EUROPEAN COURT OF AUDITORS

ECA 2019 Carbon Footprint Report

Calculation of the European Court of Auditors' carbon footprint using the Bilan Carbone® methodology

BC BILAN CARBONE®

ECA 2019 Carbon Footprint Report

ECA 2019 Carbon Footprint Report

1 Executive summary

2019

923.2 FTE[1]

Three buildings

BC BILAN CARBONE®

9 203 tCO_2e

Total 2019 GHG emissions 10 tCO_2e/FTE[1] (total uncertainties 17%)

38%

Passenger transport is the largest source of emissions

-14%

Overall decrease in emissions between 2014 and 2019: ±1.45% per year

Offset: 7 745 tCO_2e

The total emissions offset for 2019 can be reduced to 7 745tCO_2e (8.39 tCO_2e/FTE[1]), as the ECA uses 100% green electricity

1 Full-time equivalent.

ECA 2019 Carbon Footprint Report

2 Context of the study

2013

The ECA launches the **EMAS**[2] project.

2014

The ECA adopts its first environmental policy.

Goal: continuous improvement of the ECA's environmental performance.

2016

First EMAS certification.

2019

2nd EMAS certification.

2020

The ECA monitors and reports on its emissions every year using the **Bilan Carbone**® methodology.

This is the first year the ECA decides to offset unavoidable GHG emissions (generated in 2019).

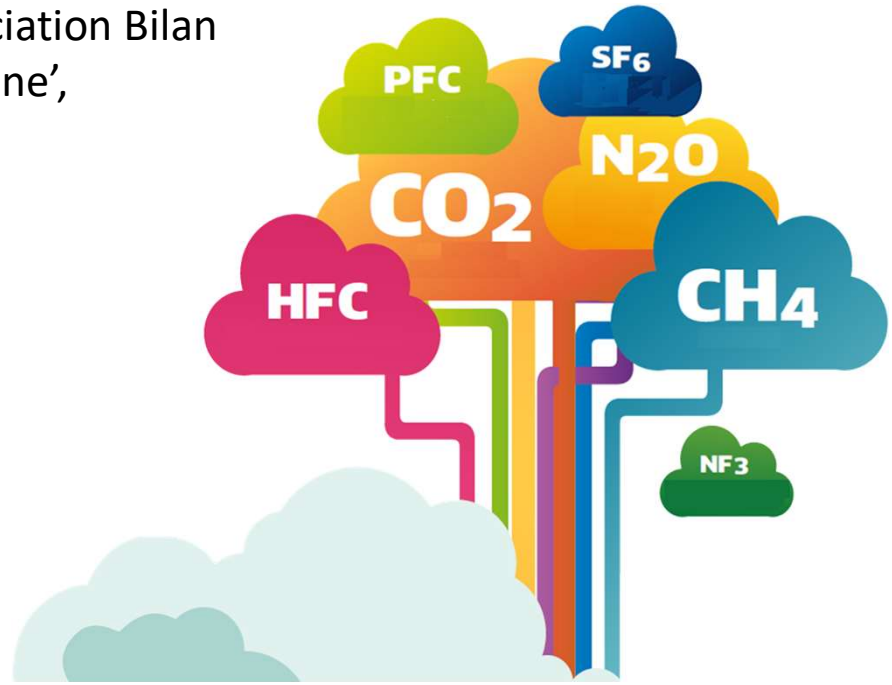
2 Eco-Management and Audit Scheme.

ECA 2019 Carbon Footprint Report

3 Overview of the Bilan Carbone®method

The Bilan Carbone® method was developed in 2004 by the French Environment and Energy Management Agency, ADEME, to quantify organisations' GHG emissions.

It is promoted by the 'Association Bilan Carbone',



The method takes account of the following gases:

- ✓ Kyoto Protocol gases: CO_2, CH_4, N_2O, SF_6 hydrofluorocarbons ($C_nH_mF_p$), perfluorocarbons (C_nF_{2n+2}), NF_3
- ✓ other non-Kyoto Protocol gases (CFCs)
- ✓ water vapour emitted by planes in the stratosphere

As it is not feasible to measure;GHG emissions directly, the Bilan Carbone® method estimates GHG emissions by multiplying data on an organisation's activity by an emission factor (EF).

Data (unit) × Emission factors (tCO_2e/unit) = GHG emissions (tCO_2e)

3 Overview of the Bilan Carbone®method

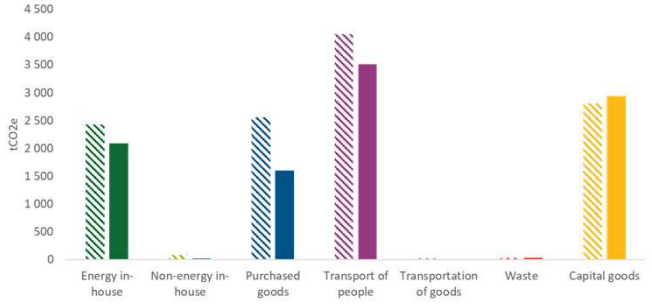
Step 1: Collect activity data

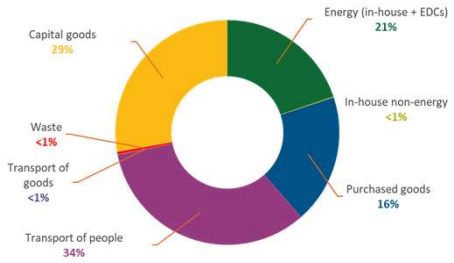
CURIA RATIONUM
EUROPEAN COURT OF AUDITORS

Step 2: Apply the emission factors taken from the Bilan Carbone® database (v. 8.1)

Data (unit) × Emission factors (tCO_2e/unit) = GHG emissions (tCO_2e)

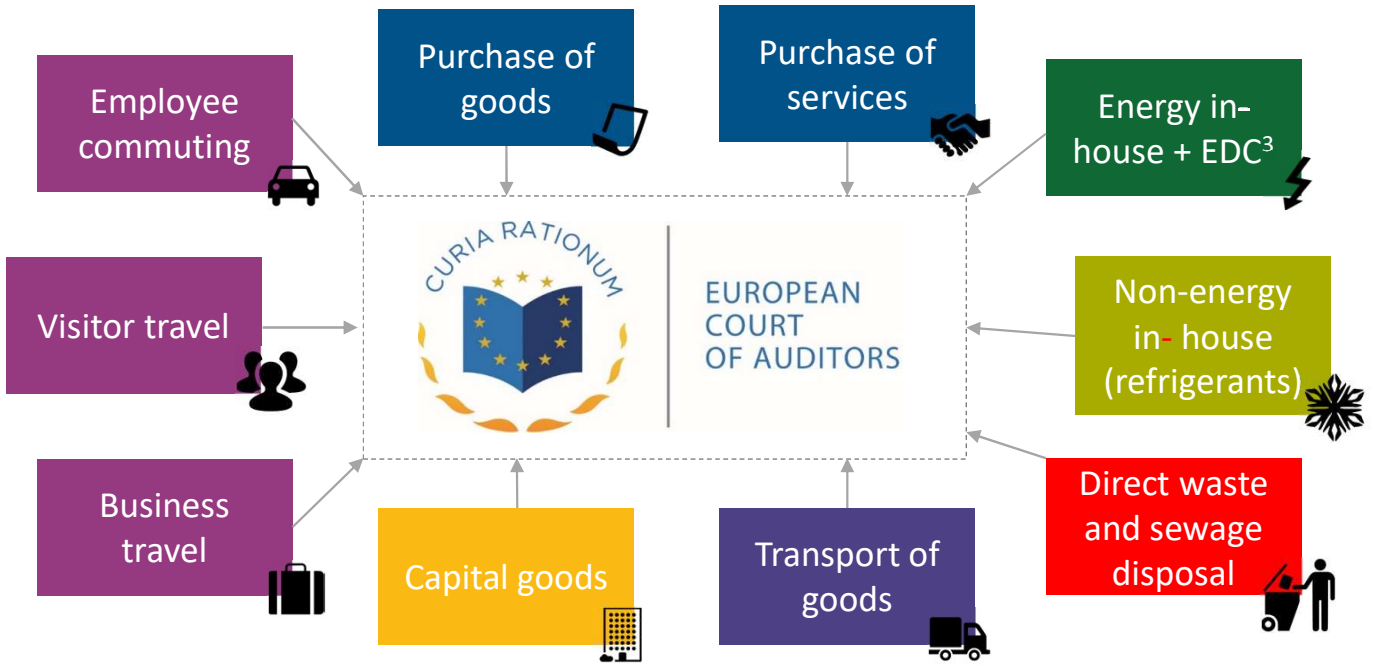
Step 3: Visualise and analyse the results





3 Overview of the Bilan Carbone® method

Operational scope of the Bilan Carbone® method in 2019



The ECA's footprint exercise includes direct and indirect GHG emissions (Bilan Carbone® scopes 1, 2 and 3).

