Transition plan CO_2-reduction HOGENT

The HOGENT University of Applied Sciences and Arts aspires to become carbon neutral by 2050, making a firm commitment by introducing a reduction plan CO_2 2025-2030.

The transition plan targets four major work domains:

1. Energy
2. Mobility
3. Nutrition
4. Sense-of-urgency

The work domains are selected based upon exerting influence on HOGENT's total emission. (See Annex 1 - *Rapport carbon footprint 2019 & Annex 2 - Rapport carbon footprint 2023)*

Each work domain contains specific goals, including CO_2 reduction targets and possible interventions. To make a firm commitment to its reduction targets, HOGENT relies on the Paris Climate Agreement in attempt to prevent global warming of 1.5°C and while using 2019 as reference. The suggested interventions are HOGENT's starting point, its various branches and each member of HOGENT to achieve the intended goals.

The Executive Board (annually) and Management Committee (quarterly) will track the progress and results of mentioned work domains. Interventions will be adjusted if necessary. The CO_2 footprint will become a key indicator to track the transition plan.

The transition plan fits both within HOGENT's broader and thematic sustainability policy. That is how the mobility policy not only aims for more accessible and inhabitable campuses, but it also commits to the modal shift for more sustainable modes of transport. The transition plan was even assessed against other policy papers and budgets.

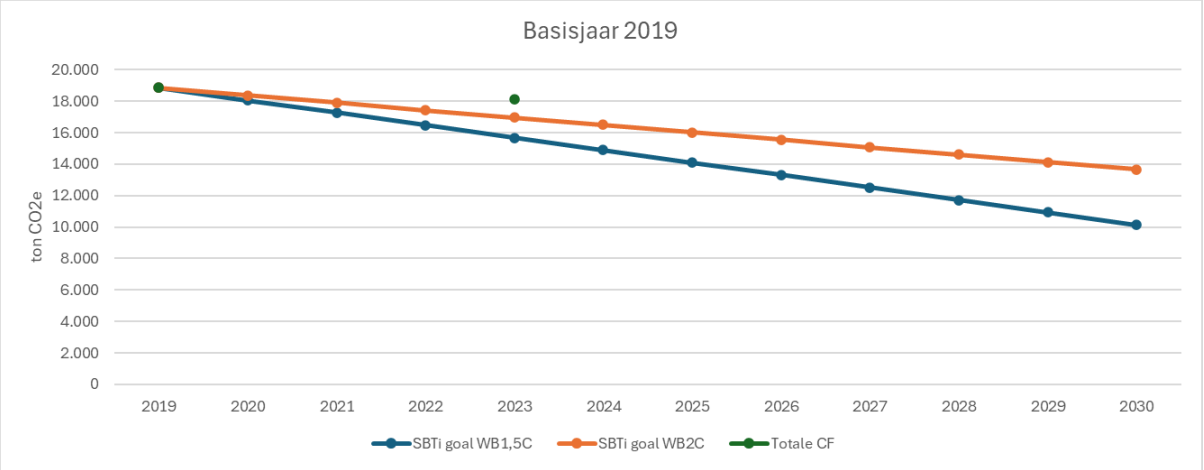
1 Carbon neutral by 2025

To reduce CO_2 emission step by step, HOGENT relies on the guidelines of the Science Based Targets initiative (SBTi). SBTi defines two scenarios to minimise global warming to respectively 2°C and 1.5°C above the pre-industrial levels:

- Well-Below-2°C (WB2C) requires an annual decrease of 2.5% emission compared to the base year.
- Well-Below-1.5°C (WB1.5C) requires an annual decrease of 4.2% emission compared to the reference year.

HOGENT follows the Paris Climate Agreement and aims to annually decrease its absolute emission of 4.2%.

The carbon footprint was first calculated in terms of data released in 2019 (= reference year). A second measuring based upon data released in 2023. The chart below envisions the required reduction pathway for both the WB2°C and WB1.5°C scenarios. A green dot marks the total emission of 2019 and 2023.



By comparing the carbon footprint of both 2019 and 2023, absolute emissions show a positive development, but the actual reduction proves insufficient to satisfy the requirements of both scenarios. The coming years will become crucial to take further/sped up steps and potentially implement additional measures to ensure HOGENT's sustainable trajectory.

For the purpose of benchmarking, tracking progress and impact measuring, a purely quantitative analysis of our absolute emissions proves insufficient. The future will determine **the relative emissions** (per employee and/or student) **and a standardised emission** for several categories. A **quantitative** and **qualitative analysis** are both required.

The chart on the next page results in an overview of **HOGENT's total (absolute) carbon footprint (CF)** of respectively 2019 and 2023, as well as the total emission per scope and per category. Referring to the chart below, emissions are determined in kg CO_2e, but to increase readability, we utilise the term 'CO_2' instead of 'CO_2e'.

HOGENT utilises the unit CO_2e (carbon dioxide equivalent) to view the impact of greenhouse gases on global warming. In addition to carbon dioxide, gases such as laughing gas (N2O), methane (CH4) and gases containing fluor (F gases) are included as well. (1 kg CO_2 = 1 kg CO_2e, 1 kg N_20 = 298 kg CO_2e en 1 kg CH_4 = 25 kg CO_2e. Gases containing fluor are highly distinctive compared to other types.)

Scope	Category (emission source)	CF 2019 (Updated version)	CF 2023	Unit
Scope 1	Stationary combustion	3,585,151	2,346,688	kg CO_2e
	Mobile combustion	12,853	44,421	kg CO_2e
	Refrigerants	65,983	4,752	kg CO_2e
	Total scope 1:	**3,663,987**	**2,395,860**	**kg CO_2e**
Scope 2	**Total Scope 2 - Market based**	**0**	**0**	**kg CO_2e**
	Total Scope 2 - Location-based	**1,194,429**	**976,293**	**kg CO_2e**
Scope 3	Purchased goods & services	1,237,109	769,699	kg **CO_2e**
	Capital goods	668,093	942,803	kg **CO_2e**
	Fuel- & energy related (not S1 or S2) (power market based)	569,930	468,271	kg **CO_2e**
	Fuel- & energy related (not S1 or S2) (electrical facility based)	751,154	532,973	kg CO_2e
	Waste stream	221,140	259,485	kg CO_2e
	Business travel	316,092	483,978	kg CO_2e
	Employee commuting	1,349,852	1,172,874	kg CO_2e
	Upstream leased assets - market based	NA	308,351	kg CO_2e
	Upstream leased assets - location-based	NA	*457,107*	kg CO_2e
	Downstream transportation	9,443,460	9,967,430	kg CO_2e
	Downstream leased assets - Market based	NA	78,109	kg CO_2e
	Downstream leased assets - Location-based	NA	*223,515*	kg CO_2e
	Total scope 3 - Market based:	13,902,719	**14,451,001**	**kg CO_2e**
	Total Scope 3 - Location-based:	13,985,780	***14,809,864***	**kg CO_2e**

Total	**Total - Market based**	**17,566,706**	**16,846,862**	**kg CO_2e**
	Total - Location-based:	**18,844,195**	***18,182,017***	**kg CO_2e**

The readings (resp. 2019 and 2023) allow us to pinpoint the categories with the highest absolute impact. And by category, and thus by work domain, to map the progression of CO_2 emission and to define reduction targets (cf. WB1.5°C).

HOGENT selected the following categories as priority areas within its transition plan due to the impact on total emissions:

- **Energy** (~22.29%)
  (Scope 1 - Stationary combustion + Scope 2 - Location-based)
- **Mobility** (~63.93%)
  (Scope 3 - Business travel + employee commuting + downstream transportation; d*ownstream transportation incorporates commuting and international mobility for students*)
- **Nutrition** (~3.44%)
  (Is subject to Scope 3 - Purchased goods & services)

The transition plan's success will require each of our endeavour. Therefore, we must strictly highlight the transition plan's urgency and create support to yet act. This requires a fourth work domain: **sense-of-urgency**.

The following areas of the transition plan will explain the work domains.

2 Energy

Zero energy in 2050 practically implies transitioning to fully **renewable energy, reducing and suspending the use of fossil fuel and strongly decreasing the average individual power consumption.** We must hence make long-term decisions, especially regarding HOGENT's real estate portfolio.

The note *Strategic decisions infrastructure* explains multiple activities and specific measures belonging to the Explanatory note *Investment budget 2025 and long-term investment budget 2026-2034.*

That is how HOGENT aims to condense and expand around its core campuses and aims for a healthy balance between protected heritage and modern buildings fully occupying gross floor area (GFA). HOGENT deliberately opts for carbon neutral (or even carbon positive) new construction and total renovation.

HOGENT consumes energy comprising procured renewable energy (99%) and solar panel-generated electricity (1%). Natural gas is the main heat source for the buildings. Using heat pumps, for example, is negligible. HOGENT wishes to raise the shares of its own generated energy and green heat. It also investigates the possibilities for storing its own energy and heat, citizen energy communities with public and private partners and high-performance energy monitoring and control. These measures will eventually not only contribute to multiple sustainability aspects (mobility, climate, inclusion, …), but also to HOGENT's financial capacity.

In the meantime, we cannot turn a blind eye to the challenges coupled with mentioned energy transition. Consequently, HOGENT's legacy contains heritage buildings which prevents energetic total renovation. And on top of that, we are dependent on terms and authorisation of third parties to take measures, for instance, energy and building envelope. Phasing out particular investment projects will compel us as well to decide a workaround. This way, thermal energy with higher efficiency may occasionally need to substitute for gas-fired heating systems because the structure itself is not yet undergoing a full renovation. The current delivery system determines the circulation temperature, and the building envelope determines the heat demand. If we do not respond to these two issues, the infrastructure will continue to consume gas until we initiate total renovation.

Infrastructural measures alone prove insufficient to strongly decrease the energy demand. Part of the responsibility lies with each of us. We must reconsider our individual energy consumption and how we carefully use space and energy.

Expansion refers to developing vacant areas that have not yet been developed on existing campuses; To densify involves building more compactly, maximising functional use of space within buildings (e.g., avoiding large central atriums), and constructing taller buildings.

Carbon neutral or carbon positive construction refers to the building that has no negative impact on climate change or contributes positively to climate mitigation. HOGENT initially aims for energy-neutral or energy positive building. Secondly, HOGENT utilises sustainable materials to the greatest extent and if possible and provided the legislative framework authorises sustainable demolition, recycling old materials.

