Report Carbon Footprint – update 2022

Ghent University

Sint-Pietersnieuwstraat 25

9000 Gent, Belgium

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Carbon Footprint of Ghent University (2022)

1. Introduction

The carbon footprint report is made for Ghent University, located at Sint-Pietersnieuwstraat 25, 9000 Gent (Belgium); hereafter referred to as UGent. The year of analysis is 2022.

a. Scope and organizational boundary

A carbon footprint is the inventory of the total greenhouse gas emissions caused by an individual, event, organisation or product. The footprint is expressed in tonnage CO_2 equivalent (tCO2e). The analysis for an organisation can be performed at different levels (Greenhouse Gas Protocol, 2021):

- **Scope 1**: Direct CO2 emissions, caused by own sources within the organisation. This concerns emissions from own building, transport and production-related activities. Examples are own generators, gas consumption and heating installations, own (truck) cars or the use of coolant in cooling equipment and climate installations.
- **Scope 2**: This includes the indirect emission of CO2 due to the generation of self-purchased and self-consumed electricity or heat. The organisation uses this energy internally, but does not generate it internally. It is physically generated elsewhere, for example in a power station.
- **Scope 3**: Indirect emissions of CO2 caused by the business activities of another organisation or company. These are emissions from sources that are not owned by the organisation and over which it has no direct influence, such as emissions caused by the production or extraction of purchased raw materials and materials and outsourced activities such as freight transport. Also the indirect emissions as a result of business traffic with private vehicles and business air traffic can belong to scope 3. Scope 3 comprise in fact the CO2 emissions in the entire life cycle of all products that the organisation buys, manufactures and/or sells (upstream and downstream).

This emissions inventory has been made in accordance with the requirements of GHG protocol. In accordance with the GHG protocol, a distinction is made between 3 sources of emission (scopes) in 2 categories: direct emissions (scope 1) and indirect emissions (scope 2 and 3) (see below).

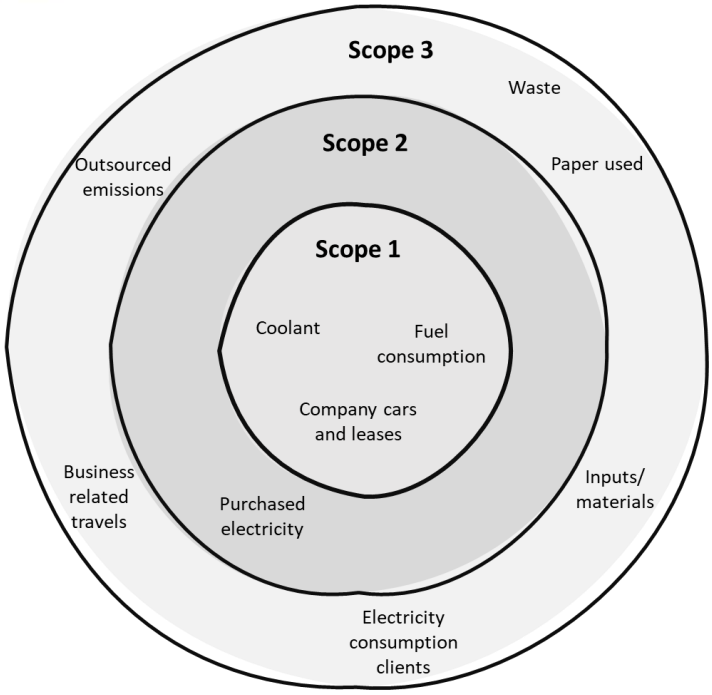


Figure 1: Schematic overview of the three scopes of a carbon footprint

The organisational and reporting boundary of the carbon footprint is made for calendar year 2022, for the university based in Ghent, Belgium.

b. Short description activities and ambitions

The University of Ghent was founded in 1817. The language of instruction at the time was Latin; there were 4 faculties, 16 professors and 190 students. After Belgian independence, in 1830, the language of education changed to French. In 1930, the language again changed to Dutch. In 1991, the State University of Ghent was renamed University of Ghent.

To date, there are more than 130 departments spread over 11 faculties in Ghent. Four educational institutions (Ghent University, Hogeschool Gent, Arteveldehogeschool and Hogeschool West-Vlaanderen) were joined in the Ghent University Association in 2003. This association forms a network of 56 000 students and 12 000 staff members. Ghent University opened its first campus outside Ghent, in Kortrijk, in 2003. In 2004, UGent opened its first foreign campus in Songdo, South-Korea.

