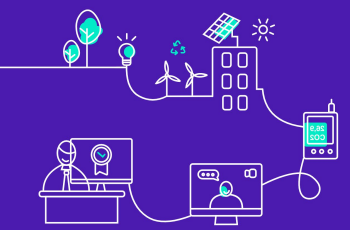
AMA

2021 Carbon Footprint

BC BILAN CARBONE

sami

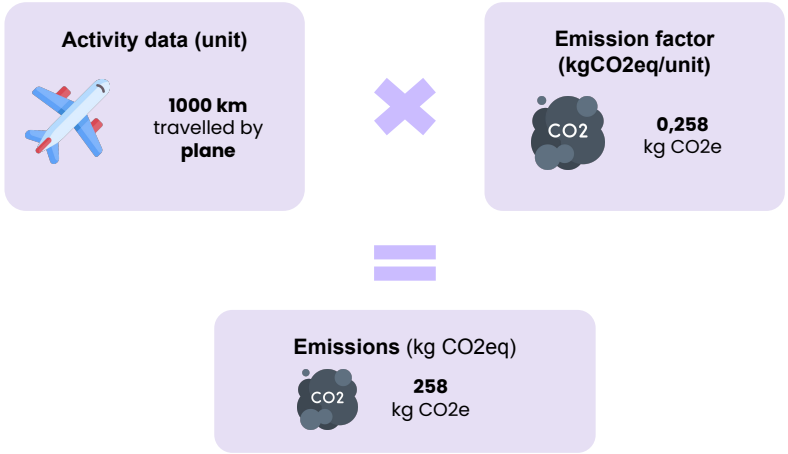
INTRODUCTION



The Bilan Carbone® is a carbon accounting method created in France in 2004 by ADEME and now supported by the Bilan Carbone Association (ABC).

The objective of a Bilan Carbone® is to measure all the emissions physically necessary for a company's activity (we can speak of physical dependence on carbon), including its upstream (procurement, freight, etc.), production and downstream activities (distribution, use of products sold, etc.).

Emissions are calculated by multiplying an activity data (physical or financial) by an Emission Factor (EF) from a reference database (ADEME's carbon base or impact base, etc.):



Scopes : definition

The Scopes designate the perimeter of the GHG emissions of the Bilan Carbone, they are divided into 3 categories:

Scope 1: direct GHG emissions, mainly due to the combustion of fossil fuels for heating or company vehicles.

Scope 2: indirect emissions associated with the production of electricity and heat.

Scope 3: all other indirect emissions in your value chain (travel, purchasing, waste, etc.). It generally concentrates most of the emissions.

The Scopes are then broken down into 22 emissions items.

SYNTHESIS

What is the perimeter ?

> *Reference year : 2021*

> *Scope : 1, 2 and 3*

> *Exclusion ? None*

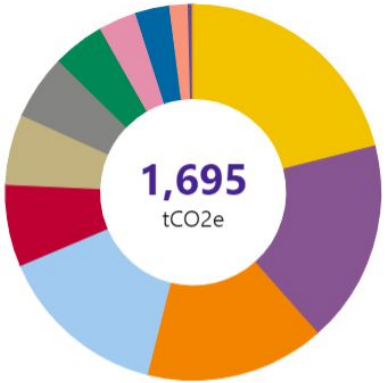
Which sources have been used ?

> *Accounting files*

> *Employee surveys : answering rate of 61%*

> *Data collected on Sami SaaS*

2021 BILAN CARBONE - AMA : Total carbon footprint (tCO2e)



- Input **21%**
- Trips **14.7%**
- Meals and accommodation **5.6%**
- Vehicle **2.9%**
- End of life **0.1%**
- IT **17.5%**
- Premises **7%**
- Freight **4.5%**
- Equipment **1.6%**
- Purchase of services **15.5%**
- Subcontracting **6.1%**
- Small supply purchase **3.2%**
- Remote work **0.3%**

Equivalent to...

30,800 m²
of French mature forest

471
round trips Paris / New York by plane

223
world tours with diesel car

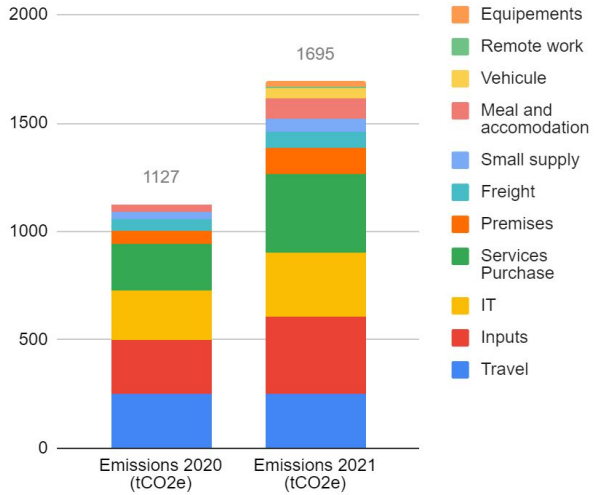
190 persons
their emissions on a year

SYNTHESIS

Comparison

We have re-categorized the 2020 data for better data comparability.

Category	2020 Emissions (tCO2e)	2021 Emissions (tCO2e)	Evolution (tCO2e)	Evolution (%)
Travel	252	249	-3	-1%
Inputs	248	357	109	31%
IT	225	296	71	24%
Services Purchase	218	365	147	40%
Premises	60	119	59	50%
Freight	55	76	21	28%
Small supply	35	55	20	36%
Meal and accomodation	32	95	63	66%
Vehicule	2	50	48	96%
Remote work		6	6	
Equipements		27	27	
Total	**1127**	**1695**	**568**	**34%**



Intensity indicators	2020	2021	Evolution %
kgCO2 / € of turnover	0.32	0.26	**-23**
Kg CO2e/fte	4.4	4.7	**+6%**

SYNTHESIS

Employee carbon intensity ?

Created by Sami, this benchmark allows us to compare you to our entire customer database.

This intensity is calculated on certain items only: travel, meals, IT products, office and telecommuting. It is then compared to the number of FTEs.

Economic carbon intensity ?

We report your CO2e emissions to your turnover so that you can compare to your sector.

The comparison data is taken from Sami's customer base and the CDP for the specified sector. This intensity is calculated on all items.

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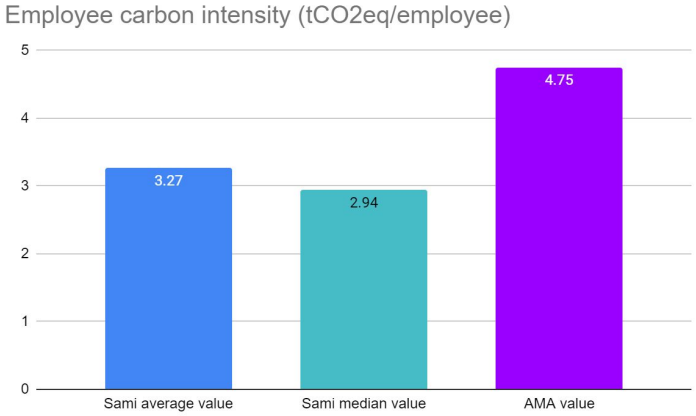
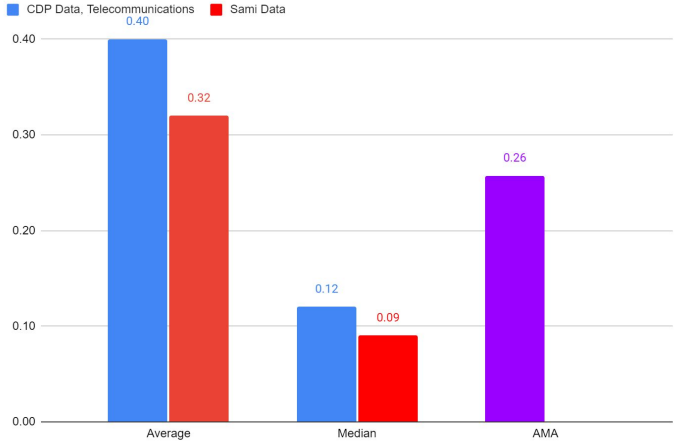
BILAN CARBONE 2021 - AMA : Benchmark





AMA EMPLOYEE CARBON INTENSITY IS ...

4,75

t CO2e / employee

AMA ECONOMIC CARBON INTENSITY IS ...