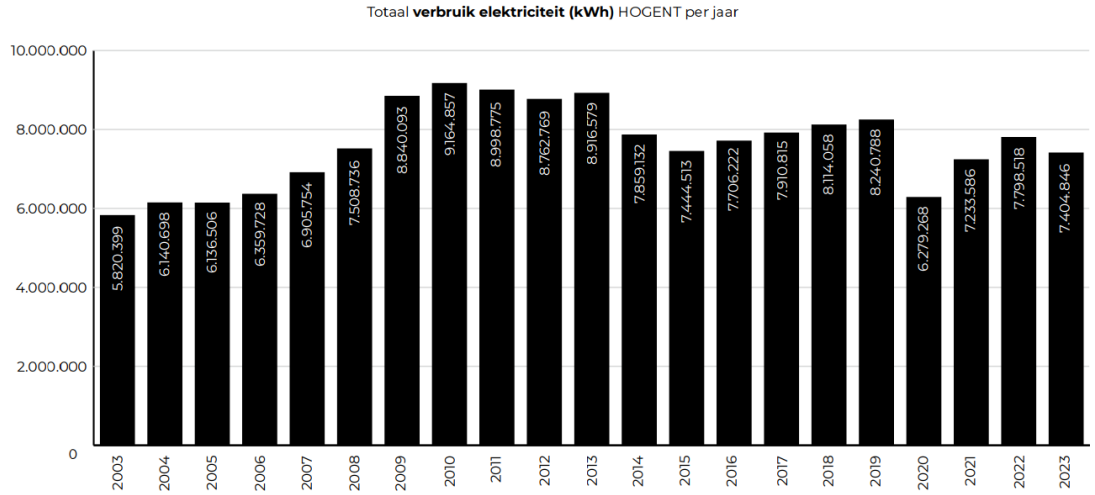
(Final) consumers have an impact on many topics and can be effective:

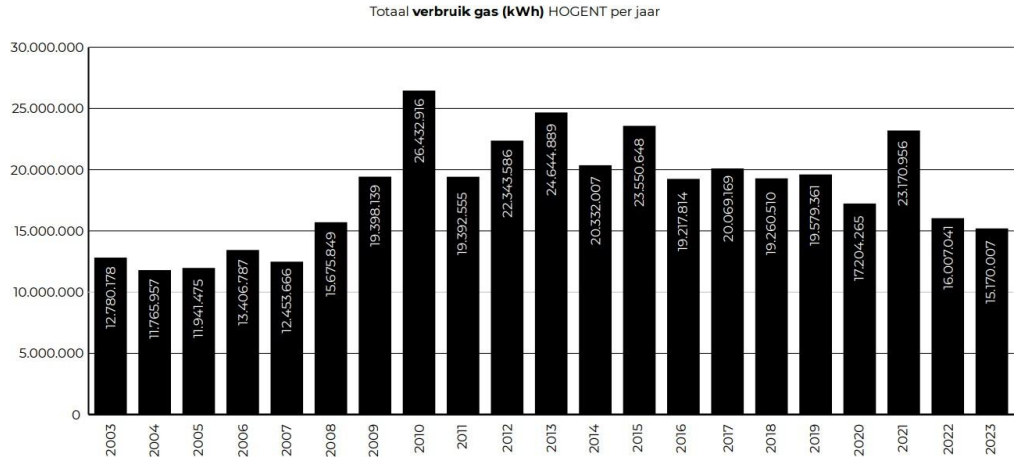
- Energy and construction costs are at the heart of HOGENT. Consequently, as a consumer, we are not always held accountable for efficiently using space and energy.
- When consumers purchase equipment/facilities, HOGENT only considers functionality and purchase price. By thinking about the total cost or ownership (TCO), energy consumption can also be considered.
- Bulk consumers (equipment, location, …) are little-known at our University of Applied Sciences. Consequently, consumers do not often take this into account.

The energy transition should also include and understand both personnel and students for the policy and investment decisions made in this context.

2.2 Some figures

The charts below show the evolution of electricity and gas consumption.





Energy consumption (2023) per head concerning the University of Ghent (UGent) and Artevelde University of Applied Sciences (Artevelde)

Energy consumption per organisation (kWh)	Energy consumption compared to # students (kWh)	Energy consumption compared to # personnel (kWh)	Energy consumption compared to # students + personnel (kWh)
HOGENT - 22,989,394	1,205	15,306	1,117
UGENT - 131,077,864	2,604	14,409	2,205
Artevelde - 9,373,000	586	6,249	536

Note: Interpreting the chart above is complicated without internal knowledge of our association partners. The number of available Science, technology, engineering and mathematics programmes (STEM programmes), the share of the historical

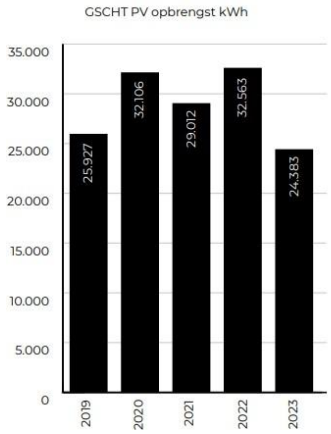
legacy, the percentage of green heat generators, energy storage, etc. possibly cause the major differences.

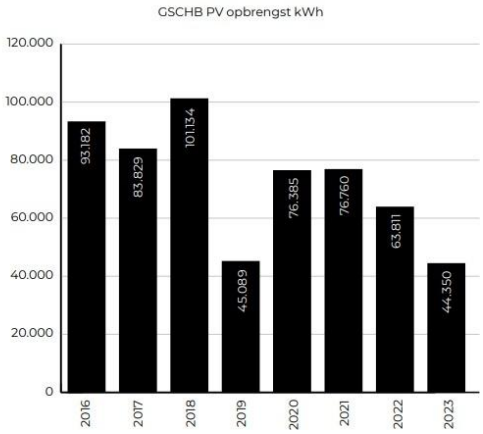
In 2023, 99% of HOGENT's consumed electricity comes from the grid. Merely 1% of the energy consumption is assigned to on-site PV installations on campus Schoonmeersen building B (SCHB) and T (SCHT).

Opbrengst zonnepanelen gebouw B en gebouw T.

GSCHT
- 103 Panelen
- 295 Wattpiek
- Solaredge PV

GSCHB
- 361 Panelen
- 295 Wattpiek
- Powerlogic GBS



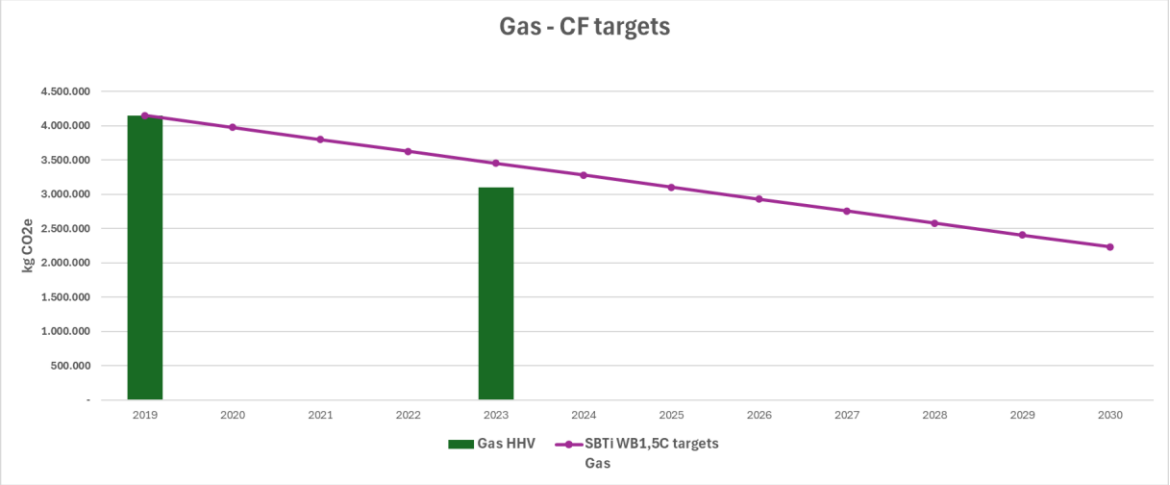


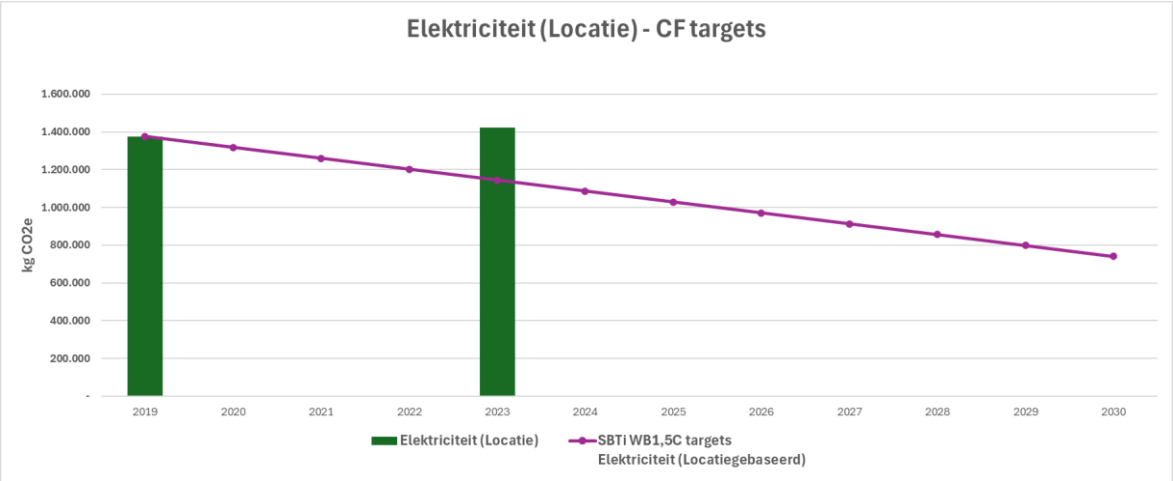
When we translate the combination of electricity and gas consumption into CO_2 emissions, HOGENT anno 2023 slightly hits below the WB1,5°C-target (- 1.65%).