Ghent University identifies itself as a socially committed and pluralistic university that is open to all students regardless of their philosophical, political, cultural and social background. The University profiles itself in a broad international perspective, while emphasising its individuality in terms of language and culture. The organisation wants to offer its students a creative development-oriented learning and research environment.

c. Sustainability strategy

Ghent University developed a sustainability vision to become a leading knowledge institution for a future that is ecologically, socially and economically sustainable, within a local and global context. To this end, the organisation applies 3 concrete sustainability principles:

- to create substantial support for sustainable development;
- to integrate sustainability into the education, research and services;
- to implement sustainability in all business operations and organisation.

Ghent University supports the EU ambition to be climate neutral by 2050 and makes this path specific for the next 10 years with a climate plan. For all relevant policy domains, goals are set, boundaries are defined and actions are formulated. The results are monitored annually by the Board of Directors and the actions are adjusted where necessary. The Climate Plan deals with 3 major aspects: climate mitigation (CO2 reduction), climate adaptation and circular economy:

- The sustainable energy policy plan (2020-2030) aims to reduce total carbon emissions from building heating and electricity supply by 40% towards 2030, referred to 1998. From now on, fossil-free building and renovation is the standard.
- Ghent University pursues an integrated mobility policy whereby the campuses are easily accessible, road safety is increased and the environmental impact of travel by staff and students is reduced. The sustainable mobility policy aims for 80% sustainable mobility by 2030; for the remaining automobility, priority will be given to shared cars and electric cars.
- In its sustainable travel policy plan Ghent University commits itself to fly less, more thoughtfully and more sustainably, and thus to reduce the CO2 emissions of its air travel by at least 1/3rd by 2030 compared to the reference year 2019.
- A sustainable purchasing policy follows the principle of the materials hierarchy and integrates social, environmental and economic criteria at all stages of the purchase of products and services.
- The sustainable food policy is moving towards a healthy, tasty, affordable and ecologically responsible food policy, with less meat and fish consumption. Half of the offer consists of vegetarian and plant-based options by 2025. Food waste is minimized.
- Ghent University will retain and strengthen green space and biodiversity in areas for which it is responsible. In doing so, it achieves progress in both quantity and quality, at campus and institutional level and thus uses a net gain in terms of green space and biodiversity as a starting point.
- Ghent University pursues an integrated water policy that closes water cycles locally as much as possible and mitigates the effects of climate change. This means that Ghent University aims to realise an additional reduction of tap water of 15% by 2030 in comparison with 2020, to make maximum use of alternative water sources depending on the application and strive for 80% reuse in new buildings and renovations.

Yet, sustainability is a very broad concept, and is thus not easily measurable. Greenhouse gas emissions, as determined in a carbon footprint, are a common and relevant proxy to quantify an organisation's general environmental performance.

The carbon footprint of Ghent University can be used to first determine the climate baseline, and then monitor progress in performance. The carbon footprint also helps to prioritize which aspects of the organisation have the greatest climate impact, and which possible actions have the highest climate returns.

Ultimately, the carbon footprint identifies the challenges to achieve climate neutrality before 2050 (being one basic implication of the Paris Agreement).

2. Aim of GHG reporting

Ghent University is the intended user of the GHG inventory. Climate Lab is the responsible author preparing and producing the GHG report. The report quantifies the environmental performance of Ghent University using a carbon footprint methodology and tracks it over time. The objective is to provide a quantification tool for reducing CO2 emissions. The report can serve as a source to compare proposed climate actions with the footprint of the organisation at large. The report also contributes to the transparency on the impact of all operations at the University. The processes within Ghent University that make the largest contributions to the greenhouse gas score have been mapped out, as well as the areas of greatest environmental gains. This analysis can constitute a basis for further development of Ghent University's climate strategy.

This report provides the data for calendar year 2022 and will be updated regularly (e.g. yearly or every few years). The report is prepared in accordance with GHG protocol and may become publicly available. The inventory has not been verified.

3. Approach

Several methods are available to determine and report a carbon footprint. Examples are the EpE protocol, PAS2050, ISO14064-1/ISO14069:2013 and the GHG protocol. The methodological overlap between these methods is considerable.

The above methods differ mainly in their field of application. For example, the EpE protocol focuses on the waste management sector, while PAS2050 mainly concerns products and the GHG protocol mainly concerns organisations. The ISO14069 can be used as a quality check for all types of carbon footprints.

Different benchmarks also exist for assessing and comparing carbon footprints at higher education institutions, although the programs of ACUPCC and STARS, developed in the US, are most widely known.

ACUPCC was initiated by Second Nature in late 2006, when a group of visionary college and university presidents initiated the American College & University Presidents' Climate Commitment (ACUPCC). Through this network a database was created with carbon footprints of American higher education institutions. An ACUPCC implementation guide is available with guidance on developing a University Climate Action Plan.

The Sustainability Tracking, Assessment & Rating System (STARS) is another transparent, self-reporting framework for colleges and universities to measure their sustainability performance, in which the carbon footprint is a component. STARS has its own guidelines on how the carbon footprint should be reported.