3 EDC: external data centre.

3 Overview of the Bilan Carbone® method

Temporal and organisational boundaries

Bilan Carbone® approach: operational control approach

Temporal scope: ECA activities in 2019

Organisational scope: three buildings in Luxembourg (K1, K2, K3)

Building	Area (m^2)	Employees
K1	23 720	325
K2	18 619	244
K3	28 245	507

These buildings include office space, basements, underground car parks, two cafeterias, a canteen, archives, a library, walkways between buildings, and other amenities.

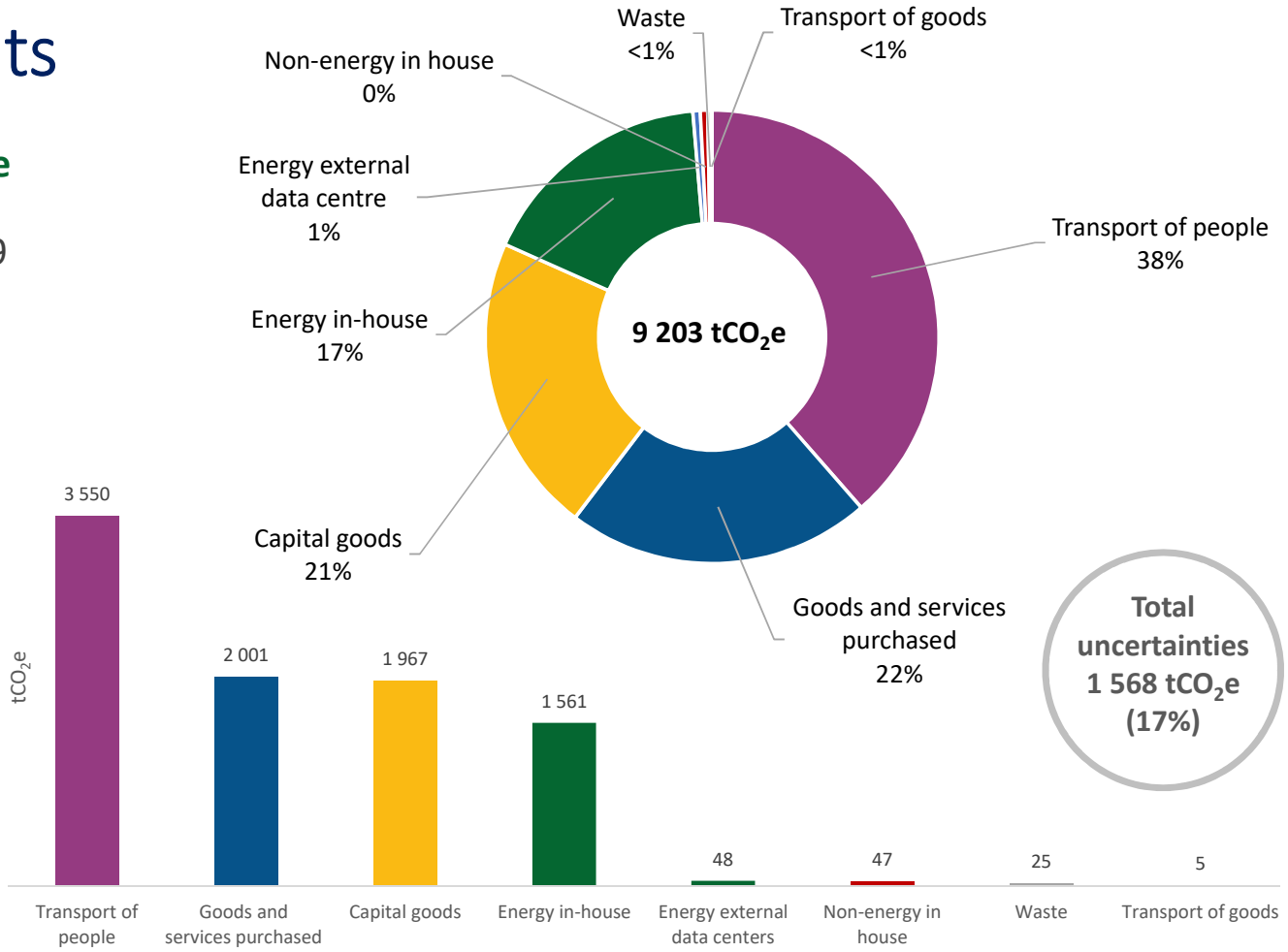
Activities of ECA officials and other employees: at the end of 2019, there were **923.2** full-time equivalent employees (FTEs).

ECA 2019 Carbon Footprint Report

4 Overall results

2019 Bilan Carbone® results

- ✓ **Total GHG emissions stood at 9 203 tCO_2e**
- ✓ The largest sources of emissions in the 2019 Bilan Carbone® were:
  - **passenger transport (38%)**
  - **goods and services purchased (22%)**
  - **capital goods (21%)**
  - **energy (in-house + EDC) (18%)**
- ✓ Non-energy in house, waste, and transport of goods made up the remaining 1%



4 Overall results

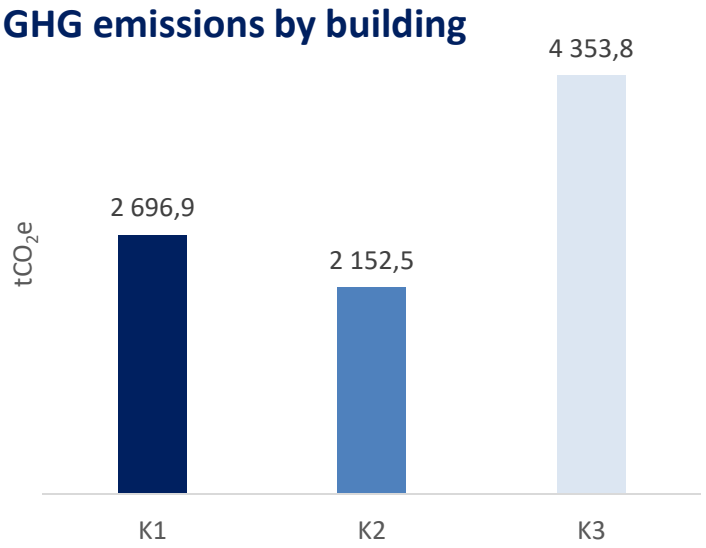
Emission results by building

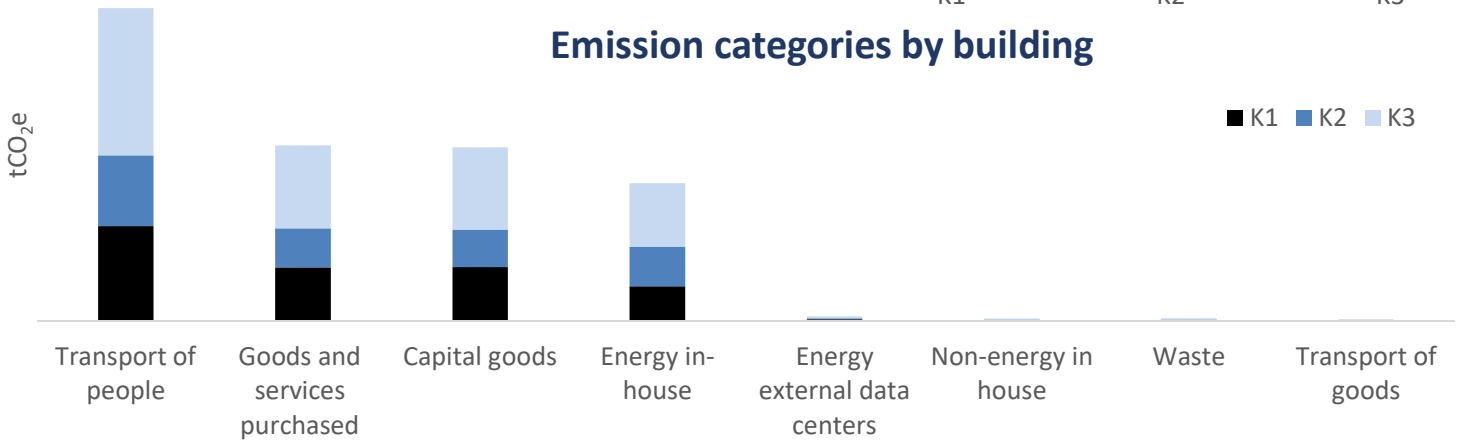
Emissions were divided between the buildings according to the staff headcount in each building.

