

2025

UM Sustainability Office

Carbon Footprint Report

*Supplementary Report Providing Detailed Life
Cycle Assessment Methodology and Results*

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1. Introduction

1.1 Background and Rationale

The operations, infrastructure, and supply chain activities of universities are substantial contributors to environmental emissions. It is imperative to quantify carbon emissions in order to comply with potential future international reporting standards, inform sustainability strategies, and monitor progress toward sustainability objectives.

This report provides a comprehensive carbon footprint assessment of Maastricht University for the 2023 (only for processes where sufficient data was available), 2024 and 2025 calendar year. The Life Cycle Assessment (LCA) framework, which is a comprehensive approach that captures emissions from all stages of the university's activities, from direct fuel use to upstream supply chain effects, is employed in accordance with the Greenhouse Gas (GHG) Protocol and ISO 14040/44 standards. It quantifies the total GHG emissions in the Scope 1 (direct), Scope 2 (energy indirect), and some of Scope 3 (other indirect) categories.

1.2 Objectives

- To quantify the carbon footprint of Maastricht University.
- To disaggregate emissions into Scope 1, Scope 2, Scope 3 categories.
- To identify major emission hotspots.
- To interpret results and suggest mitigation strategies.

2. Methodology

2.1 Framework: GHG Protocol

The carbon accounting framework follows the GHG Protocol, which classifies emissions:

- **Scope 1 – Direct emissions:**

Scope 1 emissions are direct greenhouse gas emissions from sources that are either owned or operationally controlled by the university. In this study, Scope 1 encompasses emissions from heating boilers that are primarily powered by natural gas for the purpose of heating water and space on campus. Additionally, it includes emissions from campus-owned vehicles, refrigerant leakage from air-conditioning and cooling systems, and Emergency Power Aggregates (backup generators) that are operating during power outages or testing periods. Furthermore, the Scope 1 mitigation strategy included Verified Emission Reductions (VERs) that were linked to natural gas consumption.

- **Scope 2 – Indirect energy emissions:**

The indirect GHG emissions associated with the generation of energy purchased and consumed by the university are referred to as Scope 2 emissions. Scope 2 encompasses emissions from the purchase of electricity for academic buildings, laboratories, etc, as well as any purchased heat.

The analysis also includes purchased renewable energy certificates (RECs) and green electricity certificates, which represent the environmental attributes of renewable power generation, in order to account for mitigation efforts.

- **Scope 3 – Other indirect emissions:**

Indirect emissions that result from university activities but originate from sources that are not explicitly owned or controlled by the institution are included in Scope 3 emissions. Scope 3 encompasses emissions from business travel (air and other official travel), employee commuting and students commuting based on transportation modes and distances, water consumption, paper consumption, waste and waste management, including treatment and recycling impacts, and laboratory chemicals for this study. Apart from paper and laboratory chemicals, a spend-based analysis has been made for all purchased goods and services. These categories offer a more comprehensive evaluation of the emissions associated with campus operations in the value chain.

2.2 Life Cycle Assessment (LCA)

To augment the GHG protocol and quantify the upstream and supply-chain impacts of the university's operations, LCA was implemented. Database version v3.8 was employed to conduct LCA calculations in this study, as it was the most comprehensive and compatible dataset available during the analysis. Some discrepancies in results may be anticipated as a result of updates to background datasets, emission factors, and methodological refinements in comparison to the more recent version v3.12. In particular, the updated electricity mixtures and enhanced energy datasets may result in a decrease in energy-related emissions in v3.12, while the revised inventory data and transport assumptions may lead to an increase in waste management and business travel-related emissions. Nevertheless, it is not anticipated that these updates will significantly change the overall trends or conclusions of this study. The assessment was conducted using OpenLCA software. Characterization was conducted using the ReCiPe impact assessment method. The analysis in this study primarily concentrates on Global Warming Potential (GWP) to ensure consistency with the institutional GHG inventory and to facilitate a clear comparison of climate impacts across scopes and mitigation strategies, despite the fact that multiple midpoint impact categories were generated.

2.3 Data Collection

A comprehensive evaluation of the institution's environmental impact was conducted by gathering data from a variety of sources:

- Utility bills – electricity, gas, and heating consumption.
- Procurement supplier data – materials and services sourced from external suppliers related to only a few products being paper and chemicals. For other products and services, financial procurement data was collected.
- Travel and commuting surveys – information on travel patterns of students, faculty, and staff.
- Institutional records – waste generation, water usage, and facilities management data.

3. Scope 1, 2 and 3

3.1 Scope 1 (Direct Emissions)

Scope 1 emissions encompass direct GHG emissions from sources owned or managed by the institution, in accordance with the Greenhouse Gas Protocol.

Data Sources:

Data for scope 1 calculations were collected from institutional operational records and facility management databases. Fuel consumption records for stationary combustion sources (e.g., generators, and heating systems), university-owned vehicle fuel usage files, refrigerant purchase and leakage records, and maintenance reports comprised the primary sources. Additional information was obtained from procurement documents, transportation and fleet management records, and utility invoices.

Assumptions:

- It is assumed that natural gas usage comprehensively reflects all on-site stationary combustion sources managed by the institution.
- Fleet fuel data are deemed comprehensive for all vehicles owned and operated by the institution, excluding personal or third-party transportation.
- Verified Emission Reductions (VERs) was presumed to be legitimate, authenticated, and solely utilized to mitigate emissions from natural gas consumption within the same reporting area, ensuring no duplicate counting occurred.

Boundaries/Scope:

Included:

- Direct emissions from all sources within university operational authority (e.g., natural gas consumption, University's owed vehicle, refrigerant leakage and emergency power aggregates).
- Separate analyses are conducted for 2023, 2024, and 2025 to identify trends and changes in operational activities, as well as to document year-to-year variations in emissions.

- In order to differentiate between actual on-site emissions and the impact of carbon offsets, separate calculations were conducted for 2023, 2024, and 2025, both without VERs (gross emissions) and with VERs (net emissions). This approach ensures transparent reporting and allows for a clear evaluation of genuine emission reductions versus offset-based mitigation.
- Campuses Included: The calculations included all locations in Maastricht for gas consumption, institute vehicle, diesel in power aggregate, VERs for natural gas and refrigerant leakage.

Excluded:

- Facilities not under the university's direct operational control.
- Campuses Excluded: The calculations excluded campuses outside of Maastricht and some locations in Maastricht: Boschstraat 24, Onze Lieve Vrouweplein 22, Dr. Tanslaan 10, Peter Debyelaan 25, Brouwersweg 100 (Guesthouse), and Vijverdalseweg 1 for gas consumption. For institute vehicle, diesel in power aggregate, VERs for natural gas and refrigerant leakage campuses outside of Maastricht and the guesthouse were not included.

Results – Scope 1:

The university's Scope 1 emissions were estimated to be approximately 2367.91 tCO₂e in 2023, excluding carbon credits which decreased to approximately 752.03 tCO₂e after accounting for carbon offset credits (VERs), which represents a nearly 68% reduction in total. Stationary combustion from natural gas heating systems continued to be the primary contributor.

In 2024, Scope 1 emissions experienced a modest increase, reaching approximately 2510.56 tCO₂e without credits and 775.9 tCO₂e with credits, which is nearly 69% reduction in total because of VERs. The primary cause of the increase from 2023 was because of the increased utilization of natural gas in the heating and research facilities of the campus. This year, no emissions were recorded from university-owned vehicles or refrigerant discharge.

By 2025, Scope 1 emissions further increased slightly to nearly 2518.65 tCO₂e without credits, while emissions after applying carbon credits (VERs) were estimated at 778.4 tCO₂e which gives a reduction of nearly 69% to 2025 scope 1 emissions. Similar to 2024, no direct emissions from university vehicles or refrigerants were reported.

The graphical results (Figure 1) demonstrate the university's shift in Scope 1 greenhouse gas emissions from 2023 to 2025 in scenarios with and without carbon credits, along with the contribution of individual emission sources including natural gas consumption, university vehicles, refrigerants, diesel usage from power generators and Verified Emission Reductions (VERs).