The quantification in this report was carried out using the Bilan Carbone® (version 8) method of the Bilan Carbone Association. Bilan Carbone® is a well-known international reference calculation method, capable of reporting according to the Greenhouse Gas Protocol and the ISO standard.

The Bilan Carbone quantification methodology and quantification model characteristics minimize uncertainty and yield accurate, consistent and reproducible results. The model accurately represents the emissions and removals and is therefore acceptable for calculating and monitoring the carbon footprint of UGent. The GHG emissions and removals are calculated using Base Carbone® in accordance with the latest IPCC's GWPs. All relevant GHG sources and sinks are included.

The carbon footprint is presented for the calendar year 2022. The greenhouse gases (GHGs) considered are the same as in the Kyoto Protocol: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorinated hydrocarbons (PFCs), and sulphur hexafluoride (SF6). All scores are expressed in CO2 equivalents. Each greenhouse gas can be translated into tonnes of CO2 equivalents. The CO2 footprint of the organisation is thus expressed in "tonnes of CO2 equivalents per year".

In this report, the carbon footprint of Ghent University will be compared over time. Published carbon footprints from universities are not always fully comparable, mainly due to differences in methodology, scoping or demarcation. Yet, a general picture emerges that university footprints are dominated by Scope 1 and 2 emissions, while commuting and business (flight) traffic also make an important contribution.

<u>The following project phases were completed:</u>

***Phase 1**: Scope determination and boundary definition*

In consultation with the environmental department, the relevant scopes and impact categories were delineated. Considerations that may play a role in the choice of impact categories are:

Does the organisation pay for it? Does the organisation have influence on it? Can the process make a relevant contribution to the total score? Is it usual to include the process in a (Bilan Carbone) footprint?

In line with the ISO standard, the GHG Protocol does not prescribe exactly which processes should be included in Scope 3, stating that *"companies should strive for completeness, but we recognise that 100% completeness may not be achievable"*. If certain impact categories are left out of the scope, it is important to state this clearly. These categories can be included in later updates of the carbon footprint.

Based on the above considerations, the following relevant impact categories are considered in this report:

- Energy: emissions related to direct energy use (e.g. gas, fuel, heat network, electricity consumed) in Belgium;
- Non-Energy: expected leakage of heat pumps, cooling systems and air conditioning;
- Direct waste: emissions from processing the direct university waste streams;
- Mobility: from all business travel emissions and employee commuting (including indirect emissions from vehicle production and the fuel supply chain);
- Freight: intraorganizational transports using the university vans and trucks;
- Carbon depreciation related with the construction of the university buildings included;

The following categories are not included within the current boundaries, but may be included in future carbon footprints:

- Inputs that can be derived from financial data: quantities of purchasing food at student restaurants, packaging, cost of buying paper and ICT equipment and yearly cost of different services and consultancy;
- Capital goods: Surface and typology of parkings, yearly cost of machinery, equipment and vehicles owned by the university;
- Student mobility, possibly through a survey, including airplane travel by foreign students.

***Phase 2**: Data inventory and choice of base year*

All necessary input data were collected via a site visit and a follow-up transfer of specific datasets requested. The year 2019 is used as base year.

***Phase 3**: Characterisation*

In line with the ISO standard and the GHG protocol, organisations have to determine the specific emission factors for their activities themselves as much as possible. There is no prescribed list of emission factors per process or activity. However, in this report, all calculations are based on the Bilan Carbone® reference database, a European standard applied to the Belgian context.

***Phase 4**: Interpretation*

By means of graphs and tables, the contribution of different processes to the total CO2 footprint can be analysed. This is done for the entire organisation, but also per impact category and per year. Bilan Carbone ® was used to facilitate the analysis.

***Phase 5**: Uncertainties in the data*

In Bilan Carbone, uncertainty estimates are taken into account for all input parameters. For ISO Scope 1 and ISO Scope 2 categories, the uncertainty levels must be below 20%, in accordance with the internationally accepted limit on uncertainty in carbon data.

4. Overview of emissions

All emission factors are derived from Base Carbone® (ADEME).

A. Energy use and cooling agents

The 2022 electricity consumption of UGent equalled 56 515 815 (kWh) including the CHP, PV panels and wind turbines:

- Of this 13,668,210 kWh was purchased from Luminus (8,682,375 kWh from the 3 wind turbines in Melle, the remainder as purchase from Luminus);
- Another 1,541,933 kWh was generated by the 2 CHPs;
- Another 884,056 kWh was generated by the PV plants;
- The rest was purchased as electricity from VEB.

In the same year, the natural gas purchased from VEB was 66,506,317 kWh while the heating oil purchased from Maes amounted to 237,065 kWh. District heating purchased from EDF Luminus equalled 12,984,935 kWh and the heat purchased from the university hospital (natural gas) amounted to 1.229.791 kWh.