We must tread carefully when we interpret gas and electricity consumption. Consequently, gas meets HOGENT's heat demand less and less. A green heat generator, however, will eventually replace it. Gas consumption will decrease, while electricity consumption will rise. Other numerous factors affect consumption as well: the final consumer's behaviour, gross floor area (GFA), capabilities of (major) consumers, degree days, … who significantly affect consumption each year.

Outside temperature significantly affects gas consumption for heating. Rectifying degree days is a way to normalise gas consumption to the average temperature of a standard year, allowing comparisons between different periods.

Charts below show gas and electricity emission separately.





Part of the investment budget is already being allocated to energy and sustainability measures. The chart on the next page breaks down the investment budget 2026-2034.

Bijlage 3: overzicht van de projecten energie- en duurzaamheidsmaatregelen

Campus	Gebouw	Titel	projectkost 25-34	projectkost 25-29	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Campus Aalst	Aalst - GAARB	Zonnepanelen op het dak via VEB	€ 54.800,00	€ 54.800,00	€ 54.683,75	€ 151,25								
Campus Bijloke	Cloquet - GBCLO	Energie: relighting: van TL naar LED	€ 300.000,00	€ 300.000,00		€ -	€ 300.000,00	€ -						
Campus Bijloke	Cloquet - GBCLO	Energie: gebouwschilmaatregelen	€ 400.000,00	€ 400.000,00		€ -	€ -	€ 400.000,04	€ -					
Campus Bijloke	Pauli - GBPAU	Renovatie zinken daken + isolatie	€ 1.100.000,00	€ 1.100.000,00	€ 52.593,87	€ 953.553,52	€ 93.852,67	€ -						
Campus Bijloke	Pauli - GBPAU	Vernieuwen verwarmingsketel	€ 94.000,00	€ 94.000,00	€ -	€ 33.571,45	€ 60.428,61	€ -						
Campus Bijloke	Pauli - GBPAU	Relighting PAULI (VEB)	€ 400.000,00	€ 400.000,00	€ -	€ 363.636,40	€ 36.363,64	€ -						
Campus Bottelare	Bottelare Proefhoeve - GBPRO	Buitenschrijnwerk vernieuwen	€ 116.600,00	€ 116.600,00				€ 116.600,01	€ -					
Campus Bottelare	Bottelare Proefhoeve - GBPRO	Akoestiek en verlichting (via VEB)	€ 53.000,00	€ 53.000,00			€ 53.000,01	€ -						
Campus Bottelare	Bottelare Proefhoeve - GBPRO	PV installatie op het dak (VEB)	€ 74.800,00	€ 74.800,00		€ 68.560,80	€ -	€ 6.232,80						
Campus Grote Sikkel	Biezekapelstraat - GGSBK	Restauratie buitenschrijnwerk	€ 250.000,00	€ 250.000,00			€ -	€ 249.999,99	€ -					
Campus Kunsttoren	De Kunsttoren - GKUTO	PV panelen en vernieuwen van het dak (via VEB)	€ 400.000,00	€ 400.000,00	€ 400.000,00	€ -								
Campus Kunsttoren	De Kunsttoren - GKUTO	Energie: relighting: van TL naar LED (via VEB)	€ 100.000,00	€ 100.000,00		€ -	€ 99.999,99	€ -						
Campus Mercator	Gebouw C - GMRCC	PV panelen op het dak (via VEB)	€ 342.200,00	€ 342.200,00	€ 342.196,92	€ -								
Campus Mercator	Gebouw D - GMRCD	Vernieuwen buitenschrijnwerk + dak toren (VEB)	€ 743.000,00	€ 743.000,00	€ -		€ 578.181,84	€ -	€ 164.808,96					
Campus Mercator	Gebouw G - GMRCG	Plaatsen dubbele schuifdeur	€ 116.600,00	€ 116.600,00	€ 53.000,00	€ 63.600,00	€ -							
Campus Schoonmeersen	Gebouw C - GSCHC	HVAC Stuurborden deel 1	€ 1.060.000,00	€ 1.060.000,00		€ -	€ 481.818,20	€ 578.181,84	€ -					
Campus Schoonmeersen	Gebouw C - GSCHC	Aanplanten nieuwe bomen	€ 35.000,00	€ 35.000,00	€ 34.980,00	€ -								
Campus Schoonmeersen	Gebouw C - GSCHC	Schilrenovatie, zonnewering en ventilatie (via VEB)	€ 5.394.800,00	€ 5.394.800,00		€ 50.871,87	€ 1.980.122,93	€ 3.352.972,08	€ 10.856,97					
Campus Schoonmeersen	Gebouw C - GSCHC	Relighting gebouw C (via VEB)	€ 1.325.000,00	€ 1.325.000,00	€ 814.702,52	€ 510.297,51	€ -							
Campus Schoonmeersen	Gebouw D - GSCHD	Zonwering en sluitwerk (via VEB)	€ 359.100,00	€ 359.100,00	€ 272.983,93	€ 86.144,10	€ -							
Campus Schoonmeersen	Gebouw P - GSCHP	Relighting gebouw P (via VEB)	€ 1.987.500,00	€ 1.987.500,00	€ 1.111.917,26	€ 875.582,79	€ -							
Campus Schoonmeersen	Gebouw P - GSCHP	Buitenschilrenovatie GSCHP	€ 5.659.800,00	€ 5.659.800,00	€ 1.448.112,03	€ 4.211.689,68	€ -							
Campus Schoonmeersen	Gebouw T - GSCHT	Aanpassen zonnewering + vervangen daklicht	€ 371.900,00	€ 371.900,00	€ 371.931,66	€ -								
Campus Schoonmeersen	Sporthal - GSCHS	Vernieuwen ventilatiesysteem	€ 1.166.000,00	€ 1.166.000,00	€ 663.110,60	€ 502.889,40	€ -							
Campus Schoonmeersen	Sporthal - GSCHS	Gevelstudie sporthal (ventilatiegevel) - RC technieken en microgrid?	€ 53.000,00	€ 53.000,00	€ 53.000,01	€ -								
Campus Vesalius	Vesalius - GVESA	Naisolatie gevels + schrijnwerk + basisventilatie sokkelgebouw	€ 2.752.200,00	€ 2.752.200,00	€ 1.135.631,47	€ 1.609.618,37	€ 6.981,42							
Campus Vesalius	Vesalius - GVESA	Energiestudie	€ 159.700,00	€ 159.700,00	€ 159.720,00	€ -								
Campus Vesalius	Vesalius - GVESA	Na-isolatie torengebouw	€ 2.271.100,00	€ 2.271.100,00	€ 487.156,54	€ 1.771.382,33	€ 12.584,52							
Campus Vesalius	Vesalius - GVESA	PV panelen + dakschil/isolatie sokkelgebouw	€ 1.273.300,00	€ 1.273.300,00	€ 1.273.272,00	€ -								
HOGENT algemeen	Plaats onafhankelijk - HOGAL	Vernieuwen gebouwbeheersysteem	€ 530.000,00	€ 530.000,00	€ -	€ 289.090,92	€ 240.909,10	€ -						
HOGENT algemeen	Plaats onafhankelijk - HOGAL	Vernieuwen HVAC borden deel 2	€ 1.590.000,00	€ 578.200,00				€ -	€ 578.181,80	€ 1.011.818,15	€ -			
HOGENT algemeen	Plaats onafhankelijk - HOGAL	Covid ventilatieplan + vernieuwen luchtgroepen	€ 3.180.000,00	€ -				€ -	€ -	€ 1.362.857,16	€ 1.817.142,88	€ -		
			2025 - 2034	2025 - 2029										
		subtotaal	**€ 33.713.400,00**	**€ 29.521.600,00**	€ 8.728.992,56	€ 11.390.640,39	€ 3.944.242,93	€ 4.703.986,76	€ 753.847,73	€ 2.374.675,31	€ 1.817.142,88	€ -	€ -	€ -

2.3 Intended goals

- HOGENT is committed to reducing total CO_2 emissions owing to conventional heating and electricity supply with an average of 4.2% each year compared to reference year 2019
- In 2030, a substantial share of consumed electricity derives from their own energy generators.
- Green heat generators systematically substitute for combustion installations if the delivery system authorises the building envelope.
- Total renovations, except for heritage buildings, and new construction projects take place fossil-free starting 2025

- Members of HOGENT needlessly avoid energy consumption and act responsibly regarding electronic devices, lighting, heating and cooling, hot water, etc.

These ambitious goals require further literary studies, structural energy-efficient investment measures, further investments in renewable energy and measures to change habits. The scheduled energy audits will permit us to develop additional sub-objectives in the short-term concerning:

- reducing energy consumption provided by energetic measures and more efficient use of space and energy;
- the percentage of the total useful floor area, renovated for the purpose of saving energy;
- the share of consumed electricity from its own energy generator.

2.4 Cornerstones energy transition

To achieve the objectives above, we work on:

1. Strategic real estate screening, focussing on, for example
    a. Healthy balance between preserved legacy and modern buildings
    b. Densification and expanding around core campuses
2. Efficiently using space by, for example:
    a. Densification and expanding around core campuses
    b. Reduction or fully occupying gross floor area
    c. Shared use of space
3. Energy-efficient by, for example:
    a. Opting for carbon neutral (or even climate positive) new building projects and total renovation
    b. Further investments in renewable energy
    c. Disconnecting fossil fuel
    d. Research on its own energy generator and energy storage
    e. A power management system
4. Data collection and monitoring by, for example:
    a. Investing in more fine-mesh measurement and registration system
    b. Impact measurement of actions taken
5. To create support, to raise awareness and to inform

2.5 Possible activities

To strike a healthy balance between preserved legacy and modern buildings

- A life cycle analysis decides about investments and takes circular principles into account

To condense and expand around core campuses and outlying campuses

- Update Masterplan campus Schoonmeersen (accomplishment 2025)
- Layout Masterplan campus Mercator and campus Vesalius

To reduce/ to fully use the gross floor area

- Think-thank allocation model sustainable use of space, educational concepts & educational organisation
- Clear destination for campuses and buildings, detaching buildings from programmes, facilities (e.g. labs are ideally centralised in a single facility)
- Research on possible exploitation (conferences, exhibits, …) or collaborations with parties with a strong connection to education
- To stimulate shared infrastructural use. Occupying specific spaces and devices should be more effective. Doing an inventory provided with available infrastructure, machines, … may contribute to the effectiveness

Shifting to carbon neutral (or even climate positive) buildings

- Building envelope measurements (including on campus Schoonmeersen buildings C and D, on campus Vesalius and on campus Bijloke Cloquet building)

Shifting to renewable energy

- Energy audit per building
- Research power battery campus Schoonmeersen
- To accelerate PV-panel installations based on the EPC-NR legislation
- Replacing combustion installations by green heat generators, e.g. heat pumps and riothermia. If impracticable, replaced by a more sustainable system.