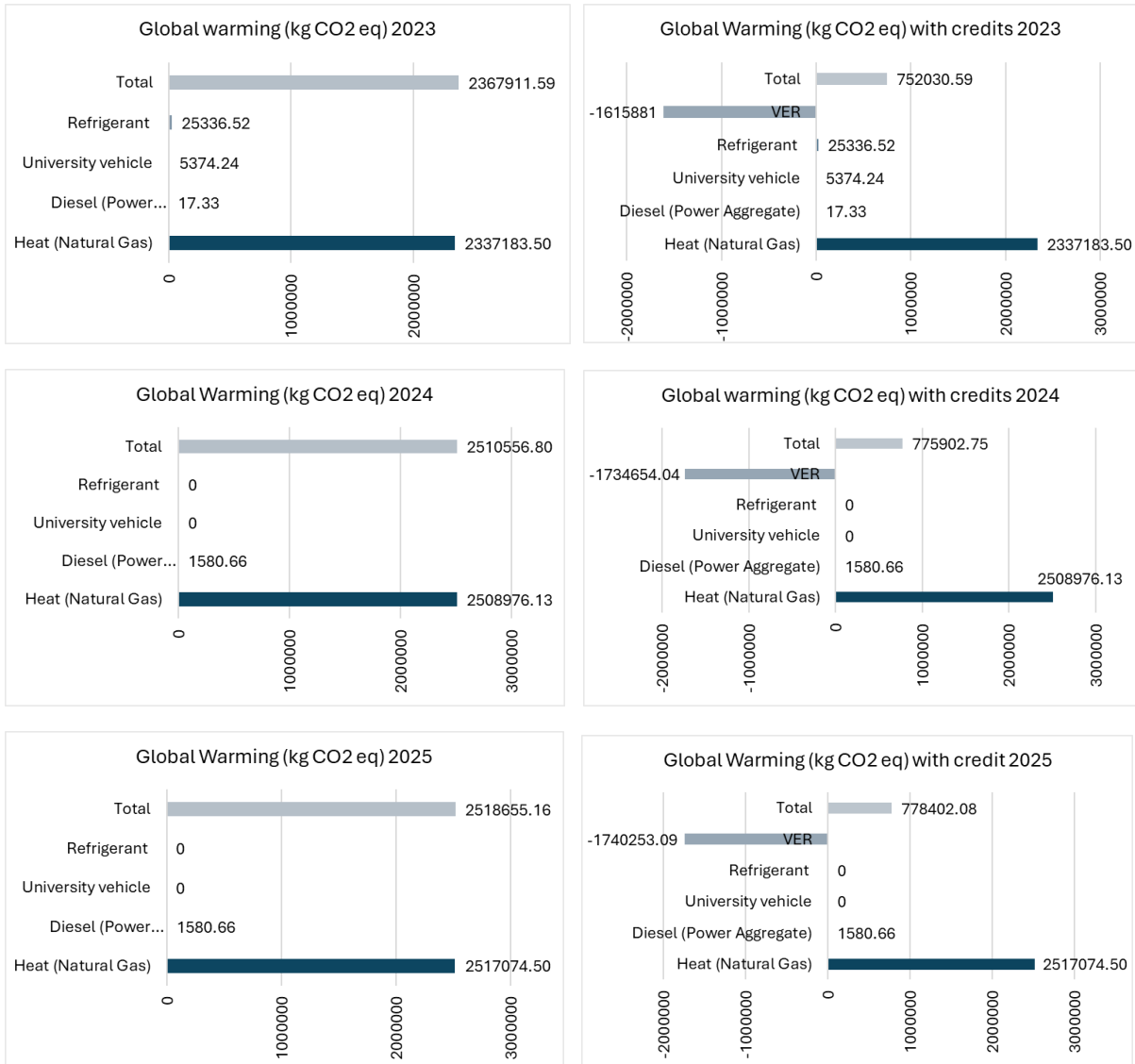


Figure 1: Annual Scope 1 emissions from 2023 to 2025, including source-specific contributions, with and without carbon credits

3.2 Scope 2 (Indirect Emissions)

Scope 2 emissions denote indirect greenhouse gas emissions linked to the use of acquired power, heating, or cooling utilized by the institution. These emissions are produced off-site at energy generation facilities but are assigned to campus operations due to the electrical and energy requirements of academic, residential, and research buildings.

Data Sources:

The university's electricity and energy consumption records were used to acquire data on Scope 2 greenhouse gas emissions. Utility invoices and electricity consumption databases associated with academic buildings, laboratories, administrative facilities etc

were the primary sources. Furthermore, data from the Maastricht hospital (MUMC+) has been used for the electricity used in hospital buildings used by UM.

Assumptions:

- All university-operated buildings over the course of three years are presumed to accurately represent data on electricity and heat consumption.
- The heat supplied by MUMC+ is produced from natural gas.
- The classification of electricity as greened or non-greened is determined by the information provided by the supplier.
- The certificates obtained in 2023 are deemed valid and are exclusively applied to the reported electricity consumption for that year.
- Ecoinvent did not have a European wind energy dataset; as a result, the ROW (Rest of World) dataset was employed as a substitute (Scenario 2).

Boundaries/Scope:

Included:

- Within Scope 2, the university's indirect emissions from the consumption of heat and electricity purchased during the years 2023–2025 are included.
- Separate analyses are conducted for 2023, 2024, and 2025 to identify trends and changes in operational activities, as well as to document year-to-year variations in emissions.
- Electricity consumption in university-operated buildings maintained by Facility Services, electricity produced by Photovoltaic (solar rooftop), electricity greened and not greened by MUMC+, green electricity bought by Maastricht University (Vattenfall) and heat delivered by MUMC+ (produced with natural gas) are all included.
- Certificates were not acquired after 2023; consequently, they are not applicable for 2024 and 2025.
- Three scenarios are incorporated within the Scope 2 boundary to reflect various treatments of energy inputs and to account for variations in electricity sourcing and accounting methods. In order to assess the sensitivity of emissions under market-based and location-based approaches, these scenarios systematically modify the classification of electricity sources (e.g., from Dutch to national and European mixtures). Three Scenarios used are described below:

Input	Scenario 1 (Market-based)	Scenario 2 (Market-based, EU wind regarded as grey)	Scenario 3 (Location-based)
Electricity produced by Solar PV (rooftop)	No Change	No Change	No Change
Heat from MUMC+ (natural gas-based)	No Change	No Change	No Change

Electricity greened by MUMC+	European Wind	National Grid	National Grid
Electricity NOT greened by MUMC+	Gas (WKK)	Gas (WKK)	Gas (WKK)
Green Electricity bought by Maastricht University (Vattenfall)	NL Wind	NL Wind	National Grid
Certificates	Included; but reported separately		

- **Campuses Included:** The calculations included all locations in Maastricht for electricity use, electricity by MUMC+ and purchased certificates for electricity (GOO). For heat delivered MUMC+ (Maastricht Hospital) was included.

Excluded:

- Direct emissions from fuel combustion (Scope 1).
- Buildings or facilities that are not under operational control are also excluded.
- **Campuses Excluded:** The calculations excluded campuses outside of Maastricht and some locations in Maastricht: Boschstraat 24, Onze Lieve Vrouweplein 22, Dr. Tanslaan 10, Peter Debyelaan 25, Brouwersweg 100 (Guesthouse), and Vijverdalseweg 1 for electricity use. For purchased certificate for electricity (GOO), campuses outside of Maastricht and guesthouse were not included.

Results – Scope 2:

The Scope 2 emissions were assessed utilizing three scenarios: market-based, market-based with EU wind classified as grey power, and location-based methodologies.

In 2023, the projected emissions using the market-based method were 8998.59 tCO₂e, however the figure increased to over 12765.64 tCO₂e when EU wind generation was classified as grey electricity. The location-based approach calculated emissions at 12765.64 tCO₂e (for 2023 scenario and 3 are basically same). The net reported emissions under all the scenarios were further reduced in 2023 as a result of the application of purchased certificates which avoided 418.30 tCO₂e of emissions.

In 2024, Scope 2 emissions noted a significant decline as the institution progressively utilized green and renewable power sources for campus activities. Market-based emissions declined to almost 2461.34 tCO₂e, but emissions in the market-based scenario, including EU wind as grey power, were projected at nearly 6098.07 tCO₂e while location-specific emissions were 13078.34 tCO₂e. The decrease signifies the university's shift towards more sustainable electricity buying methods and enhanced energy sustainability efforts.

The continuous integration of renewable energy and the optimization of electricity utilization across campus facilities resulted in a further decrease in Scope 2 emissions by 2025. The market-based scenario was estimated at approximately 2434.29 tCO₂e,

while market-based scenario which considered EU wind as grey electricity, resulted in emissions of approximately 6047.02 tCO₂e. Emissions were estimated to be nearly 12689.57 tCO₂e under the location-based approach.

The graphs (figure 2) depict variations in Scope 2 greenhouse gas emissions from 2023 to 2025, utilizing market-based, market-based with EU wind classified as grey power, and location-based accounting methodologies. The graphs also show the contribution of individual scope 2 emission sources.