In accordance with the GHG-protocol, the emissions from electricity consumption may be reported both under a market-based and location-based approach (dual reporting). Under the location-based approach, only onsite renewable energy can be accounted as “truly renewable”. Under the market-based approach, 100% local renewable energy certificates disclosed in a contract can be accounted for as local renewable energy. Only guarantees of origin originating from Belgian production facilities can be considered (renewable electricity produced in Belgium). Most of the electricity in 2022 was purchased as "green electricity" from the VEB. The origin was analysed by VREG: 27.6% of the purchased Guarantees of Origin come from Iceland, 22.7% from Norway and 21.7% from Italy. Four-fifths of the mix consists of purchased hydropower guarantees. Only 1.9% of the Guarantees of Origin

come from Belgium/Flanders. Consequently, the emission factor for electricity purchased from VEB is based on the average Belgian mix.

Overall, heating oil consumption was significantly lower in 2022 than in 2021. Gas consumption and heat delivered from heat networks were also lower than in 2021. The year 2022 was indeed on average warmer than 2021; more heating was also needed in 2021 to maintain indoor temperatures when windows were open (ventilation requirements covid). The overall trend, given rising student numbers, is moving in the right direction as far as fossil heating is concerned.

The leakage of cooling gasses from diverse cooling systems and air conditioning installations is also taken into account (see Table 1). It is assumed that all installations comply with the local environmental legislation (Vlarem II - Art. 5.16.3.3), limiting cooling system gas losses to a maximum of 5% per year. This is probably an overestimation (awaiting detailed leakage loss measurements).

Table 1: Coolant/refrigerant content (in kg) per cooling agent at Ghent University buildings.

Refrigerant code	Total refrigerant content (kg)
R119a	16.06
R1234ze	258
R134A	1853.92
R22	46.09
R32	167.99
R404a	237.2
R407C	581.75
R407F	15.76
R410A	1676.12
R449A	73.48
R452a	27.9
R507	72.1
R507a	57.66
R513A	27.24

Table 2: Partial UGent energy footprint in 2022.

Energy	Emissions			Uncertainties	
	kg CO2e	t CO2e	%	kg CO2e	%
Direct combustion	15 024 685	15 025	54%	625 269	4%
Heat network	2 561 209	2 561	9%	1 357 663	53%
Electricity (purchased and produced)*	10 416 467	10 416	37%	1 021 527	10%
Total Energy	**28 002 361**	**28 002**	**100%**	**1 810 449**	**6%**
Cooling Agents	**555 398**	**555**	**100%**	**80 755**	**15%**

*Gas component based on high-calorific gas, dominant in the province of East Flanders. **Emission factor based on the average Belgian mix.

B. Waste streams

Waste streams of the university (including the different laboratories) have been inventoried in Belgium. When not weighted directly, waste volumes have been converted to waste mass based on the mass densities of Stimular (2023).

Table 3: Waste-related emissions (Bilan Carbone®, 2022)

Waste stream	Emissions			Uncertainties	
	kg CO2e	t CO2e	%	kg CO2e	%
Construction waste	11 116	11	1%	1 007	9%
Mineral waste	2 013	2	0%	715	36%
Organic waste (inactivated fermentation biomass)*	147 299	147	15%	36 186	25%
Plastic waste**	4 257	4	0%	1 511	36%
Household waste	520 194	520	55%	234 944	45%
Dangerous waste	208 168	208	22%	69 160	33%
Waste waters	57 573	58	6%	6 194	11%
Total	**950 620**	**951**	**100%**	**247 656**	**26%**

*Emission factor assumes incineration. **Emission factor of mixed plastics treatment including further recycling processing, such as rolling, remelting, and partial incineration of soft plastics.

C. Mobility

Daily commuting emissions are calculated based on the home-office distance for all respective working days (taking into account parttime regimes, telework days and transport modi). We use the assumption of 40% telework and 220 working days per year. For commuting, in 2022, a total of 15 009 290 km was travelled by car and 20 404 824 km by train.

The company cars used 9973 litre diesel, 13 869 litre gasoline and 117 kg CNG.

Business related flight travel included 38 843 554 km and business related train travel (HST) accounted for 2 471 914 km. The Google map API Excel plugin was used to automate calculations of train movements overland.

Mainly as a result of increased telework, commuter distance travelled by car has significantly decreased. Yet, it is still responsible for a significant part of the GHG emissions of the mobility component.