Building	No of occupants	Share (%)
K1	325	30%
K2	244	23%
K3	507	47%
Total	**1 076**	**100%**

Building	tCO_2e
K1	2 696.9
K2	2 152.5
K3	4 353.9
TOTAL	**9 203.3**

K3 houses the most employees and thus produces the largest share of emissions.





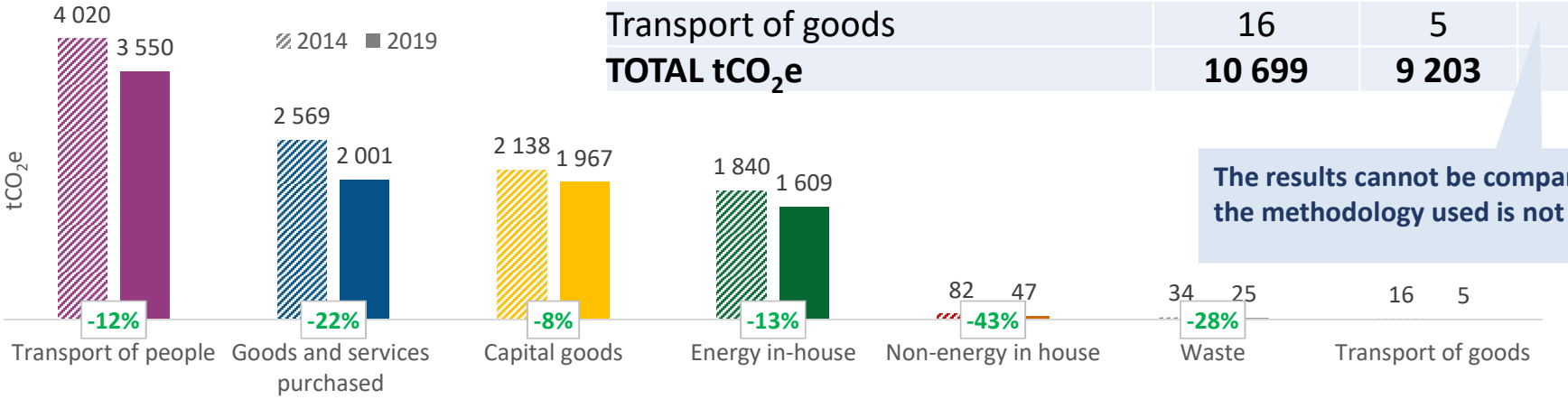
4 Overall results

Bilan Carbone® comparison* between 2014 and 2019

Overall, emissions decreased by 14% between 2014 and 2019 (-3% per year).

Emission sources tCO_2e	2014	2019	Variation 2014-2019
Transport of people	4 020	3 550	-12% ↘
Goods and services purchased	2 569	2 001	-22% ↘
Capital goods	2 138	1 967	-8% ↘
Energy in house	1 840	1 609	-12% ↘
Non-energy in house	82	47	-43% ↘
Waste	34	25	-28% ↘
Transport of goods	16	5	
TOTAL tCO_2e	**10 699**	**9 203**	**-14%** ↘

The methodology has evolved over the years, gaining in precision



The results cannot be compared, as the methodology used is not the same

*Isometric comparison may result in data that differ in the 2019 carbon footprint when the same category is analysed for both years.

ECA 2019 Carbon Footprint Report

Passenger transport

Data and assumptions

Emission sources

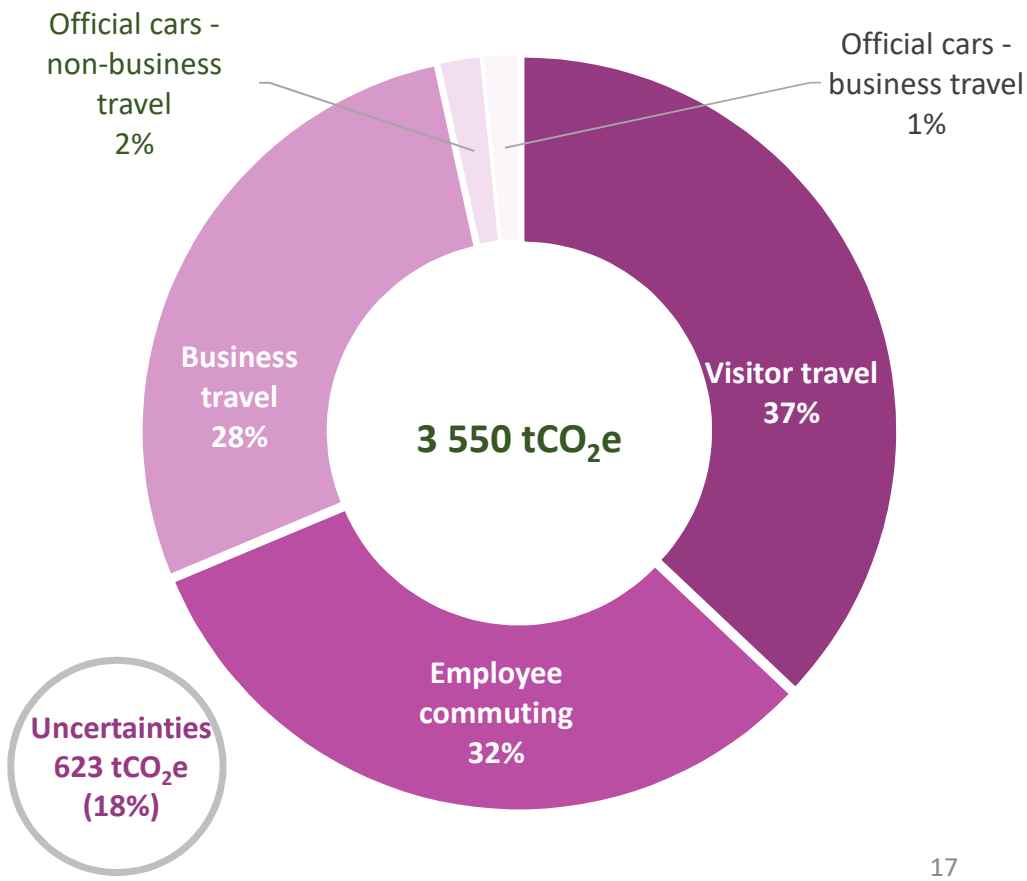
- ✓ Use of official cars (owned and leased)
- ✓ Employee commuting between home and work
- ✓ Business travel
- ✓ Visitor travel

Results

Transport of people	tCO_2e	km	Litres[4]
Visitor travel	1 316	5 218 444	-
Employee commuting	1 122	4 848 930	-
Business travel	989	4 098 015	-
Official cars - non-business travel	66	278 848	22 644
Official cars - business travel	57	228 042	18 517
Total	3 550	14 672 279	41 161

4 Litres were used for the carbon footprint calculation for official cars

Emissions from the transport of people by type of travel (with official car breakdown)



5 Result per scope

Passenger transport

Visitor travel

Data provided

Number of visitors by country of origin in 2019:

- ✓ 109 visits
- ✓ 2881 visitors

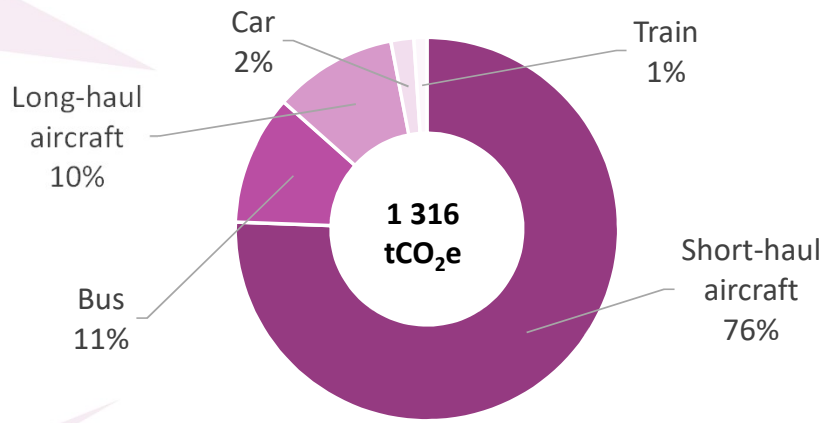
Assumptions regarding mode of transport

- ✓ Short-haul aircraft: AT-BG-CY-DK-EE-ES-FI-IE- IT-LT- LV-PL-PT-RO-Macedonia
- ✓ Long-haul aircraft: Brazil-Norway-USA
- ✓ Car: BE-LU
- ✓ Bus: CZ-DE-NL
- ✓ Train: FR

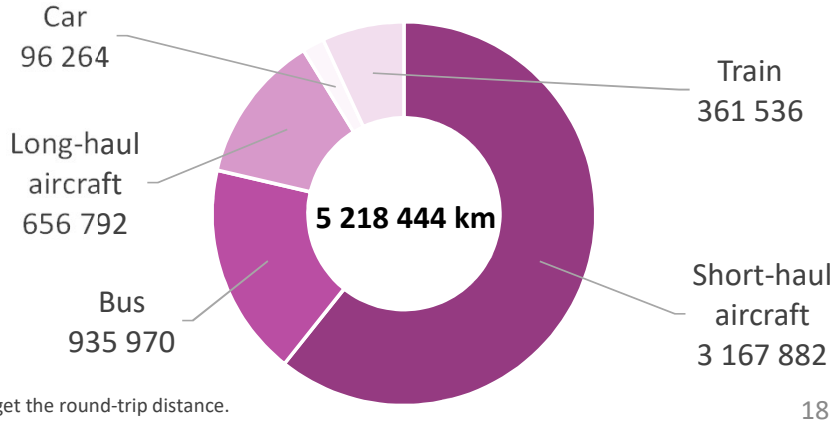
Plane: 86% of the GHG emissions for 73% of the kilometres travelled.

