CLIMATE ACTION PLAN 2022–2030





Table of contents

Introduction | 6

Sources of emissions | 7 **Evolution of emissions** | 8

Strategy | 9

The UAntwerp Climate Team 10
How to realise the climate transition 11
Cornerstones of UAntwerp's climate policy 13
Infrastructure and energy 15
Campus mobility 21
International travel 27
Food 33
Circular material use & waste 37
Nature management 43
Sustainable finance 47
Funding the Climate Action Plan 48
Sustainable asset management 51
Research 53
Education 59
Conclusions 63
Conclusions 03

Introduction

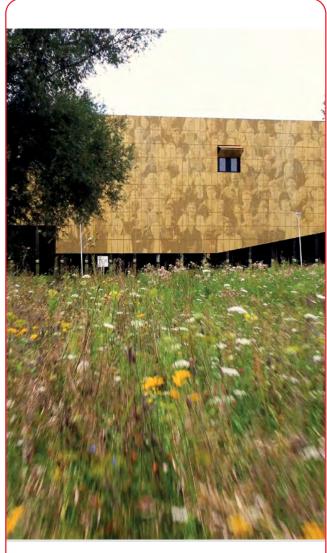


The science on climate change is clear: if we want to keep global warming below 1.5°C, global greenhouse gas emissions need to be negative by 2050 (IPCC 2018). This means that Western countries – including Belgium – should aim at more than halving their carbon emissions by 2030-2035, after which they should decarbonise completely. Over the past few years, UAntwerp has already taken important steps to become a more diverse and inclusive place, and its ambition is to also play a leading role when it comes to climate change.



The objectives of the Climate **Action Plan are to:**

- understand and map UAntwerp's climate impact and develop the necessary tools to reduce this impact.
- create a platform for ongoing dialogue between staff, students, researchers, administrators, and the university's stakeholders about climate change and UAntwerp's role in mitigating it and adapting to it.
- establish relevant internal and external partnerships to create a strong climate network in Antwerp.



The Climate Action Plan also formulates the ambition to make UAntwerp resilient to climate risks.

The Climate Action Plan sets an ambitious goal: the university must become climate-neutral by 2030 with an effective emission reduction of at least 55% compared to 2018.

The definition of climate neutrality that we follow was formulated by the United Nations Framework Convention on Climate Change (UNFCCC), which states that:



Climate neutrality refers to the idea of achieving net zero greenhouse gas emissions by balancing those emissions so they are equal (or less than) the emissions that get removed through the planet's natural absorption; in basic terms it means we reduce our emissions through climate action.1 [...] Even with our best efforts to reduce, daily activities and business operations will result in unavoidable emissions. This is why offsetting, only after measuring and reducing, is key for climate neutrality.2

Setting climate neutrality as our goal is important, because it emphasises the sense of urgency for immediate action. It also provides a benchmark by which existing actions can be measured.

In addition, by 2050 the use of all fossil fuels needs to be phased out. In other words, decarbonisation and energyindependence is the final goal.

The Climate Action Plan also formulates the ambition to make UAntwerp resilient to climate risks. The university needs to adapt to the already inevitable consequences of climate disruption. Therefore, it is of vital importance to integrate climate adaptation (e.g. planting trees, creating green-blue networks, implementing measures in buildings against excessive heat) and sustainable asset management into UAntwerp's operations. Finally, UAntwerp needs to act from a perspective of climate justice, locally and globally. Therefore, the social effects of climate transition need to be considered when implementing measures to achieve the above-mentioned goals.

Understanding the university's climate impact is an ongoing process. Yearly evaluation (with the zero measurement of 2018 as baseline) is necessary to assess the success of measures taken, in addition to determining where there is still room for improvement.

The **zero measurement** of UAntwerp's carbon footprint – carried out for the year 2018 – amounted to 41,882 tonnes of CO₃-eq In a comparison, this is the equivalent of driving 160 million kilometres with a car. It also corresponds with the total yearly carbon footprint of almost 2,100 people in Belgium (0.016% of the total Belgian carbon footprint). Reabsorbing this amount of CO₂ in one year requires 1.7 million trees 3

¹ UNFCCC (26 February 2021): A Beginner's Guide to Climate Neutrality

² UNFCCC: Climate Neutral Now

³ Ecolife (2019) "The Carbon Footprint of UAntwerp (2018)".

Sources of emissions

Figure 1 presents the contributions of the impact categories for the total carbon footprint.

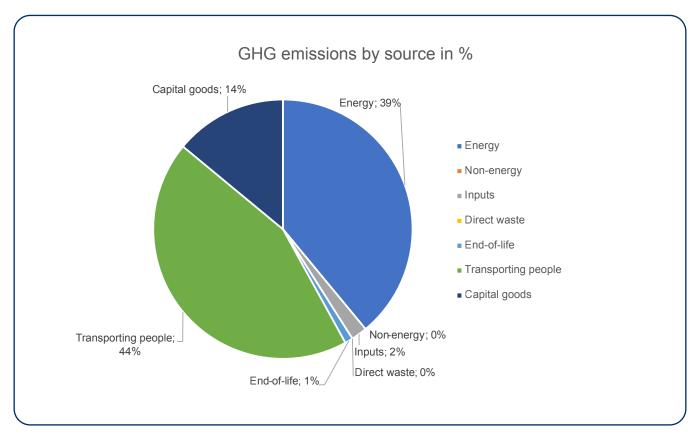


Figure 1: Contributions of impact categories for UAntwerp's total carbon footprint

The three major contributors to **UAntwerp's carbon** footprint are:

- **Transporting people** (car, public transport and airplane for staff commutes, business travel and student travel (including foreign students)): 18,457 tonnes of CO₂-eq (44%)
- **Energy use** (natural gas and electricity use on the campuses): 16,134 tonnes of CO₂-eq (39%)
- **Capital goods** (embedded energy for construction of infrastructure and equipment): 5,923 tonnes of CO₂-eq (14%)

The categories 'inputs' (materials and services, including food at student restaurants), 'direct waste', 'end-of-life' (including paper for student coursebooks) and 'non-energy related emissions' (cooling gases) all have relatively small contributions – less than a few percent¹.



UAntwerp's full carbon footprint (2018) can be consulted 📳 through this link.

Ecolife (2019) 'The Carbon Footprint of UAntwerp (2018)'.

Evolution of emissions

In line with the ambition to reach an effective emission reduction of at least 55% by 2030, emissions will need to be reduced by a minimum of 23,035 tonnes of CO₂-eq. This corresponds with an

average reduction rate of at least 4.6% per year since 2018. To reach this goal, priority should be given to reducing the use of natural gas and emissions from mobility.

At the moment, we lack sufficient data to see whether we are on track or not. Therefore, it is important that we calculate a new carbon footprint for the year 2022 at the beginning of 2023.

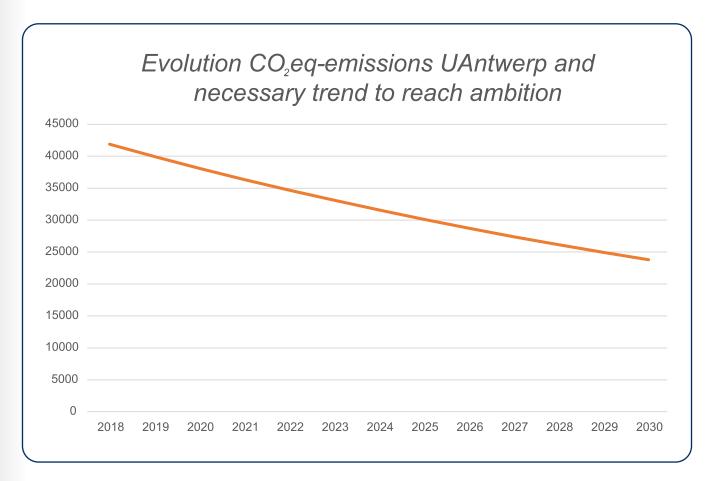
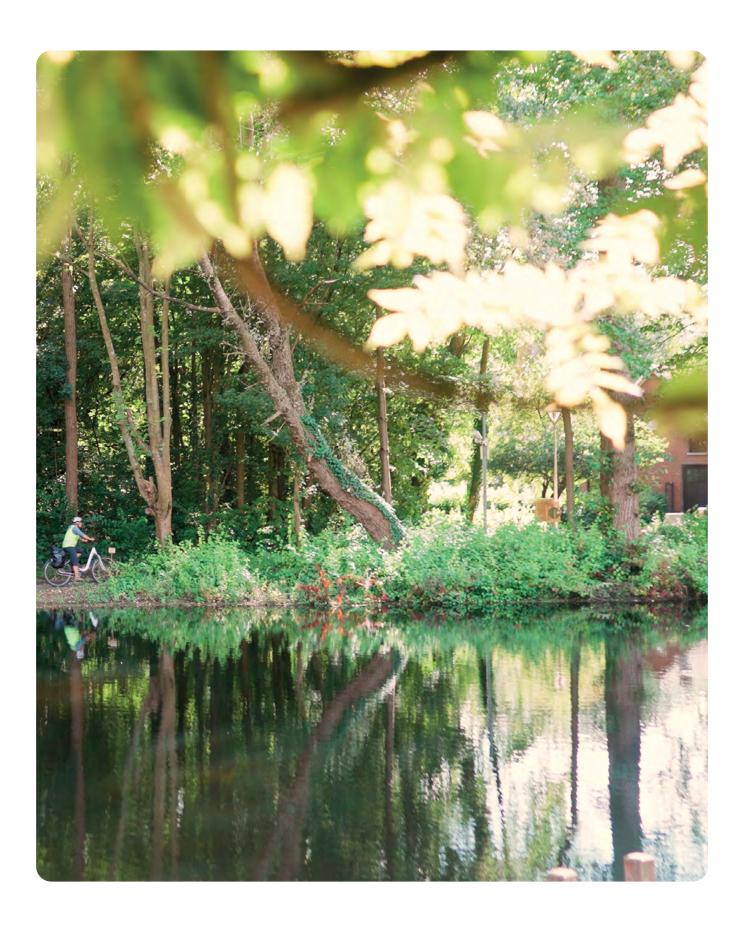


Figure 2: Evolution of UAntwerp's CO,-eq emissions and the necessary trend to reach its goal



Chapter 1

Strategy



The UAntwerp Climate Team

The UAntwerp Climate Team is a fully bottom-up initiative, established by a group of staff, researchers and students from different faculties, statutes, and campuses. They are joined together by the conviction that UAntwerp can and should play an exemplary role in the ongoing transition to a climate-neutral economy and society. The principal aim of the Climate Team is to make sure that a sound climate strategy leads UAntwerp to climate neutrality as quickly as possible.

The Climate Team consists of a Climate Coordinator, a core team and twelve working groups each tackling important sustainability domains such as energy, food, and transport.

The **Climate Coordinator** serves as link between central departments, managing bodies, faculties, Green Office, the Climate Team working groups, and the Communications Department. Housed at IMDO, the Climate Coordinator bridges policy and execution in research, education, service provision to society, and operationalisation.

The core team supports the Climate Coordinator in contentrelated and strategy matters, and is composed of key actors within the university.

The **thematic working groups** are coordinated by committed staff and are able to self-organise. The working groups are open to all relevant experts and actors within the university that work on this topic professionally. Once or twice a year, there is an open call for participation for students and staff. This bottom-up approach quarantees the collection of all in-house expertise, energy and capacity, as well as broader support. ATP staff from relevant central services participate in the thematic working groups relevant to them, as part of their tasks. The hybrid composition of the thematic working groups ensures that discussions are constructive and critical at the same time.