0,26

kg CO2e / € of turnover

RESULTS

Input - Global

358 t CO2e

21% of your footprint

Methodology

This item is calculated solely via physical data, via 3 methodologies:

> A simplified lifecycle analysis, based on available data, for connected glasses and cases

> The use of already existing life cycle analysis for smartphones

> The use of EF per kg or per unit for small IT products

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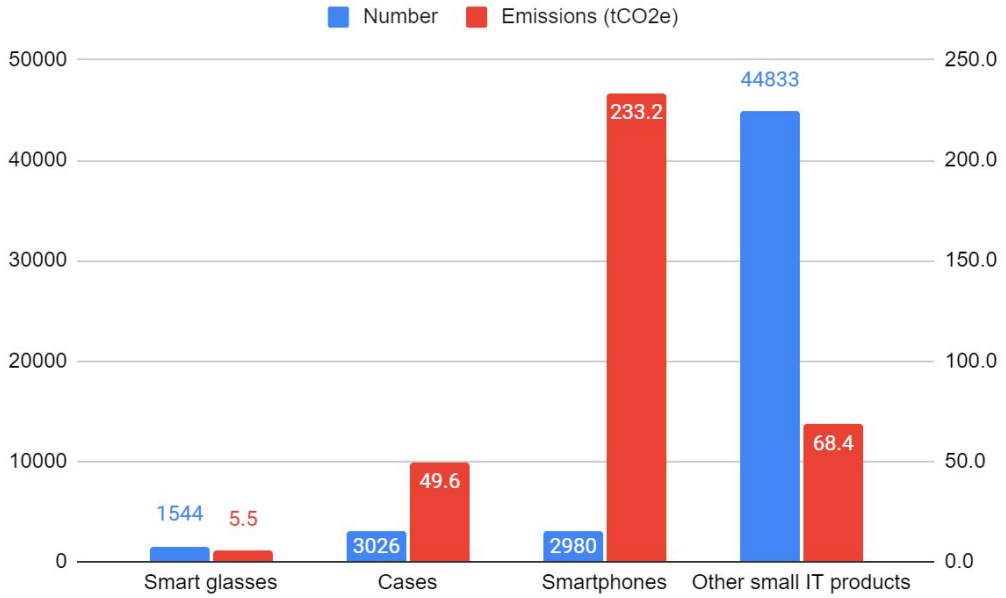
Total emissions (tCO2e)



End of life of products sold (DEE):
7 859 kg => **1 tCO2e**

RESULTS

Input- Smart Glasses

6 t CO2e

0.3 % of your footprint

Methodology

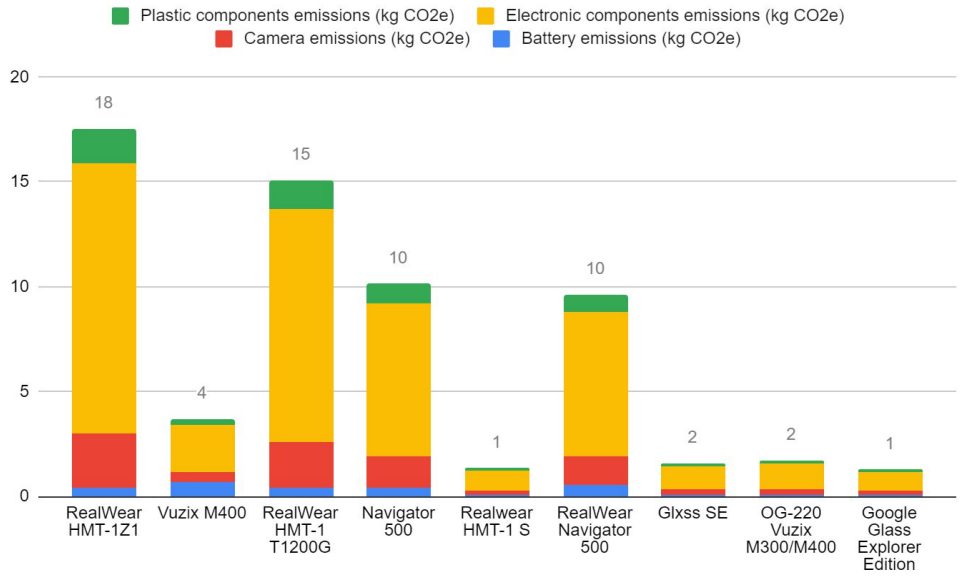
For smart glasses, we used the unit weight of each reference, and defined the % of the weight represented by each type of component.

We then associate an EF to each component.

These EFs include raw materials, manufacturing and upstream freight (cradle to gate).

Reference	Weight per unit (g)
RealWear HMT-1Z1	437
Vuzix M400	151
RealWear HMT-1 T1200G	380
Navigator 500	272
Realwear HMT-1 S	38
RealWear Navigator 500	272
Glxss SE	45
OG-220 Vuzix M300/M400	48
Google Glass Explorer Edition	36

Emission per unit (kg CO2e)



RESULTS

Input - Cases

50 t CO2e

3 % of your footprint

Methodology

For cases, we used the unit weight of each case, and defined the % of the weight represented by each component family.

We then associate to each component an EF.

These EFs include raw materials, and upstream freight, we added a manufacturing process (manufacture of a hiking bag, Ademe, kg CO2e/kg).

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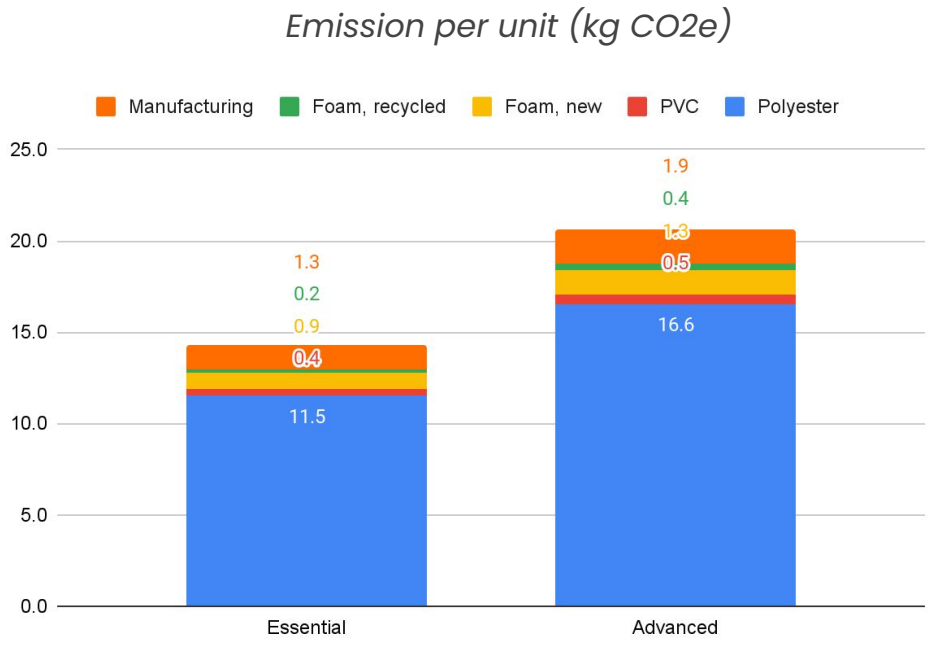
Reference	Weight per unit (kg)
Essential	1.25
Advanced	1.8