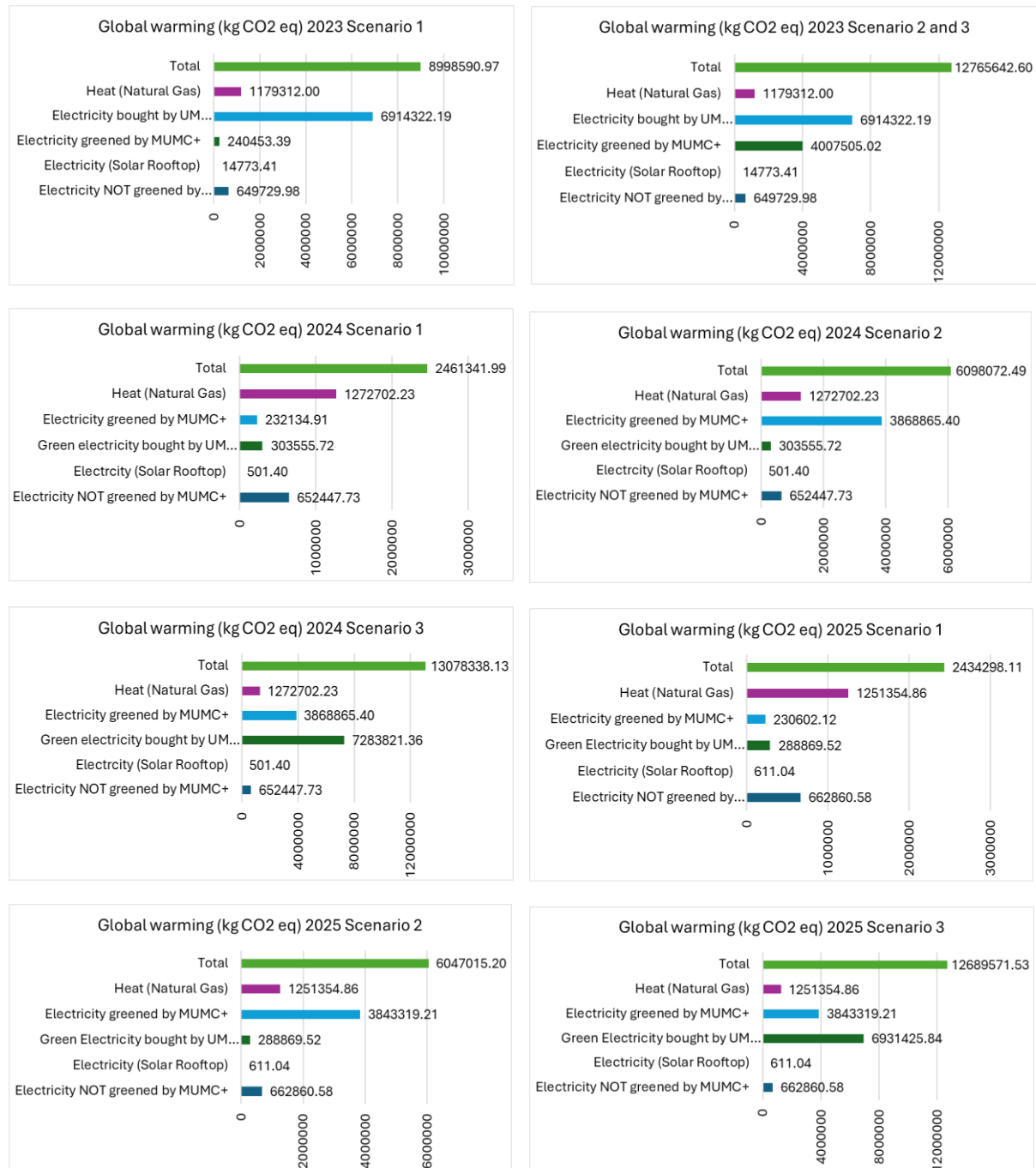


Figure 2: Comparison of Scope 2 emissions from 2023–2025 under market-based, market-based with EU wind regarded as grey electricity, and location-based accounting

approaches, emphasizing the impact of renewable electricity adoption on emission reductions.

3.3 Scope 3 (Other Indirect Emissions)

Based on the GHG protocol, scope 3 emissions have been calculated for the different scope 3 categories. We tried to use as much activity-, supplier-, and distance-based information as possible but for some categories needed to extrapolate based on costs or use spend-based data. For each of the GHG scope 3 emissions, we indicate how the calculations have been executed below.

3.3.1 Purchased Goods and Services

For some of the purchased goods and services, we made an analysis of our emissions in the LCA model:

- Paper
- Laboratory chemicals – gases
- Water

For catering, we used the carbon footprint data that was provided by our main catering supplier in 2024 and 2025 (i.e., Eurest). However, because the emission numbers provided by Eurest only partially overlap with the money spend on catering services by the UM (based on our financial accounts), we report both the emission results (i.e., catering emissions provided by Eurest, and catering emissions as part of (spend-based) purchased goods and services) in our sustainability report.

Also for laboratory chemicals, calculations have been made in the LCA model, which are provided in the Appendix. As this category was not included in the sustainability report (calculations were not finished in time), it is presented separately here as additional information to maintain consistency with the main report.

3.3.1.1 Purchased Goods and Services – Paper Usage

The university's paper consumption was evaluated in order to determine its contribution to Scope 3 emissions. This assessment considered the life cycle impacts and procurement volumes associated with paper production and usage.

Data Sources:

Information on paper usage was acquired from institutional procurement records and supplier invoices for the reporting year. The dataset comprised total amounts of office paper acquired in SRA3, A0, A4, and A3 formats. Kilogram-based measurements were obtained using ream counts and standardized paper weight criteria for Life Cycle Assessment calculations.

Assumptions:

- Paper consumption was calculated at a campus-wide level

- It was presumed that all paper acquired would be utilized within the reporting year.
- In order to convert purchased units into kilograms, the standard weight per ream was employed.
- Paper varieties procured by the university were matched with the most suitable datasets available in Ecoinvent for LCA modelling. The dataset "Paper, woodfree, coated" was used to model Glossy Photo Paper, Top Colour Digital, and Premium Paper, while "Paper, woodfree, uncoated" was used to model Top Colour Zero, Black Label Zero, and Oranje. These decisions were determined by the surface finish characteristics and product specifications.
- Calculations were annual, representing a full calendar year – 2024 and 2025.

Boundaries/Scope

Included:

- Life cycle emissions associated with paper production (raw material extraction, manufacturing, and transportation to supplier).
- Campus included: All UM locations in Maastricht.

Excluded

- Informal or unrecorded paper purchases.
- Upstream forestry land-use change impacts beyond standard LCA emission factors.
- Emission associated with the EoL phase (wastepaper).
- Student-owned paper purchased.
- Paper of copy shops.
- Campus excluded: UM locations outside of Maastricht.

Results – Paper Usage

In 2024, the emissions related to paper use at the university were 30 tCO₂e/year. The predominant emissions stemmed from the use of paper uncoated (29.81 tCO₂e/year) which includes Top Colour Zero, Black Label Zero, and Oranje paper types because of their frequent usage in daily activities like office paper use, academic printing activities, administrative documentation, examination materials, and research-related printing requirements (figure 3). By 2025, emissions associated with paper reduced to 29.59 tCO₂e/year.



Figure 3 Total and individual emissions (paper, coated and paper uncoated) from paper use for year 2024 and 2025

3.3.1.2 Purchased goods and services – Laboratory Gases

Laboratory gases are frequently utilized in university research, analytical testing, and experimental endeavours across several academic fields. The production and utilization of these gases indirectly contribute to greenhouse gas emissions, thereby being a significant element of the university's Scope 3 carbon footprint evaluation.

Data Sources:

Data concerning laboratory gas use were gathered from university procurement records and laboratory inventory systems.

Assumptions:

- The evaluation presumed that all acquired laboratory gases were used during the reporting year.
- Minor leakage during storage and use was deemed minor unless explicitly acknowledged.
- The research did not individually account for gas cylinder reuse and return systems.
- Calculations were annual, representing a full calendar year – 2024 and 2025.

Boundaries/Scope

Included:

- Gases utilized in laboratories for research and educational purposes.
- Industrial and specialty gases including nitrogen, helium, argon, carbon dioxide, hydrogen, and compressed air.
- Gas consumption in experimental and analytical equipment.
- Campuses included: All UM locations in Maastricht.

Excluded:

- Emissions associated with gas cylinder manufacturing.

- Gases that are not bought at Linde (marginal).
- Leakage losses
- Campuses excluded: UM locations outside of Maastricht (including Chemelot)

Results – Laboratory Gases

Laboratory gas consumption was estimated to generate emissions of 78.2 tCO₂e/year in 2024. Due to the widespread utilization in analytical instruments, material processing, and experimental applications throughout research laboratories, nitrogen accounted for the highest consumption volume (66.97 tCO₂e/year) which is roughly 85% of the total in 2024 (figure 4).

By 2025, emissions related to laboratory gases decreased to 72.57 tCO₂e/year. Nitrogen remained the predominant laboratory gas in total consumption (69.8 tCO₂e/year), representing 96% of the total emissions, followed by carbogen and helium (figure 4).

