F-one × MANERA

Environmental Audit

2021

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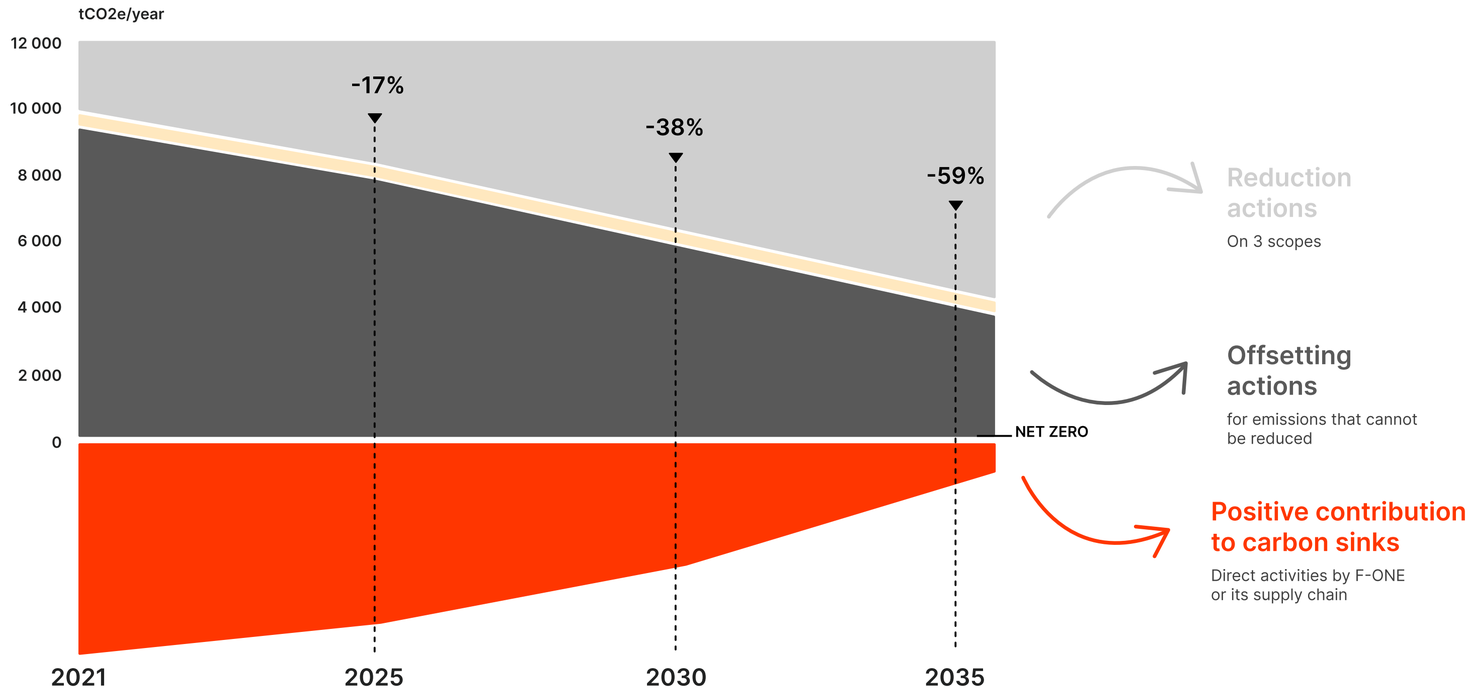
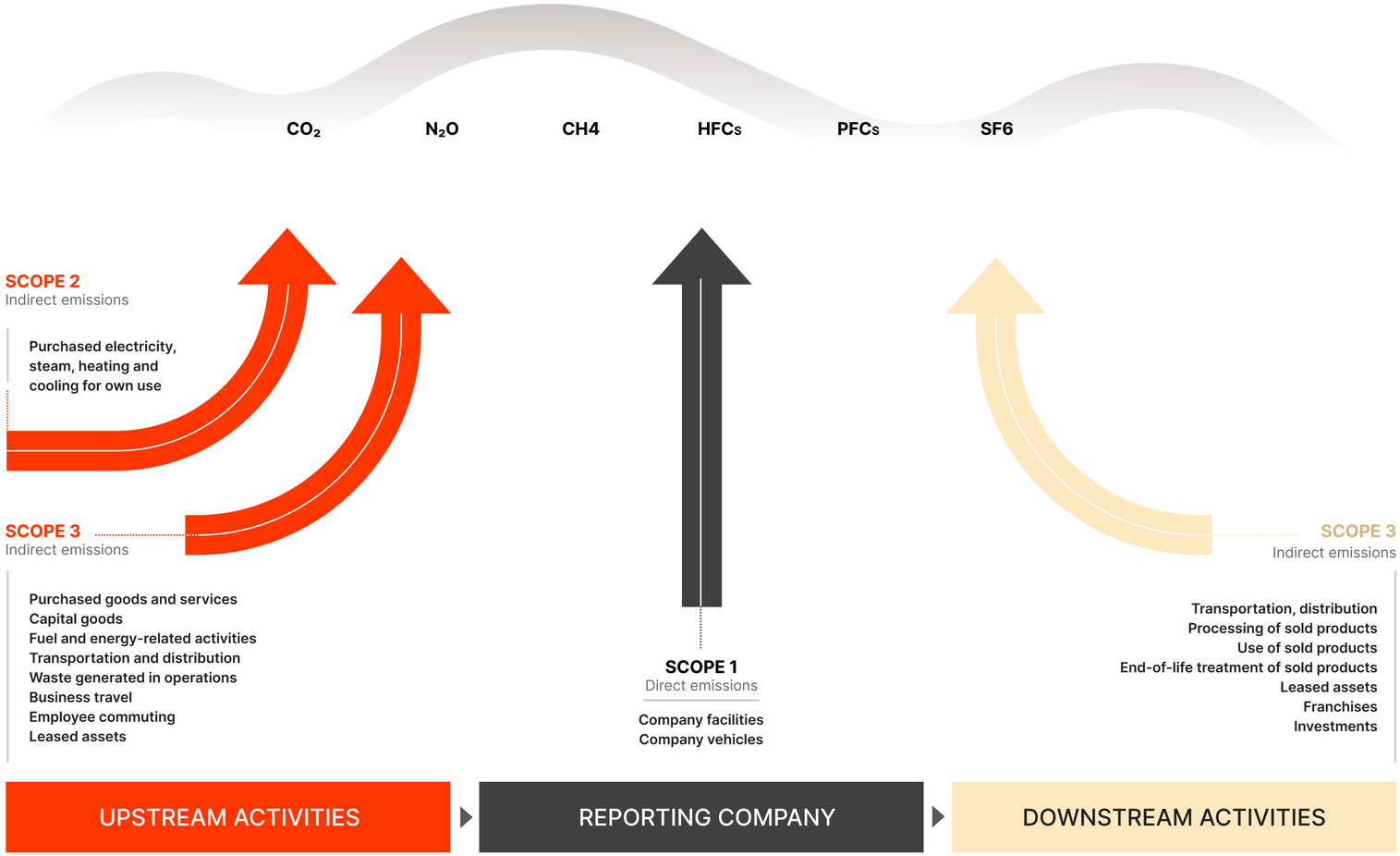
1. Methodology and scope of the study

F-ONE’s carbon trajectory and its contribution to global carbon neutrality

F-ONE’s carbon trajectory comprises three types of action :