Total :
14,3 kg CO2e

Total :
20,6 kg CO2e

RESULTS

Input - Smartphones

233 t CO2e

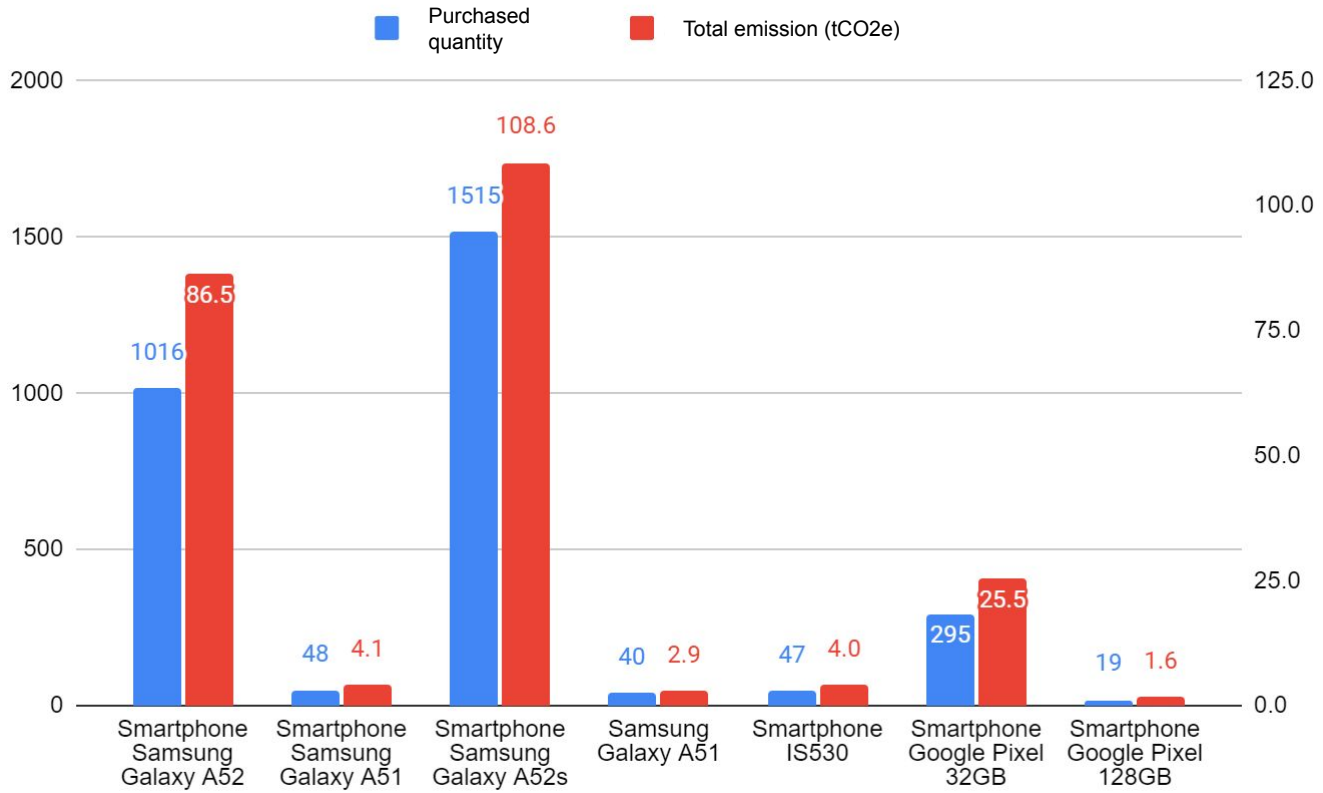
14% of your footprint

Methodology

For smartphones, we used lifecycle analysis data for smartphones close to the models sold (no data provided by Samsung).

Proxies were made according to the price and capabilities of the smartphones (screen size, power), based on Huawei and Apple data.

These EF include the usage phase (charging, 15% of the total on average).



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RESULTS

Inputs - Small IT products

68 t CO2e

4% of your footprint

Methodology

This item is calculated using the physical data of products purchased in 2021 via two methods:

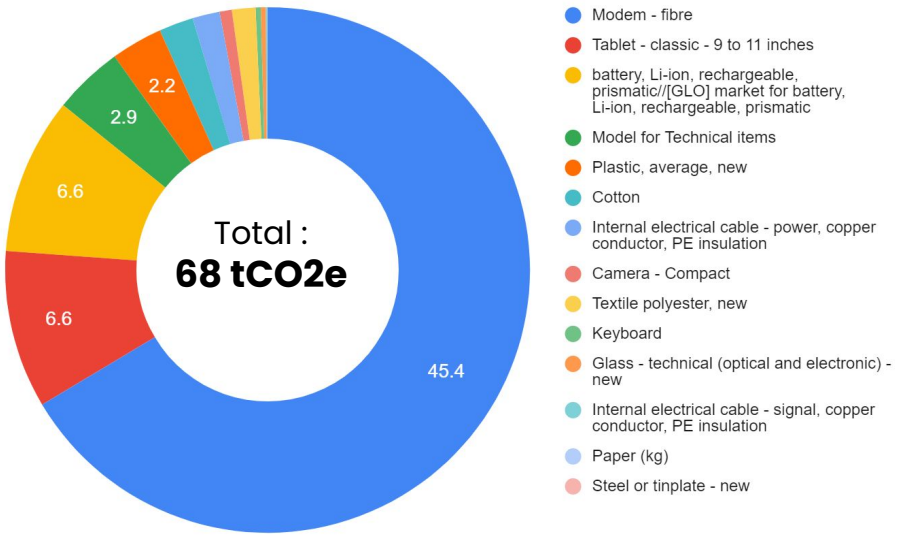
> The number of units purchased (Modem, camera...)

> The weight purchased (cables, plastic products...)

We have used the same EFs as for the 2020 carbon footprint, except for inaccuracies.

Emission Factor used	Activity data	Unit
Modem - fibre	35	units
Tablet - classic - 9 to 11 inches	51	units
battery, Li-ion, rechargeable, prismatic	861	kg
Model for Technical items	11	units
Plastic, average, new	910	kg
Cotton	91	kg
Internal electrical cable - power	419	kg
Camera - Compact	2	units
Textile polyester, new	86	kg
Keyboard	4	units
Glass - technical (optical and electronic) - new	58	kg
Internal electrical cable - signal	66	kg
Paper (kg)	40	kg
Steel or tinplate - new	1	kg

Total emissions (tCO2e)



RESULTS

IT purchases

272 t CO2e

18% of your footprint

The equivalent of 1,470 Macbooks created

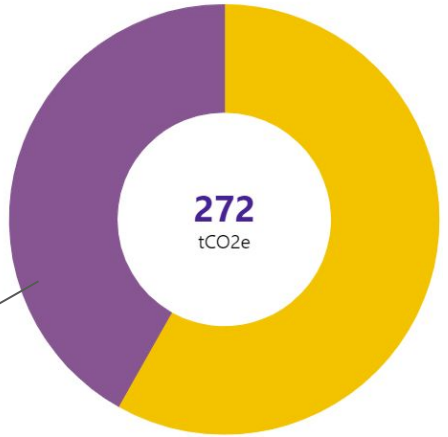
What is the methodology?

This item is fully analysed thanks to accounting data that you have provided.

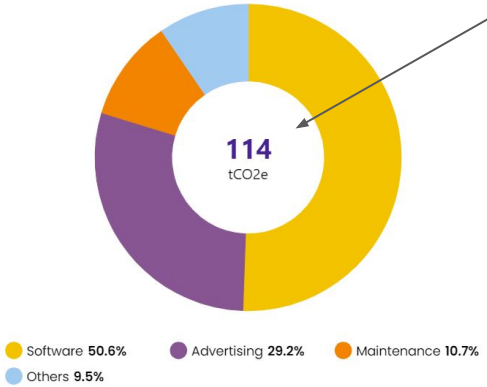
The ADEME's carbon base references monetary ratios giving an emission factor per € spent for each category of purchase.

SAMI CATEGORY	ACTIVITY DATA
Digital services	668 k€
Hardware	397 k€

Total emissions (tCO2e)



Zoom on it services (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Software	337 k€
Advertising	195 k€
Maintenance	72 k€
Others	64 k€

To reduce the impact of your digital purchases, many levers of action can be activated: buy refurbished IT equipment rather than new, host your sites and applications close to your customers, eco-design your tech tools ...

RESULTS

Xperteye solution use

24 t CO2e

1,4% of your footprint

What is the methodology?

To calculate data centers emissions, we used different data:

> GHG emission calculations provided by Microsoft Azure (scope 1, 2 and 3)

> For physical servers, the technical capacity of storage and computing (Cloud Jewels).

> For virtual servers, the flow approach (shift project), based on the volume of data transferred in each region of the world.