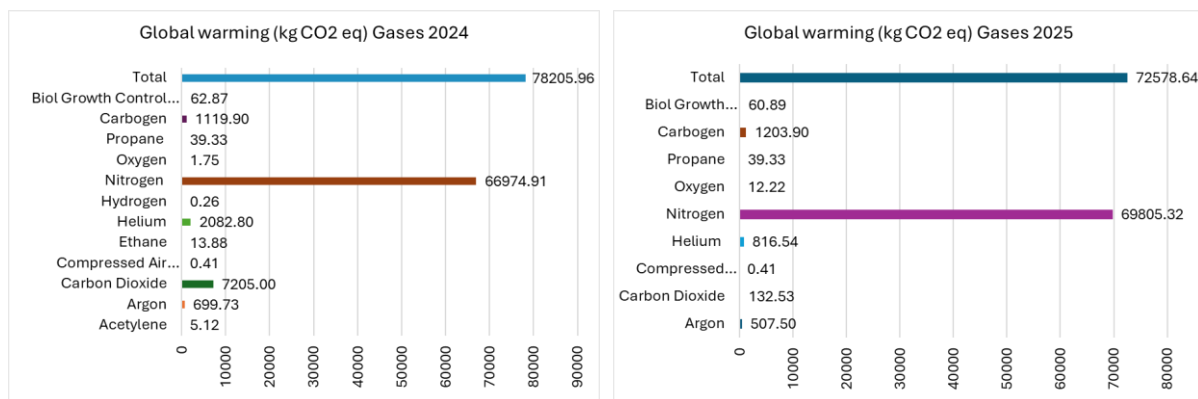


Figure 4 Total and individual emissions from laboratory gases for year 2024 and 2025

3.3.1.3 Purchased goods and services – Water

An analysis of water consumption at the university was conducted to evaluate the aggregate consumption of water across campus facilities and to identify trends in usage patterns.

Data Sources: Water consumption data were gathered from utility bills and facility management records, which encompassed all metered water supplied to university buildings and facilities.

Assumptions:

- It is presumed that all metered water is utilized for standard campus operations, which include academic structures, administrative offices, laboratories, and other facilities.
- Emissions from water consumption are computed on a campus-wide scale and is not disaggregated by individual buildings, laboratories, or facilities.

- Water losses resulting from leakage or inefficiencies were considered into the total metered consumption.
- Calculations were annual, representing a full calendar year – 2023, 2024 and 2025.

Boundaries/Scope:

Included:

- Campuses included: All UM locations in Maastricht.

Excluded:

- Unmetered or privately supplied water sources (if any) are not included due to lack of reliable data.
- Off-site or indirect water use (e.g., in purchased goods or services) is outside the scope of this analysis.
- Campuses excluded: UM locations outside of Maastricht and some locations in Maastricht: the guesthouse, and buildings that are managed but not used by the UM, being Oxfordlaan 55 and Oxfordlaan 70.

Results – Water:

Emissions associated with water consumption in 2023, 2024 and 2025 were estimated based on total metered water consumption in cubic meter. In 2023, emissions associated with university water use were predicted to be at 18.91 tCO₂e per year. The emissions were mostly associated with water usage necessary for the operation of academic buildings, labs, cafeterias, recreational facilities etc. around the campus. In 2024, water-related emissions diminished to around 18.82 tCO₂e/year by 2025, emissions increased to about 21.38 tCO₂e/year (figure 5).

For 2023, 2024 and 2025, Randwyck campus generated more emissions than City Center campus which is indicative of its increased water consumption in administrative and academic buildings and its larger dimensions.

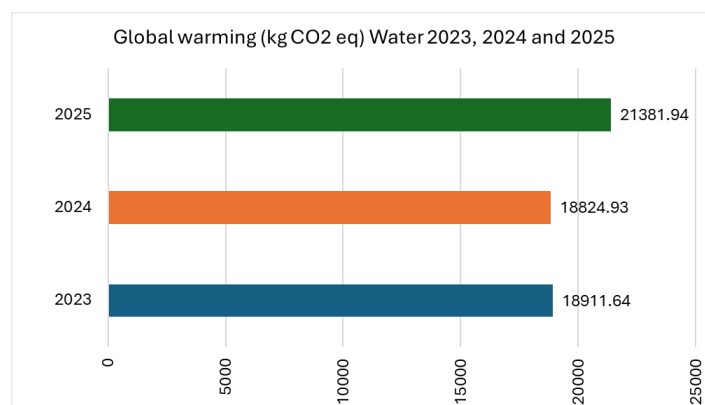


Figure 5 Emissions from water consumption across campuses for year 2023, 2024 and 2025

3.3.2 Waste generated in operations

The assessment of waste generated across the university campuses was conducted to quantify the total waste production, characterize waste streams, and evaluate the associated emissions based on treatment methods.

Data Sources: Waste data were acquired from contractor reports and institutional waste management records. The records contained the total quantities of waste collected in kilograms, which were categorized by waste type and treatment pathway. UM's waste processor also reports about emissions related to the processing of UM's waste streams, but this data is not used in our reporting.

Assumptions:

- Emissions based on waste quantities are calculated overall and not disaggregated by individual buildings.
- Calculations were annual, representing a full calendar year – 2024 and 2025.

Boundaries/Scope:

Included:

- The waste assessment assessed a variety of waste streams that were generated on the university campuses, including residual waste, plastic waste, paper waste, glass waste, swill (kitchen/food) waste, and hazardous waste.
- Waste processed by waste processor.
- Treatment pathway in accordance with waste management practices for each waste type were also included in calculations. The treatment pathway considered for waste streams are:
 - Residual waste* - incineration with energy recovery,
 - Hazardous waste* - incineration without energy recovery
 - Paper, glass, plastic, and e-waste* - recycling
 - Swill (kitchen/food) waste* - bio-digester, enabling energy recovery through biogas production.
- Campuses Included: All locations in Maastricht

Excluded:

- For 2025, wood waste, building and construction waste, waste collected in outer environment UM, grease waste, oil waste from catering suppliers and metal waste are excluded from the calculation. For 2024 also these waste categories are excluded from the calculation except the metal waste which was zero for the year

2024. Construction waste is processed by our construction partners and are excluded because we don't have waste registrations for this waste.

- Upstream emissions from product manufacturing.
- Waste generated off-site (e.g., supplier waste).
- Campuses excluded: Campuses outside of Maastricht and the guesthouse (located in Maastricht).

Results – Waste generated in operations

The emissions associated with university waste management were determined by applying treatment-specific emission factors to each waste stream. Overall, total waste related emissions for 2024 were estimated at 450.67 tCO₂e and for 2025 it is 499.07 tCO₂e (Figure 6).

The results suggest that incineration processes, particularly residual and hazardous waste streams, were the primary source of total waste-related emissions in 2024 and 2025. Despite partial energy offsets, residual waste, which was treated through incineration with energy recovery, accounted for the greatest portion of emissions (156.74 tCO₂e) in 2024 and for 2025, most emissions are coming from hazardous waste, which is treated through incineration without energy recovery (172.72 tCO₂e).

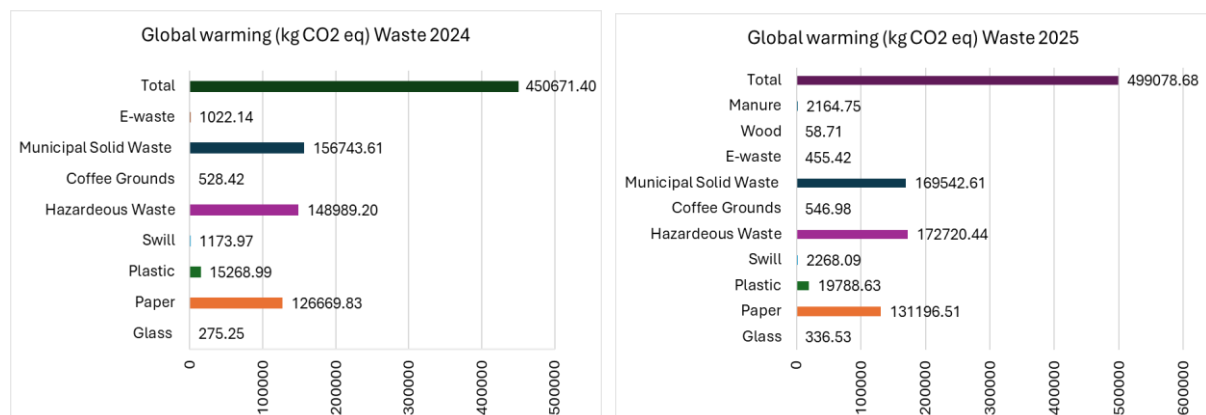


Figure 6 Emissions from waste generation and treatment for year 2024 and 2025

3.3.3 Business Travel

An assessment of business travel emissions was conducted to quantify indirect Scope 3 GHG emissions that were associated with work-related travel undertaken by university personnel during the reporting year. First, we present the calculations that were made in the LCA-model designed for the UM. This LCA-analysis does only include business travel for which we could obtain distance-based data.