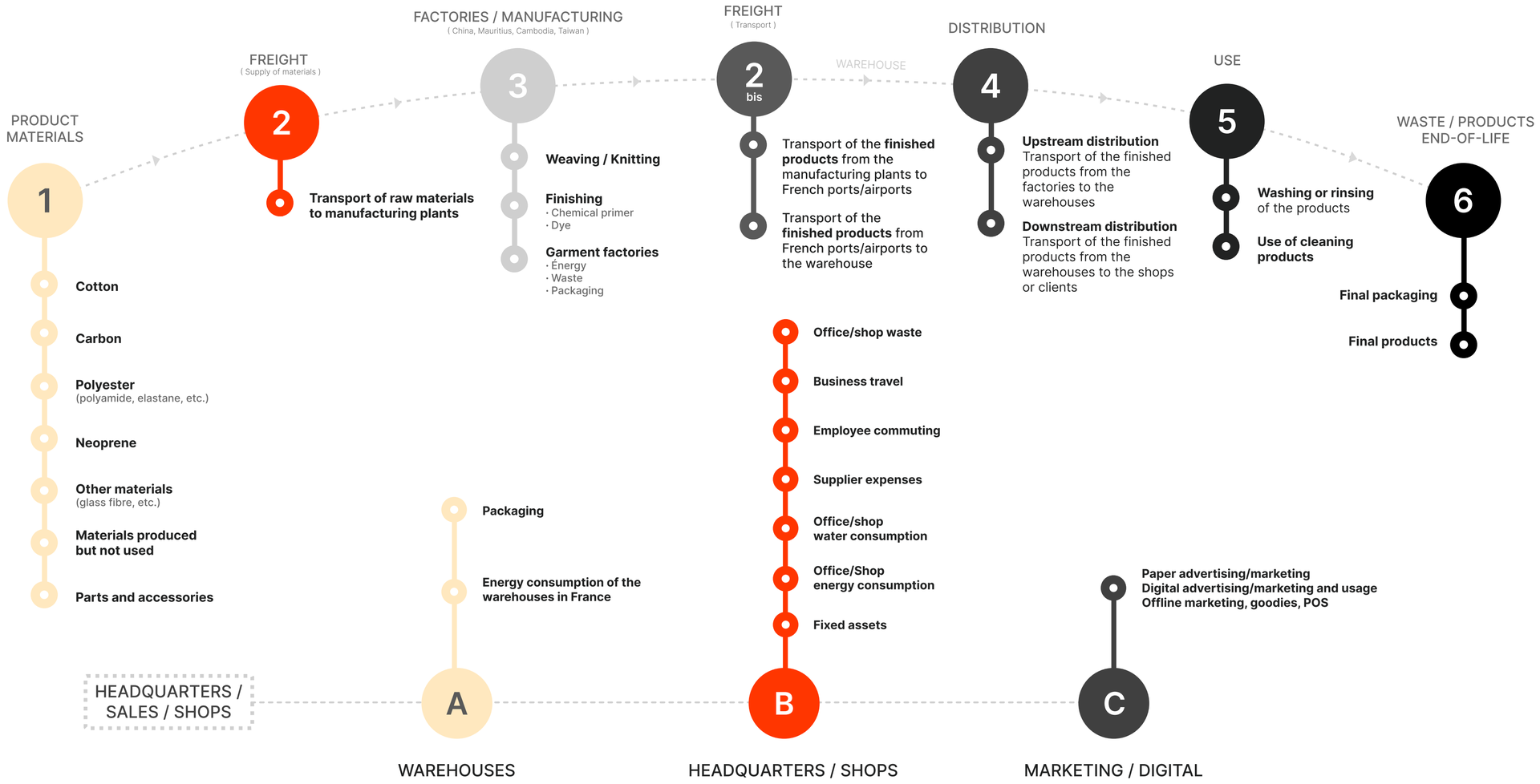


An organization’s main sources of emissions according to the GHG protocol



F-ONE flow chart

Life cycle of products



General scope of the study

Organizational scope

The activities of F-ONE and MANERA have been taken into account on **2 levels :** product life cycle and general services (headquarters and warehouses).

Temporal scope

The analysis is based on **2021 data.**

Methodological clarifications

The aim of this study is to provide an order of magnitude of the CO2 emissions of our activity.

Like all carbon footprint assessments, these calculations contain a significant margin of error. It depends on the inherent margins of error of the following:

- The data collected
- The assumptions used
- Emissions factors supplied by databases (ADEME, Ecoinvent, Exiobase...), which can be significant.

Nevertheless, this methodology has enabled us to provide an initial comprehensive carbon assessment of our company. The uncertainty rate of the data transmitted by F-ONE has not been evaluated. The uncertainty rate of emission factors is on average 43% for general services.

Emissions factors are taken from the following databases: Base IMPACTS (ADEME), Base Carbone (ADEME), Ecoinvent.

- Emissions linked to the manufacturing processes of boardsports equipment were extrapolated on the basis of data linked to the only factory that provided the corresponding information.
- The data required to assess the weaving and knitting phase were modeled by Utopies using average ADEME ratios.
- The finishing and manufacturing phases were calculated using consumption factors per piece (Ecobalyse).
- The use phase includes only the rinsing of products with water.
- For end-of-life products, an average textile end-of-life mix was used for garments. For other products, the average end-of-life of the material in question was used.

2.

Results of the study

9 600 TCO2E

Carbon footprint of our business in **2021**

The annual emissions of **890 French men and women** for one year, equivalent to **10% of the population of Pérols**[1]

160,000 Lyon - Marseille by car, i.e. **3 days of average traffic** on the A7[2]

Sources : [1] INSEE, [2] data.gouv

F-ONE's carbon emissions

41% Materials

31% Manufacturing

12% Freight

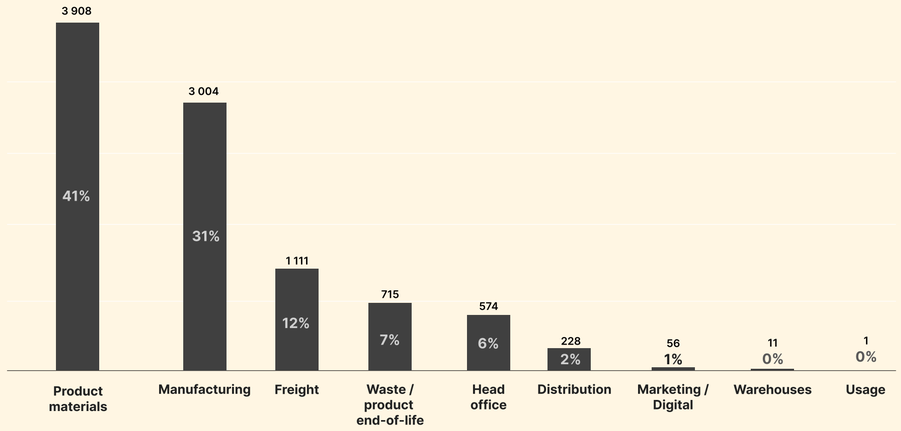
Product materials

41% of F-ONE's carbon footprint is gathered in the materials (raw materials, secondary materials and packaging)

Manufacturing

Knitting, weaving, dyeing, confection, machining, molding, trimming, varnishing and painting represent the second source of emissions, with 3,004 tCO2e emitted, or 31% of total emissions.

The top 5 most emitting areas also include waste and product end-of-life, which account for **7% of emissions**, and head office (comprising 9 emission sub-items), which accounts for **6% of overall emissions.**

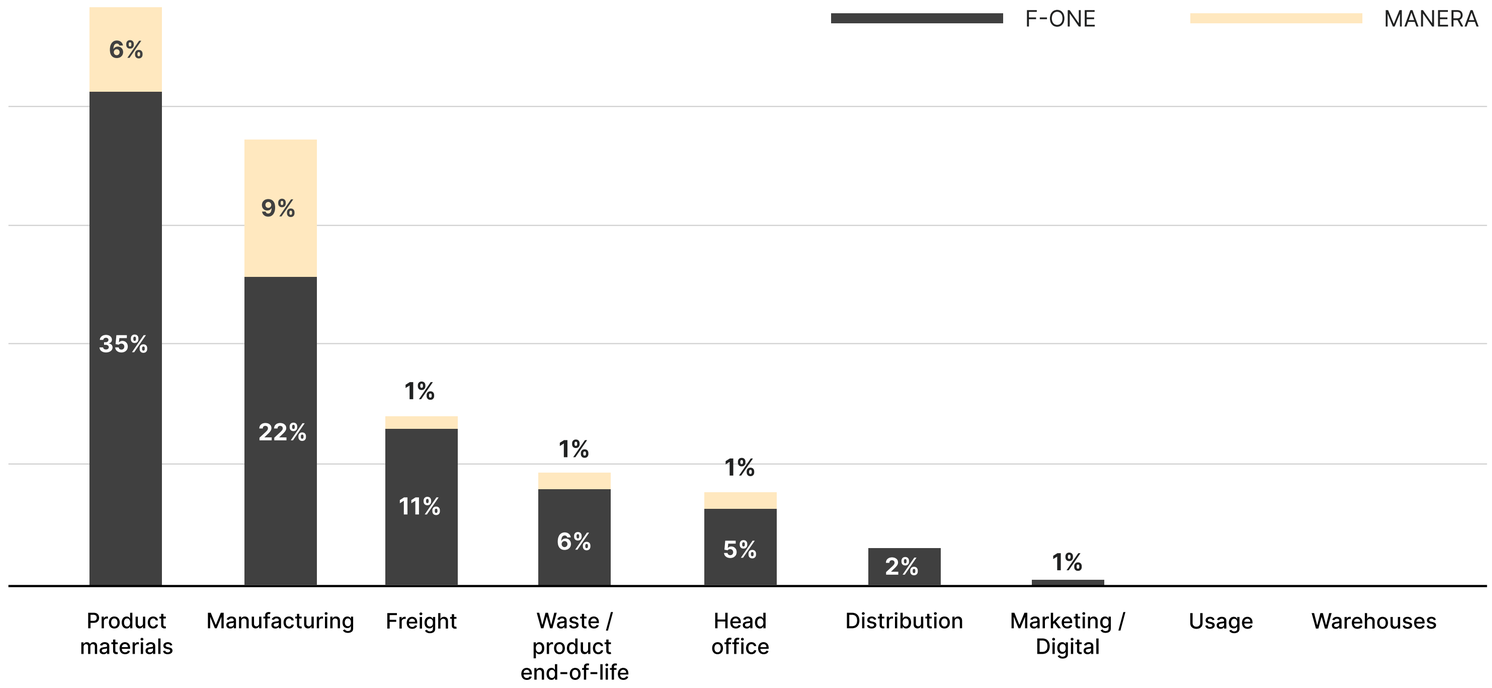


F-ONE and MANERA's carbon emissions

82% of the emissions come from F-ONE.

MANERA's emissions mainly comes from manufacturing and products' materials.

The F-ONE and MANERA split is real for production-related jobs. For general services, distribution rules have been applied.