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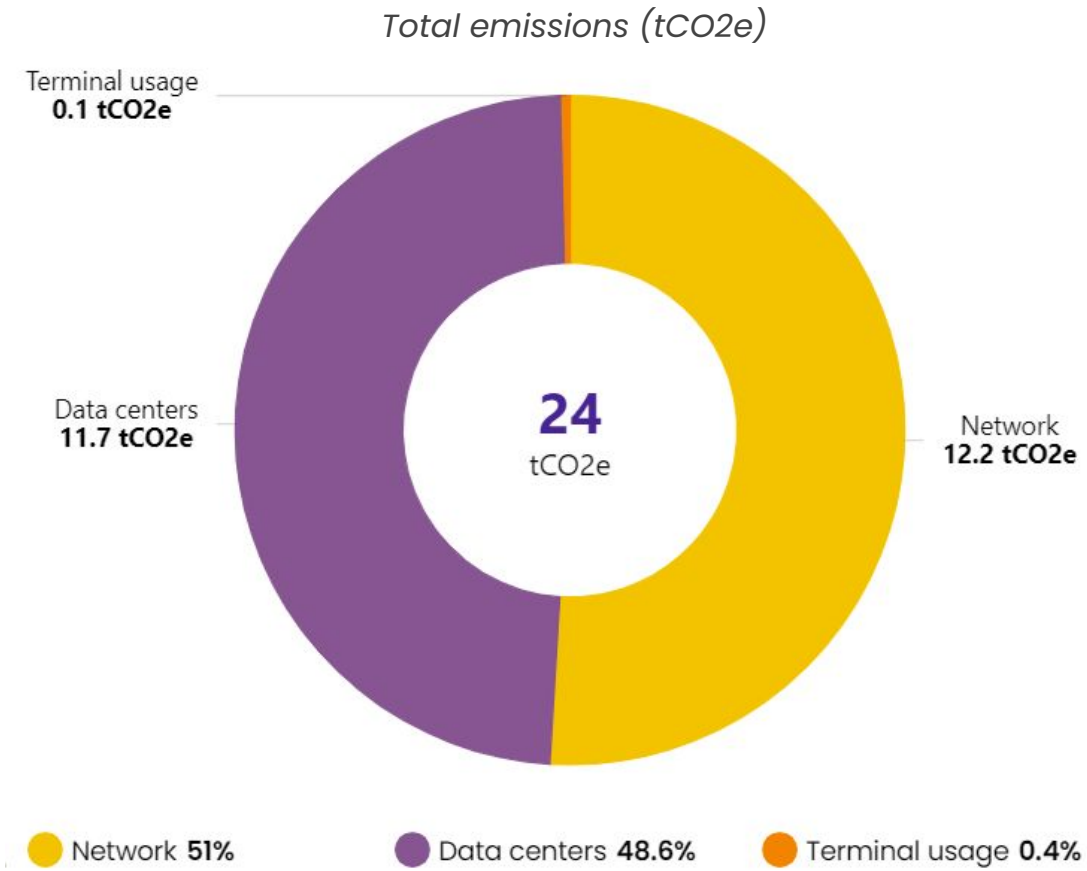

RESULTS

Data centers

12 t CO2e

1% of your footprint

What is the methodology?

To calculate the emissions related to data centers, we used different data:

> GHG emission calculations provided by Microsoft Azure (scope 1, 2 and 3)

> For physical servers, the technical capacity of storage and calculation (Cloud Jewels).

> For virtual servers, the flow approach (shift project), based on the volume of data transferred in each region of the world.

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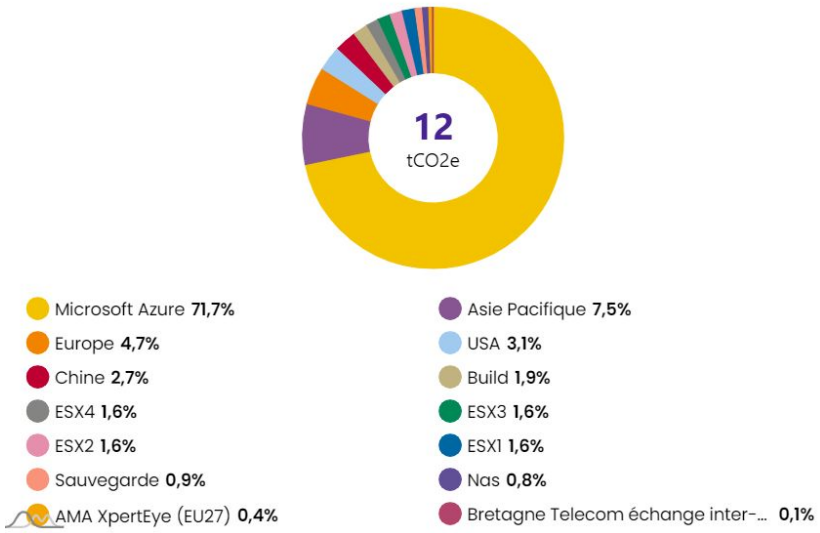
Data centers emissions (tCO2e)



Physical servers

SAMI CATEGORY	ACTIVITY DATA
ESX1	122304 To.h
	489216 vCPU.h
Build	87360 To.h
	628992 vCPU.h
Nas	262080 To.h
	174720 vCPU.h
Sauvegarde	655200 To.h
	69888 vCPU.h
ESX2	122304 To.h
	489216 vCPU.h
ESX3	122304 To.h
	489216 vCPU.h
ESX4	122304 To.h
	489216 vCPU.h
Bretagne Telecom échange inter-VMs	2141000 Mo
AMA XpertEye (EU27)	2160000 Mo

Virtual servers

Chine	6298 Mo
USA	12596 Mo
Asie Pacifique	22043 Mo
Europe	22043 Mo
Microsoft Azure	0

RESULTS

Networks

12 t CO2e

1% of your footprint

What is the methodology?

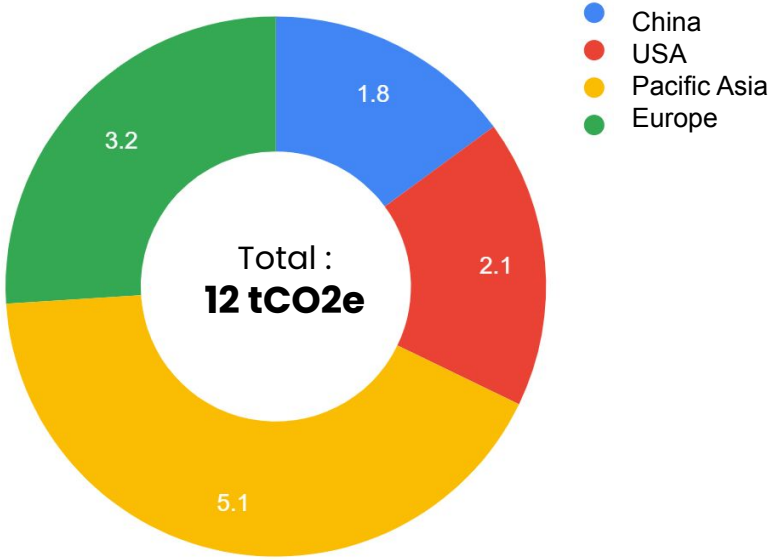
To calculate networks emissions (4G), we use the total amount of data transferred per region of the world, when using the Xperteye solution.

We then associate a conversion factor giving the electricity consumption of the networks per MB transferred.

We then convert the kWh into kg CO2e using the carbon intensity of the region's electricity mix.

Area where Xperteye is used	Total data transferred (To)
China	6.3
USA	12.6
Pacific Asia	22.0
Europe	22.0
Total	**63.0**

Networks emissions (tCO2e)



RESULTS

Terminal usage

0,01 t CO2e

0.001 % of your footprint

What is the methodology?

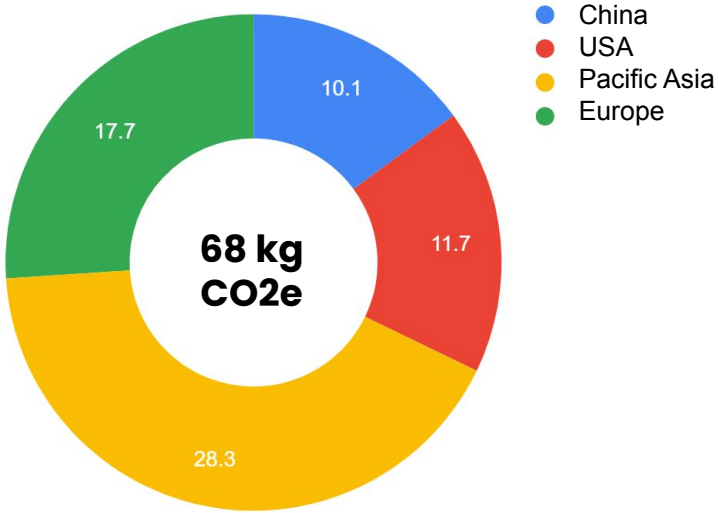
To calculate the emissions related to the use of the terminals, we estimated the power of the devices in operation, based on the capacity of the battery and its autonomy (0.0035 kW).

We then multiply this consumption by the carbon intensity of the electricity mix of the region of use.

We have only accounted here for the emissions related to the use of the glasses over the year 2021 (not the whole life cycle).