Train: 1% of the GHG emissions for 7% of the kilometres travelled.

Sources of 2019 GHG emissions from the transport of visitors



Kilometres[5] travelled by visitors



5 *EcoAct* used its internal distance-calculator tool to estimate the distance between the country of origin and Luxembourg, and multiplied it by two to get the round-trip distance.

5 Result per scope

Passenger transport

Employee commuting

Data provided

- ✓ The ECA conducts an employee commuting survey every 18 months
- ✓ 496 participants in the 2019 survey

Hypothesis

- ✓ Teleworking days were not included in the calculation.

Extrapolated results

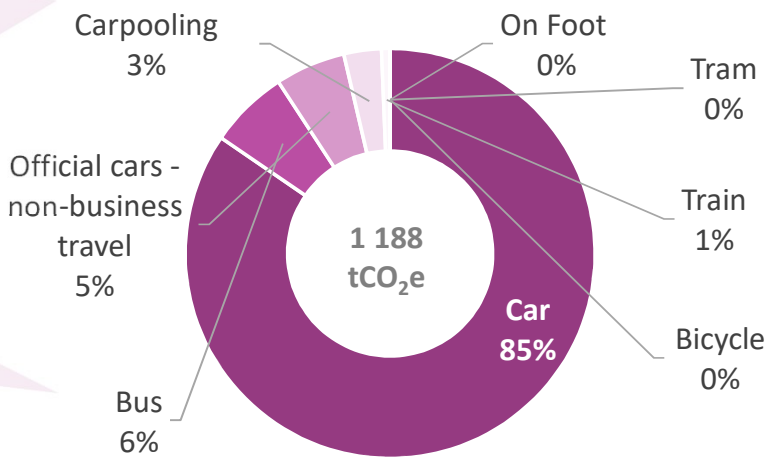
Employee commuting	tCO_2e	km
Car	1 004	3 806 044
Bus	75	483 325
Official cars - non-business travel	66	278 848
Carpooling	35	132 829
Train	8	201 050
Tram	0	21 741
Bicycle	0	165 544
On Foot	0	38 397
Total	**1 188**	**5 127 778**

-16% in one year, due mainly to the new teleworking scheme in place since 1 June 2019

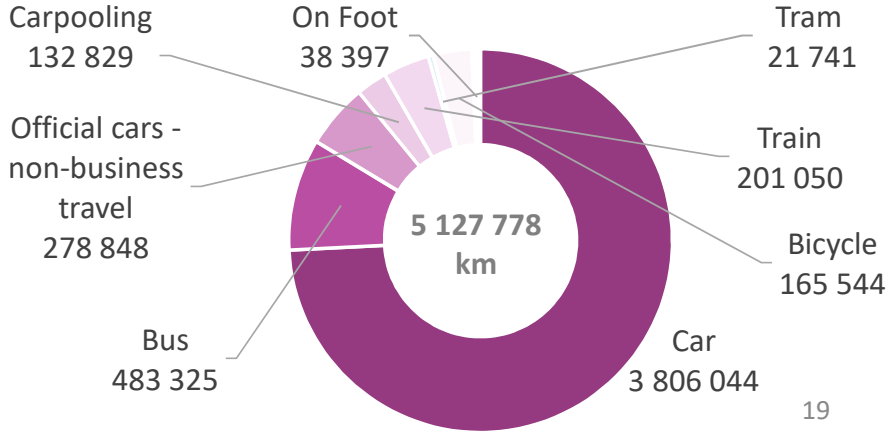
Cars: 85% of the GHG emissions for 74% of the kilometres travelled.

22 km per FTE per day on average.

GHG emissions from commuting



Kilometres[5] travelled for commuting



Business travel

Data provided

Total kilometres by mode of transport

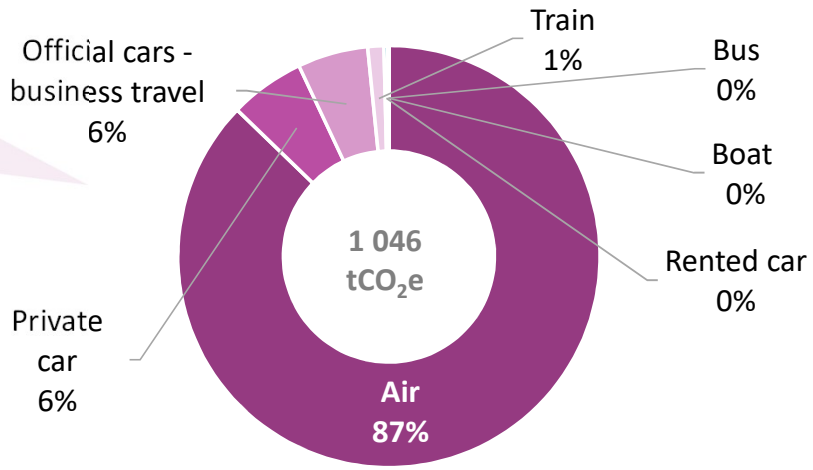
Results

Employee commuting	tCO_2e	km
Air	912	3 528 447
Private car	60	228 042
Official cars - business travel	57	228 042
Train	13	325 066
Rented car	3	10 989
Bus	1	5 198
Boat	0	273
Total	**1 046**	**4 326 057**

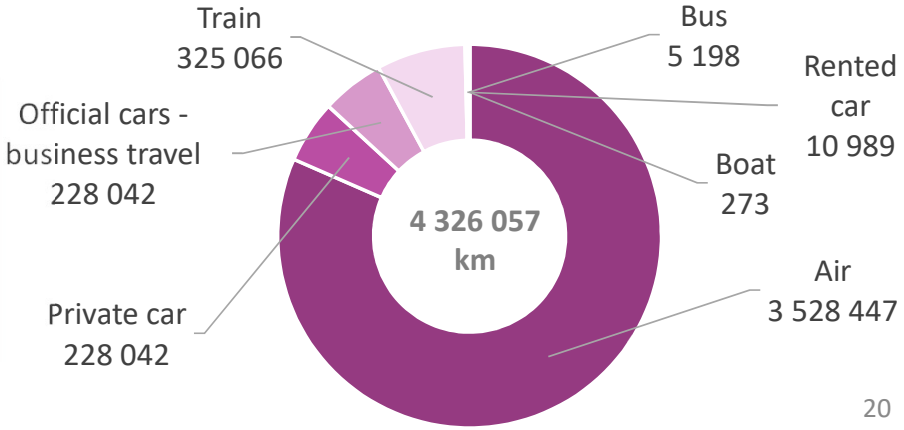
Plane: 87% of the GHG emissions for 82% of the kilometres travelled.

Train: 1% of the GHG emissions for 8% of the kilometres travelled.

GHG emissions from business travel



Kilometres[5] travelled for business travel



5 *EcoAct* used its internal distance-calculator tool to estimate the distances between the country of origin and Luxembourg, and multiplied it by two to get the round-trip distance.

