THE YOUNG ACADEMY

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THIRTEEN SHADES OF GREEN

EXAMINING THE CLIMATE AMBITIONS OF DUTCH UNIVERSITIES

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DOI: https://doi.org/10.57881/7cc24e33-8099-4901-ad4e-d6c91ad6009f

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The Young Academy is an independent division of the Royal Netherlands Academy of Arts and Sciences (KNAW).

Digital version available at https://dejongeakademie.nl/en/publications/.

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Thanks are due to all the sustainability coordinators who answered our questions, and to the Radboud Young Academy and The Young Academy for their financial support.

This publication may be cited as follows: The Young Academy (2025).
Thirteen shades of green. Examining the climate ambitions of Dutch universities.
Amsterdam, KNAW.

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EXECUTIVE SUMMARY

Dutch research universities and university medical centres (umcs) have both a considerable carbon footprint and the potential to accelerate climate and sustainability transformations in society through their research, innovation, education, and operations. Universities' sustainability plans (and their successful implementation) are therefore crucial to secure a sustainable future for Dutch academia and society more broadly. In this report, we examine and compare these plans. Our conclusion is that they vary to such an extent in their ambitions, structure, timelines, comprehensiveness, staffing, and monitoring that mutual comparison is not possible.

Based on our findings, we make five key recommendations:

1. universities and umcs should be more ambitious in their CO_2 targets;
2. they should use a uniform, standardised planning and reporting template;
3. they should ensure accountability through transparency and external auditing;
4. they should ensure continuity and autonomy for the key employees tasked with sustainability;
5. they can and should collaborate and coordinate more with other universities, umcs and beyond. Doing so will maximise the potential of Dutch universities and umcs to have a positive impact on the climate.

1. INTRODUCTION

'Climate change is a threat to human well-being and planetary health. Any further delay … will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all.'

The recent IPCC report[1] leaves no room for doubt. The impacts of climate change are already being felt around the world and disproportionately affect people and populations in less well-resourced contexts and countries.

How do we tackle this immense challenge at a national and international level? We argue here that universities[2] can and should play their part in sustainability transformations. Through their three interacting domains of responsibility (Research & Innovation, Education and Operations), universities are part of the problem, but also vital to its solution.

First and foremost, universities are drivers of societal, technological, and economic innovation. Many solutions in climate change mitigation and adaptation, whether technological or sociocultural, are based on scientific research and innovation. Second, universities educate a large (and increasing) proportion of the population, allowing them to raise awareness among young people of the importance of tackling the climate crisis and equipping them with the competencies required to effectuate the transformations necessary to secure a liveable and sustainable future for all.

Despite the positive potential that their research and education represent, universities also have considerable negative climate impacts owing to their day-to-day operations, which have a considerable carbon footprint. The thirteen Dutch

1 https://www.ipcc.ch/report/ar6/wg2/
2 Throughout the text we regularly use 'universities' to refer to both universities and umcs.

research universities[3] and seven associated umcs[4] employ over 130,000 people, and together educate more than 337,000[5] students a year. Combined, they are one of the largest employment sectors in the country, and often the largest employers in their city or region. Their sheer magnitude in terms of staff (e.g. mobility), real estate and operations (e.g. materials and labs) results in an estimated carbon footprint of more than 20 tonnes of CO_2 per employee per year, or 0.35 tonnes per square metre per year (Valls-Val & Bovea, 2021[6]). Moreover, universities are often – for example in their procurement processes – inherently embedded in and adapted to a fossil energy-driven economy, play a role in delaying positive transformative change (Stephens, 2024), and are 'implicated in development of the science and technology that is enabling continuing exploitation and usage of fossil fuels' (McCowan, 2020, p. 3).

The size and strength of universities and umcs in innovation, fundamental and applied sciences, and assets also mean that the nature and ambition of their sustainability policies and procedures can have a considerable impact on their greenhouse gas emissions footprints, as well as climate 'handprints' (the positive effects of being a climate role model on others; see e.g. Malabi Eberhardt et al., 2024). Moreover, as large employers their everyday environments and campuses can act as 'living labs'[7] for developing, implementing, and evaluating innovations in well-controlled environments in which they experiment with a post-fossil society.

This raises a number of crucial questions: what plans have Dutch research universities developed on climate action, how much progress have they made in realising these plans, and how will they track their progress towards a climate-proof future? These questions lie at the heart of this report.