Area where Xperteye is used	Total duration spent (hours)
China	3 323
USA	6 645
Pacific Asia	11 630
Europe	11 630
Total	**33 227**

Emissions of terminal used(tCO2e)



RESULTS

Services purchases

262 t CO2e

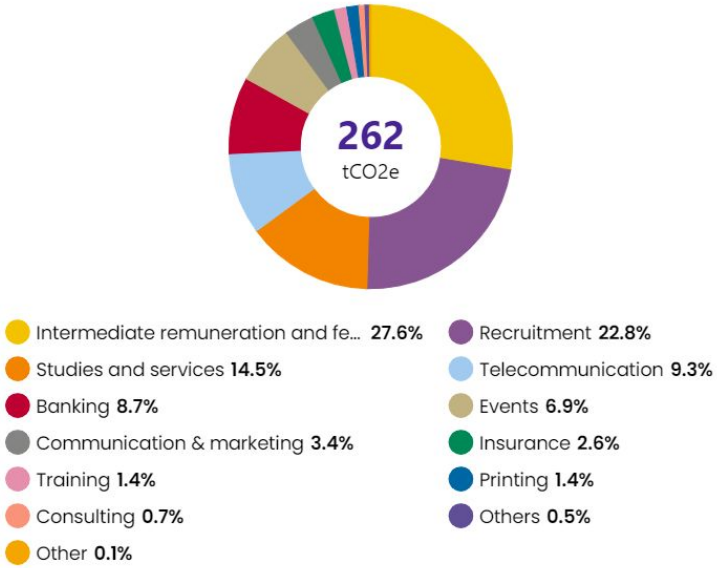
16 % of your footprint

What is the methodology?

This item is fully analysed thanks to accounting data that you have provided in the FEC.

The ADEME's carbon base references monetary ratios giving an emission factor per € spent for each category of purchase.

Total emissions (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Telecommunication	144 k€
Intermediate remuneration and fees	658 k€
Banking	208 k€
Insurance	62 k€
Printing	13 k€
Recruitment	363 k€
Studies and services	264 k€
Events	106 k€
Other	2 k€
Training	32 k€
Communication & marketing	53 k€
Others	7.8 k€
Consulting	17 k€

To reduce the impact of your purchases, you can make your suppliers aware of the importance of carrying out a Carbon Footprint and implement a responsible purchasing policy that will allow you to obtain the economic carbon intensity.

RESULTS

Business trips

105 t CO2e

6% of your footprint

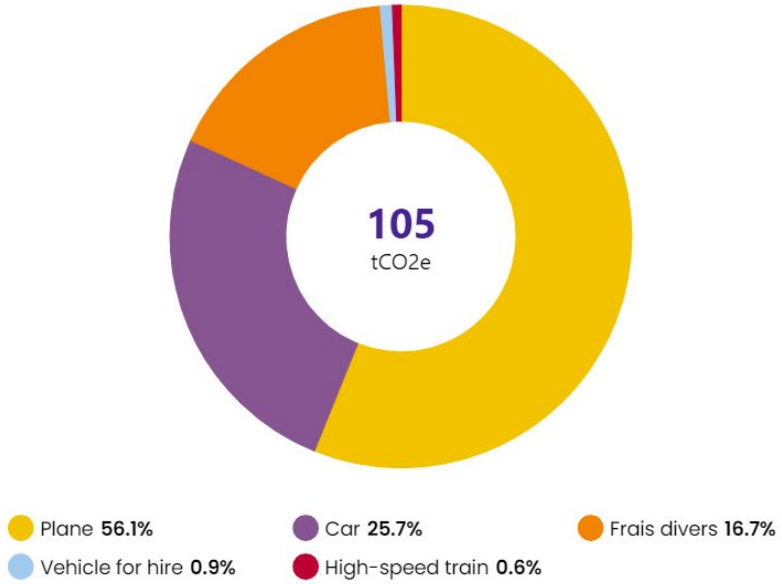
Equivalent to 268 round trips by plane Paris-Madrid

What is the methodology?

The Base Carbone (ADEME) proposes emission factors per km travelled for each type of transport.

Sami collected the data of the trips thanks to global data of km traveled and of travel expenses.

Total emissions (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Plane	252166 km
	24371 €
High-speed train	13414 €
	16618 CNY
Vehicle for hire	7056 €
Car	16288 €
Frais divers	55113 €

To reduce the impact of business travel, a company can: regulate the use of airplanes and cars during business trips, train in eco-driving, electrify the fleet of company vehicles...

RESULTS

Commuting

144 t CO2e

9% of your footprint

The equivalent of 963 Paris-Marseille by car

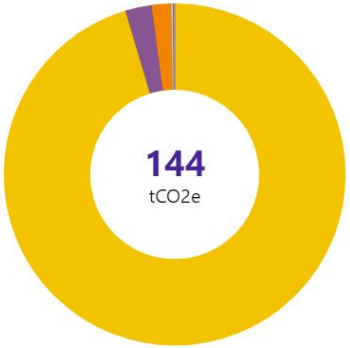
What is the methodology?

The Base Carbone (ADEME) proposes emission factors per km traveled for each type of transportation. Sami collects travel data through a questionnaire sent to employees.

Travelled kilometers

- Car **921,311 km**
- Urban public transport **67,149 km**
- Motorized two-wheeler **21,887 km**
- Bicycle **35,685 km**
- Local passenger train **7,023 km**
- High-speed train **17,833 km**
- On foot **3,395 km**

Total emissions (tCO2e)



- Car **137 tCO2e**
- Urban public transport **3.6 tCO2e**
- Motorized two-wheeler **2.7 tCO2e**
- Bicycle **0.3 tCO2e**
- Local passenger train **0.1 tCO2e**
- High-speed train **0 tCO2e**
- On foot **0 tCO2e**

22.6% of commuting done by **car** are **less than 10kms**

9.6% of commuting are done by **bicycle** or **electric bicycle**

Which represents **31 tCO2e**, or **22% of your commuting**

To reduce the impact of commuting: offer carpooling, develop a fleet of company bicycles, introduce a sustainable mobility package, equip parking lots with electric charging stations, etc.

RESULTS

Premises

119 t CO2e

7% of your footprint

L'équivalent de 6 391 jours de chauffage au gaz d'un foyer français

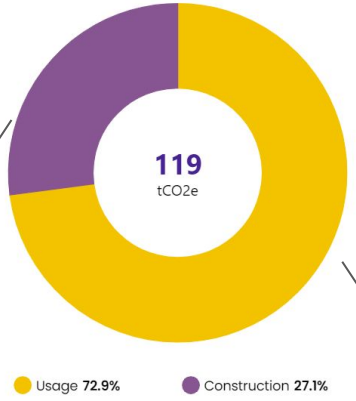
What is the methodology?

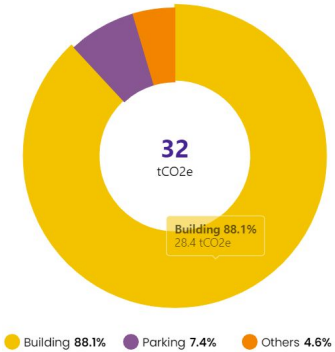
To calculate this emission item, we used different sources: electricity bill, maintenance expenses, DPE (energy performance diagnosis), equipment inventory, etc.

Air conditioning emissions correspond to the leakage of refrigerants, which are powerful greenhouse gases.

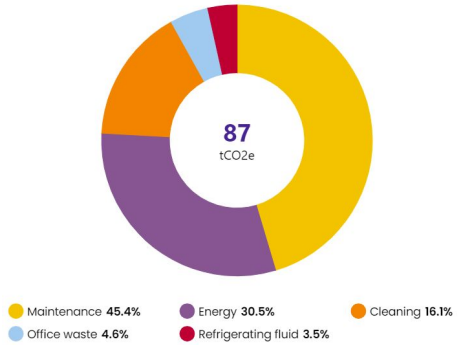
In cases where the information is difficult to access, we use standard data based on the iDO study 2021, which proposes a standard footprint per square meter for an office building over its entire life cycle, or on studies by Zero Waste France for average waste figures per office worker.