The working groups have a triple function:

- They monitor and evaluate the execution and budgeting of proposed measures.
- They annually propose suggestions for new measures based on the progress (in cooperation and consultation with the relevant staff from central departments).
- They **experiment** with **small initiatives** in collaboration with the central departments and faculties.

The Climate Team's ambition is to produce a framework for participative, coordinated climate action at all levels and in all domains of UAntwerp.

The Climate Team's work resulted in a first Climate Action Plan published in 2019. This update to the Climate Action Plan allows us to assess the success **of milestones reached**, while at the same time we can determine where there is still room for improvement.

The participatory setup of the Climate Action Plan guarantees the search for solutions that are best suited to the many different contexts of the university. The goal is thus not only climate neutrality, but to design and develop better studying and working environments, and to provide highquality and future-proof education, research and services to society. In other words: the goal is sustainability in its broadest sense.

How to realise the climate transition

As a university, UAntwerp is in a unique position to be an example for society of how to combat climate change by pledging to achieve zero carbon emissions, by refitting its buildings to be more energy-efficient, and by arming students with the knowledge and skills needed to become agents of change in the field of sustainability. After all, providing young adults with the tools needed to create a good, sustainable future has been the core mission of a university for centuries.

Moreover, UAntwerp has the tremendous benefit of having in-house expertise in a wide array of climate-relevant domains. Making UAntwerp climate-neutral will require a massive effort that has the largest chance for success when all this expertise is brought together: academic expertise to better understand climate challenges and opportunities, technical expertise to implement structural changes to the

university's policy, and stakeholder expertise on studying and working for a sustainable future in which today's youth excels.

To achieve a structural decrease in our climate impact, isolated actions are not enough. A systemic approach is needed whereby a 'climate reflex' is structurally built into a wide range of policy domains. Therefore, the implementation of the Climate Action Plan requires the active support and involvement of all central governing bodies, central advisory bodies, faculties, departments and students. In this sense, we need structural platforms and mechanisms to allow collaboration, experimentation and evaluation to happen. The following section proposes a working structure to monitor and steer the pathway to carbon neutrality. Many other European universities have already implemented such a working structure.





Short term actions:

- **Embedding climate action** into the current decisionmaking structures:
- Under supervision of the chair of the Board of Administration: budgeting and execution of the suggested Climate Action Plan measures by central departments in consultation with thematic working groups.
- Fixed agenda item in all relevant decision-making bodies' meetings to ensure continued discussion of measures and progress.
- Building on the zero measurement, organise the collection of all missing data, do a new baseline measurement every year.
- Formulate quantitative goals of emission reduction in different chapters and yearly evaluation of progress in achieving climate neutrality by 2030.
- Annual progress review by:
- Installing an academic steering committee to ensure there is an annual scientific expert review of the Climate Action Plan. This could be a role of the current Corporate Social Responsibility Steering Committee.

- _ Implementing an open review input process to ensure engagement from all staff, students and managing bodies.
- **Annual revised publication** of the Climate Action Plan during Climate Week, illustrating progress, challenges and new follow-up measures, coordinated by the climate coordinator.
- Establish an **intervision group** on sustainability for faculties (ref. Diversity Action Plan) as a supportive measure to share actions and inspiration at faculty level. This can result in an inspirational catalogue on sustainability and climate actions carried out by faculties.

Mid- and long-term action:

Rethink the working mechanisms discussed in this Chapter every two years. Question whether the current monitoring and evaluation mechanisms are still adequate to guide the university towards carbon neutrality in 2030.

Chapter 2

Cornerstones of UAntwerp's climate policy



The Climate Action Plan identifies nine cornerstones of **UAntwerp's climate policy:**



For each cornerstone, appropriate policy choices are needed using existing or new instruments, as well as the necessary budgets and sufficient FTEs.



For each cornerstone, an overview will be given of the progress that has been made since the start of the Climate Team in 2019, as well as a list of concrete goals including priority action points. Indicators and challenges related to these actions are also summarised.

Infrastructure and energy





Buildings set the scene for our day-to-day studying and working at the university. More than we realise, their quality influences how we feel: they form our environment. At the moment, emissions from energy use are the largest contributor to UAntwerp's climate impact (39% of the total footprint).

The bulk of this footprint of direct energy use comes from the burning of natural gas on campus sites. The production of electricity used on campus accounts for a much smaller part of the footprint, as the university purchases 100% green electricity with Belgian certificates of origin.

UAntwerp's patrimony is very diverse: from old heritage to new buildings meeting high-level standards. Our buildings also vary in the intensity of use, in comfort, and in energy needs. This diversity reveals a large scope for possible actions, quick wins as well as structural, long-term energy planning, that result in net gains on the long term. The core challenge for this domain is developing a sound and forward-thinking strategy for the UAntwerp building stock to be energy-neutral by 2050. The three pillars of this buildings strategy are (a) attaining a high degree of cost-effective energy efficiency, (b) installing the necessary equipment for harvesting energy from renewable resources, and (c) phasing out the use of fossil fuels. Given the long lifespan of buildings, our decisions today are already affecting the trajectory of the pathway towards having energy-neutral buildings by 2050. Representing our most important capital stock, this domain is a budgetary priority in UAntwerp's climate strategy.



Milestones reached

- The Infrastructure Department developed the Terra platform to span the entire UAntwerp building envelope. The programme and database allow for exante simulations and, in a comparable manner, simulations of various possible infrastructural measures and investments. With the Terra platform, we can assess and compare possible investments in terms of impact on energy demand, related emissions, budget size as well as payback effects. All in all, it can provide a sound basis for decision-making on energy and infrastructure investments.
- A sample of UAntwerp's buildings was screened in detail for all relevant energy parameters.
- Infrastructure for energy monitoring at a detailed level has been installed and is being operated.
- UAntwerp purchases 100% green electricity with Belgian certificates of origin.



Goals

- Develop a long-term strategy for UAntwerp's infrastructure based on an open and organisation-wide discussion by 2024.
- Achieve climate neutrality by 2030 with a **minimum** CO₂-eq reduction of at least 75%. This will reduce emissions with 12,227.85 tonnes of CO₂-eq. Emissions from fossil fuel use in buildings are compensated at the determined rate. UAntwerp decides how to allocate these funds between external projects that capture CO₂ (e.g. reforestation) and by making its own investments in energy-neutral buildings.
- UAntwerp decides how to allocate these funds between external projects that capture CO₂ (e.g. reforestation) and its own investments in energy-neutral buildings.
- All **fossil fuel use** for heating the UAntwerp patrimony is phased out by 2050.



Actions

- Multifunctional use of buildings, clustering as many services and activities as possible to generate as little travel as possible. Stimulating more intensive and multiple uses of space.
- Investigating the possibilities of **more efficient use** of existing spaces in current buildings, starting with a concrete pilot project per type of space (offices, laboratories, storage, biobank facilities).
- Prepare to meet the obligations imposed by the Flemish government. It has been decided that by 2025, all large non-residential buildings must have an energy performance label. By 2030, these buildings must achieve a yet-to-be-determined minimum energy performance label. An energy audit will also become obligatory.
- The entire patrimony is screened (U-value of roof, walls and floors of 0.2 W/m²K, windows of 0.8 or 1.0 W/m²K). Insufficiently insulated buildings are identified. A master plan is drawn up to optimally insulate all buildings by 2050. The entire patrimony is also screened for electricity consumption (lighting, electrical appliances,

- technologies, etc.). Investments are made to optimise electricity consumption, the most energy-efficient versions are the norm for new investments.
- The university inventories all useful roof surface for the installation of solar panels and formulates concrete goals and a trajectory with intermediate milestones towards the optimal number of solar panels.
- In all concretely planned major renovation works, buildings are already brought to a 2050-proof level. This check with the long-term view is necessary to avoid lock-in effects, where investments remain lower than what is required because they take a too short timespan into account, resulting in a suboptimal investment trajectory.
- Make a strategy to engage building users (students, staff) to investigate which communication can induce which important behavioural changes with respect to energy use.
- Establish a rolling fund for energy efficiency under the umbrella of the climate fund, so that energy savings from efficiency investments can be harvested to serve for further investments.



Indicators

Table 1 presents an overview of the evolution of energy consumption between 2018 and 2021. The consumption of fuel oil has drastically decreased (-54.2%). Electricity consumption has decreased by almost 10%. Natural gas consumption on the other hand has increased by 2.8%. This is particularly due to an increase in natural gas consumption at CGB (Campus Groenenborger; and to a lesser extent at CDE (Campus Drie Eiken) and CMI (Campus Middelheim)).

Consumption of energy between 2018 and 2021 based on Terra values

	CDE	CGB	CMI	СМИ	CST	Total	Unit
Natural gas 2018	12,386,988	6,328,893	1,885,403	1,768,120	9,684,130	32,053,534	kWh
Natural gas 2021	12,920,567	7,448,814	1,903,580	1,674,007	8,996,571	32,943,540	kWh
Electricity 2018	9,965,813	5,556,396	1,475,413	401,051	4,487,289	21,885,962	kWh
Electricity 2021	9,467,275	5,536,766	1,339,753	329,734	3,109,036	19,782,563	kWh
Fuel oil 2018	0	0	0	0	119,488	119,488	litre
Fuel oil 2021	0	0	0	0	54,682	54,682	litre

Table 1: Consumption of energy between 2018 and 2021 based on Terra values

Table 2 translates the insights from Table 1 into the evolution of UAntwerp's CO₂-eq emissions (in tonnes) between 2018 and 2021. The total CO₂-eq emissions decreased by almost 50%. As already mentioned in the introduction, this is largely due to purchasing 100% green electricity with Belgian certificates of origin. Despite the drastic CO₂-eq reduction, there is still a great need to invest in the reduction of electricity usage and/or for investments in renewable energy.

Source	CO ₂ -eq emissions in 2018 (in tonnes)	CO ₂ -eq emissions in 2021 (in tonnes)	Evolution in CO ₂ -eq (in tonnes)	Evolution in %	
Natural gas	7,817.9	8,034.9	+217	+3%	
Electricity	8,073.9	218.9	-7,855	-97%	
Fuel oil	412	188.5	-223.5	-54%	
Total	16,303.8	8,442.3	-7,861.5	-48%	

Table 2: Evolution of UAntwerp's CO₂-eq emissions due to energy consumption between 2018 and 2021

Note that the energy consumption at Blue App, UAMS and The Beacon is not included in the data.





A few other useful indicators include:

- Our own production of renewable energy in MWh;
- Utilised roof surface area suitable for solar panels in %;
- _ The funds that have already been specifically allocated to energy

efficiency/renewable energy infrastructure investments today, as a share (in %) of the estimated remaining investment needed for the entire trajectory towards fossil-free infrastructure by 2050.

- EPC labels for all buildings by 2025;
- Energy audit;
- Investment plan and budget estimation for all campuses.





















📐 Challenges

The largest challenge clearly lies in the financing equation: how to get the necessary investments budgeted in a coherent way, when a middle to long-term vision or strategy is still absent? In order to achieve a fossil-free patrimony, all buildings must undergo a thorough energy renovation and further investments in renewable energy are needed. This will require significant financial resources that are unfortunately not currently available (the cost is estimated to be between 280 and 320 million euros). In other words, the goal of becoming fossil-free is not feasible with the current patrimony and available financial resources. Hence it is absolutely necessary to draw up a long-term strategy with regard to UAntwerp's infrastructure. Strategic choices regarding the building stock can provide the necessary budgetary space to evolve towards a climate-

proof university, that offers high-quality education and delivers scientific research of the highest level.