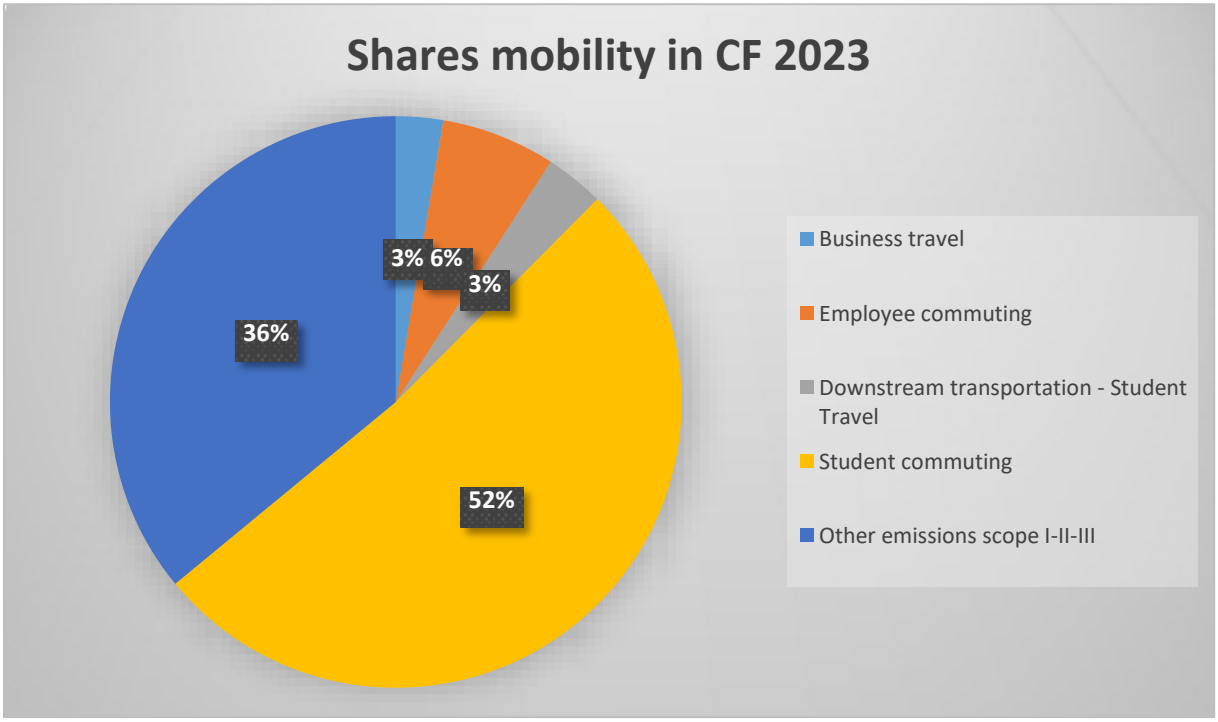
Shifting to lower consumption by

- LED lights (~relighting) currently substitute for fluorescent lamps
- Awareness and information campaigns, such as the current campaign ‘Check the 5Vs’ in annual loop.
- Analysis bulk consumers
- Energy management system/energy-monitoring
- Lowering indirect energy consumption by recycling, circular consumption, longer lifespan, …

The Investment budget 2025 and long-term investment budget 2026-2034 already explained the different measures. Few of them are already implemented or are yet to come.

3 Mobility

Mobility has the highest impact on HOGENT's emission. Work-related and school commuting are the main culprit. A minority is caused by international (business) travel.



Reducing physical relocation will without a doubt have the highest impact on mentioned emission. Physical attendance remains necessary for universities of applied sciences: personnel and students call for connection on physical sites, personal growth and competence development prompt physical attendance as well, … Each mobility policy framework aims to balance climate and other goals of HOGENT.

HOGENT integrates a mobility policy (BC/B/2024/BEAA/143873), not only focussing on accessibility and solidarity but also on on-campus experience, wellbeing and welfare of both personnel and students. This is done in a sustainable and secure way.

Also, through the sustainable travel policy (BC/B/2024/ONDW/152576), fitting into the mobility policy, we search for a balance between acquiring international and intercultural competences and taking climate change into account at the same time.

At the heart of each policy framework lies the added value that a trip provides for HOGENT, its staff, and/or its students. When relocation is required, members of HOGENT opt for a more sustainable mode of transport. **This modal shift** will lead to a further decrease in emissions. The number of commuters may have an impact as well.

The impact of mobility on HOGENT's carbon footprint is indisputable. Yet these activities contain the least accurate source data, hence large error margin. Moreover, not every relocation such as national business trips are yet accounted for in the calculations.

3.1 Some figures

Work-related commuting personnel (2023)

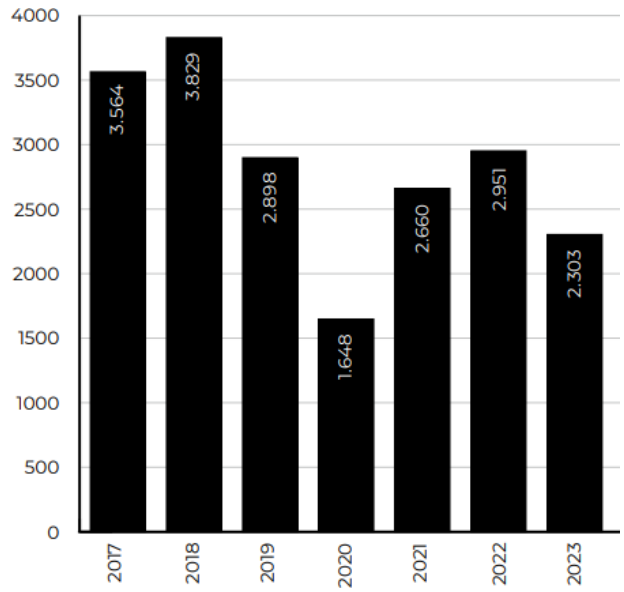
Vehicle	Distance [km]	Emission factor	Emission in kg CO_2e
Car	5,479,056.37	0.193	1,057,457.81
Train	4,887,647.98	0.021	101,531.95
Bus and tram	133,215.16	0.075	9,991.14
Moped	48,663.07	0.080	3,893.05

Commuting habit students

Vehicle	Distance [km]	Emission factor	Emission in kg CO_2e
Car	31,257,048	0.193	6,032,610.26
Train	94,819,425	0.021	1,969,700.10
Tram	421,976	0.075	1,361,701.20
Bus	17,734,040		

Charts above do not include cyclists and hikers, but do indicate CO_2-neutral nature of relocation

Number of distributed parking vignettes (total number of parking lots = 350)



International business travels 2023

Vehicle	Distance [km]	Emission factor	Emission in kg CO_2e
Car	530,640	0.193	102,413.52
Train	439,365	0.021	9,127.00
Airplane			
<1,000km	173,750.94	0.258	44,827.74
1,000km – 3,500km	840,328.65	0.187	157,141.46
>3,500km	1,121,505.03	0.152	170,468.76

International travel 2023 students (n = 476) through International Office

Vehicle	Distance [km]	Emission factor	Emission in kg CO_2e
Train	25,856	0.021	537.80
Airplane			
< 1,000km	165,072	0.258	42,588.61
1,000 km – 3,500 km	492,856	0.187	92,164.60
> 3,500 km	2,197,988	0.152	334,094.16

In academic year 2023-2024, study programmes and departments provided following incomplete data on international travel, regardless of whether it takes place off campus.

The charts result in an overview of the School of Business and Management (SBM), School of IT and Digital Innovation (SIT), School of Bioscience and Industrial Technology (SBIT), LUCA School of Arts, School of Teacher Training (STT) and the ski trip brought by HOGENT.

For several study tours, students used different travelling modes: train or car, train or bus, train or airplane. For these trips, the mode with the lowest emission factor was chosen for the calculations below. Some journeys comprised multiple stops. In case they were known already, they were included.

DBO	Distance [km]	# students	Emission factor	Emissions in kg CO_2e
Train	4618,47	288	0.021	2,224.08
Bus (per person)	2,201.8	55	0.019	1,131.80
Airplane				
< 1,000 km	5,059.06	36	0.258	16,410.68
1,000 km – 3,500 km	11,314.68	48	0.187	26,553.59
> 3,500 km	34,881.22	85	0.152	143,956.64
	TOTAL number of students	512	TOTAL	190,277.59

DIT	Distance [km]	# of students	Emission factor	Emissions in kg CO_2e
Airplane				
1,000 km - 3,500 km	3,059.76	7	0.187	4,005.23
> 3,500 km	11,679.92	40	0.152	71,013,91
	TOTAL number of students	47	TOTAL	75,019,14

DBT	Distance [km]	# of students	Emission factor	Emissions in kg CO_2e
Car (per person)	296,60	6	1.39	2,473,64
Train	3,014,32	15	0.021	431,98
Bus (per person)	4,092.41	107	0.019	2,022.85
	TOTAL	128	TOTAL	4,928.47

[5] # students – the total amount of students who used the respective mode of transport, regardless of the distance each individual student covered. You cannot just multiply the distance, the number of students and the emission factor to calculate the emissions per transportation mode.