Total emissions (tCO2e)





SAMI CATEGORY	ACTIVITY DATA
Others	8.7 k€
Building	2164 m².year
Parking	372 m².year

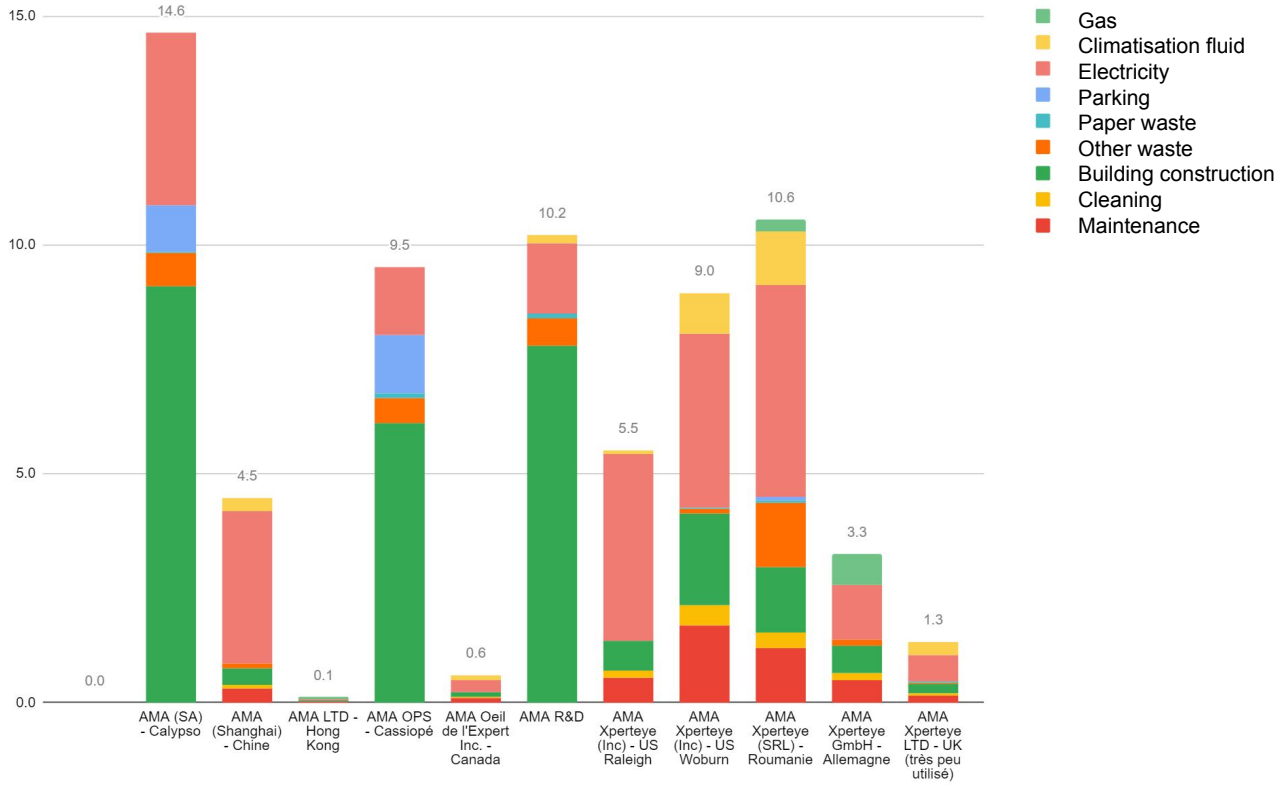


SAMI CATEGORY	ACTIVITY DATA
Maintenance	154 k€
	414 m².year
Cleaning	59 k€
	414 m².year
Energy	273603 kWh
Office waste	208 fte.year
	4.6 t
Refrigerating fluid	1.6 kg

To reduce the impact of your premises, you can among other things: reduce the environmental impact of heating, reduce your electricity consumption, improve the efficiency of your cooling system, reduce and sort your waste...

Premises

Emissions split per location (tCO2e)



To reduce the impact of your premises, you can among other things: reduce the environmental impact of heating, reduce your electricity consumption, improve the efficiency of your cooling system, reduce and sort your waste...

RESULTS

Subcontracting

103t CO2e

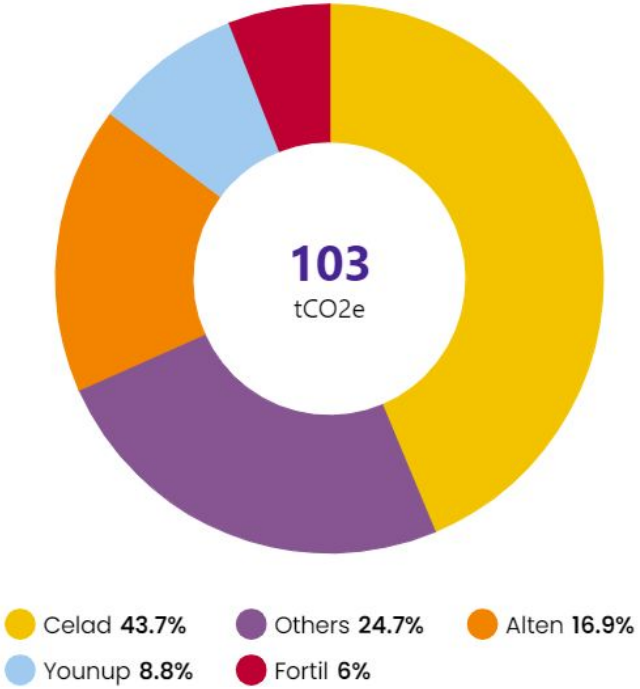
6% of your footprint

What is the methodology?

This item is fully analysed thanks to accounting data that you have provided in the FEC.

The ADEME's carbon base references monetary ratios giving an emission factor per € spent for each category of purchase.

Total emissions (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Alten	103 k€
Celad	265 k€
Others	150 k€
Younup	53 k€
Fortil	36 k€

RESULTS

Meals and accomodation

95 t CO2e

6% of your footprint

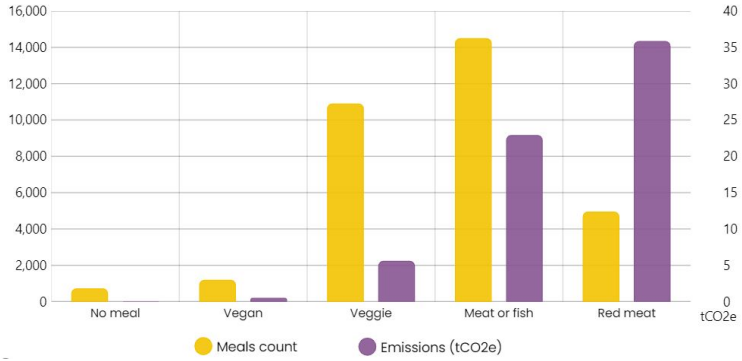
Equivalent to 510 vegetarian meal per day during one year

What is the methodology?

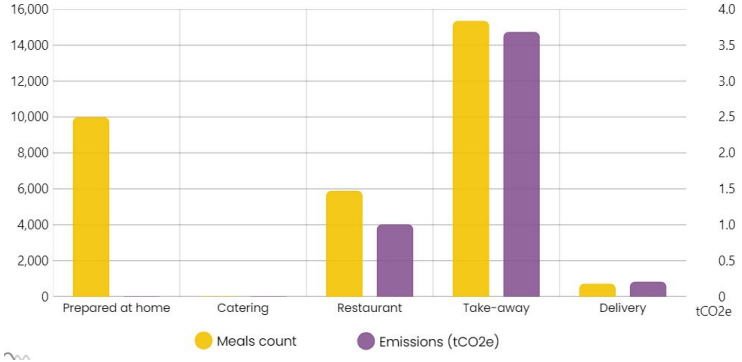
The measure of the carbon footprint of employee meals comes from an analysis of the employee survey: for each type of meal and diet, more or less meaty, and each type of preparation, an emission factor (EF) is applied to evaluate its carbon content.

Accommodation and catering expenses are taken from the accounting file (receptions).

Meal Diet



Preparation mode



Snacks and drinks

6 tCO2e 67494 cups of coffee	5 tCO2e 10073 processed snacks	1172 kgCO2e 5862 bottled water	988 kgCO2e 2994 sodas
804 kgCO2e 11466 unprocessed snacks	757 kgCO2e 1043 juices	291 kgCO2e 23657 cups of tea	161 kgCO2e 448 hot chocolates

Résumé

Catégorie	Emissions (tCO2)
Receptions	2
Meals	70
Snacks and drinks	15
Hotels	8
Total	**95**

To reduce the impact of accommodation and catering: make employees aware of the impact of high-carbon diets, reduce the impact of snacks (no water bottles, tea instead of coffee, etc.)

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RESULTS

Freight

76 t CO2e

5% of your footprint

What is the methodology?

For freight, we used two methods of calculation:

> For the upstream, we have associated to each weight of goods delivered a distance covered and a mode of transport, and thus obtained a data in t.km. An EF is associated with the emissions associated with the delivery of one ton of goods over one km by transport mode.