Data Sources (used for LCA-based analysis):

Institutional travel records, expense claims, and records from travel agencies were utilized to acquire information regarding business travel during the reporting year. The

dataset encompassed the travel distance and travel mode of each business trip. The LCA calculations were conducted using activity data based on kilometres.

Assumptions (for LCA-based analysis):

- Flights were classified as short-haul, medium-haul, and long-haul according to their respective distance thresholds, being flights <700 km; flights 700-2,500 km; and flights >2,500 km.
- We do not distinguish between economy class flights and business class flights.
- We do not correct for inefficient travel routes and assume a direct line distance between place of departure and place of arrival.
- Calculations were annual, representing a full calendar year – 2024 and 2025.

Boundaries/Scope:

Included (in LCA-based analysis):

- Business trips booked only through (official) university travel agencies were considered – Schoenmaeckers, Gray Dawes Travel and Travel Club. For 2025, we also obtained distance-based data for business trips booked at eBusiness Travel.
- Only work-related travel was included.
- Mode of Travel included: Bus, Train, Air travel, Bus and Taxi
- Air travel (domestic and international).
- Included all employees working for UM (also for locations outside of Maastricht)

Excluded (in LCA-based analysis):

- Accommodation, meals, and conference-related emissions were excluded.
- Travel undertaken for commuting purposes was excluded (reported separately under daily commuting).
- Travel with own vehicles for which costs are not covered by declarations
- Informal or unclaimed travel.
- Business travels that were not booked at any of the suppliers mentioned above.

Results – Business Travel (LCA-based analysis)

Business travel was estimated to be one of the main contributors to the university's Scope 3 emissions profile in 2024 and 2025, with a total greenhouse gas emission of 742.831 tCO₂e in 2024 and 680.16 tCO₂e in 2025 (Figure 7). The primary source of emissions was air travel, which accounted for approximately 96.5% of the total emissions in 2024 and 98% in 2025, associated with business travel. Despite the fact that long-haul international flights accounted for a smaller number of journeys, they contributed a disproportionate amount to the total emissions of 581.453 tCO₂e (~78%) in 2024 and 543.75 tCO₂e (~80%) in 2025. This was primarily due to the significantly

higher per-passenger kilometers emission intensity. Additionally, short- and medium-haul flights made a significant contribution, albeit at a lower per-trip emission level.

Train travel exhibited a significantly reduced emission intensity per passenger-kilometers and accounted for approximately 1.13% of the total business travel emissions in 2024 and 1.26% of total in 2025.

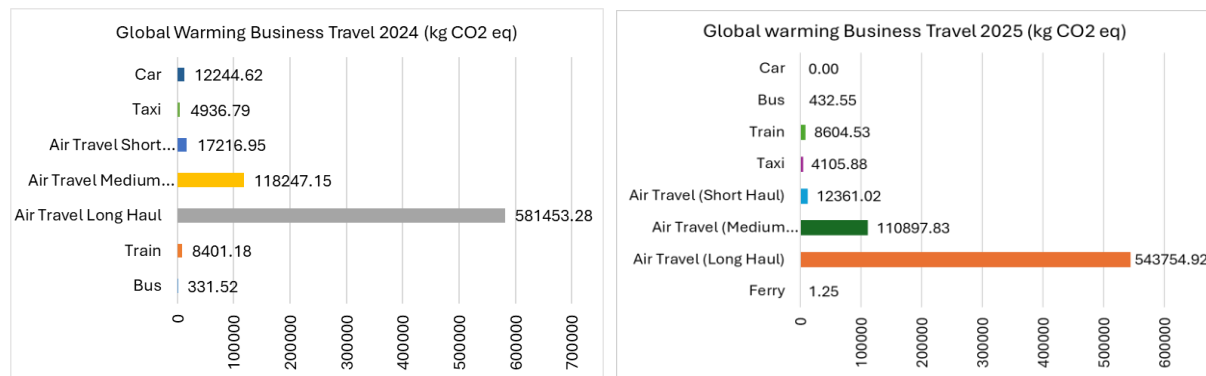


Figure 7 Global Warming Potential (GWP) of Business Travel by Transport Mode for year 2024 and 2025

We also conducted supplementary analyses that applied extrapolation based on costs (within travel mode; consequently, overall) due to the absence of distance-based data for all business travel. The appendix of this Carbon Footprint Report contains additional details regarding the procedures implemented during these analyses, the results of which are also documented in our sustainability report.

3.3.4 Employee Commuting

The indirect GHG emissions that result from the travel undertaken by employee between their residences and the institution are represented by employee commuting.

Data Sources: Information on travel mode, commuting distance, frequency, and weekly patterns was gathered through staff surveys, which was sent to all employees of the UM including those working on locations outside of Maastricht. Roughly 10% of employees working for UM filled out the survey in 2024. Kilometre-based data were then subsequently employed for the calculations, which took into consideration public holidays.

The kilometre data (per travel mode) that are used for the calculations is extrapolated data based on the results of the survey. The impact factors used are taken from Ecoinvent and include the production and use of the transportation means. These impact factors are considered to be more comprehensive compared to the emission factors on [Factoren | CO₂-emissiefactoren for example](#).

Transportation modes: Modes of transportation that are considered include the following: train, bus, car (including petrol, diesel, hybrid, electric, and other fuels), motorcycle, electric scooter, bicycle, and e-bike.

Assumptions:

- The frequency of commuting was estimated using conventional workweeks that were adjusted to account for remote work or flexible schedules when data was available.
- Calculations were annual, representing a full calendar year – 2024 and 2025.
- All car trips were assumed single occupancy unless survey data indicated carpooling.

Boundaries/Scope:

Included:

- A comprehensive list of all staff commuting journeys from their residences to the campus and return, encompassing all modes of transportation.
- Survey results of sample of all UM employees and actual distance information
- Campuses included: All UM locations in and outside of Maastricht

Excluded:

- Student commuting (covered in next sub-section).
- Business travel is also addressed separately in Scope 3.
- Travel that is not associated with institutional activities (personal tasks).

Results – Employee Commuting:

Based on the LCA calculations, employee commuting patterns and associated emissions were examined (figure 8). For 2024 and 2025, the findings suggest that private vehicles were responsible for the highest proportion of staff commuting journeys and emissions, followed by public transportation and active modes like e-bikes and bicycles.

For 2024, the highest emissions were attributed to car commuting, particularly petrol (2881.91 tCO₂e) and diesel vehicles (517.84 tCO₂e). Petrol cars alone contributed in 60% of the total emissions followed by diesel cars (11%) while hybrid and electric vehicles showed lower emissions (275.156 tCO₂e, 6% and 157.09 tCO₂e, 3% respectively). As in 2024, petrol-powered vehicles contributed the most emissions in 2025 (2438.84 tCO₂e) which alone contributed to 54.5% of the total. The second-largest contribution came from hybrid cars (534.27 tCO₂e), followed by diesel (436.26 tCO₂e) and electric vehicles (262.62 tCO₂e), respectively.

A moderate portion of commuting emissions was attributed to public transport modes, such as buses and trains, which benefited from shared passenger-kilometers and the

lowest emissions are coming from Motorcycle, scooters, bicycles, and e-bikes for both 2024 and 2025.

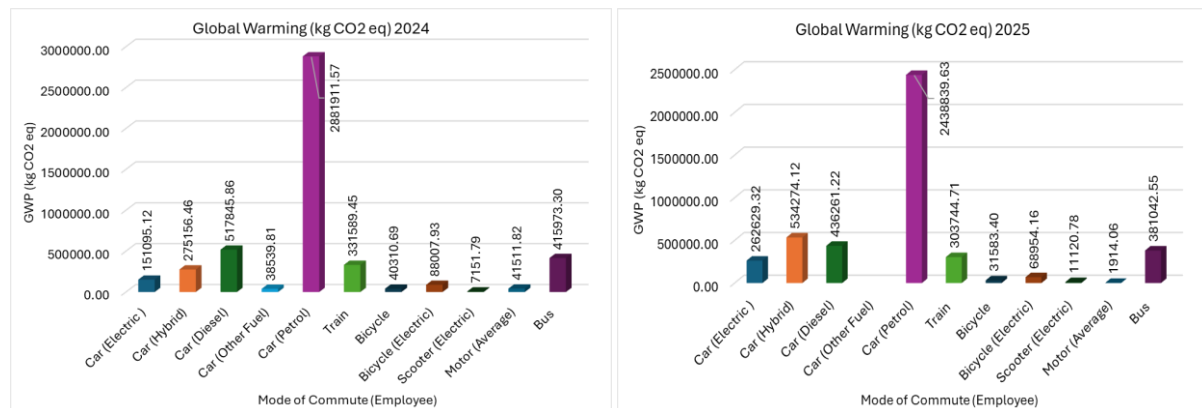


Figure 8 Global Warming emissions of Staff Commuting by Transportation Mode for year 2024 and 2025.