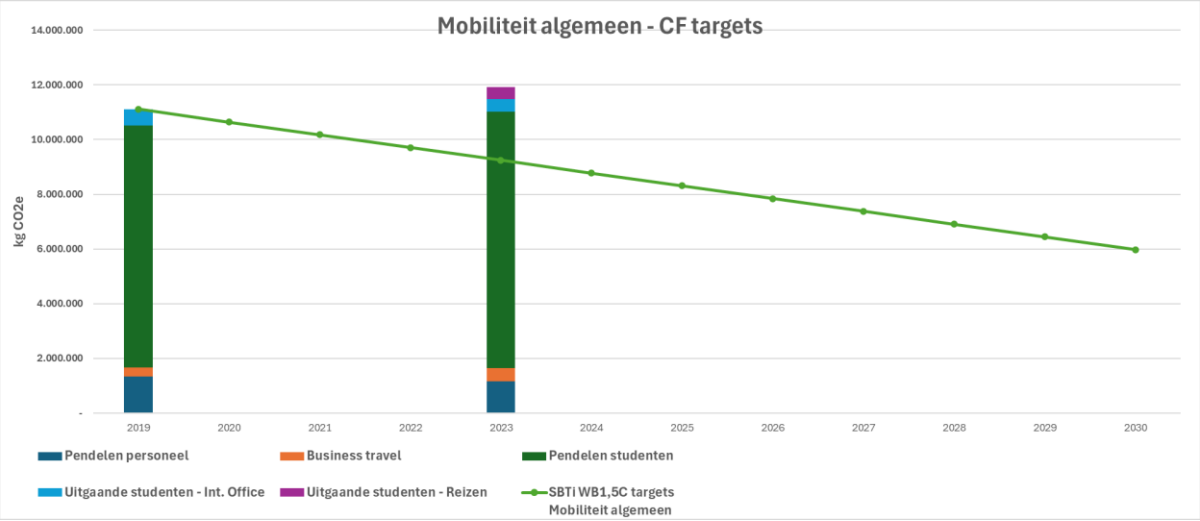
School of Arts	Distance [km]	# of students	Emission factor	Emissions in kg CO_2e
Car	1339,16	28	1.39	15,955.70
Train	3487,64	152	0.021	3097.45
Bus (per person)	14,979.04	1,166	0.019	13,873.34
Airplane				
< 1,000 km	3,543.80	36	0.258	16,856.38
1,000 km - 3,500 km	1,926.54	5	0.187	11,432.09
> 3,500 km	11,661.40	44	0.152	77,991.44
	TOTAL	1,431	TOTAL	130,954.96

DLO	Distance [km]	# of students	Emission factor	Emissions in kg CO_2e
Car	2,799.34	37	1.39	5,312.56
Train	1,390.26	23	0.021	664.24
Bus (per person)	6,515.84	250	0.019	8,418.90
	TOTAL	310	TOTAL	14,395.70

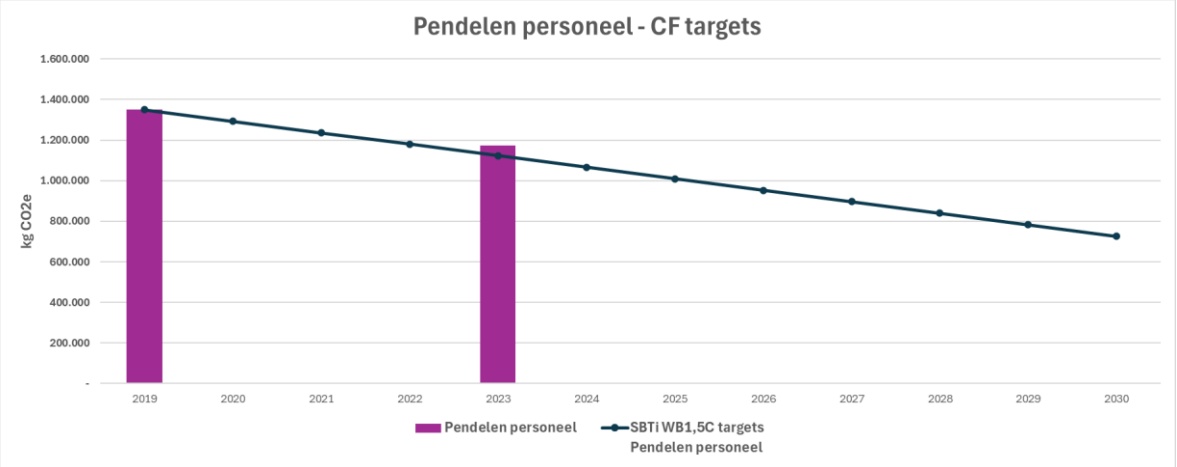
Skiing trip HOGENT	Distance [km]	# of students	Emission factor	Emissions in kg CO_2e
Bus (per person	2,006	150	0.019	5,717.10

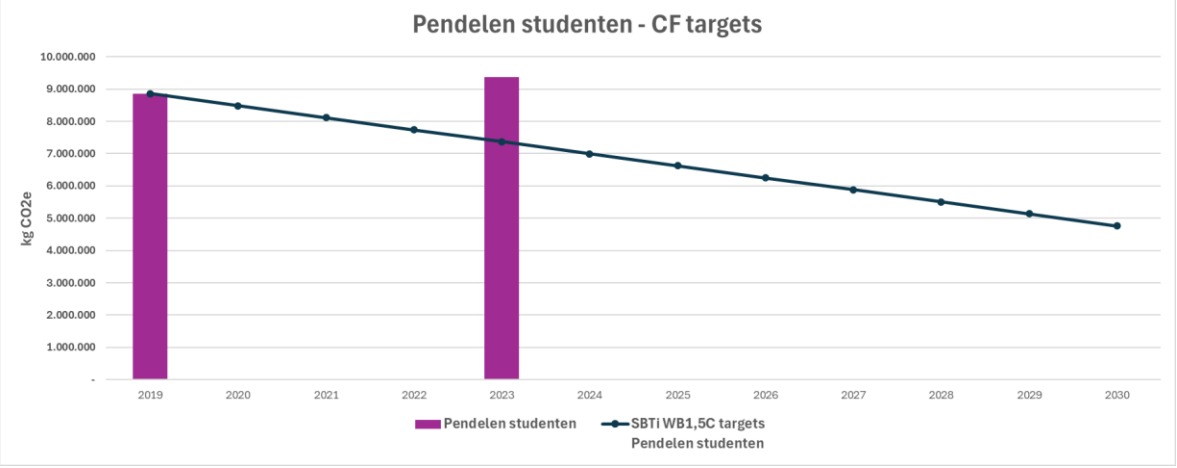
The environmental impact of these provided study trips is already **421.292,96** kg CO_2. The order of magnitude of this impact (specifically a 5% increase of our total emissions) forces us to calculate and include this emission category in the 2023 carbon footprint.

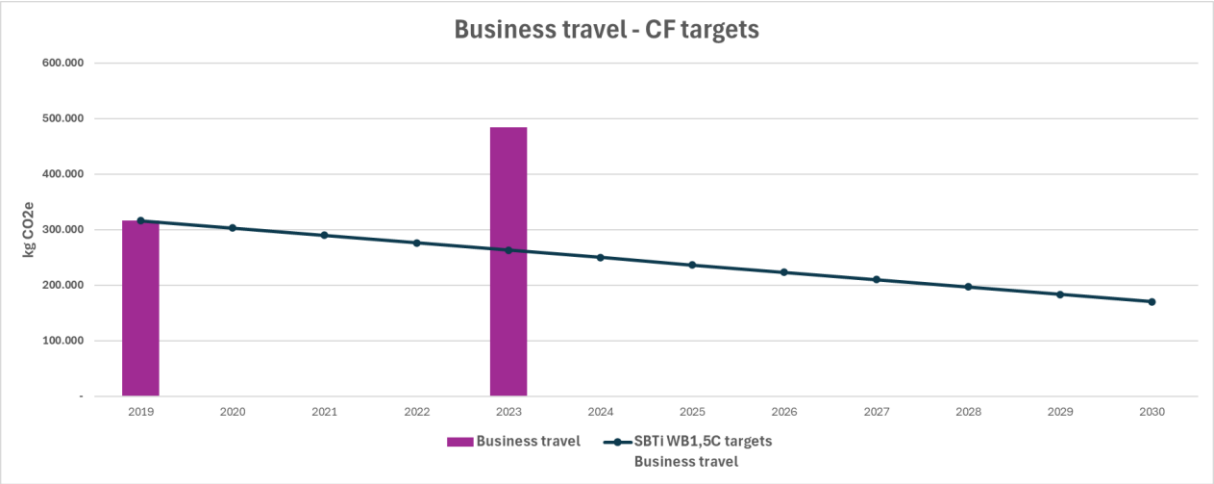
The total amount of the already known mobilities results in emissions that far exceed the CO_2-reduction goals of 2023.

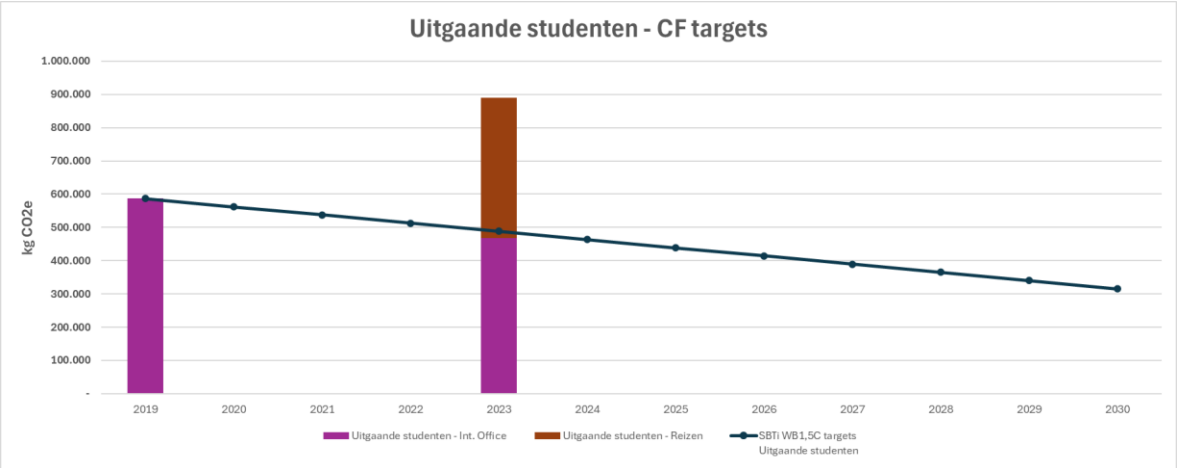


The charts below show emissions by mobility activity






Business travel - CF targets
600.000
500.000
400.000
300.000
200.000
100.000
-
kg CO2e
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
Business travel
SBTi WB1,5C targets Business travel


Uitgaande studenten - CF targets
1.000.000
900.000
800.000
700.000
600.000
500.000
400.000
300.000
200.000
100.000
-
kg CO2e
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
Uitgaande studenten - Int. Office
Uitgaande studenten - Reizen
SBTi WB1,5C targets Uitgaande studenten

3.2 Intended goals

- More accurate data collection regarding to commuting (staff and students), work-related trips, international study- and extramural trips, and inland trips
- By 2030, HOGENT strives for an annual reduction of total CO_2-emissions of commuter traffic of 4.2%
- By 2030, HOGENT strives towards an annual reduction of total CO_2-emissions of commuter traffic of students by 4.2%
- The STOP-principle leads with every new development on campus
- Turning logistic transport within HOGENT more sustainable by combining all needs to 1 supplier and using electric service cars or cargo bikes.