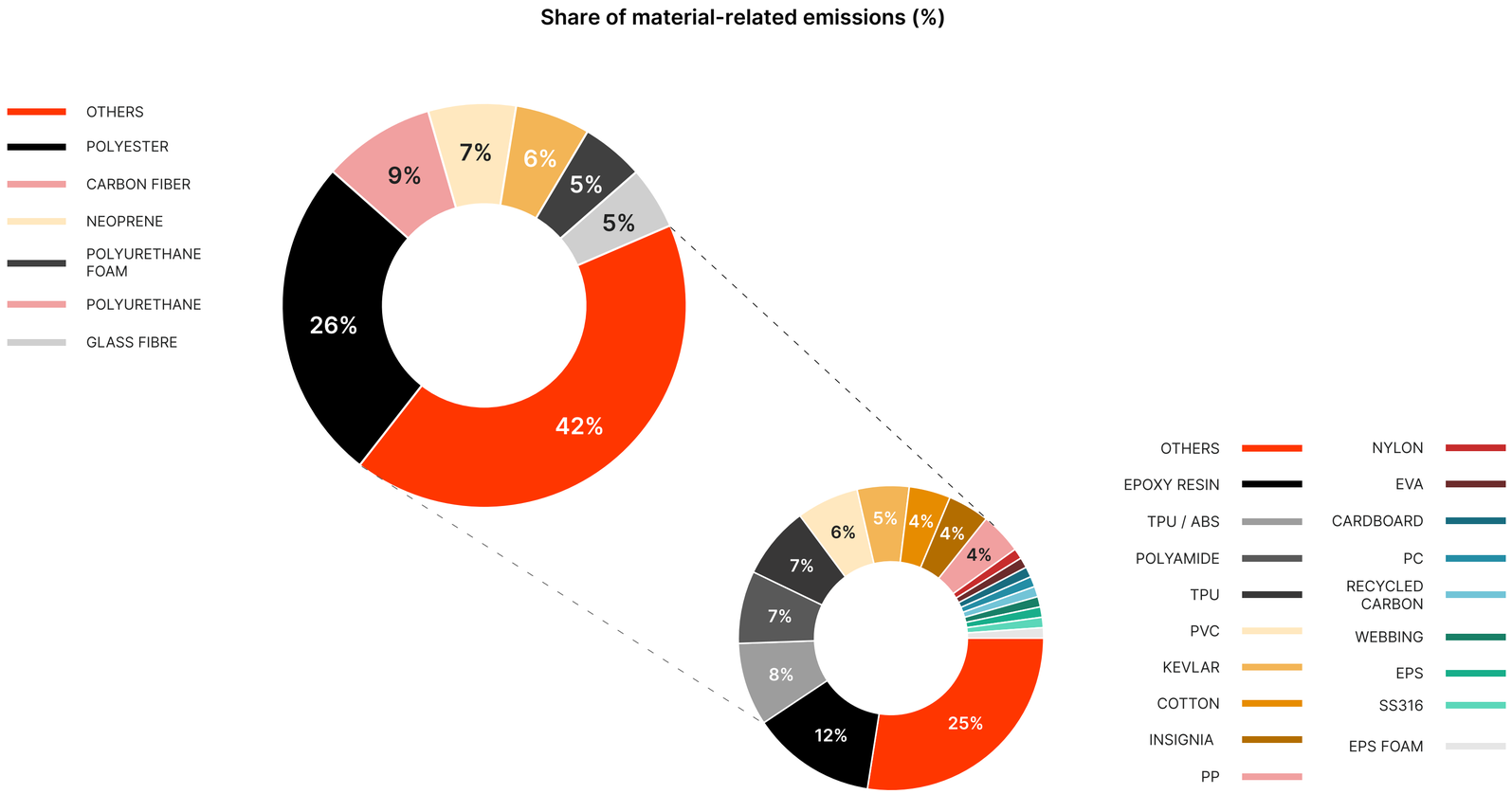


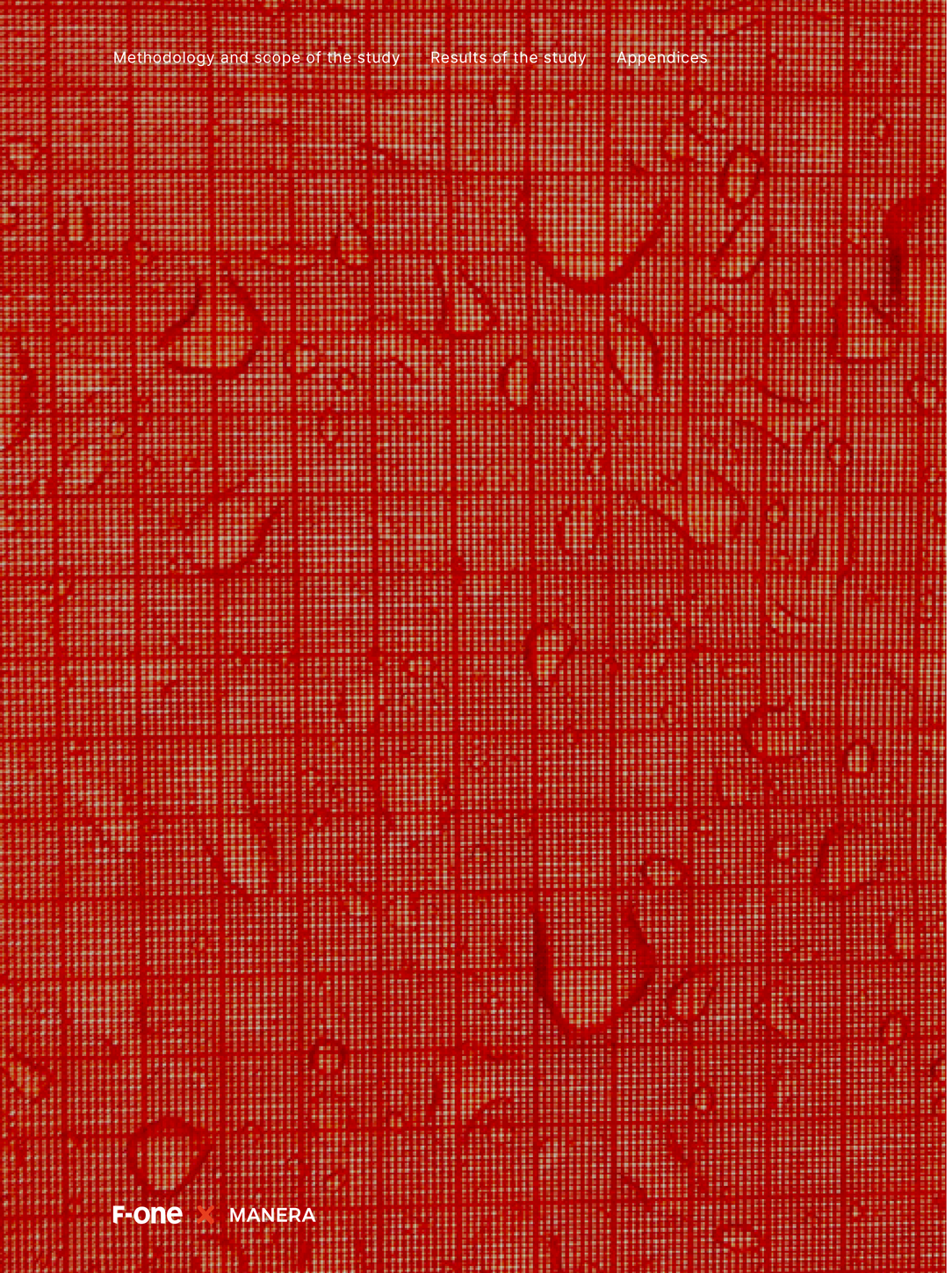
GHG emissions

by sectors and subsectors

Sectors	Subsectors	CO2e Emissions (kgCO2e)	CO2e Emissions (%)	Rank
Product materials	Raw materials	2 872 818	30%	1
	Secondary materials	887 211	9%	3
	Packaging materials	95 070	1%	10
	Molds	52 765	1%	15
Freight	Transport RM - factories	236 653	2%	8
Factories / Manufacturing	Weaving	391 483	4%	6
	Knitting	343	0%	29
	Finishing	2 479 017	26%	2
	Confection	80 625	1%	11
	Machining core / foam	731	0%	27
	Molding	37 779	0%	17
	Trimming	772	0%	26
	Sanding	3 859	0%	23
	Varnishing / painting	9 558	0%	20
Freight	Transport factories – French ports/airports	865 961	9%	4
	Transport ports/airports - warehouse	8 431	0%	21
Distribution	Distribution	228 391	2%	9
Usage	Usage	549	0%	28
Waste / Products end-of-life	End-of-life	715 319	7%	5
Warehouses	Energy consumption	-	0%	24
	Packaging	11 334	0%	19
Headquarter / Shops	Energy consumption	3 591	0%	24
	A/C	267	0%	30
	Water consumption	254	0%	31
	Office waste	59 641	1%	13
	Supplier expenses	341 588	4%	7
	Business travel	5 823	0%	22
	Communications-related travels (ambassadors, photoshoots)	79 478	1%	12
	Employee commuting	32 580	0%	18
	Fixed assets (company vehicle, renovations)	50 999	1%	16
Marketing / Digital	Advertising / Print marketing	53 363	1%	14
	Advertising / Digital marketing and usage	2 493	0%	25