The aims of this report are to (1) examine the publicly stated climate ambitions of each of the thirteen Dutch research universities and seven associated umcs, (2) critically assess their plans and compare the definitions, guidelines, and policies they put forward to achieve these goals, and 3) identify key areas for improvement. To achieve these aims, we have reviewed the publicly available commitments each institution has made. We end with a set of recommendations for increasing the intensity (i.e. the level of ambition) of the individual 'shades of green', and to maximise the beneficial climate impacts of current and future policies of universities and umcs.

3 https://www.universiteitenvannederland.nl/onderwerpen/personeel/personeel-in-dienst-van-universiteiten
4 https://www.rathenau.nl/nl/wetenschap-cijfers/wetenschappers/personeel-aan-de-universiteiten-en-umcs/het-personeel-bij-de-universitair-medische-centra
5 https://www.universiteitenvannederland.nl/onderwerpen/onderwijs/feiten-en-cijfers
6 Although it should be noted that a recent assessment for TU Delft found a footprint of approximately 3 tonnes CO_2 per employee per year.
7 https://www.rathenau.nl/nl/werking-van-het-wetenschapssysteem/living-labs-nederland

2. METHODS

To assess the current and future plans, Green Young Academy (GRYA)[8] members and Dutch academics examined all publicly available sustainability (and related) plans published on the websites of each Dutch research university and associated umc in the European part of the Kingdom of the Netherlands (i.e. not the universities in Caribbean parts). These reports were initially downloaded between October 2023 and March 2024 and, where possible, verified with the relevant sustainability coordinator to ensure they were up to date and complete prior to more in depth assessment. As most reports are regularly updated or replaced, we further verified that the report we had used was the most up to date example at the time of writing (March 2025). This second verification resulted in four updated reports (UM, UvA, LUMC and WUR), but this did not affect our overall conclusions, and we provide links for completeness. The full references for each report and their URLS are included in the reference section and available on SURFdrive.[9]

The legal context is relevant for the assessments included in this report. The Dutch Climate Act (*Klimaatwet)*[10] is an extensive legal framework adopted on 2 July 2023, and the associated National Climate Agreement (*Klimaatakkoord*)[11] is a legal framework that provides guidance for societal partners, including Dutch universities. To abide by the Climate Act, organisations must reduce their CO_2 emissions by at least 55% by 2030 (as compared to the reference year 1990) and achieve climate neutrality by 2050. In other words, the latest commitment date that universities can propose without intentionally infringing the Climate Act is 2050.

8 https://www.dejongeakademie.nl/projecten/2698805.aspx?t=Green-Young-Academy-naar-een-klimaatbestendige-toekomst-van-Nederlandse-academie-
9 https://surfdrive.surf.nl/files/index.php/s/1FrUWqArWF9O4Wc
10 https://climate-laws.org/document/climate-act_4bc4
11 https://www.klimaatakkoord.nl/documenten/publicaties/2019/06/28/national-climate-agreement-the-netherlands

To summarise and synthesise the data from the reports, we followed a three-step approach:

- Reading and summarising each university's report. A standardised questionnaire was used to extract information from each report. The information consisted of 1) the target and reference year, 2) the positive actions, 3) areas for improvement, and 4) overall impressions. These points were independently assessed by three members of the team, after which (where necessary) an agreement was reached.
- Synthesizing the outcome of step 1 to define the university's publicly stated climate ambitions and examining definitions and guidelines used in the individual reports.
- Combining the output of step 2 across all reports to identify the main areas for improvement across all Dutch universities in terms of policymaking, mutual learning and reporting standards.
- The insights gained from steps 1-3 were integrated into this report, which was then read and reviewed by multiple members of the GRYA.

3. RESULTS

3.1 Target years vary widely by institution

Across the reports, the *reference* year used to calculate the percentage decrease in CO_2 emissions varies significantly. As Figure 1 shows, only Leiden University uses 1990 as its reference year, with many choosing more recent years and 2020 being the most frequent. This choice may have been informed by the highly variable quality or non-existent nature of earlier data.

Universities also differ considerably in the year they aim to achieve their climate plans. Ten out of the 20 universities and umcs name 2050 as their target year. Others have more ambitious targets, with many choosing 2040, 2035 or 2030. A notable outlier is Erasmus University Rotterdam (EUR1, p. 8), which states that it will achieve (or rather, will have achieved) carbon neutrality by 2024, almost three decades sooner than some other institutions. Closer inspection shows that the goal of neutrality in 2024 is to be achieved by reducing emissions by 30-40% but offsetting the other 60-70%. Although such a high level of ambition is laudable, it exemplifies the importance of not focusing solely on a stated date, but also considering the nature of the target itself (e.g. net neutrality versus reduced emissions) and *how* the institution intends to achieve it, two factors that are at least as important. We examine this question and the problematic nature of offsets as solution in more detail below.