- Members of HOGENT travel more thoughtful and sustainable; this way, they will almost split the total CO_2-emissions of their international (service) trips in half by 2030, compared to the year of reference, 2019

The input from the 2024 mobility surveys among staff and students will provide us with a more accurate vision of the modal split. This input will also allow us to formulate additional short-term goals regarding the modal shift to more sustainable modes of transport, when talking about commuting and inland trips.

Improved monitoring of international (student) trips will sharpen the targets concerning international (student) mobility.

3.3 Cornerstones of mobility transition

To achieve the objectives above, we will work around:

- Monitoring and collecting data
- Informing and raising awareness
- Continuously engaging internal and external experts

Specifically in the context of commuting, intercampus traffic and domestic trips.

- More sustainable travel by fewer cars
- Integration of mobility goals in master plans and the development of infrastructures and facilities.
- Densification and infill development op core campuses (to improve inter-campus mobility and/or accessibility)

Specifically, regarding international trips

- The balance between acquiring intercultural and international skills and climate issues
- Promoting sustainable alternatives for flying, providing alternatives and reduce non-necessary trips.
- Guiding measures to limit the amount of airplane trips.

These cornerstones are in line with the Mobility policy, the Sustainable mobility action plan and HOGENT's sustainable travel policy.

3.4 Possible activities

A couple of possible measures:

- Highlighting best practices and sharing stories
- Broad communication about goals and progress (both overall and if relevant, per entity)

Specific in the context of commuting, intercampus and inland travel.

- Preparing accessibility profiles per campus, per staff member (cf. project ESCommuT)
- Deployment of HOGENT's bike leasing system
- Providing sufficient bicycle stands equipped with power outputs
- Completing the above-ground parking for students of campus Schoonmeersen
- Developing a policy for staff and students that discourages unnecessary and unwanted car use in favour of other modes of transport
- Collecting information about mobility through a registration tool for students
- Realising a logistic hub on core campuses
- Making our own logistic journeys on and between campuses more sustainable

Specific regarding international trips

- Information campaigns around:
    - Travel policy
    - Alternatives for air travel: where to go by train?
    - Human rights test
    - Safety test
- Make an upfront commitment around sustainable mobility and human rights in international cooperation.
- Integrate policy into a booking tool – if a destination can be reached door-to-door by train within a maximum of 8 hours, this will become the standard offer.
- Research the CO_2-compensation of air travel.
- Furter deployment of Internationalisation@home, MOOCS, …

To this end, both the Sustainable mobility action plan and policy about sustainable travel have already described many different activities and concrete measures. Some are still in preparation, others are already in progress.

4 Nutrition

Catering has the biggest impact on our carbon footprint within the category of purchased products and services.

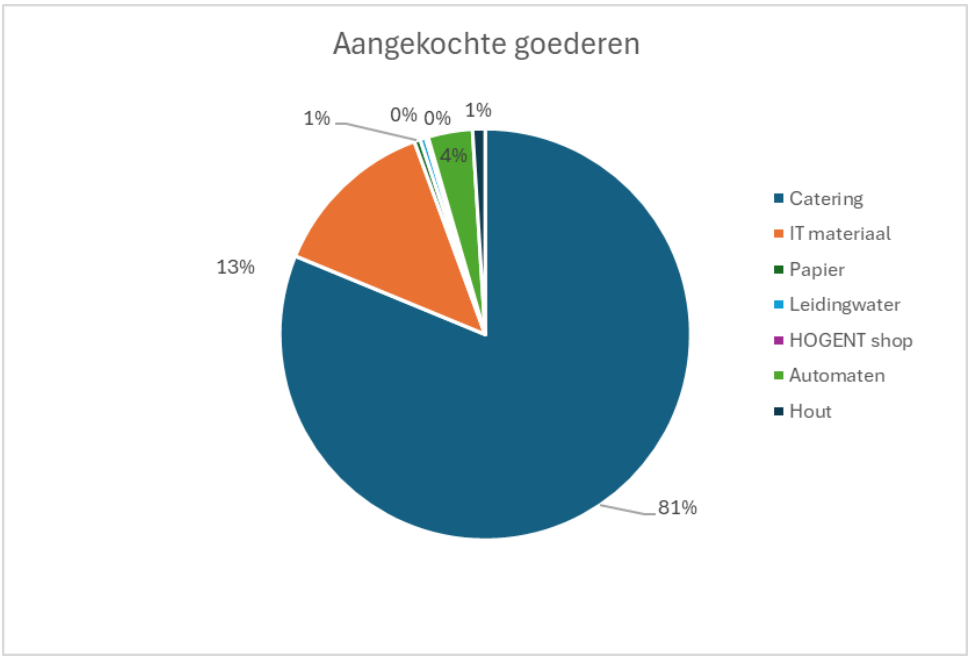
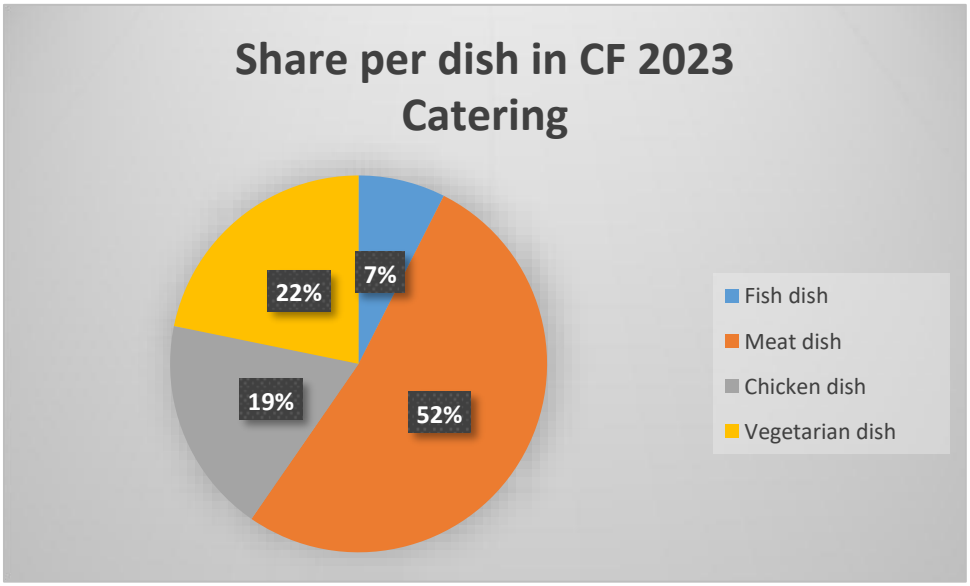


Chart: Division of purchased goods CF 2023

Within the catering category the share of meat dishes (52%) is the largest. This is no surprise, given that the emission factor for meat is approximately 12 times higher than that of a vegetarian dish. Overall, animal product-based meals are accountable for 97.3% of all CO_2-emissions of our hot meals and salads.



Animal products have a much bigger footprint than plant-based protein products. They require more land and water and cause more emissions. The negative impact on biodiversity is also much larger. The potential environmental gain from diets with less animal products is therefore significant. **Consuming less meat** is the most important way to reduce the ecological footprint of our diet. At the same time, we need to **battle overconsumption and food waste.**

HOGENT strives towards tasty, affordable, healthy, and balanced nutrition with a better ratio between animal and plant-based proteins, with an additional focus on a short food chain and the local economy. For several years, the Catering Division (Office for Student Services and Student Life) has been working to make its offer and purchase policy of food components more sustainable and reduce food remains.

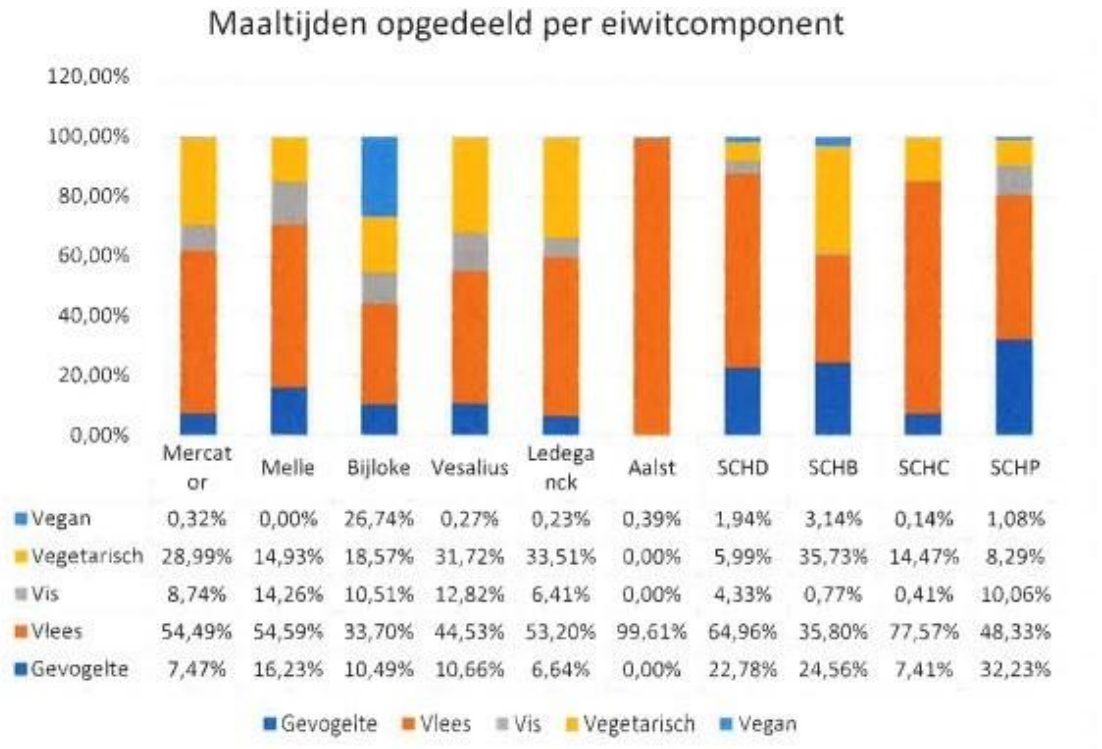
In 2023, the Catering Division started a pilot project on campus Schoonmeersen, in collaboration with researchers Impact Marketing (connected to SUOR), ProVeg Belgium, the Communication Directorate and Compass Group Belgilux to stimulate students to opt more frequently for vegan and vegetarian meals. Cooking workshops were organised, brainstorm sessions about recipes were held, different sales- and communication techniques were discussed, and various nudging strategies were assessed.