Besides establishing the finances and creating budgets, engaging with the behavioural aspects also poses substantial challenges. The question of how to raise awareness among building users about energyrelevant behaviour and how to stimulate them to change certain types of behaviour is not accompanied by further actions or by plans on how to engage building users. These behaviour aspects are an important piece of the energy puzzle. Also the question of how the university can make more efficient use of existing building spaces holds a lot of potential to reduce total energy demand against a fraction of the price of constructing new buildings, and yet this aspect remains underexplored.

Campus mobility





According to the zero measurement report, commuting accounts for 34% of the total footprint (12% for staff commutes and 22% for student commutes). This is the second largest share of UAntwerp's total climate footprint, which means it deserves considerable focus.

The university should strive for an ambitious policy that initiates a process of behavioural change, facilitates the modal shift, reduces travel distances (by promoting telework and online meetings), and promotes shared mobility and 'clean' driving.

Walking and/or cycling should be the obvious choice for short trips. Thanks to electric bicycles and speed pedelecs, cycling has also become more and more feasible for longer distances. For long distances public transport should be the first choice. Combined transport modes can help when public transport connections are inadequate. For the share of transport that needs to remain individual and motorised, carbon neutrality means switching to electric or hydrogen cars powered by renewable energy. The university's fleet of cars can lead the way in this direction.



Milestones reached

A major goal of the Climate Action Plan was to promote telecommuting to reduce travel distances. The corona crisis forced the university to take a very big leap forward in this regard. IT support drastically improved (e.g. Teams, Blackboard) and more and more portables are being introduced.

In 2021 and 2022, several other actions were realised to facilitate the **modal shift**. This includes, amongst others, the introduction of a bicycle sharing system on campuses CMI, CGB and CDE, and the realisation of new and secure bicycle parking areas (e.g. under Paardenmarkt (CST Stadscampus) and Vaccinopolis (CDE)).



Goals

UAntwerp stimulates a modal shift so that at least 85% of trips made by staff are done on foot, by bicycle, electric bicycle, scooter or public transport. The reduction potential needs to be calculated in the near future.

- UAntwerp stimulates a modal shift so that students increasingly make trips on foot, by bicycle, electric bicycle, scooter or public transport. An exact percentage needs to be defined in the near future. Currently we lack data with regard to the modal split of students. The reduction potential will need to be calculated in the near future.
- New infrastructure works are in line with the envisioned. modal shift.
- UAntwerp continues to promote telecommuting and online courses to reduce travel distances.





Actions

Measures related to cycling

- Increase the visibility of existing commuting facilities;
- **Infrastructure improvements** (fix roads and cycling paths, build new cycling paths (e.g. a clear pathway to reach UZA from CDE), improve showers, lockers, enlarge bicycle parking areas for staff, expand the number of changing rooms, increase the amount of charging points, add warning signs (that light up) at various intersections on campus streets);
- Develop a bicycle infrastructure map and display it clearly (e.g. near bicycle parking areas and on detailed campus maps);
- Provide signage for bicyclists between campuses;
- Introduce bicycle leasing as part of remuneration;
- Organise a group purchase of bicycles or e-bicycles;
- UAntwerp's Fietskaravaan (Bicycle Caravan) is in need of replacement. The purchase of new bicycles was planned for 2021-2022.
- **Discussions with local municipalities** on how to improve bicycle infrastructure/develop a strategy to become more actively involved in discussions regarding the City of Antwerp's mobility planning:
- Cycling routes towards CDE must improve;
- Near and around CST, cycling routes are unreadable and uncomfortable (especially the route from Antwerp Central Station towards CST);
- Create pedestrian streets and cycling streets around CST (e.g. Sint-Jacobsmarkt/Kipdorp).

Measures related to public transport

- **Discussion with De Lijn** and the municipalities involved to lobby for improved public transport in general.
- _ Improving the connection between UAntwerp's campuses (e.g. between CDE and Berchem Station) and regular, reliable bus times.

Measures related to parking spaces and rates

- Discourage the use of parking spaces by staff and students whose commute is shorter than 15km. Calculate how many parking spaces could be reduced by implementing this measure and use this opportunity to make UAntwerp's car parks green.
- Facilitate the shift to electric or hydrogen cars (shared or individual), powered by renewable energy (e.g. refashion parking lots into clean energy farms);
- Develop a plan to roll out and further increase the number of **charging stations** (improve charging infrastructure).
- Analyse the occupancy rates of parking spaces to see if there is room for community parking areas (for bicycles and/or cars).

Other measures

- Keep organising mobility actions to promote sustainable transport modes;
- Cluster classes and activities on the same location as much as possible;
- Develop a communication plan to promote both new and existing measures/actions.





UAntwerp has a long tradition in implementing creative policy actions that focus on sustainable transport modes for daily commutes, which resulted in a remarkably sustainable division of transport used for daily staff commutes, compared to other Flemish universities. Table 3 indicates that we continue to have an increasing number of cyclists, well above the average for Flanders.

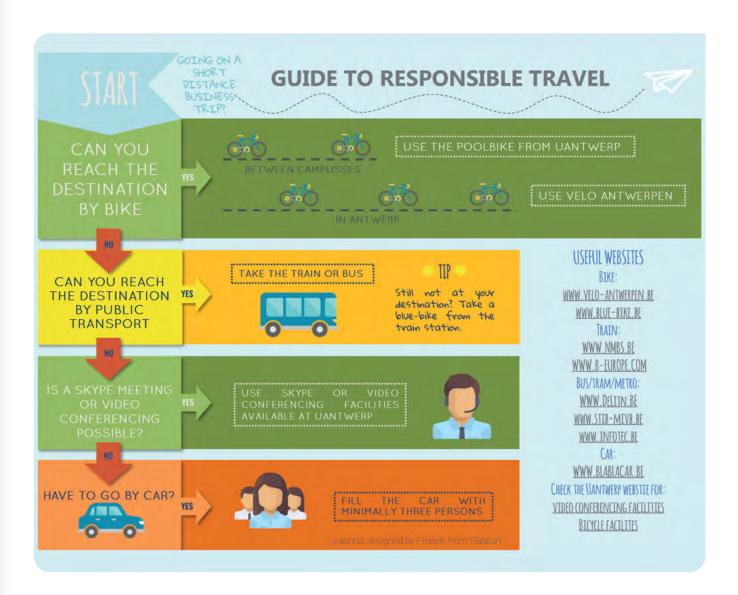
Modal split	UAntwerp	CST	CMI	CGB	CDE	Flanders
Car	25.3%	13%	31%	22%	39%	67.5%
Bicycle	39.8%	37%	37%	49%	41%	12.9%
Electric Bicycle	5.4%	5%	7%	6%	6%	4.6%
Foot	3.1%	6%	1%	3%	1%	2.5%
BMT	7.6%	10%	8%	7%	4%	3.3%
Train	17.2%	27%	15%	12%	8%	7.6%
Other	1.5%	2%	1%	2%	1%	1.7%
Total	N=4,323	1781	423	538	1581	100%

Table 3: Modal split for UAntwerp staff - for each campus and for Flanders¹

						Bicycle a	nd parkir	ıg facilitie	s per cam	pus				
Campus	Number of employees per campus	Available car parking spaces	Number of parking spaces per employee	Ofwhich secured	Ofwhich freely accessible	Total available bicycle parking spaces	Number of bicycle parking spaces per employee	Ofwhich freely accessible	Parking spaces with badge	Showers	Lockers	Electric bicycle charging points	Bicycle repair kits	Repair shop available
CST	1787	343	0.2	343	0	1048	0.6	508	540	6	unk	5	7	х
CMI	423	165	0.4	165	0	272	0.6	128	144	4	52	0	2	
CGB	538	243	0.5	0	243	366	0.7	unk	366	3	0	1	3	
CDE	1581	1065	0.7	479	586	1781	1.1	1493	288	19	unk	1	10	

Table 4: Bicycle and parking facilities per campus

¹ Rybels, Stijn, 2022, Actief pendelen naar de Universiteit Antwerpen: verkenning van de factoren die een transitie naar een actieve woonwerkmobiliteit kunnen beïnvloeden, Bijdrage aan het colloquium vervoersplanologisch speurwerk, Utrecht.



According to the zero measurement report, commuting still accounts for 34% of UAntwerp's total carbon footprint (12% for staff commutes and 22% for student commutes):

- _ Travel by students in tonnes of CO₂-eq
- _ Travel by staffin tonnes of CO₃-eq
- Modal split for students/campus and its evolution
- Modal split for staff/campus and its evolution
- Number of staff that structurally telework
- Occupancy rate of parking spaces/ location in %
- Percentage of staff whose commute is 15 kilometres or shorter for whom a car is the main transportation
- Percentage of students whose commute is 15 kilometres or

- shorter for whom a car is the main transportation mode
- Number of electric vehicle charging stations





🚣 Challenges

However, quite a few obstacles and challenges remain in the trajectory towards climate-neutral commutes.

- For cycling: the safety and comfort of the routes to different campuses remain a point of constant attention. We identified several issues along these routes: high-speed traffic, dangerous intersections, poor road surface, general lack of space for cycling and for stationary bicycles, outdated bicycle parking sheds. These are issues that need to be addressed to increase cycling as a transport mode. Also, limited information is available about existing options (e.g. showers and renting bicycles), which could drastically be improved.
- For public transport: the absence of a direct bus connection between Berchem Station and Campus Drie Eiken/UZA is a major obstacle. Also, bus times and connections between CDE and CST are often unreliable and too time-consuming.
- Actions often involve **third parties** (e.g. De Lijn, local municipalities).

International travel





Aviation is one of the fastest growing sources responsible for greenhouse gas emissions. Flying is particularly damaging to the environment because of the emissions from the combustion of aviation fuel and the dispersion of soot and water vapour that occur at high altitudes. These emissions have a greater environmental impact than emissions at ground level.3

UAntwerp attracts students and staff from around the world and our academics travel for international conferences and meetings, as well as to conduct research. International flights are therefore an important cornerstone of the university's business model.

Unfortunately, these **flights** take up a **significant share of UAntwerp's total emissions**. According to the zero measurement report, international travel by air accounts for 4075.7 tonnes of CO₂-eq, corresponding to 10% of the total carbon footprint. Therefore, it is of **great importance to reduce flights** and address emissions from aviation.





Milestones reached

A travel policy was developed that incorporates a travel **flowchart** for all international travel of staff and students: avoid travel; reduce travel demands to and from the university; travel without flying; fly when there are no alternatives; and offset these emissions. To further discourage unnecessary air travel, a restriction has been imposed on all air travel for destinations that can be reached by train within 8 hours, provided that no extra overnight stay must be booked.

UAntwerp installed a university-wide mechanism to offset CO₂-eq emissions from international travel. To do so, the university collaborates with Greentripper. In 2020, 1221.56 tonnes of CO₂-eq were sequestrated. This equals 2.92% of the university's total emissions. To achieve

3 https://sustainability.admin.ox.ac.uk/international-travel

this sequestration, a sustainable agriculture and land management initiative in Kenya was financially supported. In 2021, 717.42 tonnes of CO₂-eq were sequestrated, corresponding to 1.71% of total emissions. To do, so the 'Kasigau Corridor REDD+ Project' in Kenya was selected.