Carbon footprint of raw materials





Carbon footprint of raw materials

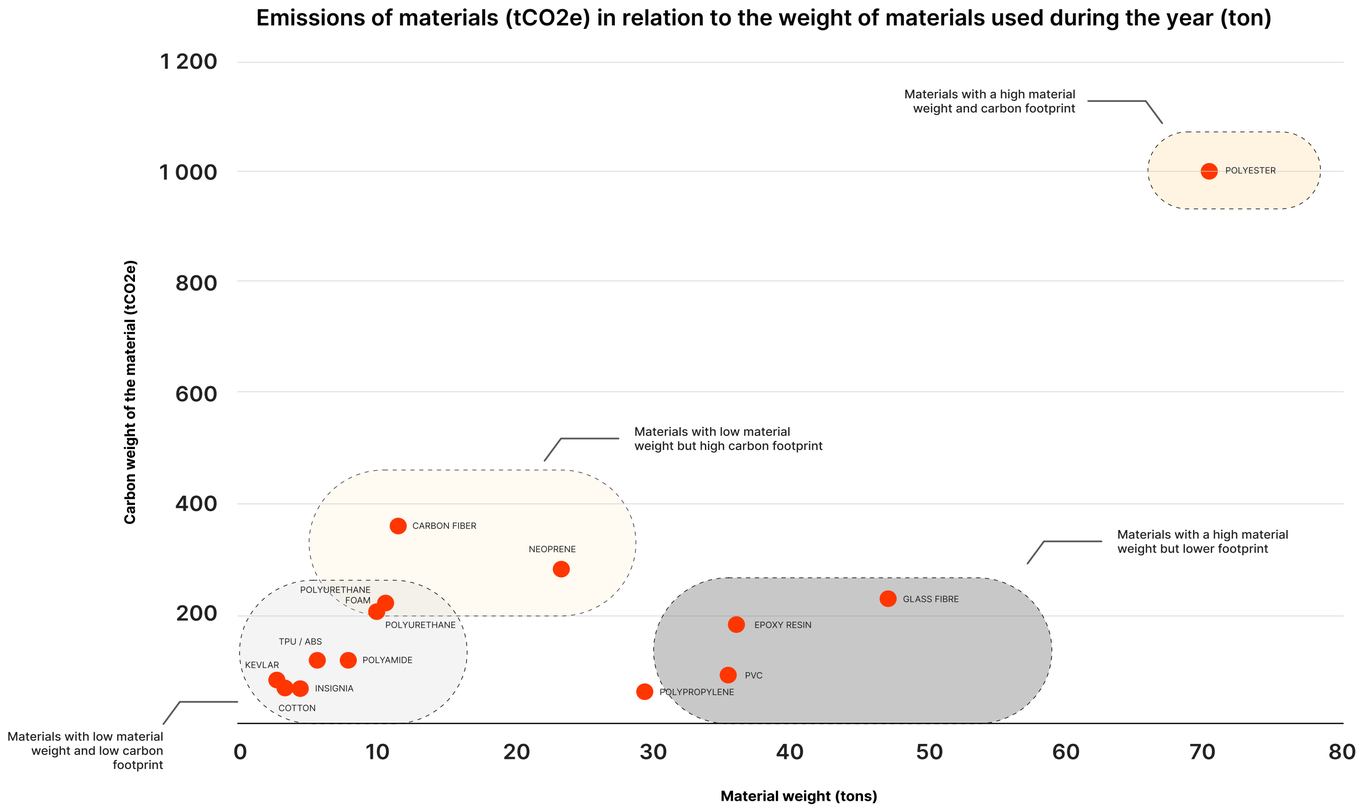
The footprint of raw materials is based on a total weight of **523 tons of materials** for over **37 different materials.**

• **Polyester** is the material with the highest carbon footprint for F-ONE, accounting for **26%** of raw material emissions.

• **Carbon fiber** is the second-highest material, accounting for **9%** of emissions (for 3% of total material weight).

Product materials (raw, secondary, packaging) account for **3 900 tCO2e** or **41%** of the carbon footprint.

Putting the weight and carbon footprint of materials into perspective



Materials	Emission factor (kgCO2e/kg)
Carbon fiber	31
Polyuréthane	21
Cotton	20
Polyester	14
Neoprene	12
Epoxy (resin)	5
Glass fiber	5
PVC	2,5

Putting the weight and carbon footprint of materials into perspective

The materials used for F-ONE products can be distinguished into groups according to the total weight used for the products and their total carbon footprint.

• **Polyester** stands out as it accounts for a major proportion of emissions (**26%**) but also of weight (**13%**).

• **Glass fibre, epoxy resin, PVC and polypropylene** have a **relatively low footprint** despite their high material weight, due to the low carbon intensity of these materials.

• On the contrary, **carbon fibre, neoprene and polyurethane** have a **high carbon impact** despite their relatively low weight.

Carbon footprint of upstream freight

The transport of finished products from factories to **French ports/airports** appears to emit much more than other upstream transport stages (78%). This is due to the use of air freight, which on average emits **195 times more than ocean freight.**

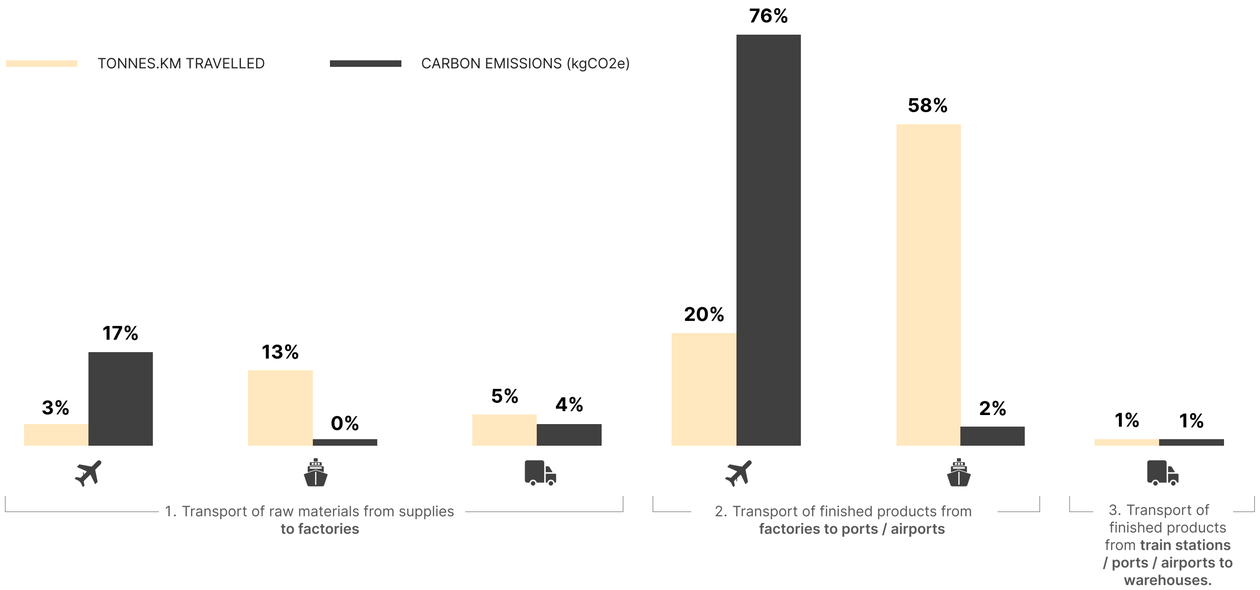
In all, air freight accounts for **23%** of tonne-kilometres travelled and **93%** of emissions. By contrast, ocean freight accounts for **71%** of tonne-kilometres and **2%** of emissions.

What's more, transporting raw materials involves shorter distances than transporting finished products, which explains its **low impact.**

Eliminating the use of air freight and replacing it with ocean freight **reduces carbon emissions by 850 tCOe, or 9% of the overall carbon footprint.**

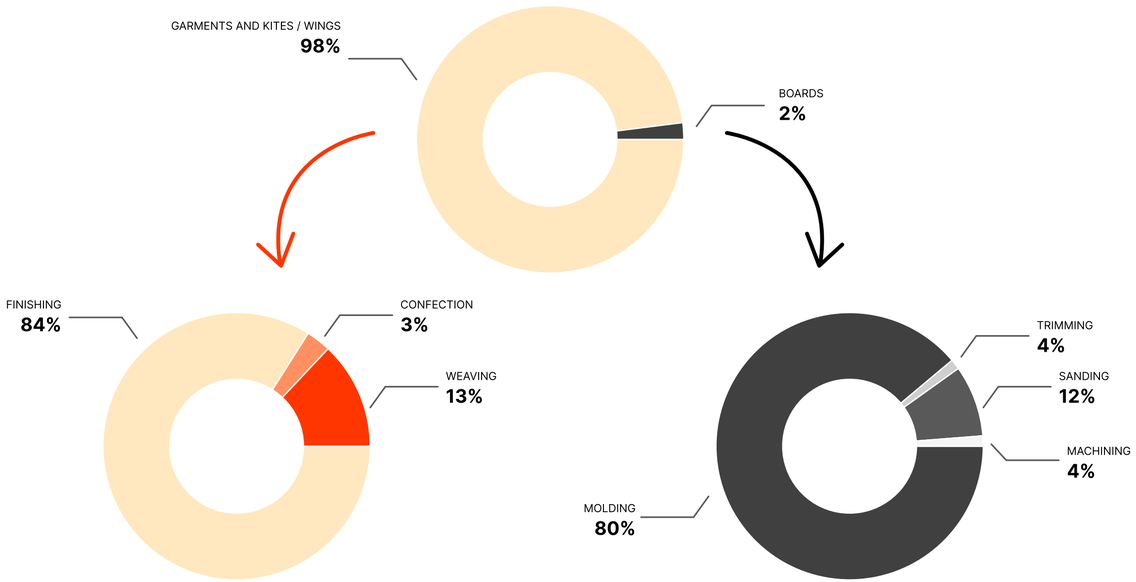
Freight accounts for **1 100 tCO2e** or **12%** of the carbon footprint.