5 Result per scope

Passenger transport

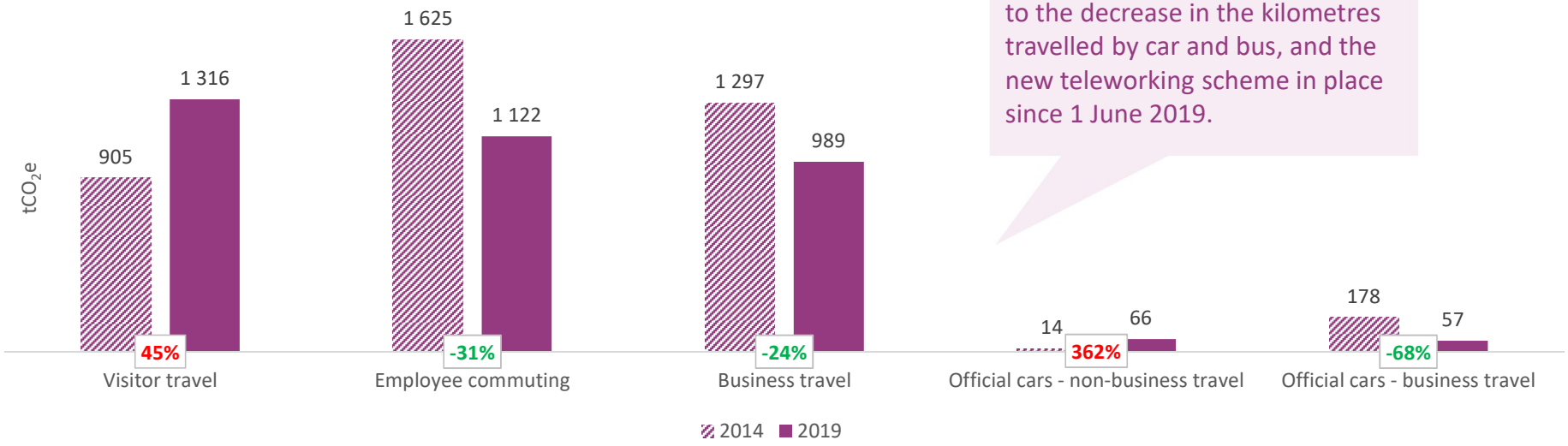
Comparison between 2014 and 2019

GHG emissions tCO_2e	2014	2019	2018-2019 variation
Total transport	4 020	3 550	-13% ↘

+45% in GHG emissions from **visitor travel**, which increased by **almost one million kilometres** over five years, accompanied by **close to a threefold increase in air travel**

-31% in GHG emissions from **business travel,** as the kilometres travelled decreased.

-24% in GHG emissions from **employee commuting**, due mainly to the decrease in the kilometres travelled by car and bus, and the new teleworking scheme in place since 1 June 2019.



5 Result per scope

Goods & services purchased

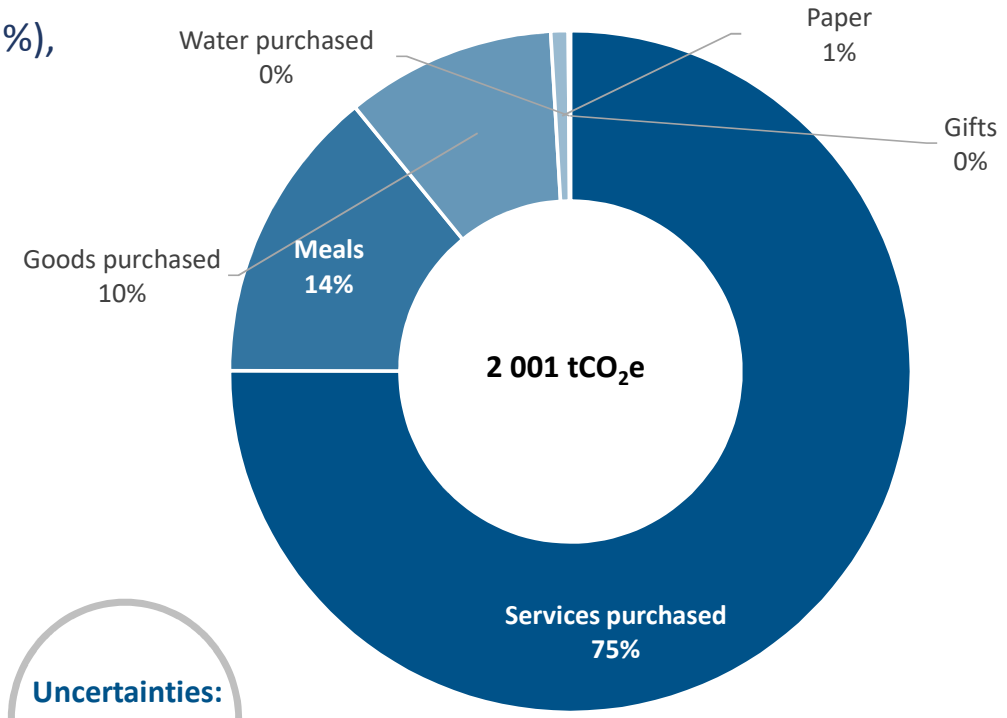
Data and assumptions

- ✓ **Goods & services** (see page 23)
- ✓ **Paper Assumption**: A4 80gr (95%), and A3 80gr and others (5%), converted into weight (5g/page)
- ✓ **Water purchased** total water consumed in 2019
- ✓ **Food (meals)**
- ✓ **Gifts** Methodology: number and type of gifts converted into weight and types of material
- ✓ **Meals** (see page 24)
- ✓ **Goods and services purchased** (see page 23)

Results

Type of good or service	tCO_2e
Services purchased	1 502,0
Meals	281,7
Goods purchased	199,2
Paper	16,6
Water purchased	1,6
Gifts	0,3
Total	**2 001,4**

Total GHG emissions from goods and services purchased



Uncertainties: 448 tCO_2e (22%)

Services

Data and assumptions

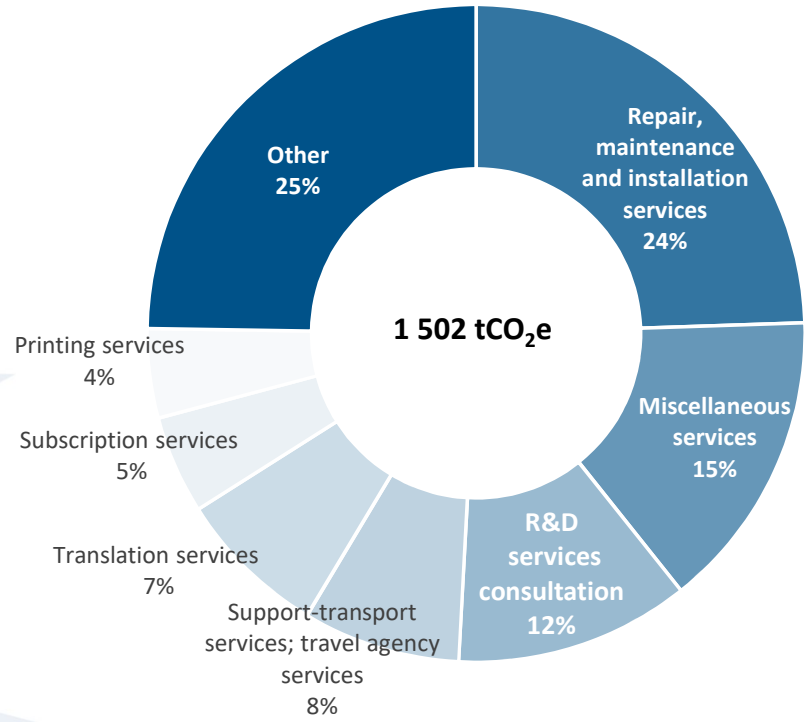
Data provided: goods and services purchased by category type and amount in euros

GHG emissions from repair, maintenance and installation services increased due to new framework contracts and works in the buildings

Results

Type of service	tCO_2e
Repair, maintenance and installation services	368
Miscellaneous services	222
R&D services/consultation	174
Support transport services; travel agency services	116
Translation services	111
Subscription services	73
Printing services	66
Other	372
Total	**1 502**

GHG emissions from services purchased



Miscellaneous services were assigned an average services emission factor extrapolated from the Bilan Carbone® database.
These services ranged from renting equipment, to training (language classes, etc.), painting, document destruction, etc.