The checkout system was modified, which allowed registration of several types of protein components used in hot meals and salads and therefore allowing measurements within those food categories. The new system allows us to map the emissions for catering activities linked to our restaurants, as well as to monitor the evolutions in our diets.

The impact of catering at events or meetings (event catering) is currently a blind spot for HOGENT. Ordering of catering activities is still decentralised and occurs at different suppliers. There is no HOGENT-wide overview of the total amount of catering for events and meetings, let alone a detailed overview of purchased catering per type of protein.

4.1 Some figures

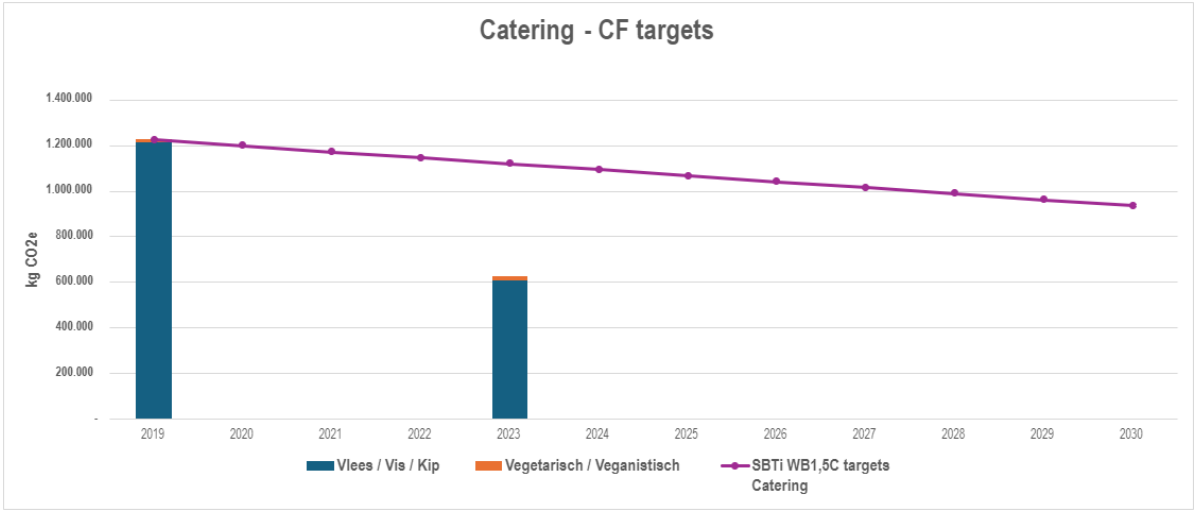
The chart below shows the share of meals sold per protein component on every campus in 2023.



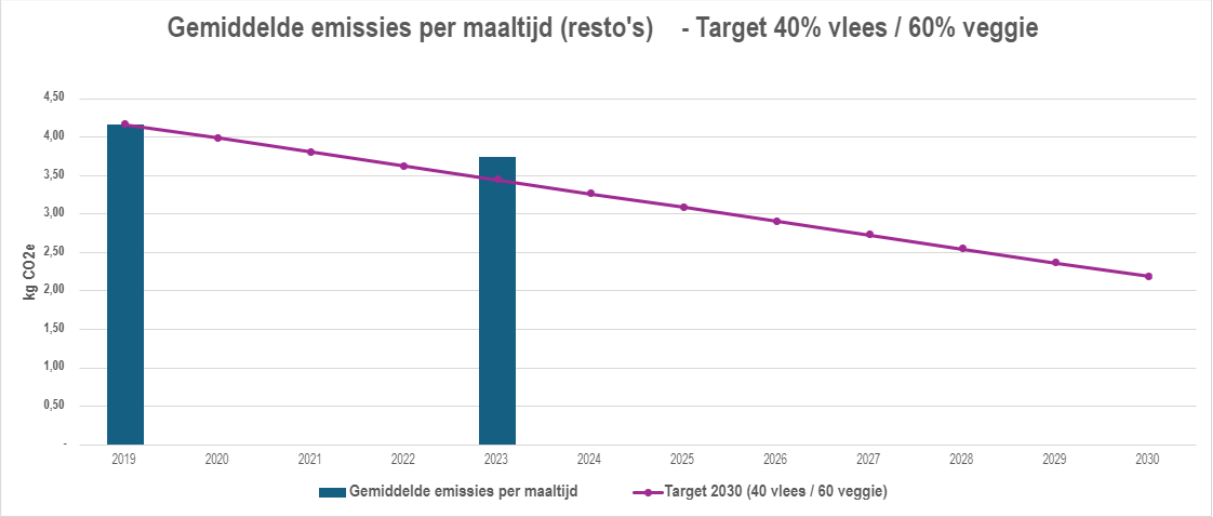
	Mercator	Melle	Bijloke	Vesalius	Ledeganck	Aalst	SCHD	SCHB	SCHC	SCHP
Vegan	0,32%	0,00%	26,74%	0,27%	0,23%	0,39%	1,94%	3,14%	0,14%	1,08%
Vegetarisch	28,99%	14,93%	18,57%	31,72%	33,51%	0,00%	5,99%	35,73%	14,47%	8,29%
Vis	8,74%	14,26%	10,51%	12,82%	6,41%	0,00%	4,33%	0,77%	0,41%	10,06%
Vlees	54,49%	54,59%	33,70%	44,53%	53,20%	99,61%	64,96%	35,80%	77,57%	48,33%
Gevogelte	7,47%	16,23%	10,49%	10,66%	6,64%	0,00%	22,78%	24,56%	7,41%	32,23%

(Source: STUVO, 2023)

Compared to 2019, far less meals are sold in our student restaurants, while the number of students has risen. Thanks to this initiative, emissions in 2023 were much lower than the reduction target set by the SBTi. That is why the Catering Division will use 2023 as a new year of reference. This chart does not deal with sandwiches consumed in the student restaurants nor event catering.



When we also take the ratio between 40% animal and 60% plant-based proteins[6] into account for calculating the emissions per meal, we acquire the chart below. We can see that the average emissions for 2023 are just above the target to achieve a 40/60 ratio by 2030.



[6] As part of the Green Deal Protein Shift, HOGENT restaurants committed to a 40/60 ratio of animal and plant-based protein products on our plate.

4.2 Intended objectives:

- HOGENT strives for a 40/60 ratio of animal/plant-based proteins in student restaurants by 2030.
  An option is to differentiate between different student restaurants, for instance, restaurant Bijloke 20/80 and restaurant Schoonmeersen 50/50.
- In event catering, HOGENT strives for a 20/80 ratio of animal/plant-based products by 2030.
- The members of HOGENT annually reduce the total CO_2 emissions of the food consumption and -production by 4.2% compared to reference year 2019.

4.3 Cornerstones of food transition

To achieve the objectives above, we work around the following areas:

1. Data collection and monitoring
2. Increasing the high-quality range of vegan and vegetarian alternatives.
3. Implementing steering measures within event catering
4. Continuous deployment of HOGENT's expertise, for instance a follow-up project for sustainable food in cooperation with SUOR.
5. Encouraging change of behaviour

4.4 Possible activities

A couple of possible measures:

- Informing about impact
- Sharing inspiring stories
- Experimenting with a range of quality vegan/veggie products
- Exploring hybrid products
- Cooking workshops for chefs
- Framework agreement for event catering
- Guidelines about sustainable events and catering
- Veggie is default at event catering
- Measuring and communicating goals and progress per entity.
- Measuring, but also disclosing goals, impact, and evolution in student restaurants.
- A new research project Sustainable food, collaboration between the department Catering, directorate of communication and Sustainable impact - SUOR
- Implement measuring tools for monitoring from the Green Deal.

Different actions and concrete measures have already been described in the Policy plan of Student Facilities 2024-2028. Department Catering will continue to promote sustainable meals. This will be accompanied by the introduction of new meals, adapted communication, nudging of the relevant dishes and products and a further differentiation of the prices.

5 Sense-of-urgency

Being carbon neutral by 2050 poses a challenge. It means taking decisions today, whose impact may only become visible in the long term. Moreover, not everybody at HOGENT feels and acknowledges the urge to change. In order to make changes today, tomorrow and in the further future that will drastically reduce our carbon footprint, a broad support to prioritize the climate transition is needed. Administrators, staff and students need to be involved and convinced of the importance of climate action: necessity leads to action.