Share of emissions linked to stages and modes of transport in relation to weight transported and distance travelled (%)



Carbon footprint of manufacturing

Manufacturing accounts for **3 000 tC02e** or **31%** of the carbon footprint.



The manufacturing of garment and kites/wings accounts for most of the carbon emissions (98%), compared with the manufacturing of boards (2%).

Within garment and kite/wing manufacturing, finishing has the greatest impact (84%). Weaving is second with 13% of emissions, followed by confection (3%)

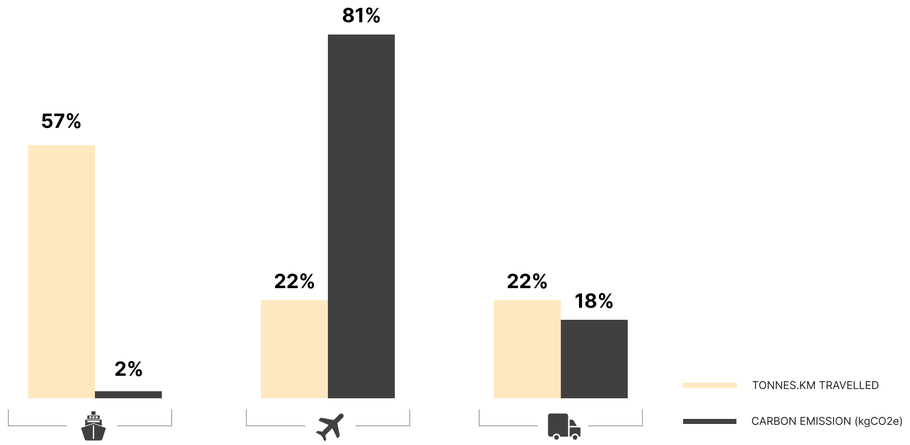
By relocating manufacturing to France and taking advantage of its low energy mix (13 times lower than in China, for example), F-ONE could **avoid 500 tCO2e** (i.e. -50% of this sector and -16% of the overall carbon footprint), **including 900 tCO2e** for the finishing stage (i.e. -10% of the overall carbon footprint).

Carbon footprint of distribution

Products' distribution to customers by air has the biggest carbon footprint (81%), even though it accounts for only 22% of the tons.km traveled and 9% of the tons of products.

Of our air distribution, 20% of destinations are served only by air (notably the Canary Islands, Guadeloupe, Cyprus, New Zealand and Dubai). For the remaining destinations, we use both air and sea transport.

These air-only destinations account for just 7% of all tonne-kilometres flown. Therefore, if the remaining 93% of our journeys were made by boat, we would avoid emitting **170 tCO2e** (or 2% of our overall carbon footprint).

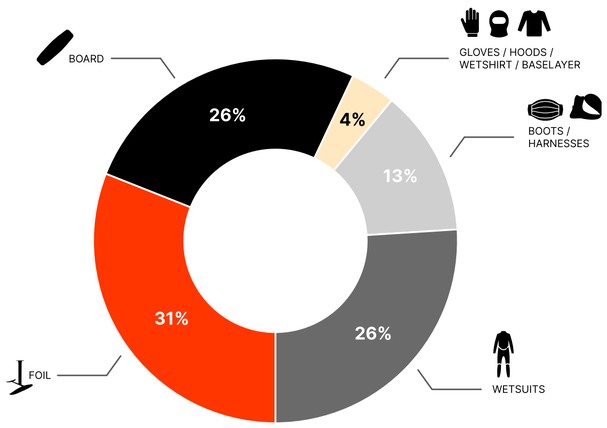


Carbon footprint of usage

Only the quantity of water used for washing certain products has been taken into account in the emissions linked to product use.

Usage represents 1tCO2e or <1% of the carbon footprint.

Share of usage-related emissions (%)



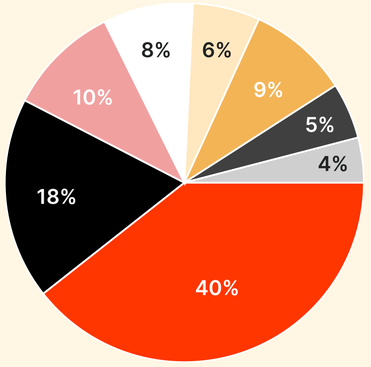
Carbon footprint of product’s end-of-life

It is assumed that all materials used in manufacturing and packaging ultimately end up as waste.
Scrap, offcuts and other machining waste have not been taken into account.

Boards account for 45% of this emission item, due to the high weight of PVC, glass fibers, Epoxy resin, EVA and other materials used in their manufacturing.

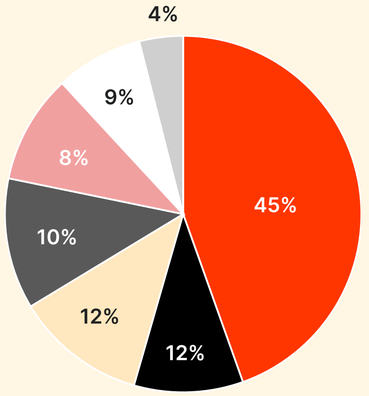
The end-of-life of manufactured products accounts for **715 tCO2e**, or **7%** of the carbon footprint.

Share of product-related emissions (%)



OTHERS
PVC
GLASS FIBER
POLYPROPYLENE
NEOPRENE
EPOXY RESIN
POLYESTER
EVA

Share of material-related emissions (%)

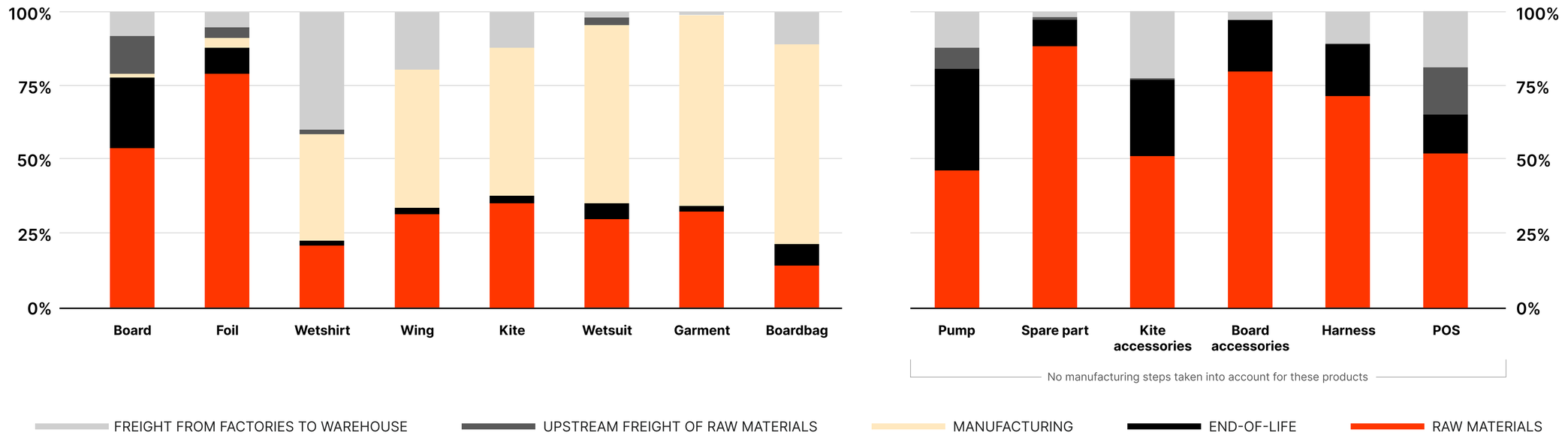


BOARD
FOIL
KITE ACCESSORIES
OTHERS
KITE
WETSUIT AND NEOPRENE ACCESSORIES
SPARE PART

Carbon footprint of product families by stage in the value chain*

For products in the Pumps, Spare parts, Kite accessories, Board accessories, Harnesses and POS families, no steps from manufacturing have been taken into account. Raw materials are therefore the item with the greatest footprint.