Table 4: Mobility related emissions (Bilan Carbone, 2022)

Mobility component	**Emissions**			**Uncertainties**	
	kg CO2e	**t CO2e**	**%**	**kg CO2e**	**%**
Commuting	5 136 357	5 136	36%	579 017	11%
Business car travel	342 696	343	2%	32 297	9%
HST travel	9 121	9	0%	3 953	43%
Plane travel	8 673 765	8674	61%	2 804 796	32%
Total	**14 161 941**	**14 162**	**100%**	**2 864 123**	**20%**

D. Freight and internal transports

Freight emissions are calculated for all UGent-owned trucks. The calculations are based on the transaction records of the fuel cards.

Table 5: Freight-related carbon emissions (2022)

Freight	Emissions		
	kg CO2e	t CO2e	Uncertainty %
Internal freight by truck	110 820	111	5%
Total	110 820	111	5%

E. Carbon depreciation of university buildings

The yearly carbon attribution of the *building materials* embedded within the university buildings also needs to be considered, depreciated over a lifetime of 30 years. The spatial footprint of the sites includes:

- Total gross area of university buildings: 804 195 m².

This emissions post is reported for reasons of completeness, but not included in the final GHG Summary due to the very large uncertainties.

Table 6: Carbon depreciation of university buildings (2022)

Freight	Emissions		
	kg CO2e	t CO2e	Uncertainty %
Real estate depreciation	11 794 860	11 795	50%
Total	11 794 860	11 795	50%

5. Total GHG impact 2022

Table 7 gives a summary of the yearly emissions for the different GHG emission posts. A full representation is provided in Annex (total emission in tCO2e per post, in line with ISO14069:2013 and GHG Protocol) and the representation per scope is provided in Figure 2.

Table 7: Summary of total emissions per post in tCO2e in 2022 (Bilan Carbone, 2022).

Summary CO2e	**Emissions**		**Uncertainties**	
	t CO2e	**%**	**t CO2e**	**%**
Energy	28 002	64%	1810	6%
Cooling agents	555	1%	81	15%
Freight	111	0%	5	5%
Mobility	14 162	32%	2864	20%
Direct waste streams	951	2%	248	26%
Total	43 781	100%	3398	8%

The 2022 carbon footprint of Ghent University is **43 781 tCO2e (±8%)**. The uncertainty levels are below 20%, in accordance with the internationally accepted limit on uncertainty in carbon data. According to the GHG Protocol, emissions are aggregated in 10 categories, subdividing direct emissions and different sources of indirect emissions. This GHG emissions table can be consulted in annex. Subdivided per scope, according ISO14069:2013 and following the location-based approach, the relative share of the emission includes:

- 32% in scope 1 (direct emissions)
- 23% in scope 2 (indirect emissions from electricity consumption);
- 45% in scope 3 (other indirect emissions).

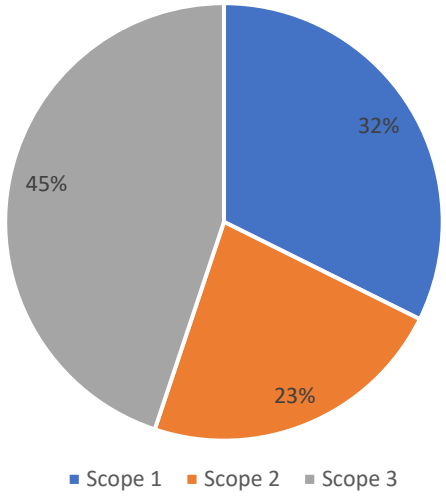
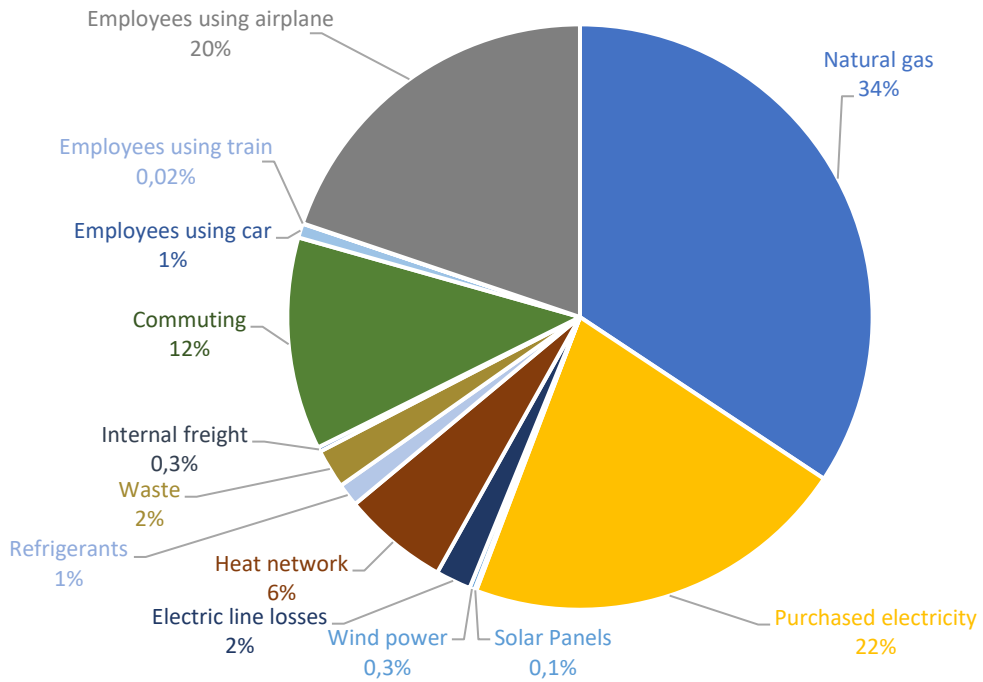