3.3.5 Student Mobility

The emissions associated with student mobility have been calculated, despite the fact that they are not an employee and are not explicitly classified as one of the scope 3 categories in the GHG protocol.

Data Sources: Data about student mobility were sourced from the university transportation system, student enrolment records, residential information, campus mobility reports, and projected travel distances between student current residences, campus facilities, and students' permanent homes.

Student mobility data were gathered in three ways:

- *Weekly commuting of students from their living address to the university:*
 - For each type of program, a student could be registered for (exchange, bachelor, master, pre-master, contract, course, post-initial master) a calculation was made to get an average amount of travel days per month per calendar year. This calculation was based on the university schedule of multiple 'example students' per program type. This calculation was then extrapolated and applied to all students within that program type. This distinction in program type is important since a course student has significantly less travel days per month than a bachelor student. The exact course dates per student could not be used as the scheduling system for students is not yet implemented in the data warehouse, as such the abovementioned approximation had to be used.
 - Distance was calculated using the address registered for the student in the registration system (point A) and the address of the university location the student was enrolled for (point B). Then using the longitude and latitude in the

Haversine formula in conjunction with the spherical law of cosines in order to get a distance in kilometres.

- *Yearly travel of students from their living address to their home address (both registered by the UM):*
 - Distance was calculated using the address registered for the student in the registration system (point A) and the address of the university location the student was enrolled for (point B). Then using the longitude and latitude in the Haversine formula in conjunction with the spherical law of cosines in order to get a distance in kilometres.
- *Travel of students because of Erasmus exchange programme:*
 - Distance was calculated using the address registered for the student in the registration system (point A) and the address of the university location the student was enrolled for (point B). Then using the longitude and latitude in the Haversine formula in conjunction with the spherical law of cosines in order to get a distance in kilometres.

Transportation modes:

The assessment considered a variety of transportation modalities, such as buses, trains, car, flights as short-haul, medium-haul, and long-haul according to their respective distance thresholds: <700 km; flights 700-2,500 km; and flights >2,500 km. Both annual travel between students' permanent residences and the university campus and local commuting between current residences and campus facilities were incorporated into the analysis.

Assumptions:

- Calculations were annual, representing a full calendar year – 2024 and 2025.
- Cycling and walking were regarded as zero-emission modes of transportation.
- Regarding the travel modes, we distinguish between train, bus, car (petrol, diesel, hybrid, electric, and other fuels), motorcycle, electric scooter, bicycle and e-bike.
- The impact factors used are taken from Ecoinvent and include the production and use of the transportation means.
- For calculations of weekly commuting of students from their living address to the university, we assumed:
 - For each travel day, the distance was assumed to be travelled twice (once from home to the university and once going back home).
 - Only the months when student was actually enrolled at the university (and had classes) were used in the calculations.
 - As we don't have information on travel modes, we made assumptions based on a survey on student mobility in Limburg taken by *Werkgroep Onderwijs en Mobiliteit Limburg* in October 2021. The method was an

online survey with 4,351 student responses from all HBO, MBO and universities in Limburg. Based on this survey the following assumptions were made for student mobility at Maastricht University:

- A: Living within 7,5 km of the university: 15% walking, 65% by bike, 12% by bus, 8% by car.
 - B: Living between 7,5 and 15 km of the university: 30% by bike, 30% by bus, 25% by car, 15% by train.
 - C: Living between 15 and 25 km of the university: 4% by bike, 28% by bus, 21% by car, 47% by train.
 - D: Living between 25 and 50 km of the university: 12% by bus, 23% by car, 65% by train.
 - E: Living between 50 and 150 km of the university: 3% by bus, 18% by car, 79% by train.
 - F: Anybody living further than 150 km of the university was treated as following classes online and as 0 travel distance and days.
- For calculation of yearly travel of students from their living address to their home address (both registered by the UM), we assume:
 - That every student travels from their living address (where they live during their studies) to their home address (mostly where their family lives) and back once a year. These emissions are calculated and presented separately as we have not yet decided whether the yearly travel should be included in our emission results.
 - Nine different categories of student mobility were assumed for yearly travel of students (category A-E based on Werkgroep Onderwijs en Mobiliteit Limburg study/survey in 2021; category F-I based on own assumptions):
 - A: Home address within 7,5 km of the university: 15% walking, 65% by bike, 12% by bus, 8% by car.
 - B: Home address between 7,5 and 15 km of the university: 30% by bike, 30% by bus, 25% by car, 15% by train.
 - C: Home address between 15 and 25 km of the university: 4% by bike, 28% by bus, 21% by car, 47% by train.
 - D: Home address between 25 and 50 km of the university: 12% by bus, 23% by car, 65% by train.
 - E: Home address between 50 and 150 km of the university: 3% by bus, 18% by car, 79% by train.
 - F: Home address between 150 and 500 km of the university: 10% by bus, 80% by train, 10% by airplane (<700 km).
 - G: Home address between 500 and 700 km of the university: 20% by train, 80% by airplane (<700 km).
 - H: Home address between 700 and 2500 km of the university: 100% airplane (700 – 2500 km).

- I: Home address further than 2500 km of the university: 100% airplane (> 2500 km).
- For calculation of travel of students because of Erasmus exchange programme, we assume:
 - One-time trip to the exchange university's location and back.
 - Nine different categories of student mobility (category A-E based on Werkgroep Onderwijs en Mobiliteit Limburg study/survey in 2021; category F-I based on own assumptions):
 - A: Home address within 7,5 km of the university: 15% walking, 65% by bike, 12% by bus, 8% by car.
 - B: Home address between 7,5 and 15 km of the university: 30% by bike, 30% by bus, 25% by car, 15% by train.
 - C: Home address between 15 and 25 km of the university: 4% by bike, 28% by bus, 21% by car, 47% by train.
 - D: Home address between 25 and 50 km of the university: 12% by bus, 23% by car, 65% by train.
 - E: Home address between 50 and 150 km of the university: 3% by bus, 18% by car, 79% by train.
 - F: Home address between 150 and 500 km of the university: 10% by bus, 80% by train, 10% by airplane (<700 km).
 - G: Home address between 500 and 700 km of the university: 20% by train, 80% by airplane (<700 km).
 - H: Home address between 700 and 2500 km of the university: 100% airplane (700 – 2500 km).
 - I: Home address further than 2500 km of the university: 100% airplane (> 2500 km).

Boundaries/Scope:

Included:

- Student addresses, student registration data, student schedule examples GeoNames dataset on postal codes around the world and their coordinates.
- Included all locations where students are registered including the campuses outside of Maastricht.

Excluded:

- Personal travel unrelated to academic activities.
- International vacations and leisure travel.
- Visitor and guest transportation.

Results – Student Commuting:

The life cycle assessment results showed that student commuting significantly contributed to the university's Scope 3 emissions. The total greenhouse gas emissions associated with student commuting were estimated to be approximately 20465.64 tCO₂e/year in 2024 out of which 14461.49 tCO₂e/year is because of the daily commute between current residences and campus facilities remained the largest contributor, accounting for nearly 70% of the total commuting emissions, while annual home-to-campus travel contributed 6004.15 tCO₂e/year which is approximately 30% of the total emission.

By 2025, student commuting emissions decreased a little to an estimated of 19632.65 tCO₂e/year. Emissions from daily commuting activities represented approximately 69% of total commuting emissions (13621.598 tCO₂e/year), while home-to-campus travel accounted for the remaining 31% (6011.05 tCO₂e/year).

Cars remained the dominant emission contributor for both 2024 and 2025 for daily commuting activities followed by the public transportation (trains and buses). The graphs (figure 9) depict the greenhouse gas emissions that are linked to student commuting activities in 2024 and 2025.



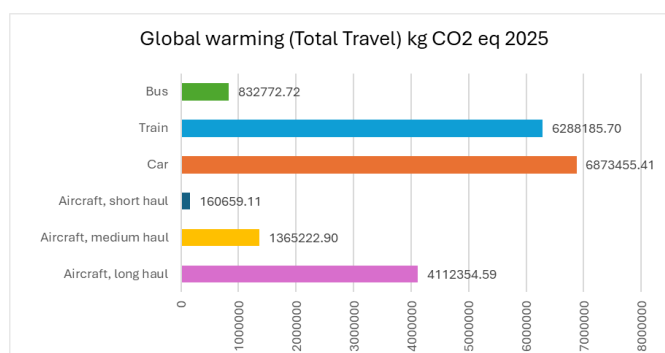


Figure 9 Emissions associated with student commuting activities in 2024 and 2025, which include daily commuting between residences and campus facilities, annual home-to-university travel, and total combined commuting emissions.