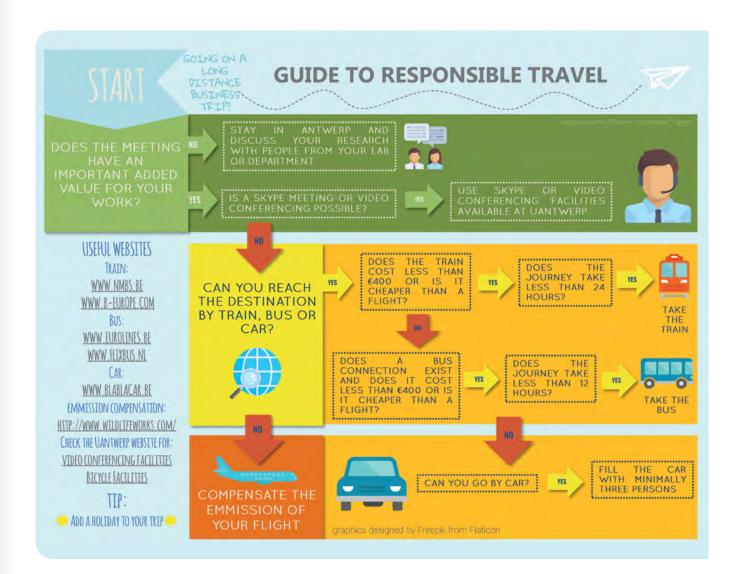
At several locations on campus, investments were made in videoconferencing technology, which reduces the need to travel.



Goals

Maintain the online and successful hybrid meeting culture to prevent extra travel;

Eliminate 30% of flight kilometres by 2030. This reduces CO_2 -eq emissions by 1,222.71 tonnes of CO_2 -eq.





Actions

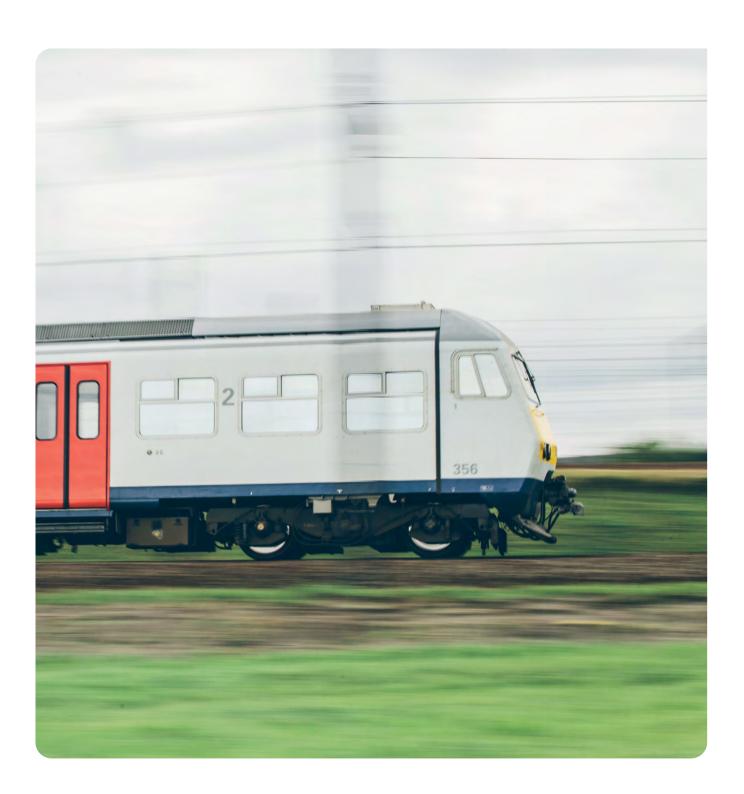
- Increase the CO2-eq contribution substantially to discourage air travel. The budget that becomes available can be used for climate-related actions at the university (e.q. a subsidy for train, bus and boat travel).
- Restrict travel for one-on-one appointments;
- Restrict international travel for meetings shorter than 4h;
- Discourage booking business and first class seats for flights. Passengers in a higher class seat have a remarkably higher carbon footprint than passengers in an economy seat.



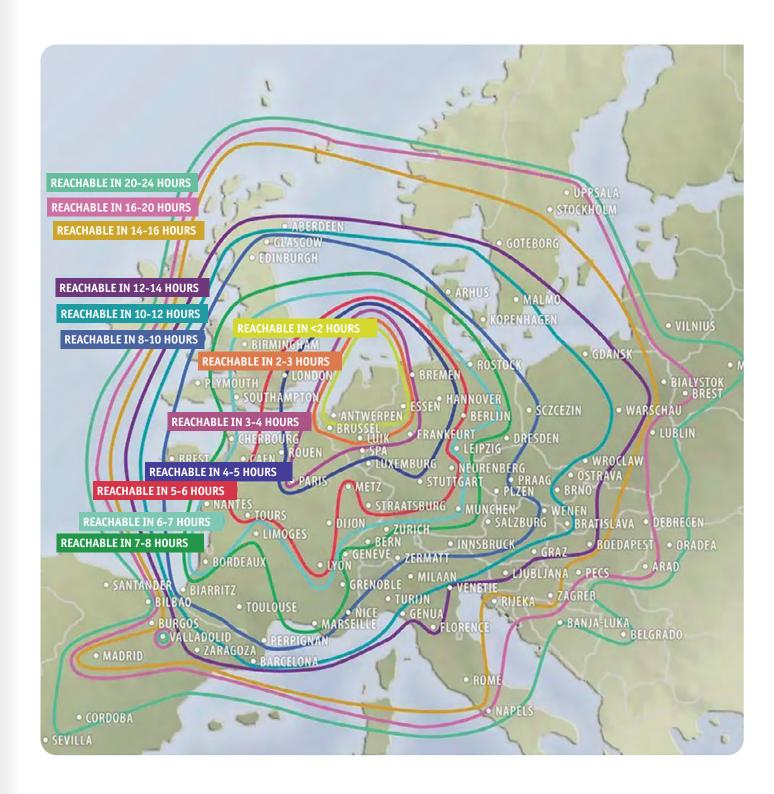
Indicators

- Airplane travel by students in tonnes of CO₃-eq
- Airplane travel by staff in tonnes of CO₂-eq
- Airplane travel per faculty
- Ratio of train travel to air travel (international and national)
- Tonnes of CO₂-eq sequestrated
- Amount of money invested in compensation













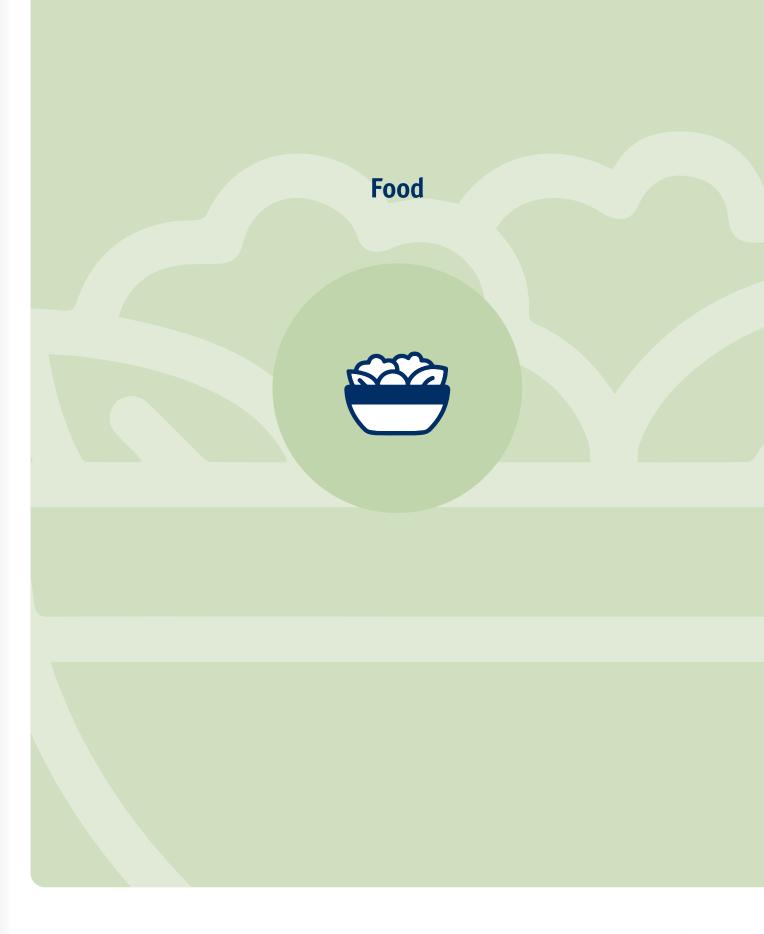
Challenges

- The effectiveness of **carbon offsets** is highly controversial and needs to be strictly monitored.4 Strictly controlled reforestation offers best guarantees to effectively offset emissions.⁵ Even then, compensation must be used as a last resort. The first goal must be to reduce kerosene consumption.
- Academics are currently being assessed not only on their scientific achievements (number of articles, patents, etc.) and teaching duties, but also on their international mobility. Someone who has participated in international conferences, has a higher chance of receiving funding and of advancing in an academic

career. However, this checkbox of international mobility interferes with the goal of reducing air travel, because it forces researchers to go to conferences or on short internships 'for their academic career', even if the added value is limited. If this checkbox remains in place, academics from universities with the strictest travel policies will have a disadvantage compared to colleagues at institutions that do not have air travel limits. To gain greater support for phasing out air travel, it is essential that international (or more correctly, intercontinental) mobility is no longer considered a hallmark.

⁴ Eighty-five percent of the offset projects examined have a low likelihood of effectively reducing future emissions or are projects whose estimated reductions are overestimated. Only 2% of the projects surveyed had a high certainty of reductions in future emissions that are not overestimated. In Öko-institut, 2016, How additional is the Clean Development Mechanism? Analysis of the application of current tools and proposed alternatives.

⁵ Reforestation projects without substantial financial returns can only be implemented through donations. Trees absorb CO, from the atmosphere. In CO, compensation via reforestation, it is calculated that the newly planted trees absorb the CO, emissions of a plane trip over the course of a few decades. The prerequisite for successful uptake is that this forest is not planted in fire-prone areas, because during a forest fire all CO₂ is released back into the atmosphere. Furthermore, it is also important to consider the original value of nature and natural vegetation of the location, as well as socio-economic conditions. Forests compensating for emissions reduced to ashes, August 4, 2021, De Standaard via https://www.standaard.be/cnt/dmf20210803 97515523. More on offsetting on the Zomer Zonder Vliegen (Summer Without Flying) website, with right of reply from BOS+ on reforestation projects, via https://zomerzondervliegen.be/vragen/CO_-compensatie Holl and Brancalion, 2020, Tree planting is not a simple solution via https://www.science.org/doi/10.1126/science.aba8232.





Food has an integral link to global greenhouse gas emissions and forms an important point for climate action. While the estimated impact of food on the total emissions of the university remains relatively limited, it cannot be neglected. Moreover, changing the food policy on campus has the potential to change eating habits outside the university as well.

To reduce its food-related emissions, the university can make its intention explicit by promoting food options that are locally produced, seasonal, and plant-based, while at the same time reducing food waste and packaging. The university can play a leading role by facilitating this transition in the best way possible.



Milestones reached

Komida introduced an exchange system (the cambio system) to reduce the amount of single-use packaging. Furthermore, all disposable cups were banned completely and the cutlery for takeaway meals will all become recyclable.

Komida expanded the number of vegetarian and vegan options. Beef is almost completely banned from the menu. In order to generate less food waste and less energy and water use, Komida started with the central production of meals for **online orders** during off-peak periods. To avoid food waste Komida also collaborates with **TooGoodToGo** and Foodsavers.