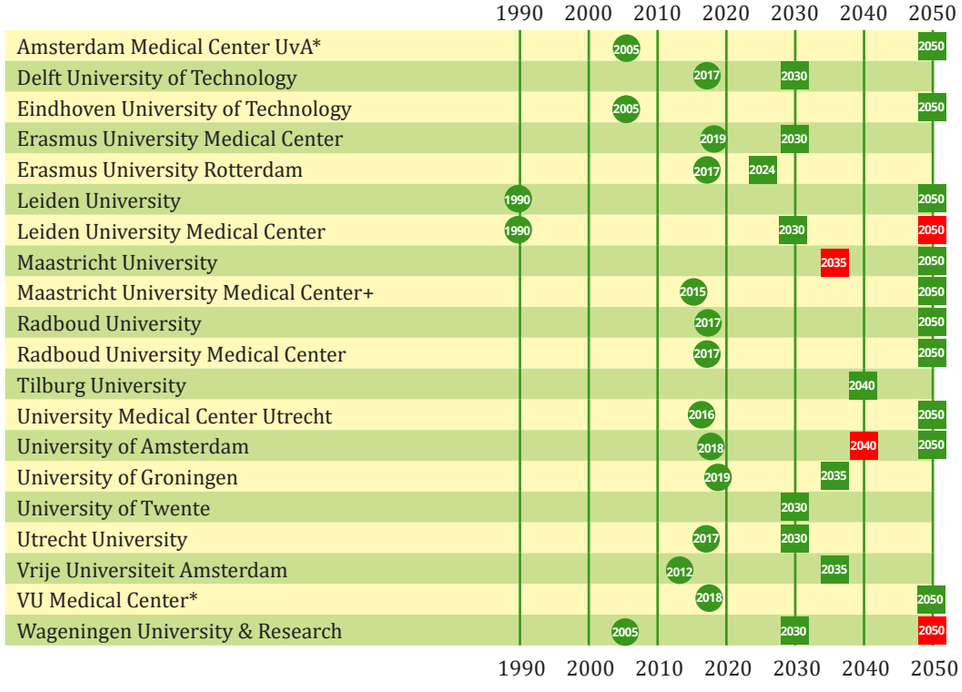


Figure 1: Reference year (circle) and target year (square) for each institution and the red square for the updated target year of a single institution that appeared this year.

*AMC UvA and VUmc have merged into Amsterdam University Medical Center in 2018.

3.2 The nature of the target and the terminology used varies widely by institution

Although two institutions may specify the same date or dates for achieving their goals, what that goal *is* may vary considerably across institutions. As a group institutions use many different terms, but they often use multiple terms internally as well (e.g. 'climate neutral', 'Paris compliant', 'carbon neutral', 'energy neutral', 'fossil free university' and 'CO_2 reduction'). Figure 2 lists some commonly used terms and the reports in which they appear.

Many of these terms have specific definitions, implications, and challenges. To add to the complexity, the same terms are often used in different ways. In the Glossary, in Box 1, we review the terminology commonly used in both the universities' reports and in wider discussions of sustainability policies, as well as references for further reading, while acknowledging that there are no universally accepted definitions for some terms.

	Paris compliant	Carbon neutral	Energy neutral	Fossil fuel-free	Climate neutral	Carbon negative	Eco positive	'We're aiming to rapidly reduce our use of fossil fuels'
Amsterdam Medical Center UvA*		■			■			
Delft University of Technology	■	■						
Eindhoven University of Technology	■	■						
Erasmus University Medical Center	■							
Erasmus University Rotterdam		■					■	
Leiden University	■	■			■			
Leiden University Medical Center					■			
Maastricht University	■							
Maastricht University Medical Center+					■			
Radboud University					■			
Radboud University Medical Center			■		■			
Tilburg University		■						■
University Medical Center Utrecht	■							
University of Amsterdam	■	■						
University of Groningen		■						
University of Twente		■				■		
Utrecht University		■	■					
Vrije Universiteit Amsterdam				■	■			
VU Medical Center*		■			■			
Wageningen University & Research			■		■			

Figure 2: Different goals mentioned by each institution.