**Excluding the impact of headquarters, stores and product use*

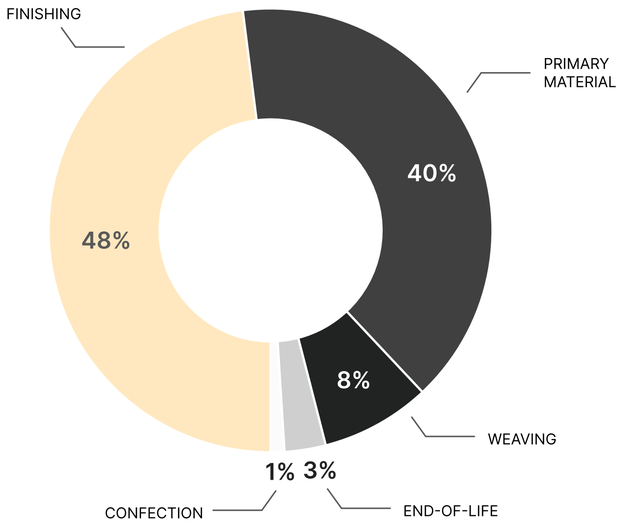


Emissions from an inflatable kite

Finishing and materials, major sources of emission for kites.

The sectors that contribute most to the carbon footprint of an inflatable kite are the **materials** (especially polyester) and **finishing** through the dyeing process.
Emissions from certain products may vary according to brand. A carbon assessment is an exercise that gives an order of magnitude.

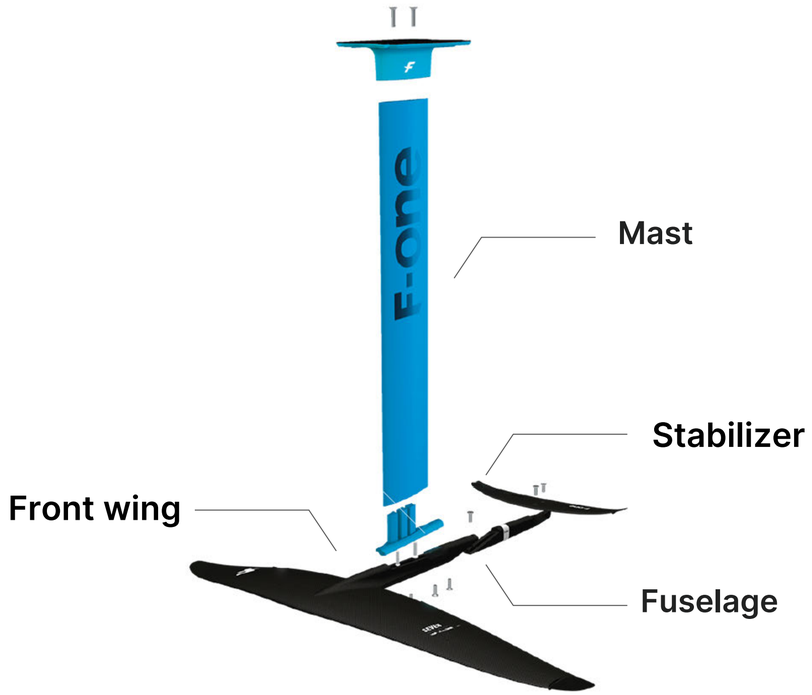
Emissions from the materials and manufacturing of an inflatable kite :



In kgCO2e/ Inflatable kite on product materials and manufacturing sectors

93 kgCO2e

For an inflatable kite



Emissions from a foil

Carbon footprint correlated with part weight

The parts making up the foil have a similar carbon intensity. In fact, they are all composed in part of carbon fibre, which has a significantly higher carbon footprint than other materials. The carbon weight is therefore mainly related to the quantity of carbon fibre within each part.

Mast

24 kgCO2e | 23kgCO2e/kg

Stabilizer

10 kgCO2e | 21kgCO2e/kg

Fuselage

4 kgCO2e | 25kgCO2e/kg

Front wing

41 kgCO2e | 20kgCO2e/kg

Total impact

79 kgCO2e

Emissions from certain products may vary according to brand.
A carbon assessment is an exercise that gives an order of magnitude.

Emissions of key products

The carbon footprint is evenly distributed amongst the key products.

Wing

73 kgCO2e

Wetsuit

75 kgCO2e

Foilboard

53 kgCO2e

Hydrofoil

67 kgCO2e

Total impact

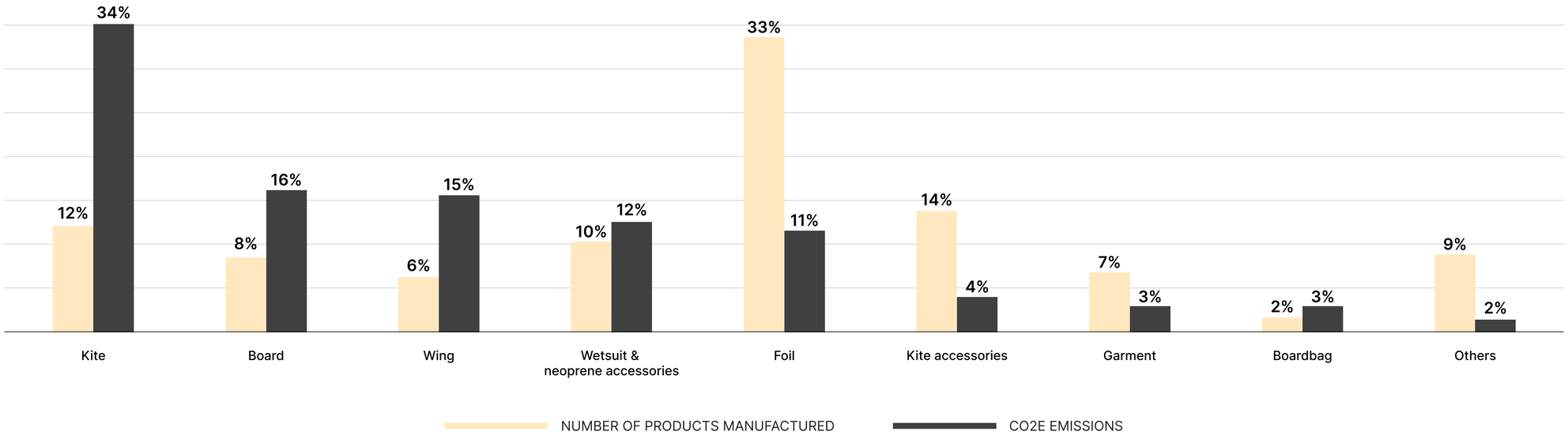
268 kgCO2e | *Or the equivalent of a Montpellier-Lisbon flight.*

Emissions from certain products may vary according to brand.
A carbon assessment is an exercise that gives an order of magnitude.

Emissions by family based on the number of products manufactured

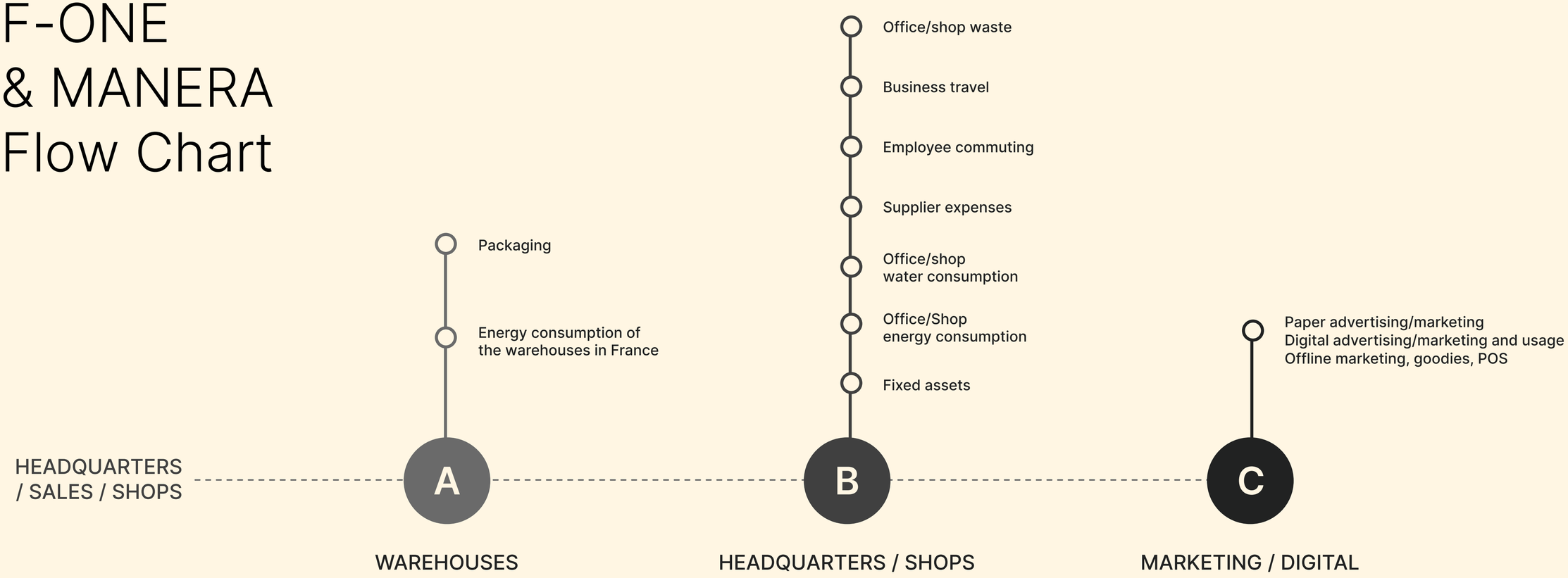
Emissions are concentrated around products with **high-impact** materials or manufacturing processes

Share of emissions* for product families in carbon emissions (kgCO2e)



*Based on materials, end-of-life, manufacturing, freight (from raw materials suppliers to manufacturing factories & from factories to warehouses), and 500,000 manufactured products, excluding the “Spare Parts” product family.