At events, at least 50% of the food served is vegetarian (unless requested differently) and all the water that is being served is tap water.

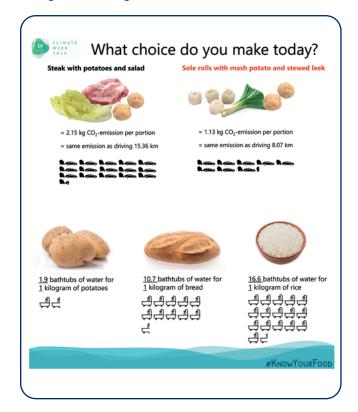
'Mosquito in the Room' did a menu scan to advise Agora on how to make their menu more sustainable. They gave advice on ingredients, communication, presentation of food, types of meals, etc. The same organisation will scan the menu of the University Club in the near future.

In **tender dossiers**, criteria are being included such as translating lower purchasing prices into lower selling prices (e.g. for meat substitutes).



Goals

- Climate-proof food provision and consumption at the university by 2030;
- By 2030, **80%** of the meals served and consumed are vegetarian or vegan.





Actions

- **Measure** the ecological impact of food **and communicate** this transparently.
 - The climate impact and environmental impact of recipes and ingredients should be assessed through an impact test, paying attention to nutritious and healthy food. Recipes that do not stand the overall test require adaptations. The footprint of every meal can be communicated transparently by making use of labels.
- Prioritise low-impact food at Agora Caffee and Komida: local, seasonal and organically supplied. The university stimulates the use of certified labels, collaborations with local farmers, and initiatives to grow your own vegetables.
- Replace or reduce animal products as much as possible, both by increasing plant-based option and by stimulating the demand for these:
 - The number of vegetarian and vegan menu options can be further increased;

- Vegetarian and vegan can be made the default option when ordering catering, while fish and meat remain available when asked for specifically;
- The aim is to phase out the offer of red and processed meat, and to serve smaller portions of meat (poultry and pork) and fish (non-predatory) from labelled sustainable sources;
- At the same time, informative and awarenessraising campaigns and actions (with financial and non-financial rewards) continue to promote plantbased meals and make sustainable choices more feasible, attractive and acceptable to students and staff.
- Combat food waste and packaging through adequately measuring waste, serving smaller portions, using leftovers (e.g. TooGoodToGo app), composting, distributing reusable coffee cups and teacups, installing water fountains in all campus buildings, and starting awareness-raising campaigns. For more tips on non-food waste: see the chapter on 'Waste'.



Indicators

Table 5 provides an overview of the number of vegan, vegetarian and non-vegetarian meals that were served at Komida between January and October 2022. In total, 55% of the meals served and consumed were either vegan or vegetarian.

Table 5: Proportion of vegetarian/vegan/non-vegetarian dishes sold at Komida

Campus	Vegan (in %)	Vegetarian (in %)	Non-vegetarian (in %)
CST	14%	37%	48%
CMI	15%	33%	52%
CGB	15%	50%	35%
CDE (+ shop and go)	17%	39%	44%
Total	16%	39%	45%

- Vegetarian meals served in %
- Vegan meals served in %
- Percentage of vegetarian students
- Percentage of vegetarian staff
- Percentage of vegan students
- Percentage of vegan staff
- Amount of avoided food waste



Challenges

Komida and Agora identified several financial, regulatory, and competitive obstacles to becoming fully climatefriendly. Hence, top-down investments, working on the

supply as well as on the demand side, along with gradual changes assisted by awareness-raising campaigns and good collaborations with other stakeholders will be key.

Standard sandwichse are not yet included in this calculation.

Circular material use and waste





We cannot build our future on a linear 'take-make-dispose' model.

Evidence to support this statement is overwhelming and ever-growing. The concept of 'planetary boundaries' effectively underscores this notion by identifying nine thematic boundaries within which, if respected, humanity could continue to develop and thrive for generations to come.8 Most of these boundaries have already crossed critical thresholds, leading to an increased risk of system collapse, notably regarding: Biosphere Integrity (Genetic Diversity); Novel Entities; Biochemical Flows; Land-System Change; and Climate Change.9

These phenomena are strongly interconnected within linear economic models based on infinite growth, exploiting natural resources, and disregarding the ecological integrity of our support systems. Despite theories and efforts of the last decades to decouple economic growth from natural resource use and its negative environmental impact, no such decoupling has occurred in any meaningful way. 10 Quite the opposite: in an absolute sense, the global demand for natural resources is ever-growing. 11 It is thus high time to implement regenerative and circular 'mechanisms', aimed at minimising material use, avoiding waste, and prioritising low-carbon materials, whilst supporting climate action. When zooming in on the scope of our university, there are many levers of intervention, such as: dematerialisation; circular procurement; product-service models; advanced waste separation; and zero-waste. The task is not to approach these levers separately but as part of an integrated vision, including narrowing material cycles (use less); slowing material cycles (use longer); closing material cycles (use again); and regenerating material systems (make clean). 12 Associated assignments cut across UAntwerp departments, touching upon purchasing protocols, facility management, waste collection, and financial administration, amongst many others.



Milestones reached

All individual bins in all offices of the university have been removed and replaced by a waste-sorting island at several spots on each building floor. Each employee may keep their own bin, but it will no longer be emptied by cleaning staff.

The **Green Guide for Labs** and the **Green Guide for Offices** each contain a chapter with recommendations on how to reduce waste. There also has been a switch from single-use cups to reusable cups at all student association-related events.

- 7 [Persson et al., 2022; IPCC, 2022; EC, 2021]
- 8 [Rockstrom et al., 2009, 2021]
- 9 [Persson et al, 2022]
- 10 [Global Footprint Network, 2022]
- 11 [EC. 2022]
- 12 [Bocken et al., 2016; Konietzko et al., 2019]

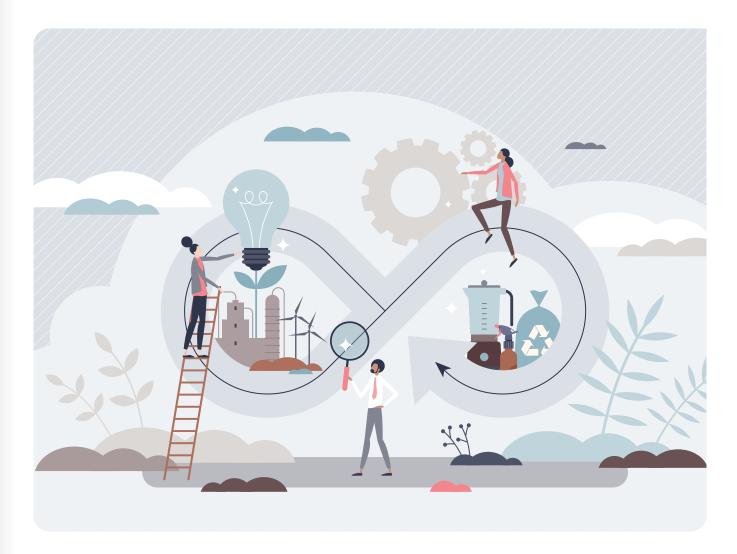


Goals

The final goal is to make the university waste-free. Therefore, all the activities of the university will need to be organised in a circular way. In order to achieve this, the entire product and services flow path associated with these activities should be taken into consideration.

More specifically, it is the university's ambition to:

Develop central purchasing guidelines and integrate sustainability criteria in all tenders. This includes criteria that facilitate circular material and product use (this then connects back to various indicators, i.e. detachability; material passports; recyclable content, etc.) and criteria on waste reduction and enhanced waste collection/logistics.



- Make use of a step-by-step guide and checklist mandatory for all departments and associated research groups, leaving room for personalised purchases according to different needs, but with a clear structure on how purchases and disposal can be sustainably managed.
- Reduce non-hazardous and packaging waste across all campuses and replace single-use materials with reusable materials.
- Raise awareness among staff and students regarding circular purchasing and waste avoidance, and the impact of choices (e.g. no purchase versus cheapest purchase versus sustainable purchase).

- Communicate about waste flows at UAntwerp (with an annual update).
- Reuse or recycle all waste to its highest value by 2030 (tender requirements).
- Create **smoking-free areas** on campus and drastically reduce the number of cigarette butts that are thrown into the environment.
- Apply the total costs (and benefits) of ownership models.





Actions

Purchasing:

- Circularity criteria: ensure the inclusion of conditions that relate to circular material use and the avoidance of packaging waste with every offer;
- Sustainability criteria: include sustainability criteria in the evaluation of tenders (cleaning, green management, office materials, chemicals, printing, window cleaning,
- Create purchase reports for all purchases not made through the UAntwerp purchasing platform. This could be achieved by enforcing order placement through framework contracts.
- Forbid the purchase of single-use material in the long term and avoid purchasing non-recyclable packaging and materials that are already present at the university and could be shared.

Reuse:

- Optimise the use and reuse of existing equipment (e.g. furniture, office supplies etc.) of staff and students (internal or external), i.e. through the launch of a UAntwerp sharing platform;
- Develop a deposit system for using/borrowing cutlery and cambio boxes at UAntwerp food restaurants;
- Replace recycled packages and biodegradable packages with reusable packaging in the university's food restaurants:
- Replace plastics in the university's goodie bags, e.g. pencils instead of pens;
- Remove plastic bottles with still water from the university's vending machines and give information about where water taps and drinking fountains are instead:
- Organise a Green Office 'Erasmus furniture return service' action.



Sorting waste:

- Complete the removal of individual waste bins and placement of sorting islands;
- Place sorting bins outside campus buildings;
- Place bins and compost bins for organic waste inside and outside each building on CDE and CGB.
- Expand the number of paper bins on all campuses;
- Print and apply new waste sorting stickers to sorting bins on all campuses;
- In student areas sorting possibilities can be extended: place separate bins for paper and cardboard and organic waste. Currently, the only sorting options are PMD and residual waste.
- Offer sorting options at student-related events;
- Provide guidelines on waste management of non-contaminated and non-sorted lab waste.



Recycling:

- Make paper removal a circular story. Cardboard and paper are currently not separated which will lead to less qualitative recycled content.
- Focus on non-contaminated waste from labs which are currently not being sorted and recycled.

Student-oriented actions:

- Refine the reusable cup system at student events;
- Incorporate a clear policy on single-use materials and waste from student events;
- Avoid littering on campus by organising activities such as plogging to raise awareness.

Communication and awareness

- Send out annual communication on waste flows;
- Organise waste-free campuses (two-week trial) and/or participate in Plastic-free May (Mei Plasticvrii);
- Thinking about the materials used and the waste produced when designing research activities or student projects;
- Encourage lecturers to offer their coursebooks in doublesided printing and raise awareness among students regarding coursebook printing;
- Communicate about recycled paper;
- Distribute green quides.

Indicators

According to the zero measurement analysis, most of the university's footprint regarding direct waste was generated by the incineration of non-hazardous and dangerous waste (medical or chemical). In weight, this accounts for roughly half of the total waste collected on campus.

According to the carbon footprint, the treatment of direct waste was responsible for the emission of 96 tonnes of CO₃-eq, which represents less than 1% of UAntwerp's total carbon footprint.