3.3.6 Excluded Scope 3 Categories in the 2023–2025 Emission Calculations

Capital goods

We did not distinguish capital goods from goods and services in our calculations for 2024 and 2025. However, this will not affect the results of our emission calculations as the same calculation rules apply and because we only have spent-based data that we can use. What is possible, is that the costs on capital goods are spread over many years in our financial overview, which would have an effect on the results as the GHG-protocol prescribes that, just as for purchased goods and services, the emissions should be counted in the year in which the investments were made.

For the next years, we will evaluate whether we need to make a split, amongst others, based on the agreements that are made relating to this across universities in the Netherlands.

Fuel- and energy related activities

We don't report on fuel- and energy related activities yet. This will be a point of improvement for the years ahead. The emission factors that have been used for scope 2 are the correct emission factors as they exclude emissions that should be attributed to fuel- and energy related activities. Hence, this means that some emissions related to our energy use (that is, those emissions related to fuel- and energy related activities) are still missing in our calculations.

Upstream transportation

We don't have information that we could use to calculate our upstream transportation emissions. Currently, not many suppliers can provide information about their emissions, let alone, information about what emissions relate to the production of their offerings and which emissions relate to transport. Therefore, no calculation has been included related to upstream transportation.

Upstream leased assets

Currently, no emissions are calculated for this category because leased assets are now all included in the spend-based analysis for 'purchased products and services. For the upcoming years, we will decide which products and services will be included in this category.

Downstream transportation and distribution – Not Applicable***Processing of sold products – Not Applicable******Use of sold products – Not Applicable******End-of-life treatment of sold products – Not Applicable******Downstream leased assets***

Currently, no emissions are calculated for this category. However, if we rent buildings to third parties, this is a relevant category for which we need to decide how to report in the future.

Franchises – Not Applicable***Investments***

Currently, no emissions are calculated for this category. However, this probably is a relevant category for the UM as well. We will decide how to deal with this category later, amongst others, based on the discussions in the UNL working group of CO₂ reporting.

Appendix A

A.1 – Purchased goods and services – Laboratory Chemicals

Laboratory chemicals are extensively utilized in university research and teaching operations throughout scientific and technical fields. The production and use of these compounds indirectly contribute to greenhouse gas emissions, thereby constituting a significant element of the university's Scope 3 carbon footprint evaluation.

Data Sources:

Data concerning laboratory chemical use were acquired from university procurement records, laboratory inventory databases, departmental purchasing reports, and chemical usage logs for research and teaching laboratories.

Assumptions:

- The assessment assumed that the chemical quantities purchased were entirely utilized during the reporting year.
- Chemical losses that occurred during handling and storage were deemed insignificant.
- Emissions associated with energy consumption of laboratory equipment are treated separately and not attributed directly to chemical usage.
- Calculations were annual, representing a full calendar year – 2024 and 2025.

Boundaries/Scope

Included:

- Chemicals used in teaching and research laboratories.
- Laboratory reagents, solvents, and experimental materials.

Excluded:

- Biological substances and medicinal products.
- Manufacturing of laboratory equipment.
- Water use related to laboratory operations.
- Emissions from laboratory services that are outsourced.
- Minor cleaning and office chemical products.
- Chemicals without available datasets in the Ecoinvent database were excluded from the analysis due to lack of life cycle inventory data. These chemicals represented a small share of total chemical consumption and are therefore not expected to significantly affect the results.
- Campuses excluded: campuses outside of Maastricht (including Chemelot).

Results – Laboratory Chemicals

In 2024, emissions related to laboratory chemicals were estimated to be 26.19 tCO₂e/year. The predominant source of emissions was heavy water (15.27 tCO₂e/year) succeeded by ethanol (4.4 tCO₂e/year), acetonitrile (1.6 tCO₂e/year) and acetone (1.2 tCO₂e/year). Heavy water alone contributed to around 58% of the overall contribution.

By 2025, total laboratory chemicals estimated to be nearly 9.99 tCO₂e/year out of which the maximum contribution is coming from heavy water (2.8 tCO₂e/year) followed by ethanol (2.1 tCO₂e/year), acetonitrile (1.01 tCO₂e/year) and acetone (0.96 tCO₂e/year).

Figure 10 shows the overall distribution of emissions by each chemical or solvents used with the laboratory along with the contribution by the chemicals or solvents which contributed the most in the overall emissions.

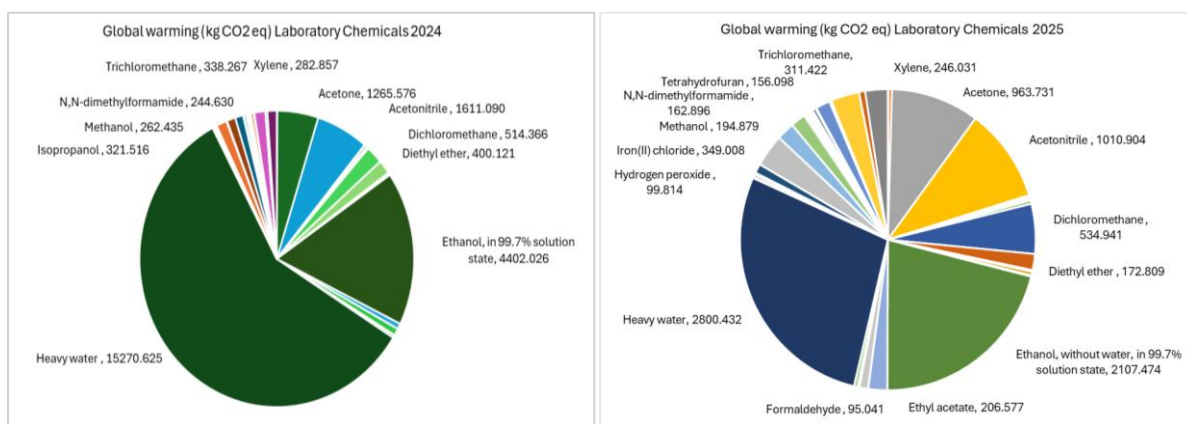


Figure 10 Emissions associated with laboratory chemical in 2024 and 2025

A.2 – Additional analyses for calculating business travel emissions UM 2024 and 2025

The calculation of business travel emissions is highly complex, partly executed in OpenLCA and partly calculated differently. Below, we explain the different steps of the calculations that were made outside of and in addition to the LCA-based analysis:

- First of all, information about business trips booked was collected, including information about travel mode, distance, and business class travelled. Business class was not considered in the LCA-based analysis but has been corrected for in the additional analysis. Some suppliers could provide distance-based data:
 - 2024: Schoenmaeckers, VCK/GDG and The Travel Club could provide (most of) the requested data (covering 51.78% of the costs spend on business travel in 2024).
 - 2025: GDG, Schoenmaeckers, and eBusiness Travel could provide the data requested (covering 52.26% of the costs spend on business travel in 2025).
- The total distance travelled per transportation mode is calculated based on the data provided. For air travel, we distinguish between (single way) trips <700 km, between 700 and 2,500 km and >2,500 km because different emission factors

apply to those categories. Some suppliers provided the total number of km for a round trip and in those cases, the distance was divided by two to treat the data as two single way flights for categorisation based on distance. For train, taxi, car (rental) and bus travel, we did not distinguish between different distance categories.

- Per travel mode (and for air travel, per distance category), the number of kilometres provided by the travel agents were added up.
- Per travel mode (and for air travel, per distance category), we multiplied the total number of kilometres with the impact factors from [Factoren - Personenvervoer | CO₂-emissiefactoren](#). We used the total (Well-to-Wheel) impact factors. This led to the first results of emissions related to business travel in terms of kg CO₂e (for the data provided by travel agents). However, some additional corrections were made:
 - Correction for flying business class, which has a higher impact compared to flying economy class:
 - 2024: Based on assumptions and information provided by travel agents, we assumed that 10% of the km flown long-haul (>2,500 km) were flown in business class. Therefore, for this distance category, we multiplied 10% of the calculated emissions by 2.8 (assuming an additional carbon footprint of 180% for flying business class based on sources).
 - 2025: More and new information was obtained about business travel. First of all, GDG, Schoenmaeckers and eBusiness Travel could provide more detailed information about flying business class and the actual percentages were applied for all distance categories (instead of only applying 10% for long-haul flights in 2024). Furthermore, we found information that flying business class has an additional carbon footprint of 53.33% for short-haul flights (<3,700 km) and of 180% for long-haul flights (>3,700 km). Based on this information, we applied a correction factor of 1.5333 on the actual kilometres travelled business class for flights <2,500 km and of 2.8 on the actual kilometres travelled business class for flights >2,500 km.
 - The impact factors that we used do not account for inefficient flying routes of airplanes and we found online that a correction of 1.08% needs to be done to account for detours (i.e., airplanes not flying in a direct line to the destination and occasionally need to wait for approval to land). Therefore, all air travel emissions (after correction for flying business class) were multiplied by 1.08%.