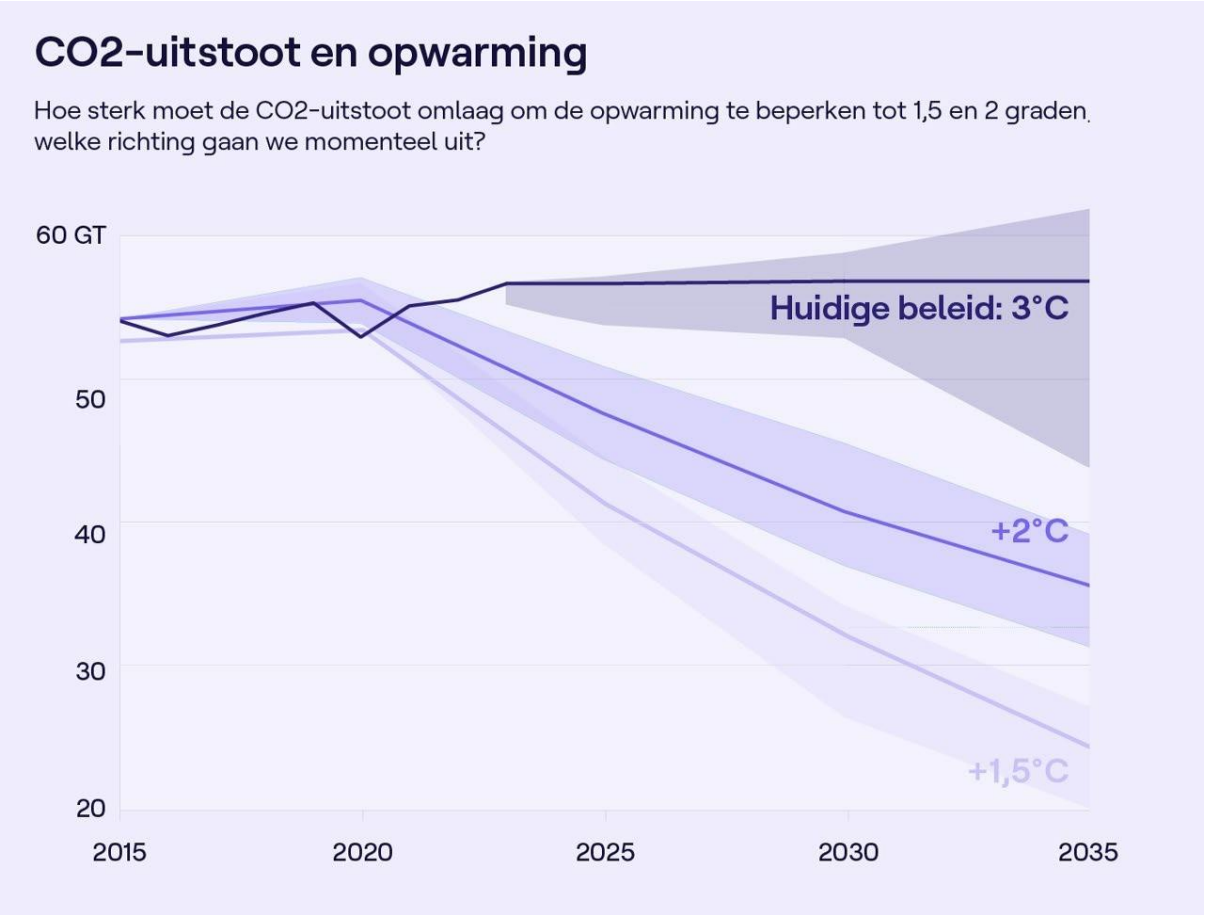


Figure from UN Climate Report on the Emissions gap, source: VRT NWS

A possible explanation for this, as mentioned before, is that the costs of a lot of procurement and investment decisions are borne centrally. This can make users less likely to oversee available infrastructures, facilities and goods in an economical, efficient and thoughtful way.

To address this, we aim to focus on:

- Informing and raising awareness
- Implementing ‘quick wins’: emission sources/categories that may have a smaller share in the total emissions of HOGENT but do have an immediate impact and visibility to staff and students.

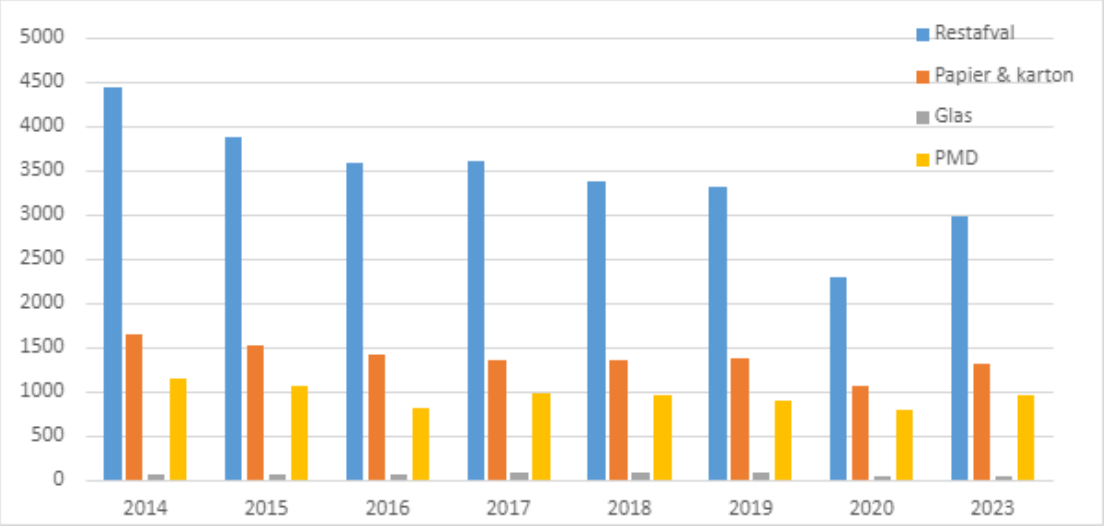
5.1 Possible ‘quick wins’

Evolution in paper consumption

201G				
Article	unit	Number of Units	Number of sheet/units	Number of sheets
Yellow label 80G A4	pallet	6	100,000	600,000
Yellow label 80G A4	box	30	2,500	75,000
Yellow label 80G A3	box	2	2,500	5,000
Coloured paper pastel 80G A4	Pack	0	500	0
Black label 80G A4 4 holes	sheets	6,000,000	1	6,000,000

2023				
Article	unit	Number of Units	Number of sheet/units	Number of sheets
Yellow label 80G A4	pallet	27	100,000	2,700,000
Yellow label 80G A4	box	152	2,500	380,000
Yellow label 80G A3	box	50	2,500	125,000
Coloured paper pastel 80G A4	Pack	505	500	252,500
Black label 80G A4 4 holes	sheets	543,877	1	543,877

Evolution of household waste



Offer of drinks and snacks in vending machines

2023	Number of consumptions	CF [kg CO_2e]

Candy	44,749	6,780.369
Hot drinks	40,832	7,122.040
Soft drinks	40,252	13,021.959

5.2 Intended goals

- Every employee/student is aware of HOGENT's carbon footprint and transition plan
- There is an easily accessible dashboard
- There is an annual CO_2-reduction of 4.2% for each of the chosen 'quick wins.

5.3 Possible actions

A couple of possible actions

- Broad communication, not only about policy and goals, but also achieved results.
- Formatting the Sustainability dashboard – Climate action
- Campaigns about various 'quick wins'
- Cf. Transition UGent – a network where engaged members of HOGENT consider the different themes
- Point of contact for initiatives/ideas around 'quick wins'

6 Assignment for the government

The climate transition is one of the most important challenges and chances this century. To accelerate the transition to a sustainable, climate-neutral society, it is important that **the government has a leading role in supporting and subsidising this transition within educational institutions.**

The urgency of the climate transition is gradually becoming clearer due to the consequences of climate change, the rising costs of fossil energy and the growing dependence on imported energy. In addition, the transition to renewable energy sources such as wind, sun, hydrogen, etc. is essential to reach the climate goals. Belgium, Flanders and Ghent, just like HOGENT, have committed to become carbon neutral by 2050. To realise this goal, significant investments in infrastructure and technology are required. In doing so, it is crucial that different national and international governments keep the specificity of educational institutions in mind, when preparing, formulating and implementing the policy.

Concrete needs

- **Need for governmental support**

  Governmental support can simplify and accelerate the climate transition by offering **subsidies, tax benefits or interest-free loans** for carbon neutral/positive renovation projects, the installation of green technologies, etc.

- **Simplifying/ accelerating procedures for sustainable projects.**

  A good example are the heritage files. Many educational institutions, as well as HOGENT, have heritage buildings in their building portfolio. Because of the various, and sometimes conflicting, interests and policy frameworks applied to making heritage sustainable, it is impossible to move forward. **Solution-oriented alignment between different government agencies** is necessary to make any progress in certain files.

- **Aligning the policies on (higher) education.**

  Not all policies bear in mind the uniqueness of educational institutions, making general policies or policies tailored to private actors difficult, or even impossible to be implemented by an educational institution. For this, there is an EPC-NR legislation that requires every non-residential building to be carbon neutral by a specific term. This means for HOGENT that every building in its patrimony is carbon neutral. As for historical patrimony, this is unthinkable with current legislations and technologies.
  It would be more realistic to become carbon neutral at the level of total building patrimony.
  These impasses can be prevented by dialogue between governmental institutions and educational institutions.

- **Additional resources for heritage maintenance.**

  Real estate heritage, such as a historical building, play a vital role for the cultural identity and history of our country. Without structural maintenance and restauration, valuable heritage is at risk of being lost.

  However, the maintenance and restauration of real estate often is a prolonged process, requiring specialised expertise and skills, which brings additional costs.

  Moreover, much real estate heritage is protected by strict national and international legislation, which makes maintenance and restauration, as well as sustainable/energy-efficient renovation difficult, or sometimes even impossible.

  The resources provided by the government today are barely sufficient to carry out our decree tasks in a qualitative way and to maintain and adapt our existing 'standard' patrimony to the current norms and legislation.

  The Government received the request to provide enough resources for the maintenance and sustainable renovation of real estate heritage. For this, we refer to the renovation of the Royal Conservatory of Brussels - a project that the Flemish Coalition agreement incorporates.

- **Adapted/appropriate traffic infrastructure/traffic facilities**

  Mobility plays a key role in realising climate goals and reducing CO_2-emissions. While HOGENT can take various actions, these efforts only will not result in the desired modal shift, unless the government also provides appropriate, high-quality, safe traffic infrastructures and traffic facilities. Available, high quality and safe traffic facilities play a crucial role in influencing people's travelling behaviour.

  If facilities for cycling, walking and public transport are well and safely developed, people may consider these modes of transportation. Think about safe and separated cycling lanes, bicycle highways, reinforcement of public transport, reliable and fast connections, traffic-safe crosswalks, etc. Well-designed traffic facilities may surely help to reduce and prevent traffic congestion.

We ask every staff member, student and partner to advocate these needs to other educational institutions and other organs that can put local, regional, national and international governments under pressure.