- Recycled content (in %)
- Recyclable content (in %) split into:
 - Directly reused or remanufactured (in %)
 - Repurposed (in %)
 - _ Recycled or recovered (in %)
- Components that are easily detachable (in %)
- Residual value (in Euro)
- Environmental-impact score (dependent on applied assessment/standard)
- Materials and products free from harmful substances (in %)
- Materials and products with circularity IDs/material passports (in %)
- Amount of residual waste (in kg)
- Amount of fractions selectively collectable (in kg)
- Amount of PMD waste (in kg)
- Amount of paper waste (in kg)
- Amount of biodegradable waste (in kg)
- Amount of chemical waste (in kg)
- Amount of medical waste (in kg)
- Amount of radioactive waste (in kg)





Challenges

UAntwerp's transition to a climate-neutral and minimal-waste university will encounter several obstacles. When developing novel short or long-term action points and targets, we have to keep these obstacles in mind. We listed some of the potential challenges we may face along the way.

- Technical obstacles: for certain actions, it is unclear whether they can be technically implemented. The technical feasibility should be assessed first.
- Legal obstacles: UAntwerp has ongoing fixed contracts with cleaning staff and waste collection companies. Only when these contracts end or need to be negotiated, can major changes in waste management be implemented.
- For some types of waste such as medical, chemical and sterile products – it is difficult to reduce or replace them with alternatives, since they are required for qualitative scientific research and/or fall under strict health regulations.
- To reduce waste and improve sorting, reusing, and

- recycling on campus, changes will be required. **Resistance to change** is expected and proper change management strategies need to be considered.
- **Cost-effectiveness:** the implementation of some changes will require certain budgets. For these actions, budget estimations must be made.
- Decentralised authorities at UAntwerp: each research group can decide by itself what, where and when they purchase equipment, paper, etc. This high degree of autonomy makes it very difficult to set limits on purchasing decisions.
- Infrastructural limitations: little to no space is available for storing unused furniture.

Nature management





Nature is a major ally in any climate adaptation strategy. Plants absorb CO₂ from the atmosphere, provide natural cooling during periods of heat stress, and can increase resilience to extreme weather such as drought or heavy rainfall. But there is more to it: the ecosystems underpinning human life require a high degree of biodiversity as much as a stable climate.

The sharp, documented decreases in biodiversity have led scientists to stress the vital importance of proactive strategies to prevent further mass extinction of species. Finally, the presence of nature in our daily living and/or working environment has a profound influence on our sense of well-being, and nature can accommodate for a variety of social goals. This chapter takes root in these different perspectives on nature to first and foremost ask: how can UAntwerp increase the presence of nature on its campuses and boost and reconcile the different functions that nature provides us with?



Milestones reached

Currently, UAntwerp's nature management is designed to enhance the ecological, social and economic functions of nature on campus. The existing grassland complexes are, for example, developed into flowery, natural grasslands where invertebrates are taken into account by providing permanent roughness. The forest resources are transformed into high-quality forest habitats with mature trees. Existing water features are being upgraded to enhance water quality and underwater biodiversity. No pesticides are used in the university's nature management. Together with Corridor, the university has worked out an ambitious and ecological green plan for CDE to boost biodiversity. These existing plans are excellent touching points for implementing small projects for biodiversity, accelerating the goals of the plans.

Overall, the most progression was achieved in the field of biodiversity, especially on CDE where a lot of actions were undertaken to implement the ambitious biodiversity plan. All achieved milestones are listed below.

On CGB a vegetable garden was installed: eleven vegetable boxes were installed together with a wide variety of fruit trees and shrubs. The garden is now in its third year and has grown into a green meeting place for gardeners across the university (Biodiversity/Nature awareness).



On CDE, the hillside around Building A was cleared from dead and sick trees and the dominant blackberries. Now the hillside has been planted with fruit trees and shrubs and ten vegetable boxes were installed (Biodiversity/ Nature awareness).



- Corridor biodiversity plan on CDE (Biodiversity):
- The pond at Komida was dredged. In the short term, this resulted in an immediate reduction of methane emissions, caused by the enormous amount of organic matter at the bottom of the pond (Greenhouse gas reduction). In the mid to long term, the quality of the pond will be improved by allowing more life in and around it.
- The big field next to Building O was converted into a flower field, with a short-term effect of enhancing biodiversity on this site.
- Sheep are now grazing the fields of the campus, which had two major impacts. Biodiversity will be enhanced even further since the sheep will transport seeds from other locations to the campus resulting in more diverse flowers. Also, the sheep help to control invasive species such as Fallopia japonica.
- For these efforts, the university was awarded the prize for most biodiverse business terrain in Flanders within the Green Deal project for businesses.
- At CST, a tree management plan has been elaborated. Additionally, several greening projects have been realised (e.g. green roof on Building R and planting and/ or replacing trees near Buildings K, C, A and D).



Goals

The main goals are to enhance biodiversity, climate adaptation and raise nature awareness.

In enhancing biodiversity we are already on the right track, but lots of opportunities are still unexploited.

In terms of climate adaptation, sustainable buildings will have a huge impact by collecting rainwater, but also the nature on the campus can play a role. Trees will keep the terrain cooler, retain water and capture CO₂.

In terms of raising nature awareness, the vegetable gardens are a step in the good direction, but the goal is to integrate

buildings, nature and people more fluidly. On CST, there is still a huge potential for more nature visibility.



Actions

- Implement more steps from the Corridor Biodiversity Plan (Biodiversity);
- Realise a biodiverse plantation following the principle of a Tiny Forest® (hillside of Building A on CDE). The forest will also serve as a carbon capture research object for the PLECO Group (Biodiversity/Climate adaptation/ Research):
- Create pathways and picknick places in the flower field and nature hotspots (Nature awareness);
- Add more colour (flowers) and nature (e.g. small pocket parks) on CST (while increasing biodiversity) (Nature awareness/Biodiversity);
- Create more small pocket parks on CST;
- Develop a structured plan for a potential horse/ cattle food forest on CDE De Ark (Climate adaptation/ Biodiversity/Animal welfare);
- Investigate the potential for living moss walls on CST to filter air pollution and create a cooler environment (Climate adaptation);
- Investigate the potential for green roofs on all campuses (Biodiversity/Climate adaptation);
- Perform a scan leading to a selection of softening and greening projects (Climate adaptation);
- Develop a plan to use and reuse and infiltrate rainwater as much as possible (Climate adaptation);
- Expand the garden community for both vegetable garden spaces and look for joint projects with the Climate Team's



Food Working Group (Nature awareness);

- Look for opportunities to combine nature projects and research on campus (Research);
- Follow up and implementation of the hydrological study (CDE), restore lost pond connections, create biodiversity hotspots in and around ponds (Biodiversity/Climate adaptation);
- Kickstart the nature management community on all campuses (at the moment CGB and CMI in particular are in need of a nature management facilitator).

Indicators

Biodiversity:

- Number of trees planted
- Number of uprooted trees
- Amount of greening projects realised
- Increase/decrease in species on the campuses

Climate adaptation:

- Softened surface (in m²)
- Paved surface (in m²)
- Annual water use (in m³/campus)
- Capacity to collect rainwater (in m³)



Challenges

In order to measure the effect of nature management, **monitoring** is needed. How can we identify successes? Is there an increase in species on the campus? Are the steps taken really beneficial for biodiversity? A standardised way of monitoring is needed to find answers to these questions.

- UAntwerp's campuses are spread throughout Antwerp. Every campus deserves its **own nature management team** up till now this has been challenging to achieve.
- If decisions were made to reach the biodiversity goals, are these decisions implemented correctly? Are the people in charge of the practical implementation aware of the goals and effects of these decisions? Do they need additional training to implement specific ecosystems?
- Acquiring funding.

Sustainable finance



Funding the Climate Action Plan

UAntwerp's Climate Action Plan has set the goal of becoming climate-neutral by 2030 and fossil-free by 2050 (Scope 3). Large efforts (financial or other) are necessary to achieve this objective. Creating a robust financing mechanism addresses these needs is therefore of utmost importance. Along with significant reductions in carbon emissions (mitigation), a part of emissions that UAntwerp still has, will have to be offset through carbon offsetting. However, the ultimate goal remains to actually reduce CO₂-eq emissions as much as possible and to compensate as little as possible. Therefore - compared to the previous Climate Action Plan - the focus of this chapter has switched from 'Compensation' to 'Funding the Climate Action Plan', and we will build upon the knowledge that was produced by the Compensation Working Group.

The current focus is on two topics: 'Budgeting CO, emissions' and 'Developing a climate investment fund'.

Budgeting for CO, emissions

At present, CO₂, or more generally, greenhouse gas (GHG) reduction measures remain dependent on the goodwill of individual people. For example, through UAntwerp, employees can use Tago Travel to book flights. The travel agency charges a contribution per plane trip that is proportional to the amount of CO, emitted. These contributions will be invested in the 'Kasigua Corridor REDD+ project' (Wildlife Works) until 2022 and a forestry project in Kenya from 2023 onwards. However, it is important to note that employees are not required to book trips through this travel agency, because with the CO₃ compensation it would cost more than if you would pay for the flight yourself (booked through an agency of choice). Therefore, researchers with a tight budget might opt out on this option.

Furthermore, we noticed that researchers who work on projects with high CO₂ emissions do not always have room in their research budget to compensate for their emissions. This makes the individual burden very high and for most even too high to reduce or compensate for their emissions.



Developing a climate investment fund

The university is developing several climate projects, but there is no real sustainability or climate fund available. To achieve the goals set for 2030 and 2050, a sustainability or climate investment fund could help these projects achieve their goals. It is yet to be determined what shape this fund should take, how it should be managed and who should be in charge of decision-making for this fund.





Milestones reached

In the 2019 Climate Action Plan, three priority action points were defined by the 'Compensation Working Group'.

Establish a broad stakeholder consultation on what and when we will anchor compensation in the operational management of the university. Define methods to gather **budget** for GHG emission compensation at UAntwerp.

There have been meetings with the Board of Governs and the CFO of UAntwerp regarding funding the Climate Action Plan. These meetings have resulted in a number of specific, new action points that we can use in the Funding the Climate Action Plan Working Group. More meetings will be held at board level in the future.

- **Cost-benefit analysis:** perform a detailed investigation of potential external compensation projects and compile an overview, highlighting advantages and disadvantages, such as implied societal impacts, time frame issues, or opportunity costs. Already existing initiatives, i.e. the travel emissions compensation tool developed by Eric Struyf at the Department of Biology, is especially suited to be picked up and expanded. Internal projects could include green roof initiatives, study programme development and the integration of compensating actions into the curriculum and credit system of UAntwerp.
 - External compensation projects for air travel have been defined by UAntwerp. For the upcoming period, a forestry project in Kenya will be supported by calculating the CO₂ emissions into the cost of traveling.
 - Besides looking at compensation, we have also investigated whether there are opportunities to work with external parties to reduce our CO, emissions. An

- interesting opportunity to explore is a collaboration on sustainable energy in a PPP (public-private partnership).
- Quick wins could include a quide on personal GHG emission compensation and the dissemination of information on potential compensation initiatives. A feedback loop with students and staff of UAntwerp could help identify new initiatives and evaluate existing ones.
 - Since the 'Compensation Working Group' became the 'Funding the Climate Action Plan Working Group' in March 2022, this action point has received less attention. The focus is now on creating a sustainability fund and less on compensation.



Goals

 UAntwerp proactively seeks sufficient financial **resources** to achieve its climate goals (for example, by establishing a climate investment fund or through other financing mechanisms).



Actions

Air travel: the central booking system needs to be improved. We have to consult with the travel agency and we should learn from other universities that have better functioning booking systems.

Air travel: (together with the International Mobility Working Group) motivate staff to use Tago Travel (a travel agency). We can interview some employees to discover their reasons for using or not using Tago Travel to book flights, or send out a feedback questionnaire.