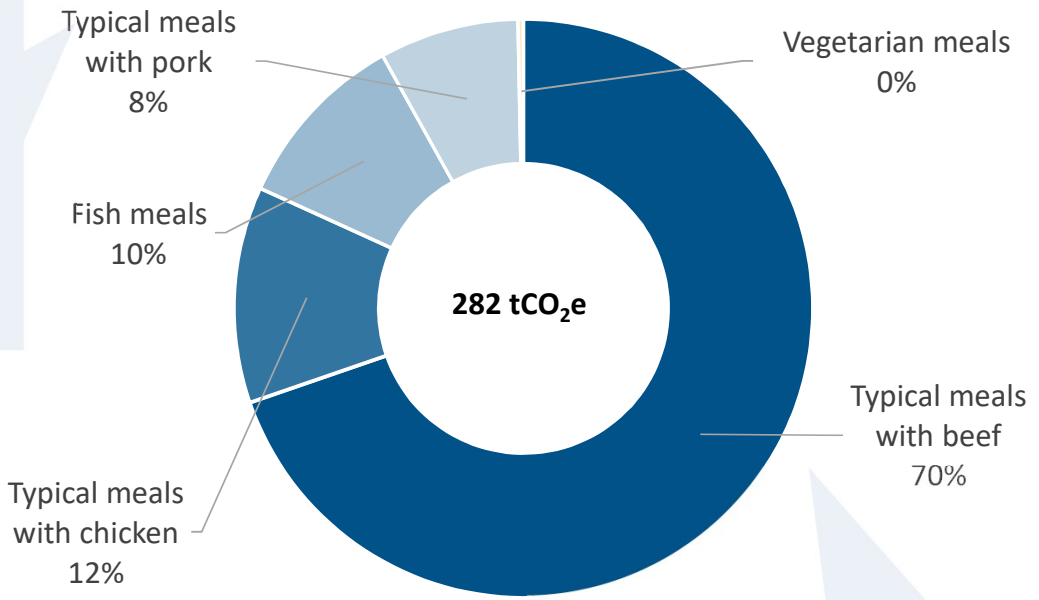
Meals

Data and assumptions

- ✓ Number of meals, and quantities of organic and non-organic meat (pork, beef, chicken) and fish purchased
- ✓ Assumptions: 1% vegetarian meals
- ✓ Other meals broken down according to the quantities of meat and fish purchased (29% chicken, 21% beef, 20% pork, 29% fish)

Replacing a pork dish with a vegetarian dish would reduce the meal's carbon impact by 50%.

GHG emissions from meals



Results

Type of meal	tCO_2e
Typical meals with beef	196
Typical meals with chicken	34
Fish meals	28
Typical meals with pork	22
Vegetarian meals	1
Organic meals	0
Total	**282**

Organic meals were assigned the emission factor applicable to an "average meal", as the determinants of a dish's emissions are its ingredients (meat, vegetarian) and whether or not the ingredients were produced locally. There is no conclusive evidence that the average organic meal is less emissive.

Replacing beef with chicken would reduce a dish's carbon impact by 79%.

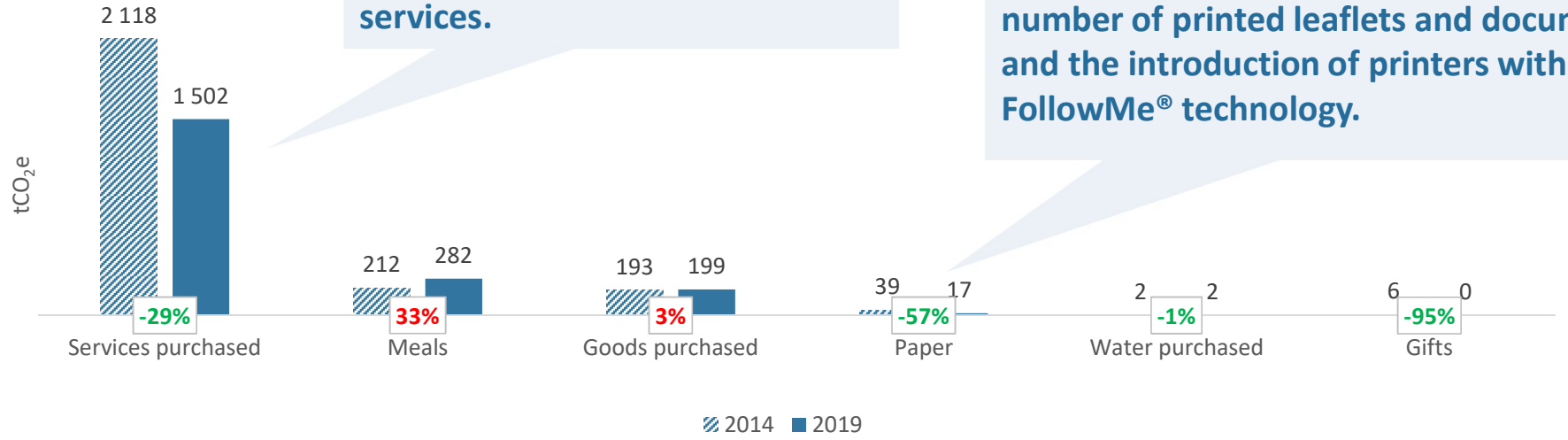
Goods & services purchased

Comparison between 2014 and 2019

GHG emissions tCO_2e	2014	2019	2014-2019 variation
Total goods and services purchased	2 569	2 001	-28 % ↘

The significant fall in services purchased is due to greater data precision in the area of computer services.

Paper consumption fell by 57% over five years, mainly owing to the decrease in the number of printed leaflets and documents, and the introduction of printers with FollowMe® technology.



5 Result per scope

Capital goods

Data and assumptions

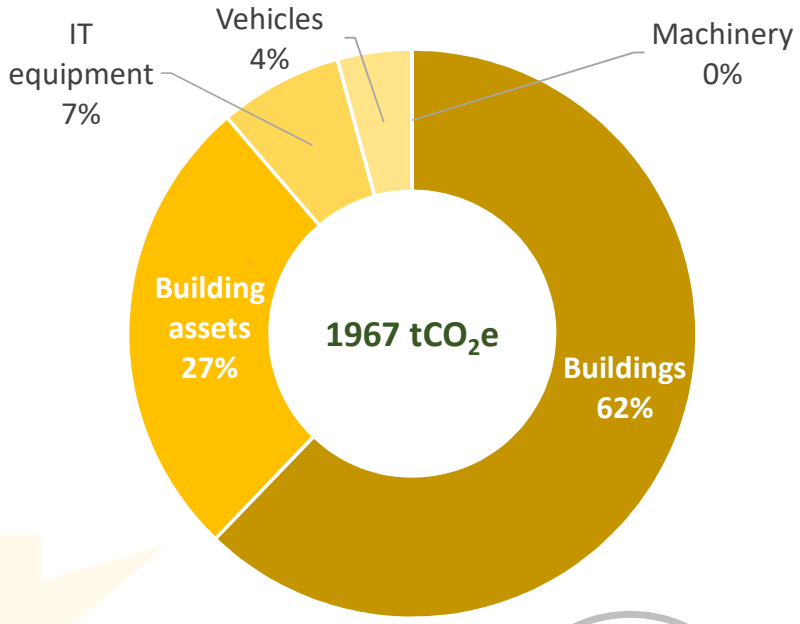
- ✓ **Buildings and car parks:** m^2 of parking and office space
  Depreciation: forty years
- ✓ **Building assets:** generators, refrigerators, air conditioning units, machinery etc., in units per building, and furniture, equipment and tools per building in terms of purchase price
  Depreciation: eight years
- ✓ **IT equipment**: IT inventory by type of good
  Depreciation: four years
- ✓ **Vehicles**: model of leased and owned vehicles across all three buildings
  Depreciation: four years

Results

Type of capital good	tCO_2e
Buildings	1 223
Building assets	522
IT equipment	138
Vehicles	83
Machinery	0.04
Total	**1 967**

Emissions from IT equipment have almost halved since 2018 due to a new internal policy to extend lifespan. 53% of the equipment is over five years old.