Figure 2: Distribution of the UGent carbon footprint per scope.



Summary figure : Overall carbon assessment of all organisational activities/processes as a share of the total footprint (year of analysis 2022).

6. Conclusions and evolution

The 2022 carbon footprint of Ghent University is **43 781 tCO2e (±8%)**. Since the base year 2019, the footprint has markedly decreased (from 55 803 tCO2e in 2019) (Table 8). While the energy GHG impact remains relatively stable (despite the increasing number of students), both commuter distances travelled by car and airplane travel have significantly decreased over time.

Table 8: Evolution of the carbon footprint of Ghent University since base year 2019.

	2019	**2020**	**2021**	**2022**
Energy (tCO2e)	28 696	27 375	33 341	28 002
Cooling agents (tCO2e)	555	555	555	555
Freight (tCO2e)	260	260	260	111
Mobility (tCO2e)	25 667	12 345	11 295	14 162
Direct waste streams (tCO2e)	626	626	626	951
Total (tCO2e)	55 803	46 076	46 076	43 781

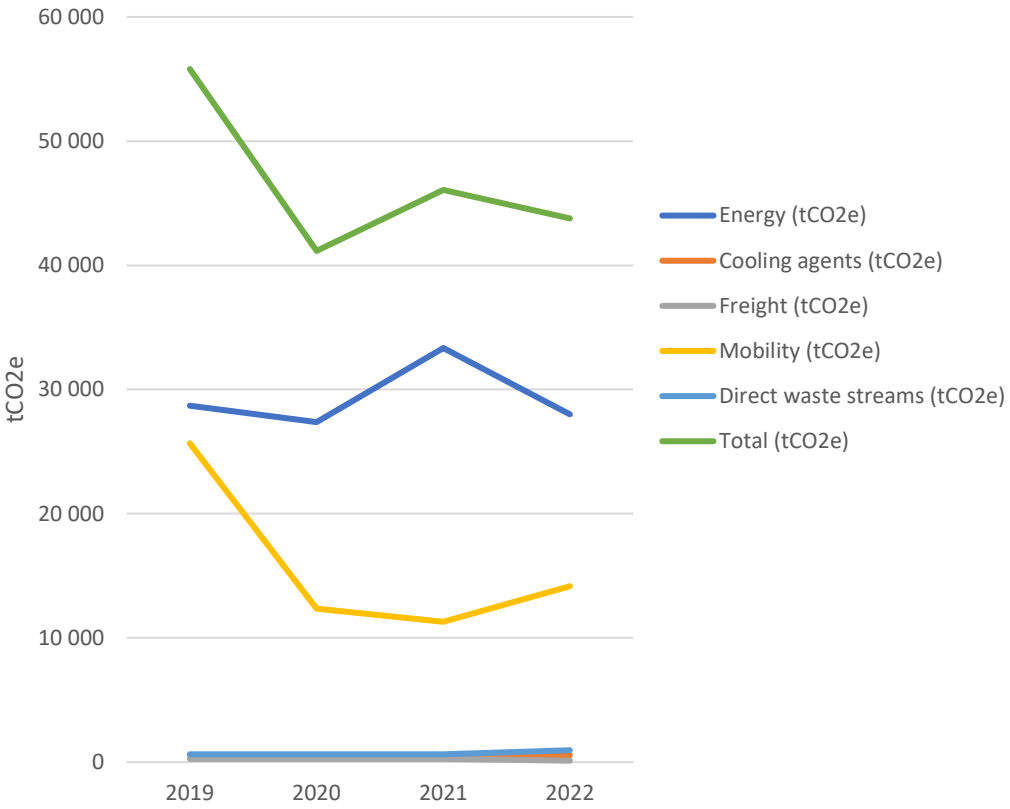


Figure 3: Evolution of the UGent carbon footprint since 2019.