Air travel: a proposal to increase the CO₂ contribution to €70–€100 per tonne of CO₂ to not only account for the



effective carbon cost, but also the social cost of carbon. Additionally, we should research if it is a possibility to pass this increased cost on to research groups (legal feasibility). Can this contribution be integrated into budget applications from Horizon, FWO or BOF projects?

Energy reduction and external funding: a proposal to set up a working group as soon as possible with representation from the Finance Department, Legal Services, Infrastructure Department and Climate Team to develop a PPP (private public partnership).

CO_a **compensation:** a proposal to extend the compensation mechanism to car travel (long-term planning).

Indicators

Climate investment fund (CIF):

- Budget available for the climate policy's mitigating measures (in Euro)
- Budget used for the climate policy's mitigating measures (in Euro)
- Budget assigned for the climate policy's adaptation measures (in Euro)
- Budget used for the climate policy's adaptation measures (in Euro)

CO₂ compensation:

 Amount of CO₂-eq reduced due to investments in mitigation measurements (in CO₂-eq)

Air travel:

- Percentage of travellers/employees using Tago Travel to book their flights.
- Amount of the contributions to the Kenya Forestry project (in Euro)





Challenges

At present, we do not have a dedicated climate investment fund (CIF) at UAntwerp. Moving forward, a university-wide CIF needs to be implemented, for which the introduction of a central funding strategy is crucial. Budgets should be allocated and properly communicated to all stakeholders. The financing strategy is ideally embedded centrally, in a way that reducing emissions in the first stage is given priority over compensating costs at a later stage. For this purpose, intermediate targets will have to be defined, based on the results of the Zero Measurement Working Group, to avoid that the resulting compensation costs will be unanticipated and exorbitant.



Sustainable asset management

A sustainable asset investment strategy of the university belongs at the heart of the university's climate strategy for two reasons:

- 1. By carrying out a rooted sustainability strategy for its investment portfolio, the university can contribute to the allocation of funds to support (rather than impede) the socially just climate transition that the university deems desirable.
- 2. By taking a pro-active stance towards what the energy and climate transition will entail in terms of rearranging the assessed values of carbon-neutral vs. carbon-intensive capital stock (industries, products, services), the value of the university's portfolio will be more future-proof and less vulnerable to devaluation risk in the rapidly changing economy and society that climate change and climate policy induce when it is invested in sustainable financial products.



Milestones reached

A Sustainable Finance Committee – made up of UAntwerp students, researchers, expert professors and administrative and technical staff – needs to be set up, that focuses on investigating the asset investment strategy of the university and proposes a sustainability framework to guide future asset investment decisions.



Goals

The portfolio of UAntwerp is managed taking into account a clear sustainability compass. This implies a substantive exercise - establish a vision on how sustainability is interpreted and operationalised into portfolio management quidelines – as well as a procedural one – the way in which the former can be developed and maintained in an open way.



Actions

- Putting the recommendations of the Sustainable Finance Committee on the agenda of the Board of Governors;
- Adopting a standard sustainability reporting practice for the UAntwerp investment portfolio.



Indicators

Annual standard sustainability reports on UAntwerp investment portfolio



ᄷ Challenges

The Sustainable Finance Committee could not make concrete recommendations beyond the general principles, because the requested information on key indicators for the current portfolio was denied by the Movable Assets Committee (Comité Roerende Waarden). This prevented any form of zero measurement, trajectory setting and monitoring strategy.



Research



The societal impact of UAntwerp's research and education actions are possibly the university's biggest leverage in accelerating climate action. However, if our university wants to take on this role, it should also arm our researchers and research departments with the context and skills needed to address the wide array of sustainability and climate justice issues.

Therefore, research should be able to tackle wicked problems by conducting problem-based research. Waas et al. describe the challenge as follows:



'If we focus on addressing "wicked problems", and if we take into account the context in which sustainability issues form (complexity, uncertainty, diversity of values), then there is a need for a new research approach that is complementary to a monodisciplinary and purely academic approach. Known as "sustainability science" or sustainability science and research, this new approach is more specific than the concept of "science for sustainability" or research for sustainability. This distinction goes beyond a semantic discussion, and has far-reaching implications for the conceptualisation, conduct and organisation of research. Sustainability science is a specific interpretation of research for sustainability, characterised by inter- and transdisciplinarity and by an explicit recognition of the normative nature of research. It is not a new discipline, but it is a new research approach characterised by new forms of collaboration.'13

The EU research funding programmes under the Horizon Europe umbrella – which are both trendsetters with regard to funding research and research topics – are moving more towards problem-based and interdisciplinary research, including clearly emphasising climate action and sustainability as key research objectives.

Evidently, individuals and groups of researchers within our

university are already engaging with this sustainability research approach, however, structural mainstreaming of sustainability research at our university – both within the faculties and in the central department - is work in progress.



Milestones reached

In the 2019 Climate Action Plan, a couple of priority action points were identified. However, without a plan of action or a task group responsible with the capacity to execute these action points, many of them were not achieved.

However, it should not be ignored that interdisciplinary research and education institutes such as IMDO, USI and the IOB – along other research groups embedded in all faculties - develop research projects and connections that do adhere to the sustainability research approach. This is due to high engagement of individual researchers and research groups, leading to good outreach of research projects on topics such as air quality, climate justice, poverty, nature-based solutions, etc.

Nevertheless, a clear university-wide vision and strategy on sustainability in research is currently lacking. This has resulted in a fragmented landscape of initiatives and actions with many blind spots and a lack of a clear overview and visibility. As a consequence, it is often difficult to follow-up

¹³ Waas et al., 2010, Nota Commissie Duurzaam Hoger Onderwijs 2019: https://publicaties.vlaanderen.be/view-file/31677.



the outcome of actions, the realised progress, bring together people motivated to take action, and set up interdisciplinary collaborations in research.

An assessment of the 2019 objectives:

- Develop UAntwerp's vision on sustainability in education and research.
 - No action has been taken with regard to an overall vision on sustainability in research.
- Outline staff expertise and research projects.
 - In the last couple of years, a couple of attempts have been made by IMDO in collaboration with RIVA (formerly ADOC, research department) to create an outline. It proves to be a challenge to make a good thematic list and continuously update this outline.
- Establish a formal working group on sustainability and research at UAntwerp.
 - No action has been taken in this regard by the university management. Ideally this would be done under supervision of the Vice-Rector for Research and RIVA in collaboration with IMDO, USI and other relevant academic actors. An attempt has been made by the Climate Team's Research and Education Working Group to launch proposals, however, beyond individual actions, research policy is so central to the entire university, that it was felt capacity fell short and that this should be taken up by a formal working group with full representation of all relevant stakeholders.
- Develop a manual with good practices on how to integrate sustainability in doing research (e.g. limiting transport, waste), which RIVA (formerly ADOC) can

distribute together with funding possibilities. The objective is to inspire and stimulate researchers and not to increase the administrative burden.

- No action has been taken in this regard. Initiate an Antwerp city lab to investigate complex sustainability challenges (and/or increase participation in Stadslab2050).
- No action has been taken in this regard. Stadslab2050 has been abolished by the City of Antwerp.
- Increase the visibility of successfully incorporating sustainability and interdisciplinarity in research.
 - There were certainly actions that successfully showed sustainability and interdisciplinarity on a large communication platform, such as Curieuzeneuzen (Curious Noses). However, this was due to the strength of these projects, not because a sharing platform was created from within the university.



Goals

In terms of developing sustainability, research at UAntwerp has three main objectives:

- Develop a vision and action plan for sustainability research on the basis of scenario planning;
- **Support and mainstream sustainability science** as the dominant research approach to address sustainability issues.
- Develop an ethics framework and policy on dissociation from fossil fuel companies to finance research.





■ Actions

Develop a vision and action plan for sustainability research

Action 8.1 Develop a vision and action plan for sustainability research on the basis of scenario planning (as explained here).

_ Indicator: a vision and action plan is developed by December 2023

Action 8.2 Establish a formal expert working group on sustainability research under supervision of the Vice-Rector for Research.

Mainstream sustainability science in our research support of inter- and transdisciplinary collaboration

Action 8.2 RIVA supports researchers in developing sustainability science projects and funding applications.

- _ Indicator: RIVA has a 'helpdesk' on interdisciplinary and sustainability science;
- Indicator: RIVA has an information page on sustainability science on their website

Action 8.3 Support for initiatives that want to engage with interdisciplinary and sustainability research

- Indicator: RIVA has a 'helpdesk' on interdisciplinary and sustainability science;
- Indicator: network events on interdisciplinary and sustainability science are organised;

_ Indicator: start-up of a learning network on interdisciplinary and sustainability research.

Action 8.4 In all templates, presentations, project applications and supporting documents mainstreaming of the concepts, ideas and aspects of sustainability science. Include normative sustainability objective as part of every internal funding application.

- Indicator: all internal application forms (such as BOF funding) have a section on the sustainability science aspects of the research.;
- Indicator: all internal application forms (such as BOF funding) have a section on the estimated carbon footprint of the research project and include a carbon compensation budget;
- **Indicator:** all project applications coming from UAntwerp have a carbon compensation budget included in the budget overview;
- Indicator: the sustainability science approach is mainstreamed in all RIVA presentations and supporting documents for research funding applications.

Action 8.5 Workshops on 'What is sustainability science and sharing best practices'.

Indicator: workshops are organised.

Action 8.6 Training courses for PhDs and postdoc researchers on interdisciplinary research methods.

- _ Indicator: Training courses at the Antwerp Doctoral School
- Develop an ethics framework and dissociation from fossil fuel companies for funding research.



Action 8.7 Develop an improved research ethics and integrity framework that enforces research not to be unsustainable and encourages sustainability science.

- _ Indicator: start process with the Research Board and Research Integrity Committee;
- _ Indicator: a sustainability research ethics framework is developed under supervision of the Research Integrity Committee.

Action 8.8 On funding research: strengthen transparency of research funding and avoid conflicts of interest (UAntwerp Code §2.9) How do we ensure that research is always seen as objective and in the public interest?

- _ Indicator: start process with the Research Board and Research Integrity Committee;
- Indicator: a sustainability research ethics framework is developed under supervision of the Research Integrity Committee, which addresses research funding.

Action 8.9 Ban all research funding from fossil fuel companies, similar to the tobacco research funding for cancer research (see Fossil-free Research Initiative).

- Indicator: discussion and formal recommendation on ESG criteria for banning private organisations that fund research (example Princeton University);
- Indicator: decision to ban funding for future research projects based on the abovementioned criteria.



See above.







Challenges

One clear challenge for interdisciplinary work is the compartmentalised nature of the university in disciplinary departments and faculties, which are often difficult to bridge when it comes to research funding or administration. A vision and strategy on sustainability research will need to be developed through an inclusive process of discussions and strong support

from UAntwerp's management and research department (RIVA).

Another challenge might be the **knowledge gap** of researchers to start engaging with interdisciplinary research and the lack of context in which they can start learning to do this.







Shaping young people's critical thinking, perspectives on life and skills to take action, are maybe the most important tasks of today's universities. Adapting the way we organise our education to today's complex societal challenges and wicked problems – from climate change to poverty – is thus an imperative.

Under the umbrella of 'sustainability education', a thriving literature has already developed sets of pedagogical and competency frameworks that are widely accepted and ready for use. We can find the crystallisation of this in the online teacher training on sustainability (in Dutch) developed by the Flemish government in collaboration with all Flemish universities, including UAntwerp. This training course focuses on introducing sustainability competences and democratic and participatory learning processes in higher education courses.



Milestones reached

In the 2019 Climate Action Plan, a couple of priority action points were identified. However, without a plan of action or a task group responsible with the capacity to execute these action points, many of them were not reached.