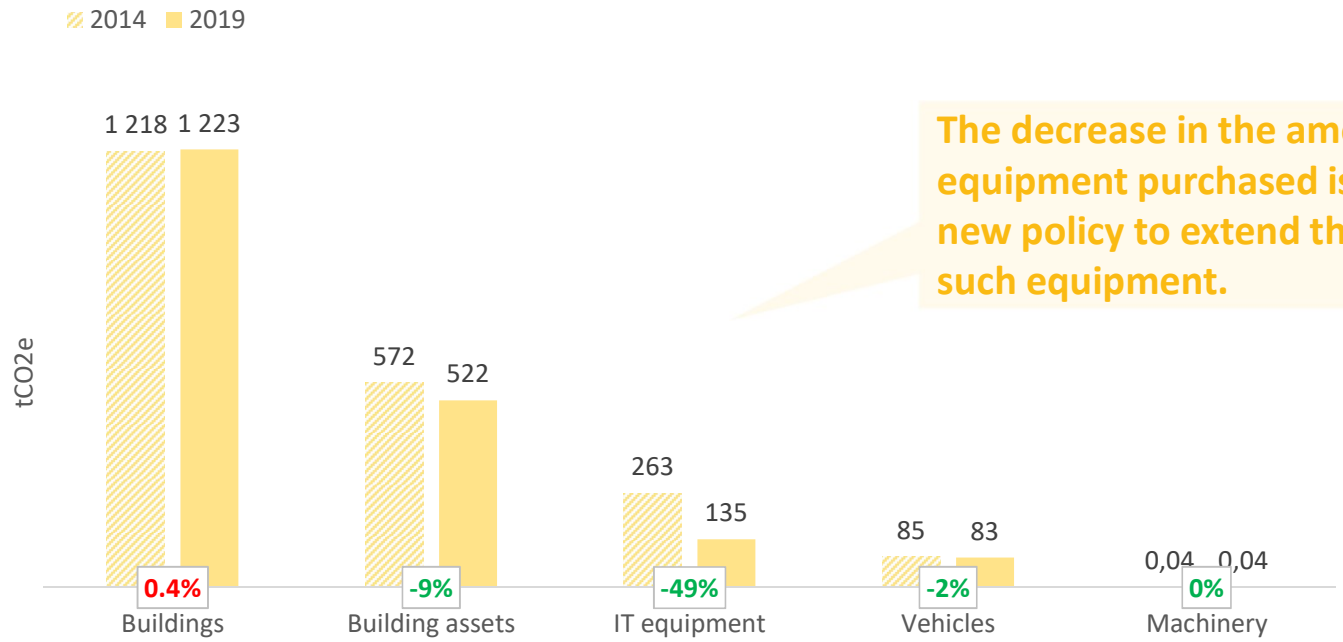
Total GHG emissions from capital goods



Uncertainties 398 tCO_2e (20%)

Comparison between 2014 and 2019

GHG emissions tCO_2e	2014	2019	2014-2019 variation
Total capital goods	2 138	1 963	-9 % ↘



The decrease in the amount of equipment purchased is due to a new policy to extend the lifespan of such equipment.

5 Result per scope

Energy (in-house + EDC)

Data and assumptions

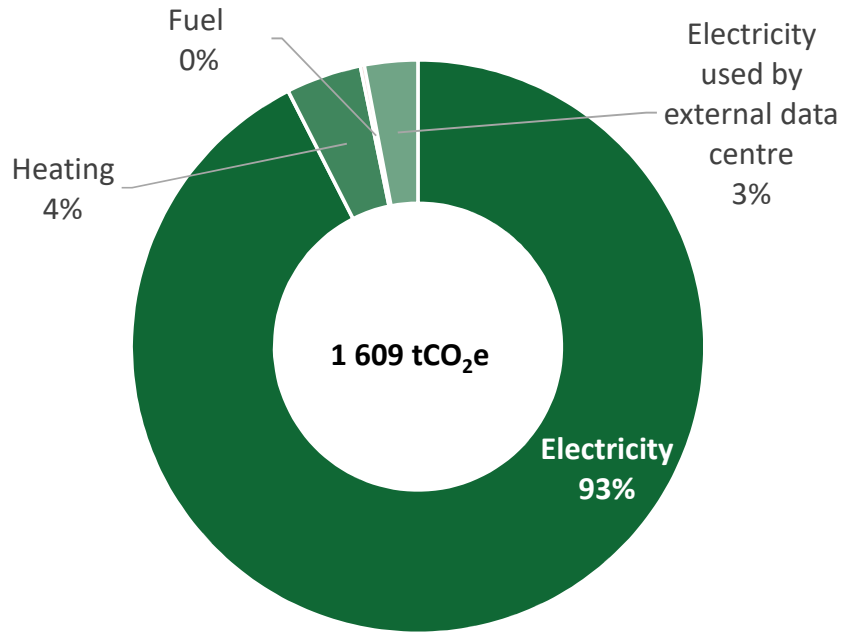
- ✓ **Electricity consumption and losses**
  Electricity losses: 2.44%
  The ECA purchases green electricity with “guarantees of origin”. However, the Bilan Carbone-® method takes account of the real electricity consumed from the national grid.
- ✓ **Fuel consumption** (by generator): litres purchased.
- ✓ **Heat consumption**-: 2019 consumption for each building. The emission factor is based on the provider energy mix.

Results

Type of energy source	tCO_2e
Electricity	1 489
Heating	68
Fuel	4
Electricity used by external data centre	48
Total	**1 609**

Uncertainties 78 tCO_2e (5%)

Total GHG emissions from energy



2.44% of emissions attributable to electricity lost.

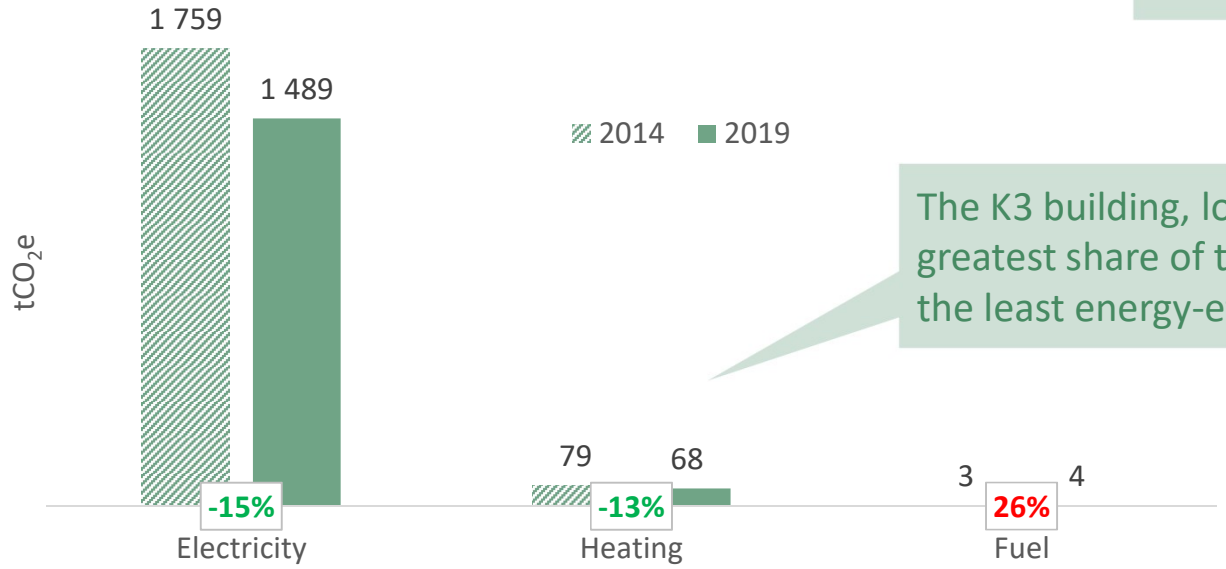
-23.4% compared to 2018 due to more precise data concerning the network.

5 Result per scope — Energy (in-house + EDC)

Comparison between 2014 and 2019

GHG emissions tCO_2e	2014	2019	2014-2019 variation
Total energy	1840	1609	-14% ↘

The decrease in GHG emissions reflects the the downward trend in the ECA's energy consumption between 2014 and 2019: the same emission factors for heating and electricity have been applied to both years.



The K3 building, logically, accounts for the greatest share of the energy emissions, but K2 is the least energy-efficient building per m² per FTE.

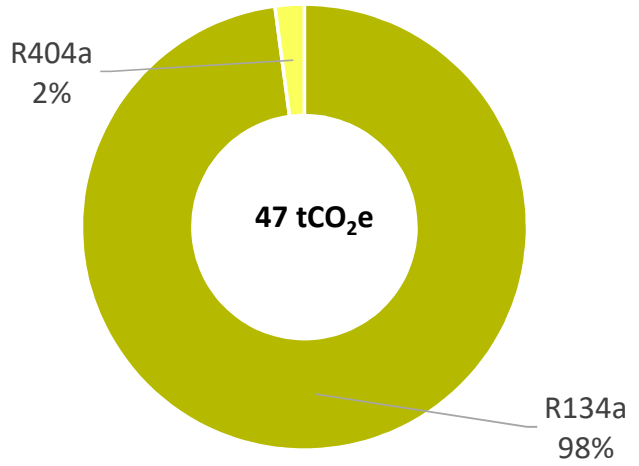
5 Result per scope

Non-energy in house

Data and assumptions

Refrigerant gases: cooling installations refilled with refrigerant gases (R134a and R404a) throughout 2018. Refills were viewed as leaks.