The carbon footprint per employee and per student provides insight in the carbon intensity of the university (Table 9). Based on the numbers of the base year 2019, the carbon footprint of Ghent University equalled about **6.7 tCO2e per employee** in the base year. Taking into account the student population, the carbon footprint equalled about **1.2 tCO2e per student** in the base year (2019). Note that the footprint per employee and per student simply represents a relative share of the total footprint (total footprint over the total population). Consequently, it does not necessarily imply a causal connection with the analysed group, since for instance student flights (such as Erasmus related flights) are not included in the business travel by airplane.

Table 9: Total carbon footprint of Ghent University (2019-2022), relative to the number of students and employees.

Year of analysis	Total impact (tCO2e)	Total FTE	Number of students	tCO2e per FTE	tCO2e per student	tCO2 per person (FTE+student)
2019	55 803	8268	46 020	6.7	1.2	1.0
2020	41 161	8758	47 033	4.7	0.9	0.7
2021	46 076	8826	49 870	5.2	0.9	0.8
2022	43 781	8800	50 000	5.0	0.9	0.7

The following three evolutions are key to be able to obtain the 2030 climate targets:

(i) Regarding the energy impact: In 2019, the energy footprint equalled 28.7 ktCO2e, which dropped in 2020 towards 27.4 tCO2e as Covid hit (Table 10). The relatively cold year 2021 had higher heating oil consumption, gas consumption and heat purchases from heat networks. The higher heating demand was also needed to maintain indoor temperatures when windows were open (ventilation requirement Covid). The 2022 energy footprint dropped again, just below the level of 2019. The overall energy trend seems slow but (accounting for the increased student numbers) moving in the right direction.

(ii) Regarding the commuting impact: In 2022, a total of 15 009 290 km was travelled by car. This is a remarkable reduction from the base year 2019, when car commuting accounted for 24 772 477 km. To a large extent, this reduction in commuting travel is due to increased telework (from 25% to 40%).

(iii) Regarding airplane travel: Business related flight travel included 38 843 554 km in 2022. This too is a remarkable reduction from the base year 2019, when airplane travel equalled 58 316 983 km. The trend is moving in the right direction, although there is also an effect of Covid travel restrictions during the first months of 2022.

Table 10: Evolution of the partial UGent energy footprint since 1998.

	GHG Emissions				
Energy	**tCO2e (1998)**	**tCO2e (2019)**	**tCO2e (2020)**	**tCO2e (2021)**	**tCO2e (2022)**
Direct burning*	25 363	16 049	15 645	19 111	15 025
District heating	872	2566	2464	3233	2561
Electricity** (purchased and produced)	8541	10 081	9266	10 997	10 416
Total energy impact	**34 777**	**28 696**	**27 375**	**33 341**	**28 002**
Total refrigerant impact	**-**	**555**	**555**	**555**	**555**

*Gas component based on high-calorific gas, dominant in the province of East Flanders. **Emission factor based on the average Belgian mix.

Annex 1: GHG Protocol emissions statement for C02, CH4, N20, FC and other appropriate GHG groups in tonnes of CO2e.

			Emissions de GES										Emissions évitées de GES
Catégories d'émissions	**Numéros**	**Postes d'émissions**	CO2 (t CO2e)	CH4 (t CO2e)	N2O (t CO2e)	HFCs (t CO2e)	PFCs (t CO2e)	SF6 (t CO2e)	Autres gaz (t CO2e)	**Total (t CO2e)**	CO2 b (t CO2e)	Incertitude (t CO2e)	**Total (t CO2e)**
Scope 1	1-1	Emissions directes des sources fixes de combustion	12,443	33	147	0	0	0	0	**12,623**	0	614	0
	1-2	Emissions directes des sources mobiles de combustion	144	0	1	0	0	0	0	**146**	7	5	0
	1-3	Emissions directes des procédés	0	0	0	555	0	0	0	**555**	0	81	0
	1-4	Emissions directes fugitives	0	0	0	0	0	0	0	**0**	0	0	0
	Total Scope 1		**12,586**	**34**	**148**	**555**	**0**	**0**	**0**	**13,324**	**7**	**620**	**0**
Scope 2	2-1	Emissions indirectes liées à la consommation d'électricité	9,391	0	0	0	0	0	0	**9,391**	0	892	0
	2-2	Emissions indirectes liées à la consommation de vapeur, ch	0	0	0	0	0	0	0	**0**	0	0	0
	Total Scope 2		**9,391**	**0**	**0**	**0**	**0**	**0**	**0**	**9,391**	**0**	**892**	**0**
Scope 3	**Emissions du Scope 3 amont**												
	3-1	Produits et services achetés	0	0	0	0	0	0	0	**0**	0	0	0
	3-2	Biens immobilisés	0	0	0	0	0	0	0	**0**	0	0	0
	3-3	Emissions liées aux combustibles et à l'énergie (non inclus	2,619	838	1	0	0	0	0	**3,459**	-7	133	0
	3-4	Transport de marchandise amont et distribution	0	0	0	0	0	0	0	**0**	0	0	0
	3-5	Déchets générés	848	19	83	0	0	0	0	**950**	1,891	248	0
	3-6	Déplacements professionnels	8,866	83	3	0	0	0	0	**8,952**	0	2,005	0
	3-7	Déplacements domicile travail	5,018	61	51	0	0	0	0	**5,130**	0	601	0
	3-8	Actifs en leasing amont	0	0	0	0	0	0	0	**0**	0	0	0
		Autres émissions indirectes amont	0	0	0	0	0	0	0	**0**	0	0	0
	Emissions du Scope 3 aval												
	3-9	Transport de marchandise aval et distribution	0	0	0	0	0	0	0	**0**	0	0	0
	3-10	Transformation des produits vendus	0	0	0	0	0	0	0	**0**	0	0	0
	3-11	Utilisation des produits vendus	0	0	0	0	0	0	0	**0**	0	0	0
	3-12	Fin de vie des produits vendus	0	0	0	0	0	0	0	**0**	0	0	0
	3-13	Actifs en leasing aval	0	0	0	0	0	0	0	**0**	0	0	0
	3-14	Franchises	0	0	0	0	0	0	0	**0**	0	0	0
	3-15	Investissements	0	0	0	0	0	0	0	**0**	0	0	0
		Autres émissions indirectes aval	0	0	0	0	0	0	0	**0**	0	0	0
	Total Scope 3		**17,351**	**1,002**	**139**	**0**	**0**	**0**	**0**	**18,491**	**1,884**	**2,112**	**0**