- Based on the steps so far, emissions were calculated still only for the business trips booked at the travel agents that could provide distance-based data.
- Therefore, also an overview of business trip declarations was requested from the Finance department. This overview covers the business trips booked at the suppliers from which we received distance-based data but also included business trips booked elsewhere. The overview includes declarations booked on two financial accounts: 43311 and 43310; and includes all relevant declarations, showing the costs and in some cases the travel mode (no distance information or information on class travelled in).
- Every declaration in the overview is categorized per transport mode based on the information available:
 - Some declarations explicitly mention the transport mode
 - Some declarations mentioned a supplier from which the transport mode could be derived (for example taxi or bus companies)
 - Some declarations were categorized in different transport modes based on information provided on the destination (some only can be travelled to by plane) and/or costs.
 - For some declarations, we could not determine the transport mode; those were categorized as “unclear”.
- Based on the information obtained from the travel agents and the declaration overview from Finance, we extrapolated to calculate the business travel emissions covering all costs spent on business travel.
 - 2024:

First, based on the km share per transport mode per travel agent that provided data, we calculated the money spend on the different transport modes. Example purely for illustration:

 - Total money spent at travel agent X: €100,000 (as obtained from Finance)
 - Share of kilometres travelled at travel agent X (as obtained from travel agent X):
 - Plane: 60,000 km (60% of total)
 - Train: 20,000 km (20% of total)
 - Taxi: 10,000 km (10% of total)
 - Bus: 10,000 km (10% of total)
 - Assumed money spent on different travel modes for business trips booked at travel agent X based on the information above:
 - Plane: €60,000
 - Train: €20,000
 - Taxi: €10,000
 - Bus: €10,000

Second, we added up the costs per travel mode of all travel agents that provided data (based on calculations as presented above).

Third, we calculated the total costs spend per transport mode based on the finance overview (and the classification that we could make) excluding costs of the travel agents that could provide distance-based data.

Fourth, per transport mode, we calculated the percentage of costs covered by the travel agents that could provide distance-based data and extrapolated the total emissions of those travel agents to 100% of the costs.

Finally, we corrected for the costs that are unclear; that is, the costs for which we could not determine to which transport mode it applies (in the declaration overview). For 2024, this was 7.71% of the costs. So the total emissions calculated in the previous steps were divided by 0.9229 (=1-0.0771).

- 2025: To determine the share of costs covered by the travel agents that could provide distance-based data (being Schoenmaeckers, GDG, and eBusiness Travel) and The Travel Club (that could not deliver reliable/complete data but for which we extrapolated based on costs/emission ratio and transport mode distribution of Schoenmaeckers), we only used the declaration overview delivered by finance. Each declaration could be filtered on travel agent, and the total costs of these travel agents could be determined. Because we categorized each declaration (if possible) on travel mode (using the same method and information as in 2024), we could also see what the costs per travel agent per travel mode was. Consequently, we extrapolated the emissions to 100% of the costs (total money spent at all suppliers including those that did not deliver distance-based data) within each transport mode.

For example, ~82% of the travel costs related to air travel were booked at Schoenmaeckers, GDG, TTC or eBusiness Travel. For those four travel agents, we calculated the emissions (using information from Schoenmaeckers, GDG and eBusiness Travel, and extrapolating data from Schoenmaeckers to calculate emissions of TTC). These emissions were extrapolated to cover 100% of the costs related to air travel.

Finally, we extrapolated to 100% of the costs correcting for costs that could not be categorized per transport mode (“unclear”). For 6.44% of the travel costs in 2025, it was unclear to what it related.

- 52.26% of the total costs on business travel were spend at Schoenmaeckers, GDG or eBusiness Travel. 87.65% of the total costs were spend at those travel agents + The Travel Club (that

could not provide reliable distance data but for which we extrapolated Schoenmaeckers costs/emission figures and distribution across transport modes).

- Still, not all emission data were included as the calculations so far only account for foreign business trips. This does not include domestic business trips made by public transport, taxi or car rent.
 - 2024: For train and bus travel (travel by public transport using the NS business card and declarations) and taxi travel, we only had information about the costs. Therefore, we extrapolated based on the emissions calculated so far for train, bus and taxi (using the same emission/cost ratio). Furthermore, we assumed that 75% of the total costs for public transport, were spent for train travel (and 25% for bus travel).
For travel by own car and lease car, we obtained information about the number of kilometres travelled and could calculate the emissions using the impact factors of 0.22 per km driven (based on from [Factoren - Personenvervoer | CO₂-emissiefactoren](#)).Finally, information on the number of kilometres travelled by executives by taxi were obtained categorized by fuel (diesel, EV and hybrid). These number of kilometres were multiplied by the emissions factors from [Factoren - Personenvervoer | CO₂-emissiefactoren](#).
 - 2025: For 2025, we wanted to take the same steps as we took for 2024 regarding the emissions for domestic business trips (by public transport, own car or (executive) taxi; however, we did not obtain the information in time, which is why we included the same amount of emissions for this part as were calculated for 2024 (and included this in the sustainability report 2025).
- The additional emissions are added to the emissions already calculated to get the final results.

A.3 – Impact factors for the spent-based study

For all goods and services, we made a spend-based analysis, which only gives a very rough indication of the emissions related to these goods and services. The following impact factors were used for the categories presented in the table below. All impact factors are based on a study by the TU Delft about their emission calculations: [EM-IJSH220119 21..52](#).

Good or service	Impact factor
Total outsourced work (Totaal uitbesteed werk)	0.16 (t kg CO ₂ e/€ spent)
Medical / farma / lab products (Med/farma/lab art.)	0.88 (t kg CO ₂ e/€ spent)
Chemicals (Chem. vast/vloeibaar)	1.07 (t kg CO ₂ e/€ spent)
Other materials	0.88 (t kg CO ₂ e/€ spent)

Licenses (Totaal licenties (ICT))	0.28 (t kg CO ₂ e/€ spent)
Publications (Totaal collectievorming)	0.13 (t kg CO ₂ e/€ spent)
Subsidies and contributions (Totaal subsidies en bijdragen)	0.14 (t kg CO ₂ e/€ spent)
Travel costs domestic (Verbl. Kn. Binnenl.)	0.46 (t kg CO ₂ e/€ spent)
Stay international (Verblijf buitenland)	0.46 (t kg CO ₂ e/€ spent)
ICT consultancy (Totaal ICT consultancy)	0.16 (t kg CO ₂ e/€ spent)
Consultancy (Totaal honoraria advisering)	0.16 (t kg CO ₂ e/€ spent)
Maintenance and adjustments (Totaal onderhoud en aanpassing)	0.29 (t kg CO ₂ e/€ spent)
Cleaning (Totaal schoonmaak en afval)	0.79 (t kg CO ₂ e/€ spent)
Hardware (Totaal hardware)	0.38 (t kg CO ₂ e/€ spent)
Organisational costs training (Totaal Organisatiekosten cursus/ training/congr)	0.17 (t kg CO ₂ e/€ spent)
Representation (Totaal representative)	0.34 (t kg CO ₂ e/€ spent)
Maintenance equipment (Totaal onderhoud App/inv/transportmidd)	0.37 (t kg CO ₂ e/€ spent)
Security (Totaal bewaking en beveiliging)	0.17 (t kg CO ₂ e/€ spent)
Materials (Totaal materialen)	0.48 (t kg CO ₂ e/€ spent)
Kopieerkosten (Totaal kopieerkosten)	0.54 (t kg CO ₂ e/€ spent)
Catering (Totaal catering (voor training events))	1.14 (t kg CO ₂ e/€ spent)
Equipment (Totaal Apparatuur/inventaris/av-mat)	0.52 (t kg CO ₂ e/€ spent)
Office costs (Totaal kantoorkosten)	0.17 (t kg CO ₂ e/€ spent)
Telefommunication (Totaal telecommunicatie)	0.27 (t kg CO ₂ e/€ spent)
Housing costs (Totaal Huisvesting: Investering)	0.29 (t kg CO ₂ e/€ spent)
Rent equipment (Totaal huur App/inv/transportmidd)	0.17 (t kg CO ₂ e/€ spent)
Other housing costs (Totaal Overige huisvesting)	0.12 (t kg CO ₂ e/€ spent)

The impact factors presented above were multiplied by the expenses for the particular goods and services. Consequently, we extrapolated the results over the total expenses on products and services excluding costs related to depreciations. For 2024 and 2025, respectively 69% and 70% of the costs (excluding depreciations) were covered by the categories presented in the table above. The product and services categories that are not included in the table (but are included in the results by extrapolation) are: other general costs, interest and banking costs, costs external education, Personnel costs third parties, donations facilities personnel, personnel UM secondary, recruitment costs, and training and development.