On the positive side, it must be acknowledged that interdisciplinary education has a strong tradition at UAntwerp in the form of bachelor, master and postgraduate study programmes (master programme in environmental sciences, bachelor and master programmes in socioeconomic sciences, master programmes in development studies, postgraduate programme in climate and energy, summer school, etc.). This is partly due to the high engagement of individual researchers and research groups, leading to a good offer on sustainability-related education. Further progress has been made in the addition of the topical and university-wide, interdisciplinary courses (Dutch: korfvakken) as electives in the third year of the bachelor programmes.

Nevertheless, a clear university-wide vision and strategy on implementing sustainability in education is currently lacking. This has resulted in a fragmented landscape of





initiatives and actions with many blind spots and a lack of a clear overview and visibility. Moreover, it hampers the university in jumping in ambition level from nothing, education about sustainability and education for sustainability, to sustainable education (as described by Sterling, 2004).

An assessment of the 2019 objectives:

- Develop a UAntwerp vision on sustainability in education and research.
 - No action has been undertaken in developing a university-wide vision on sustainability in education
- Outline staff expertise and research projects, as well as sustainability competences in programme components.
 - The earlier attempt at creating an outline in 2014 undertaken by the Education Department proved that it is difficult to create an up-to-date and detailed outline of sustainability competences in programme components.
- Establish a formal working group on sustainability in education at UAntwerp.
 - No action has been undertaken.
- Initiate an Antwerp city lab to investigate complex sustainability challenges (and/or increase participation in Stadslab2050).
 - No action has been undertaken in this regard. Stadslab2050 has ceased to exist.
- Start new university-wide, interdisciplinary courses on sustainability topics as pilot projects.

- Some experiments have been conducted in the Antwerp Summer University. Train lecturers on sustainability competences ('professionalisation trajectory').
- In collaboration with ECHO and the *Educatiepunt* Duurzaam Hoger Onderwijs Vlaanderen, a couple of workshops were organised. Further outreach based on an online learning module looks promising. Increase the visibility of successfully incorporating sustainability and interdisciplinarity in education.
 - A brochure on Good Practices in Sustainability Education at UAntwerp was developed.
 - The 2019 Education Policy Day dedicated two time slots to sustainability competences and good practices. In 2021, both Education Policy Days organised presentations addressing sustainability in education.



Goals

- Create an organisational context in which interdisciplinary, problem-based education activities can easily be organised;
- Set up an assessment process for all bachelor and master curricula from all faculties to include sustainability competences in the study programmes;
- Support CIKO staff and lecturers to engage with sustainability competences.





Actions

Create an organisational context in which interdisciplinary, problem-based education activities can easily be organised.

Action 9.1 Establish a formal expert working group on sustainability in education, under supervision of the Vice-Rector for Education, to develop a clear vision and action plan on sustainability in education.

- Indicator: establishment of an expert working group;
- Indicator: adaptation of the current vision and policy for education; integrating sustainability in education.

Action 9.2 Exploration and set up of a UAntwerp living lab or city academy (Stadsacademie). This can be attached to existing initiatives such as CSL or the Antwerp Science Shop (Wetenschapswinkel).

Indicator: concept note has been drafted and the idea is discussed in relevant fora.

Action 9.3 Support interfaculty initiatives, such as the Interdisciplinary Project Week funded by the call from the Advancement Fund. Continue this type of funding.

Indicator: provision of a structural funding stream for problem-based and interdisciplinary education projects stimulating new pilots, improved interfaculty cooperation or strengthening existing initiatives

Action 9.4 Highlight sustainability and climate change in education on the annual Education Policy Day.

Indicator: programme of the Education Policy Days.

Set up an assessment process for all bachelor and master curricula from all faculties to include sustainability competences in the study programmes.

Action 9.5 Provide financial capacity to set up facilities for faculties and departments to outline and review the sustainability competences present in their curricula. Excellent examples of such processes can be found here and here.

Action 9.6 Develop a learning network on 'integrating sustainability in UAntwerp's curricula' (see example from UGent).

Support CIKO staff, Vice-Deans of Education and lecturers to engage with sustainability competences.

Action 9.7 Organise a student survey on their views and perspectives of sustainability in their university education (see example from UGent).

 Indicator: survey is being organised with a minimum of 700 respondents from all faculties.

Action 9.8 Continue organising workshops and peerto-peer learning sessions on integrating sustainability competences in education for CIKO staff and lecturers.

Indicator: four to five annual workshops and seminars are organised which are open to all CIKO staff and lecturers.

Action 9.9 All faculties develop a core competences framework integrating sustainability competences.

Indicator: this element is part of the quality assurance activities of the Education Department.



^心乃 Indicators

A strong indicator of how the provision of sustainability in education is caters to the demand of students is the results of student surveys on this topic (see Action 9.7).

Another indicator could be the percentage of bachelor students that choose courses focused on climate change or sustainability from the university-wide, interdisciplinary courses and how this has evolved over the past decade.

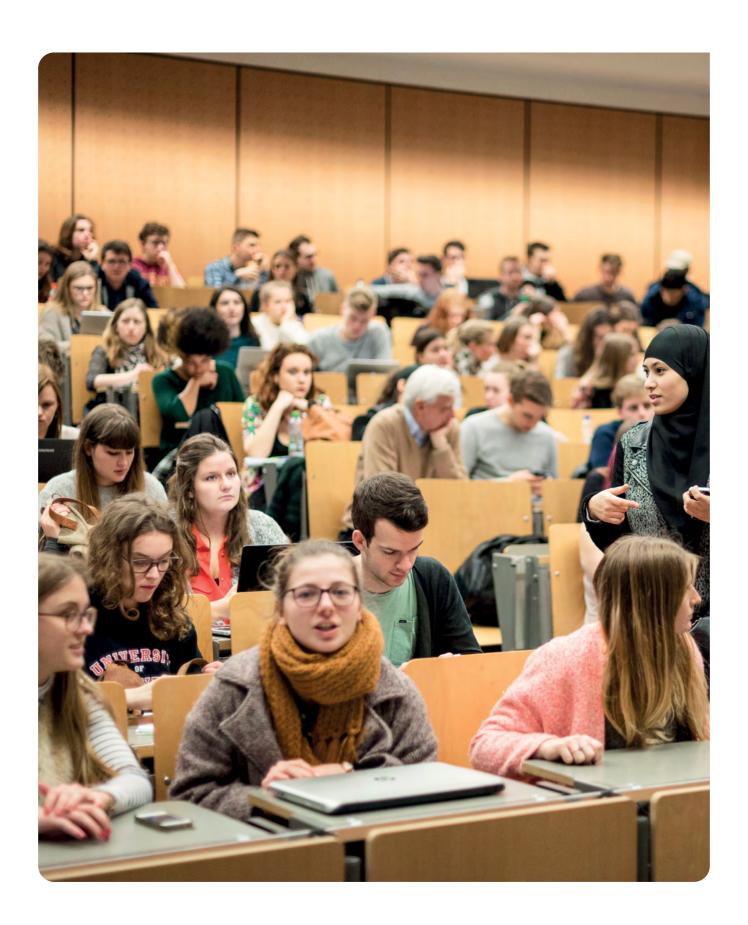
For further indicators, see above.



Similar to research, one clear challenge for interdisciplinary education is the compartmentalised **nature of the university** in disciplinary departments and faculties which are often difficult to bridge. A strong vision and strategy on sustainability in education can be developed through an inclusive process involving discussions and strong support from UAntwerp's management and Education Department, as well as from the faculties (similar to how the Diversity Policy was developed). Funding initiatives need to focus on the just distribution of money, also expressed as 'calculation units'.

Another challenge might be the knowledge gap for lecturers who are not yet familiar with sustainability to start engaging with sustainability education and the lack of context in which they can start learning to do this.





Conclusion



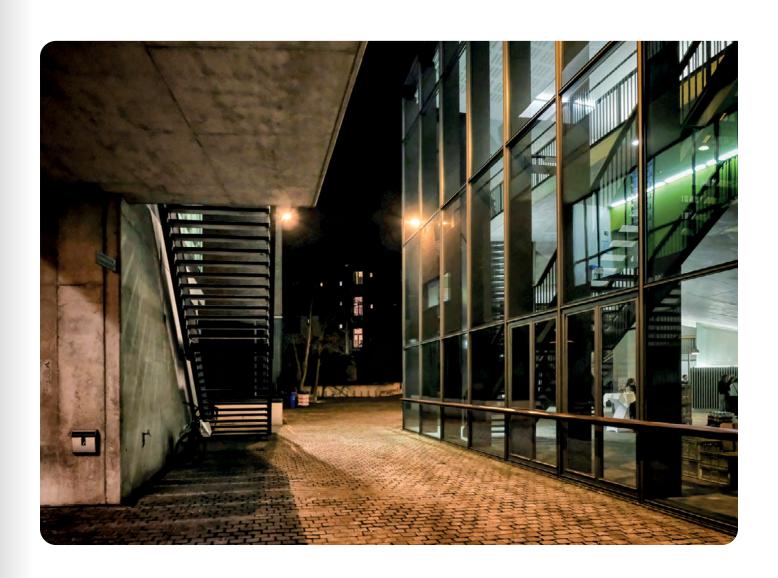
From the lights in the buildings where we work, the content of our courses, to the lunch menus in the cafeteria - climate action concerns everyone at the university.

he Climate Action Plan started as a voluntary initiative from a small group of staff, but has grown exponentially since its conception, confirming that there is a strong will to work towards a sustainable future for the university. There is great momentum. But in order to achieve the goals formulated in this Climate Action Plan, the active support and involvement of all faculties and departments is essential. Commitments and road plans must be made and signed so that climate action can be elevated from a bottom-up voluntary initiative to being integrated in the organisation's strategy.

Implementing the Climate Action Plan requires specific tasks and follow-up that go beyond the scope of voluntary working groups. It is therefore important that a sufficient number of ATP staff are given the formal mandate to follow-up on the anchorage and implementation of policy measures and actions agreed upon within the framework of the Climate Action Plan. Another clear outcome of this endeavour is that **expertise** is **needed**. Funds must be allocated for dedicated research on the university's climate impact. The knowledge that we need to find well-suited and context-specific solutions is already present in-house, at

our university. However, by establishing the Climate Team from the bottom-up often asked for voluntary engagement. While this proved a powerful structure that yielded high participation, it was also a confrontation with the limited 'free-to-dedicate' time that in-house experts – from PhD researchers to professors, as well as administrative and technical staff – have available within their current jobs with already full work schedules. Avenues to mediate this could be considered where the university makes more use of its channels for research funding, aligning these more with the knowledge needed to execute the Climate Action Plan. We also see a role for **an academic steering committee** to lead the Climate Strategy as a whole. This steering committee can have a similar function to the university's current Corporate Social Responsibility Steering Committee. Its members could facilitate the process of finding the required expertise in the domains discussed and address specific questions at hand.

Finally, more collaboration is needed with other societal actors in the Antwerp region (cooperatives in the domain of climate finance, the City of Antwerp, the Port of Antwerp, etc.), but also with other universities – in Flanders and internationally - especially on issues where collective action is necessary. UAntwerp could join existing initiatives to group university efforts and take up a leading role in societal transition.



CLIMATE ACTION PLAN 2022-2030

This document was prepared by the UAntwerp Climate Team, a collective of staff and students joined together by one shared goal: to **get UAntwerp climate-neutral** as quickly as possible, in line with scientific recommendations.

Comments and questions about this document can be addressed to: climate@uantwerpen.be