Annex 2: ISO14069:2013 statement for C02, CH4, N20, FC and other appropriate GHG groups in tonnes of CO2e.

			Emissions de GES									Emissions supprimées de GES
Catégories d'émissions	**Numéros**	**Postes d'émissions**	CO2 (t CO2e)	CH4 (t CO2e)	N2O (t CO2e)	Gaz fluorés (t CO2e)	Autres gaz (t CO2e)	**Total (t CO2e)**	CO2 b de combustion (t CO2e)	Autre CO2 b (t CO2e)	Incertitude (t CO2e)	**CO2 b (t CO2e)**
Scope 1	1	Emissions directes des sources fixes de combustion	12,443	33	147	0	0	**12,623**	0	0	614	0
	2	Emissions directes des sources mobiles de combustion	144	0	1	0	0	**146**	7	0	5	3
	3	Emissions directes des procédés	0	0	0	555	0	**555**	0	0	81	0
	4	Emissions directes fugitives	0	0	0	0	0	**0**	0	0	0	0
	5	Emissions directes issues de l'UTCF										
	Total Scope 1		**12,586**	**34**	**148**	**555**	**0**	13,324	**7**	**0**	**620**	**3**
Scope 2	6	Emissions indirectes liées à la consommation d'électricité	9,391	0	0	0	0	**9,391**	0	0	892	0
	7	Emissions indirectes liées à la consommation d'énergie de	0	0	0	0	0	**0**	0	0	0	0
	Total Scope 2		**9,391**	**0**	**0**	**0**	**0**	9,391	**0**	**0**	**892**	**0**
Scope 3	8	Emissions liées à l'énergie non incluses dans les postes 1 a	2,619	838	1	0	0	**3,459**	-7	0	155	-3
	9	Achats de produits	0	0	0	0	0	**0**	0	0	0	0
	10	Biens immobilisés	0	0	0	0	0	**0**	0	0	0	0
	11	Déchets générés	848	19	83	0	0	**950**	0	1,891	248	0
	12	Transport de marchandise amont et distribution	0	0	0	0	0	**0**	0	0	0	0
	13	Déplacements professionnels	8,866	83	3	0	0	**8,952**	0	0	2,005	0
	14	Actifs en leasing amont	0	0	0	0	0	**0**	0	0	0	0
	15	Investissements	0	0	0	0	0	**0**	0	0	0	0
	16	Transport des visiteurs et des clients	0	0	0	0	0	**0**	0	0	0	0
	17	Transport de marchandise aval et distribution	0	0	0	0	0	**0**	0	0	0	0
	18	Utilisation des produits vendus	0	0	0	0	0	**0**	0	0	0	0
	19	Fin de vie des produits vendus	0	0	0	0	0	**0**	0	0	0	0
	20	Franchise aval	0	0	0	0	0	**0**	0	0	0	0
	21	Leasing aval	0	0	0	0	0	**0**	0	0	0	0
	22	Déplacements domicile travail	5,018	61	51	0	0	**5,130**	0	0	601	0
	23	Autres émissions indirectes	0	0	0	0	0	**0**	0	0	0	0
	Total Scope 3		**17,351**	**1,002**	**139**	**0**	**0**	18,491	**-7**	**1,891**	**2,113**	**-3**