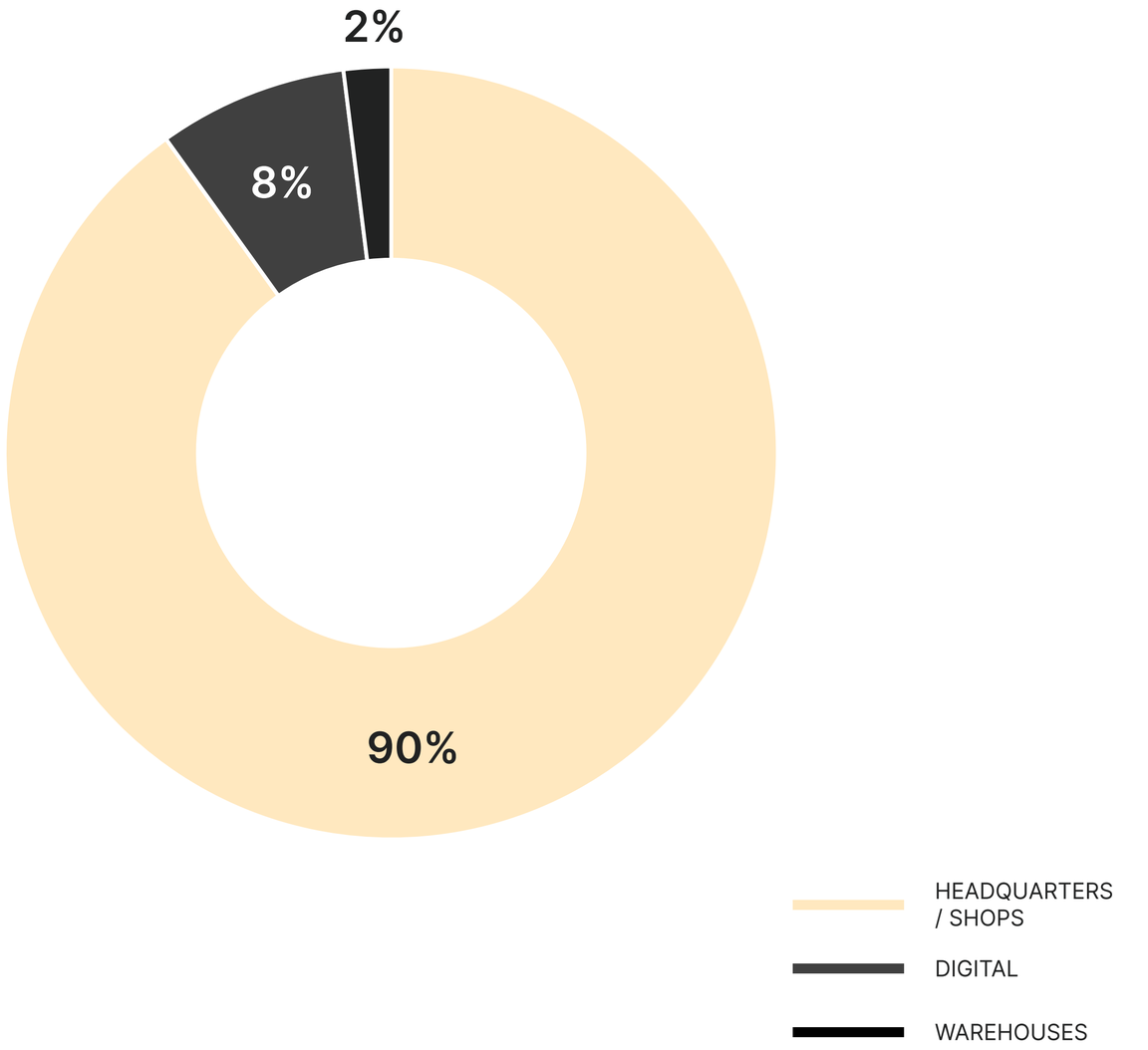
F-ONE & MANERA Flow Chart



Carbon footprint of general services

Emissions linked to headquarters and shops account for 90% of this sector's emissions, with 8% linked to the digital component and 2% to warehouse energy consumption.

General services; warehouses, headquarters /shops and digital represent 640 tCO2e or 6% of the carbon footprint.

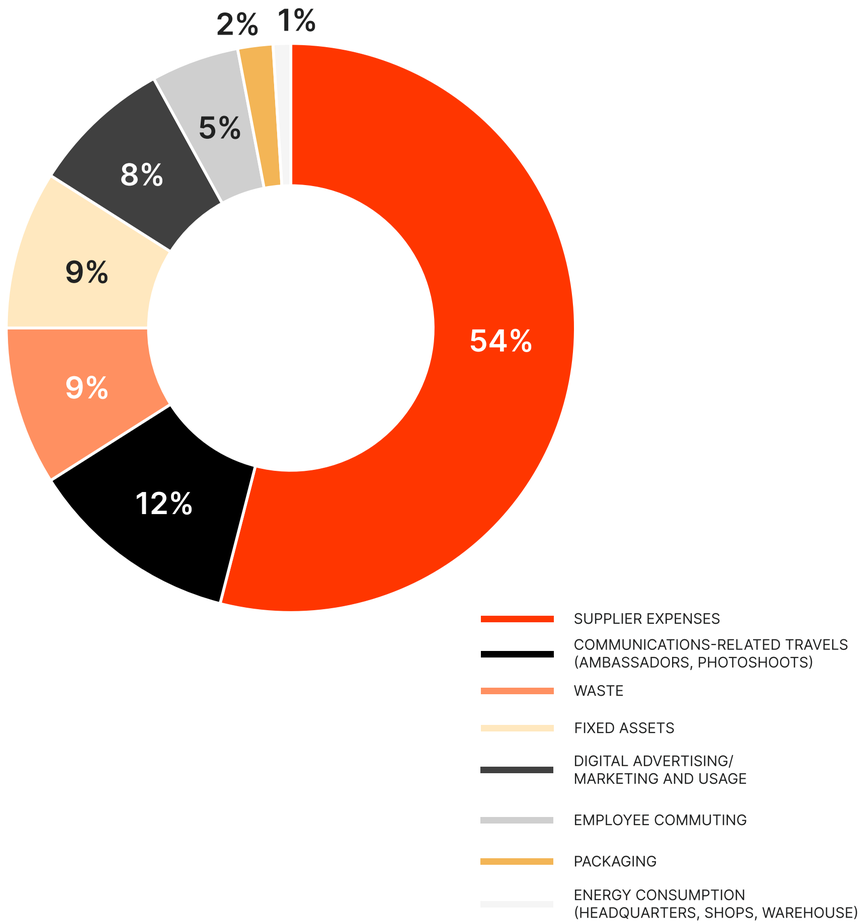


Carbon footprint of general services

Emissions linked to supplier expenditure account for **54%** of emissions, **12%** comes from commuting, 8% from advertising/digital marketing and digital usage, **9%** from waste, **9%** from fixed assets and **5%** from commuting.

In all, these 6 sub-sectors account for **98%** of general services emissions.
Raw materials related to packaging represent **2%** of this item. Energy, water and air conditioning represent **less than 1%** of this item.

General services; warehouses, headquarters /shops and digital represent 640 tCO2e or 6% of the carbon footprint.



54%
Supplier expenses

12%
Communications-related travels

8%
Digital advertising / marketing and usage

5%
Employee commuting

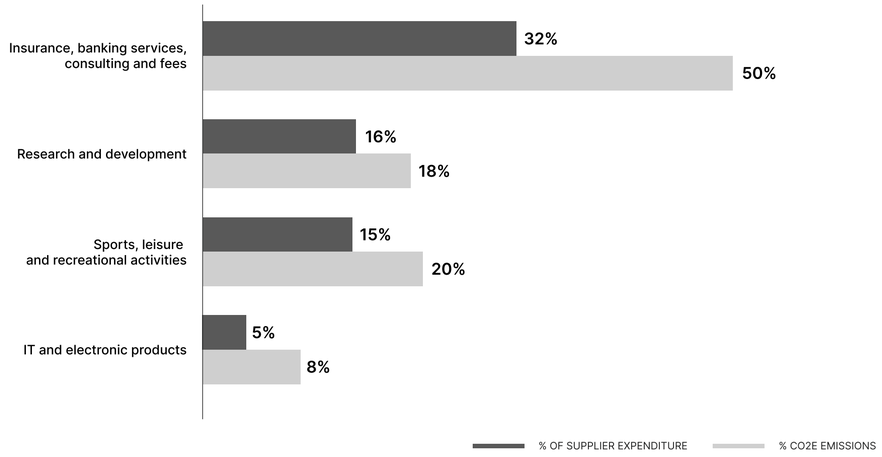
9%
Waste

9%
Fixed assets

Focus on supplier expenditure

The estimated expenditure amounts to **€1.9 million**. The four largest expenditure items are insurance, banking services, consulting and fees, research and development, sports, leisure and recreational activities, and IT and electronic products. The remaining expenditure is distributed across 12 sectors.