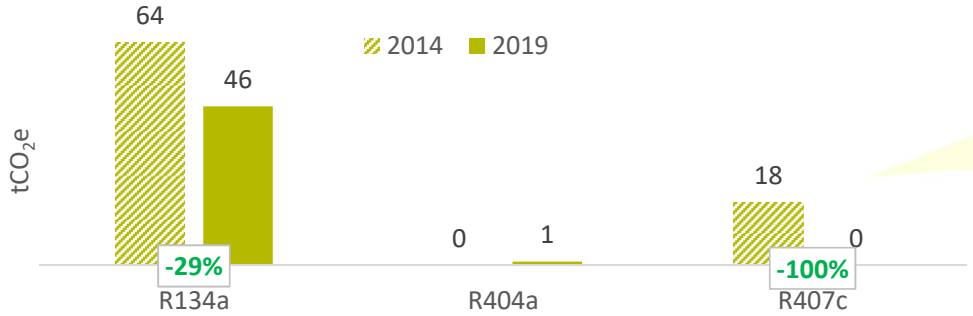
Total non-energy GHG emissions



Results in and comparison between 2014 and 2019

GHG emissions tCO_2e	2014	2019	2014-2019 variation
R134A	64	46	
R404A	0	1	
R407C	18	0	
Total	**82**	**47**	**-43%**

Uncertainties
13 tCO_2e
(28%)



Refrigerant gases have a huge impact:

- ✓ 1 tonne of R134a is equivalent to 1 300 tCO_2
- ✓ 1 tonne of R407A is equivalent to 3 940 tCO_2

5 Result per scope

Waste

Data and assumptions

✓ **Waste**

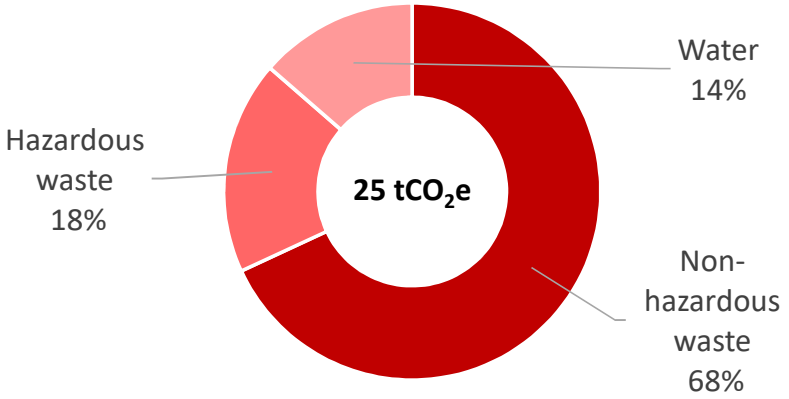
Non-hazardous: food and household waste, plastics, paper, cardboard, and glass packaging

Hazardous: wastewater and sewage, light bulbs and fluorescent tubes, packaging waste containing harmful products, scrap metal, batteries, accumulators, and electronic waste

✓ **Water use (sewage)**

Data: based on water consumption, allocated to buildings on the basis of occupancy

Total GHG emissions from waste



Uncertainties
7 tCO_2e
(27%)

Results

Type of waste	tCO_2e
Non-hazardous waste	16.69
Hazardous waste	4.49
Water	3.34
Total	**24.52**

GHG emissions from waste by category

Category of waste	kg	tCO_2e
Household and similar waste	37 580.0	13.59
Food fats and oils	50 531.0	3.55
Paper, cardboard and wooden packaging	45 553.0	1.96
Wastewater containing hydrocarbons, and sewage	12 220.0	0.86
Food waste	23 590.0	0.85
Various types of packaging waste	4 355.9	0.14
Glass packaging	3 200.0	0.12
Waste electrical and electronic equipment	615.5	0.04
Plastic waste (including packaging)	779.3	0.03
Scrap metal	184.0	0.01
Light bulbs and fluorescent tubes	106.5	0.01
Packaging waste containing harmful products	100.0	0.01
Batteries and accumulators	76.0	0.01
Other waste from demolition (uncontaminated)	122.5	0.00

5 Result per scope

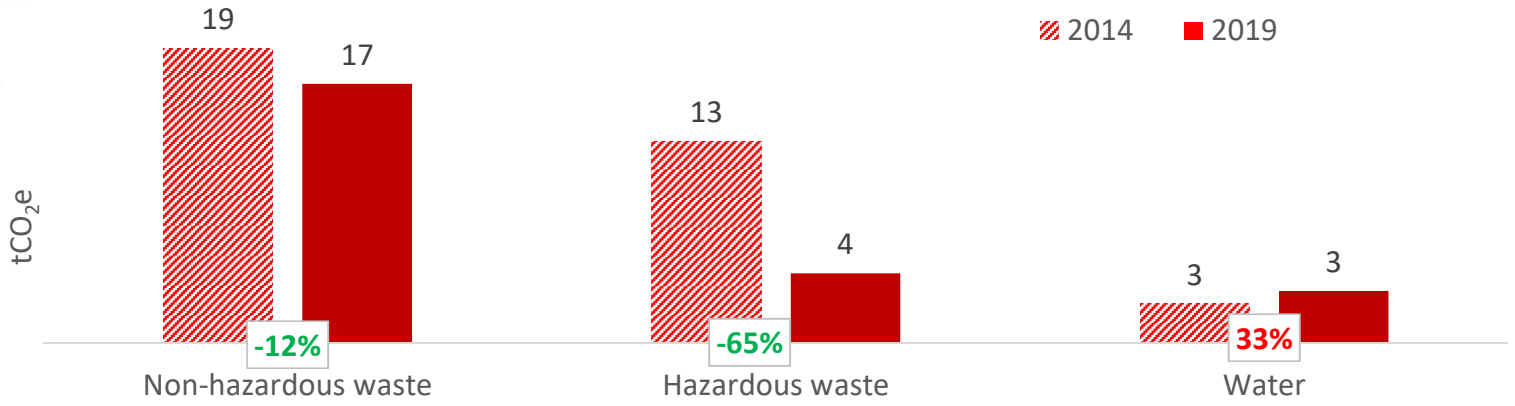
Waste

Comparison between 2014 and 2019

GHG emissions tCO_2e	2014	2019	2014-2019 variation
Total waste	34	25	-38% ↘

The treatment of food fats and oils improved between 2014 and 2019, i.e. from incineration to 61% recycling/biological treatment

-33% cardboard and paper- in non-hazardous waste



5 Result per scope

Transport of goods

Data and assumptions

Transport by suppliers: 2018 data; no 2019 data available because of the Covid pandemic

Uncertainties
1 tCO_2e
(25%)

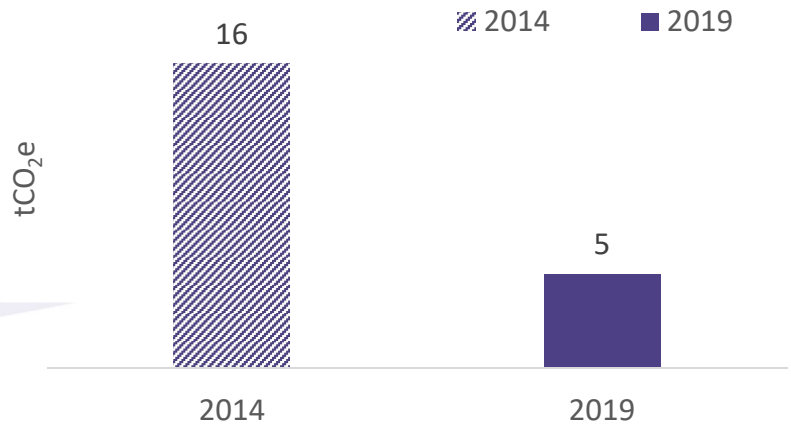
Average distance driven by each supplier per year: 2 513 km

This is equivalent to driving from Luxembourg to Rome and back

Results

Emission source	Total kilometres	tCO_2e
Total transport of goods	52 767	5

This result cannot be compared, as the methodology used for the calculation was different.



ECA 2019 Carbon Footprint Report

6 Offsetting

The ECA purchases “guarantees of origin” electricity. However, the Bilan Carbone® method does not take this into consideration (see page 28).

	Item	Quantity tCO_2e
A	TOTAL 2019 EMISSIONS	9 203.30
B	INCLUDING ELECTRCITY EMISSIONS	1 488.60
C	TOTAL GREEN ELECTRCITY EMISSIONS	30.92
D = B - C	DIFFERENCE	1 457.68
A-D	**2019 TOTAL TO BE OFFSET**	**7 745.62**

The green electricity purchased is deducted from the total emissions to be offset for 2019.

This report was prepared for the European Court of Auditors (ECA) by Argest S.A. and EcoAct France, data provided by the ECA.

Argest S.A.

15, rue Wurth-Paquet
L-2737 Luxembourg
+352 26 44 70 1
mail@argest.eu
www.argest.lu

EcoAct France

35 rue de Miromesnil
F-75008 Paris
+33 1 83 64 08 70
contact@eco-act.com
www.eco-act.com

European Court of Auditors

12, rue Alcide De Gasperi
L-1615 Luxembourg
+352 43 98 1
ECA-info@eca.europa.eu
www.eca.europa.eu

Version 1 – oct. 2020