific data, also based on the level of GHG emissions, their respective improvement plans and any actions undertaken. Such analyses could allow Cosmoproject to make more informed choices in the selection of its suppliers, harmonising economic aspects with environmental ones.

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