The total emissions amounted to 441 tCO2e, i.e 54% of emissions linked to general services and 5% of overall emissions.

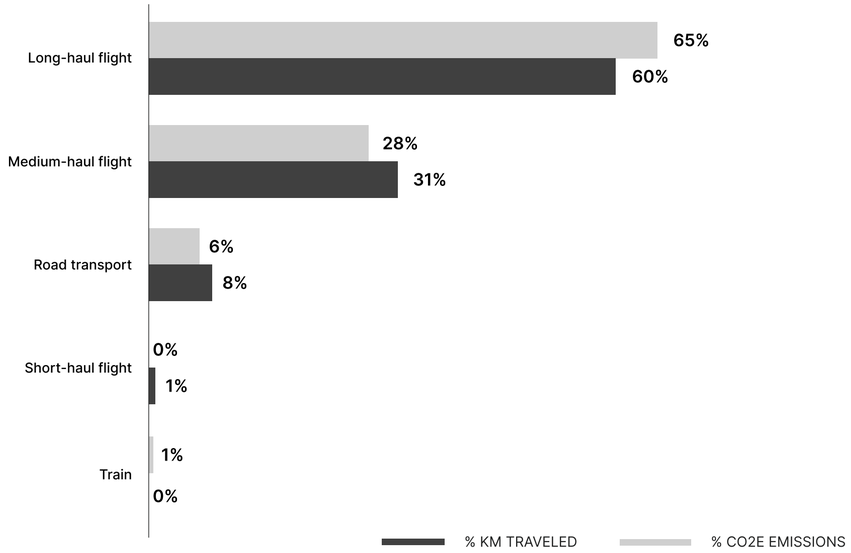


F-one X MANERA

Focus on communica-tions-related travels

(Ambassadors, photoshoots)

Emissions linked to communications-related travels amounted to **79 tCO2e**, i.e **12%** of emissions linked to general services and **less than 1%** of overall emissions.



Focus on waste

End-of-life office and warehouse waste accounts for **60 tCO2e**, or **9%** des of general services emissions and **less than 1%** of overall emissions.

Type of waste	**Carbon emissions** (tCO2e)	**Carbon emissions** (%)
Domestic waste	2	3%
Cardboard	52	87%
Metal	1	2%
Glass	3	5%
Wood	0,4	>1%
Plastic	2	3%

Focus on fixed assets

Fixed assets take into account the emissions linked to the works, furniture, and equipment we have purchased. Vehicles account for **82%** of this sub-sector's emissions, furniture for **11%,** machinery for **4%** and digital for **3%**.

Overall, fixed assets account for **51 tCO2e.**

Entities	**Carbon emissions** (tCO2e)	**Carbon emissions** (%)
Furniture	6	11%
Digital	1	3%
Machinery	2	4%
Vehicles	42	82%

Focus on advertising, digital marketing and usage

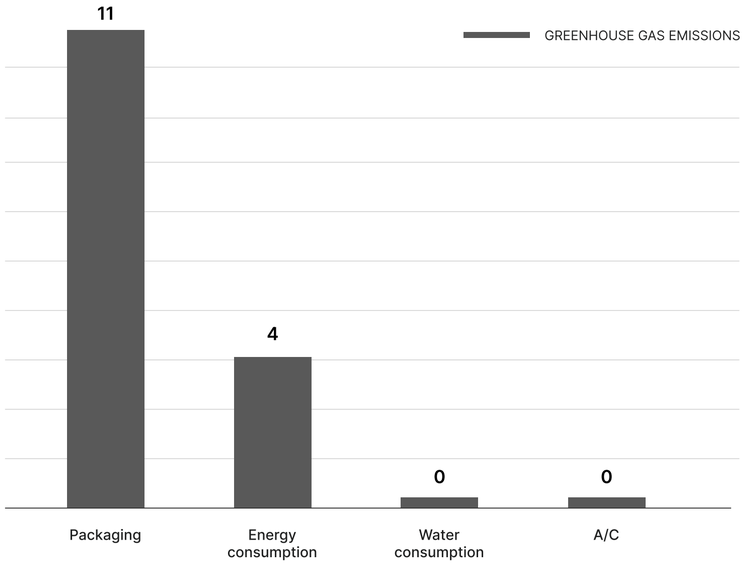
Overall, advertising/marketing and digital use account for **56 tCO2e, or 8%** of general services emissions.
The digital component accounts for less than **5%** of this sub-sector's emissions, but has a fairly high image influence with consumers.

In total, advertising/marketing and digital use account for **56 tCO2e.**

Entities	**Sub-entities**	**Carbon emissions** (tCO2e)	**Carbon emissions** (%)
Point-of-sales displays (POS)	Paper and cardboard	38	69%
Goodies	Textile and apparel	15	27%
Digital	Facebook	0,1	0,2%
	LinkedIn	> 0,1	0
	Instagram	0,3	0,6%
	YouTube	2	4%

Focus on energy consumption, water, A/C and packaging

Emissions linked to energy, water, air conditioning and packaging represent **15 tCO2e**, or about **3%** des émissions. of emissions. The head office and stores consume **63 000 Kwh/year** equivalent to the annual consumption of **13 households.**



3. Appendices

Notes on methodology

N°BU	N°Sub-BU	BU label	Notes on methodology	
			Data calculation	**Choice of the emission factor**
1	**1**	**Product materials**	Each product was broken down into its constituent materials, and an emission factor was then assigned to each material.	Emission factors for the various materials are taken from databases as well as documentary research.
	1.1	Raw materials		
	1.2	Secondary materials		
	1.3	Packaging materials		
2	**2**	**Freight**	If the supplier's city was not given, it was estimated using the locations of other suppliers of similar products or of the same factory. If the mode of transport was not specified, it was taken to be truck for transport within the same country, and air for international transport.	The emission factor chosen for air freight is that of a cargo aircraft weighing over 100 tonnes.
	2.1	Freight raw materials – Factories		
	2.2	Freight factories - port/airport		
	2.3	Freight port/airport - warehouse		
3	**3**	**Factories / Manufacturing**	Emissions linked to the manufacturing processes for board sports equipment were extrapolated on the basis of data from the only factory that provided the corresponding information (HORIZON). The data needed to assess the weaving and knitting phase were modeled by Utopies using average ADEME ratios. The finishing and confection phases were calculated using consumption factors per piece (Ecobalyse).	Sanding and trimming are considered as requiring the same amount of energy. The emission factors chosen for garment manufacture are those associated with a tee-shirt.
	3.1	Manufacturing		
4	**4**	**Distribution**	Transport from the Pérols warehouse to the port or airport has not been taken into account here. The distances covered by sea transport have been approximated using the countries of departure and arrival.	The emission factor chosen for air freight is that of a cargo aircraft weighing over 100 tonnes.
	4.1	Distribution		
5	**5**	**Usage**	The upper limit of the quantity of water used per wash has been used in the calculations. It is assumed that washing is carried out using only water (emissions linked to any washing products have therefore been excluded).	-
	5.1	Usage		
6	**6**	**Waste / End-of-life**	Each product was broken down into its constituent materials, and an emission factor was then assigned to each material.	-
	6.1	End-of-life		

			Notes on methodology	
N°BU	**N°Sub-BU**	**BU label**	**Data calculation**	**Choice of the emission factor**
A	**A**	**Warehouses**	-	-
	A.1	Energy consumption	-	-
	A.2	Packaging	The quantity of material in each of the packaging was estimated using the dimensions given, and a thickness estimated using documentary research. The adhesive material is considered to be LDPE.	-
B	**B**	**Headquarter / Shops**	-	-
	B.1	Energy consumption	-	-
	B.2	A/C	The air conditioner capacity and the fluid used have been deduced from the model name entered.	-
	B.3	Water consumption	-	-
	B.4	Office waste	The weight of waste was estimated using an average skip volume of 30m3, as well as average densities of the different types of waste, derived from documentary research. The volume of 5-type waste stream was divided equally between the different skip components (except for cardboard, which has its own skip): metal, glass, wood and plastic, in order to assign them an emission factor. Metal waste is considered to be entirely aluminum.	Les déchets métalliques sont considérés comme étant totalement de l'aluminium
	B.5	Supplier expenditure	Expenditure on physical products already accounted for elsewhere and expenditure on administrative costs (such as customs duties, fees, royalties, etc.) have been excluded.	-
	B.6	Business travel	The van is considered to have 9 seats, so trips with less than 9 people are only counted once.	The van is considered to be a medium-sized diesel-powered car. All train journeys are considered to be made on mainline trains in France.
	B.7	Communications-related travels		
	B.8	Employee commuting	Employees are assumed to have worked 229 days in 2021, so the daily distances covered have been multiplied by 229.	-
	B.9	Fixed assets	Only investments made in 2021 (i.e. from 01/01/2021) have been taken into account, in accordance with the rules of the GHG Protocol standard.	-
C	**C**	**Marketing / Digital**	-	-
	C.1	Paper advertising/marketing	-	-
	C.2	Digital advertising/marketing and usage	The total number of Facebook + Instagram posts has been split in 2 for each network	-

F-one

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