> For the downstream, we used the GHG declaration data of the carriers (UPS, Fedex, DHL).

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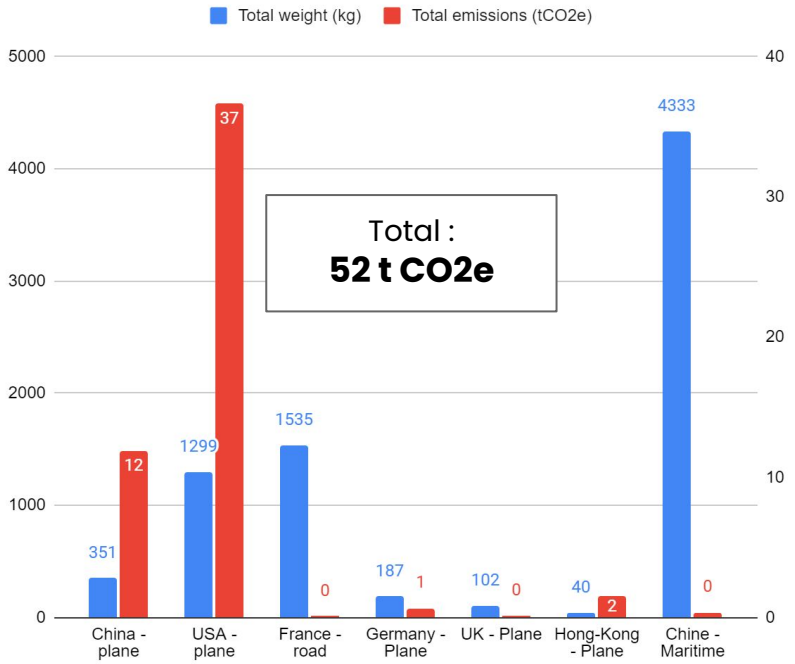
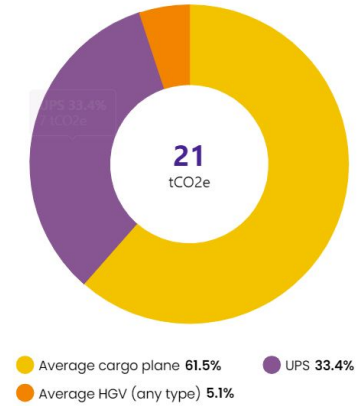
Upstream freight emissions (tCO2e)



Downstream freight total emission (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Average cargo plane	2062 kg
Average HGV (any type)	174 kg
UPS	7401 kg

RESULTS

Vehicules

50 t CO2e

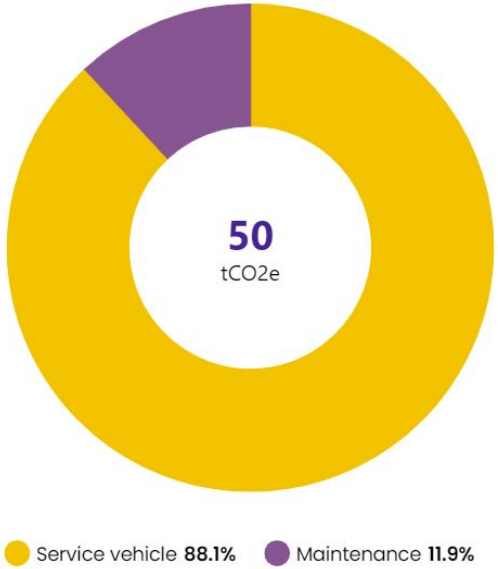
3% of your footprint

What is the methodology?

This item is analyzed using the physical data entered in the Sami application (tab "Company vehicles")

Emissions related to maintenance are calculated via expenses.

Total emissions (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Maintenance	15 k€
Service vehicle	18013 €
	29 tonnes

To reduce the impact of these vehicles, choose light vehicles: their manufacturing process is less emissive, the amount of material required is much less for an SUV than for a scooter.

RESULTS

Small supplies & equipment

82t CO2e

5% of your footprint

What is the methodology?

This item is fully analyzed thanks to the accounting data that you have provided in the FEC.

The ADEME's carbon base references monetary ratios giving an emission factor per € spent for each category of purchase.

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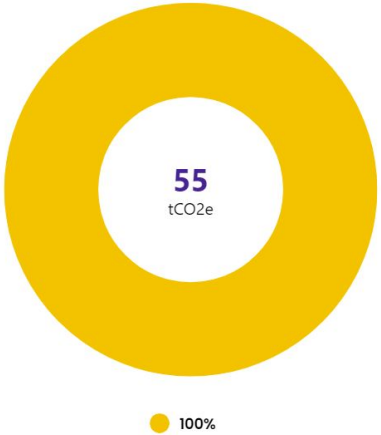
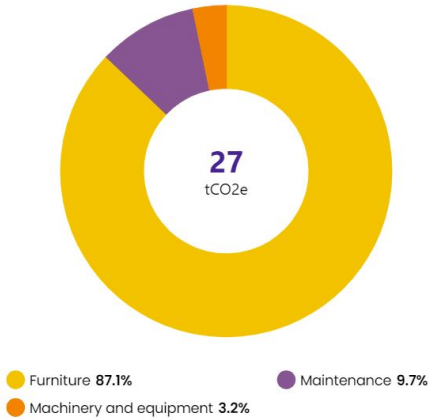
Small supplies emissions (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Others	150 k€

Equipements emissions (tCO2e)



SAMI CATEGORY	ACTIVITY DATA
Machinery and equipment	4.5 k€
Furniture	45 k€
Maintenance	6.7 k€

RESULTS

Remote work

6 t CO2e

0.3% of your footprint

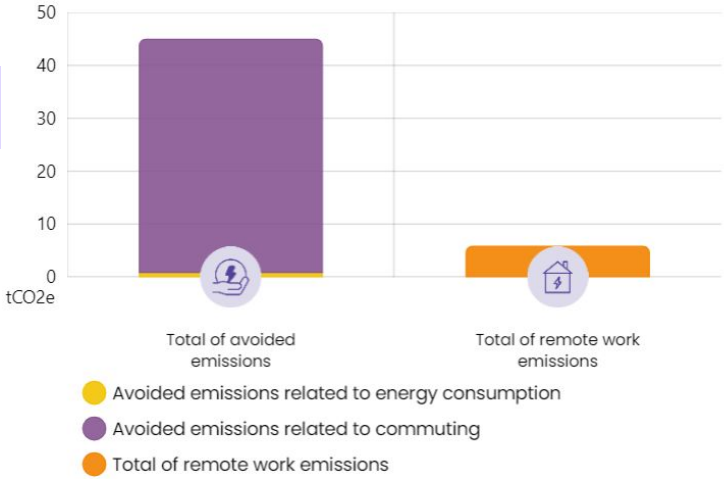
The equivalent of 311 days of gas heating for a French household

What is the methodology?

Telecommuting avoids emissions related to commuting, but when employees work from home, they use energy that is not accounted for by the company (heating, electricity, consumption of digital equipment, internet, etc.)

We have therefore added an emissions factor that measures this item, depending on the heating method and electricity supplier of each employee.

Total emissions (tCO2e)



	DATA
Total of remote work emissions	5,8 tCO2e
Remote working days	7 578
Average rate of remote work	20%
Avoided emissions related to energy consumption	0,9 tCO2e
Avoided emissions related to commuting	44 tCO2e

To reduce the impact of telecommuting: "premium" renewable electricity offers allow for the support and production of low-carbon energy, let's remember that telecommuting mainly allows to avoid commuting.

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RESULTS

Social networks and website consultations

0.2t CO2e

0.01 % of your footprint

What is the methodology?

For emissions related to website and social network viewing, the following assumptions were made:

An average consultation time per page of 2 minutes for the website and 0.1 minutes for social networks.

The French average concerning the terminals: 53% on mobile (in 4G), 16% on tablet and 31% on computer (in Wifi).

Conversion factors are from the International Energy Agency (IEA) and CISCO.

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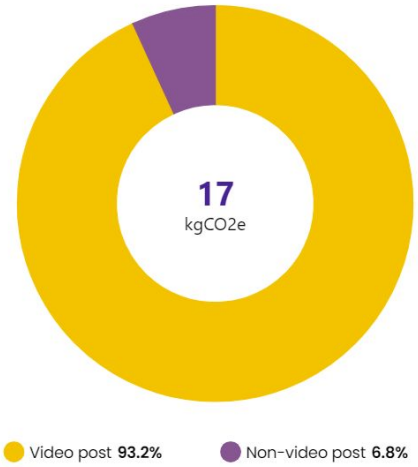
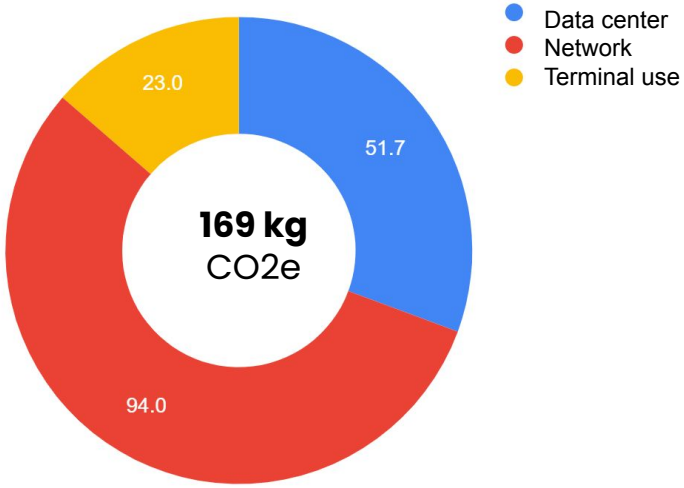
Total social networks emissions (kgCO2e)



SAMI CATEGORY	ACTIVITY DATA
Non-video post	125688 views
Video post	47424 min

Total website emissions (kgCO2e)



SAMI CATEGORY	ACTIVITY DATA
AMA XpertEye (EU27)	2160000 Mo

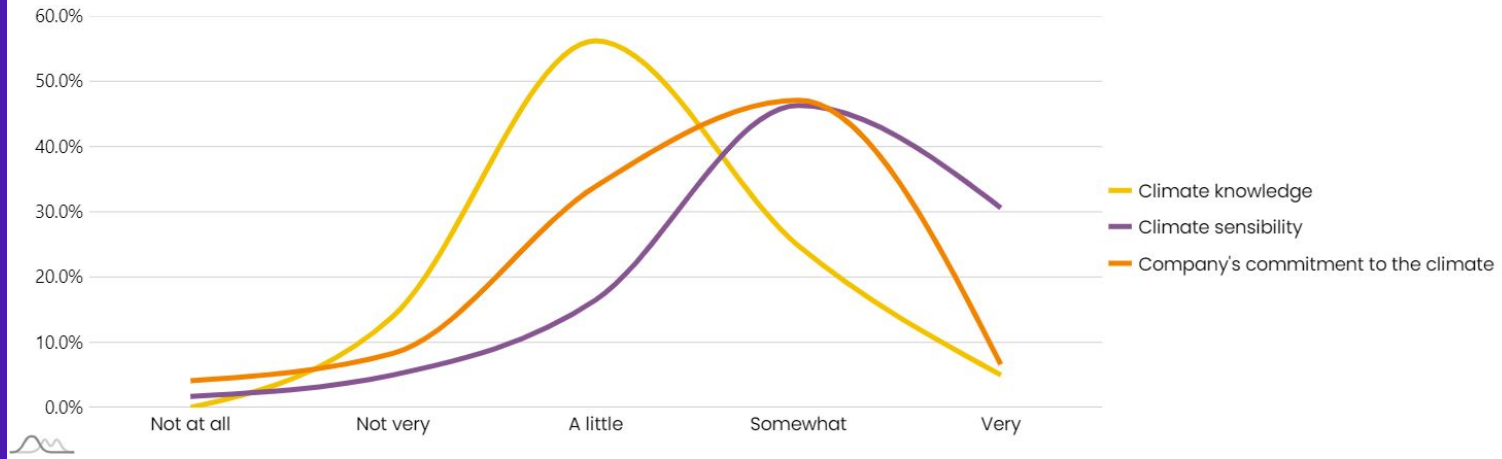
To reduce the impact of your digital consultations, you can: eco-design your sites and applications, optimize the hosting of your digital tools (in France, the energy mix is low carbon)...

RESULTS

Employee barometer ?

Thanks to this barometer, we monitor your employees' awareness and level of knowledge on the climate issue.

We also monitor their vision of your company's climate commitment.



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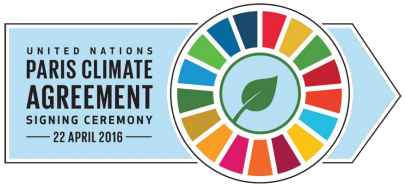
ACT

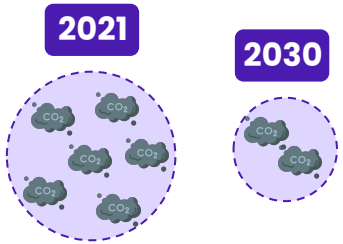
How to TAKE ACTION ?

Your company's footprint isn't much compared to Amazon or Facebook, that's for sure.

But that doesn't mean you should downplay the importance of the room for maneuver. in the face of the climate challenge, companies, governments and citizens must each do their part.

To stay below 2°C and respect the Paris agreements, we still have a certain amount of CO2e that we can emit until 2050 on a global scale: this is our **global carbon budget**.





This budget is then **disaggregated** at the level of each country, each economic sector, and each company, which is assigned an individual carbon budget.

"**Doing your part**" is therefore a commitment not to exceed your carbon budget.

4 steps :

1. **Carbon assessment**
2. **Reduction objectives**
3. **Implementing action plan**
4. **Carbon footprint tracking**

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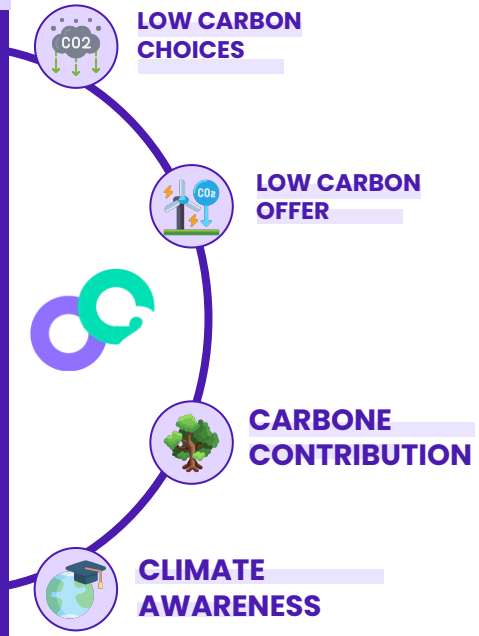
ACT

What is Net Zero Initiative ?

In order to limit the temperature increase to +1.5°C compared to the pre-industrial period, climate science requires us to reach a balance between global CO2 emissions and global CO2 removals by 2050. This balance is called global carbon neutrality, or "net zero emissions".

To achieve net zero, the two levers to be used at the global and national levels are reducing emissions and increasing carbon sinks.

Climate actions typology



Implement **actions** that will directly reduce your company's emissions.

To reduce emissions in your **value chain**, your first lever of action is your customers.

Support the **decarbonization** of other sectors outside your value chain.

Make your stakeholders (customers, suppliers, employees, etc.) **aware** of climate issues.

Inspired by Net Zero Initiative (By Carbone 4)

How to implement actions?

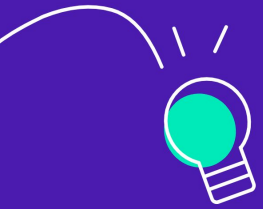
The entire action plan is available on the Sami application.

The actions have been pre-selected by your coach but you can also select from our database (containing more than a hundred ideas) the ones that seem to be the most adapted to your company!

Summary of climate actions

Type	Recommandations	Emission related to each item
	**N°1 :** Reduce the carbon content of your digital products sold to customers	357 t CO2e
	**N°2 :** Reduce emissions related to internal digital use	296 t CO2e
	**N°3 :** Decarbonize your commutings and business travels	249 t CO2e
	**N°4 :** Decarbonize the operation of your premises	119 t CO2e
	**N°5 :** Develop a low-carbon offer	Supporting leading companies in the ecological transition
	**N°6 :** Finance carbon reduction and/or sequestration projects	• Emission reduction or carbon sequestration outside your value chain • Social co-benefits (fight against poverty, health) and environmental benefits (biodiversity, pollution)
	**N°7 :** Raising awareness of climate issues among employees, suppliers and customers	• Refine your carbon footprint (supplier carbon footprint) • Team building (employees)

See details on sami



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Merci !