*AMC UvA and VUmc have merged into Amsterdam University Medical Center in 2018.

One particularly challenging term is *carbon neutrality*, often used to compute CO_2 impact while including carbon offsetting schemes. In the absence of transparent reporting of actual in-house reductions in CO_2, however, carbon neutrality is hard to interpret. For instance, in theory a 'carbon-neutral' or 'net-zero' university need not reduce its CO_2 emissions at all (it may even *increase* them), as long as it purchases sufficient carbon offsets.

1. Glossary

Greenhouse gases (GHG) (source)
Gases that trap heat in the atmosphere, and therefore increase the global temperature. These gases include but are not limited to carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O).

Carbon footprint (source)
A representation of the effect on climate in terms of the total amount of GHG that are produced, measured in units of CO_2 (CO equivalent) because of the activities of an organisation.

Carbon offsetting (source)
Certificates linked to activities lowering CO_2 emissions that can be purchased in order to compensate for its own CO_2 emissions. Often included in the definition of carbon neutrality.

Paris compliant/compliance (source, source)
Adhering to the agreements made under the Paris Agreement of 2015, which translates to a 49% reduction in GHG emissions by 2030 compared to 1990 levels, and a 95% reduction by 2050.

Carbon neutral (source)
The amount of CO_2 emitted is equal to the amount of CO_2 removed from the atmosphere. Does not include other GHG. Removal approaches include sequestration, offset, or changing old pathways and processes. Scope 3 is often not included.

Energy neutral (source, source)
All energy used comes from renewable sources.

Fossil fuel-free/fossil free (source, source)
This term is used inconsistently. Sometimes it refers to not using fossil fuels. More commonly, it is used in the context of investment and research alliances to mean the rejection of any ties with, or funding by, the fossil fuel industry or related companies.

Net zero (source, source)
The amount of GHG emitted is equal to the amount of GHG removed from the atmosphere. Removal includes sequestration or offset. Synonym for 'climate neutral'.

Carbon insetting (source, source)
Carbon 'insetting' focuses on reducing emissions, rather than compensating them.

Climate neutral (source, source)
The amount of GHG emitted is equal to the amount of GHG removed from the atmosphere. Removal includes sequestration or offset. Synonym for 'net zero'.

Carbon negative (source, source)
The amount of CO_2 removed from the atmosphere exceeds the amount of CO_2 emitted. Removal is done via sequestration. Sometimes 'carbon positive' is used instead, but that is factually incorrect: this term means that there are more GHG emitted than removed.

Eco positive (source)
The amount of GHG removed from the atmosphere exceeds the amount of GHG emitted. Actions go beyond only GHG: The expectation is that the organisation will have a positive effect on its environment, including biodiversity.

Paris Agreement (source, source)
Agreement made at the COP21 in Paris in 2015 to keep 'the increase in the global average temperature to well below 2°C above pre-industrial levels', and make efforts 'to limit the temperature increase to 1.5°C above pre-industrial levels'.

Klimaatwet (Dutch Climate Act) (source)
The translation into Dutch of the Paris Agreement, a legal framework that commits the Netherlands to a 49% reduction in its GHG emissions by 2030 compared to 1990 levels, and a 95% reduction by 2050.

Corporate Sustainability Reporting Directive (CSRD) (source)
EU guidelines, part of the European Green Deal, on how companies and organisations should report their path to becoming more sustainable. Starting in 2026, reporting under the CSRD will be mandatory for listed companies, with more organisations being included from 2027 onwards.

The problem with offsetting

Offsetting is problematic for at least three reasons. First, carbon offsetting programmes, which allow individuals and institutions to offset (pay for) CO_2 emissions, have been shown to have a range of problematic consequences, and often fail to achieve their goals in the long term for various reasons[12] (e.g. Angerman, 2023). Second, the only resource required for offsetting is money. Offsetting can be done without technological innovation or making any changes in practices, and thus without downstream benefits ('handprints') encouraging other parties to adopt new practices. Third, including such offsets in the overall net neutrality goals obscures progress (or lack thereof) towards an *actual* reduction in emissions (sometimes described as 'carbon insetting').[13] It becomes impossible to compare institutions, or track progress within a single institution, if its publicly reported CO_2 emissions include varying levels of offsetting.

Of course, large institutions such as universities will always use a considerable amount of energy, no matter how innovative and sustainable their policies and buildings become over time. Although offsets (or better schemes with the same purpose) for residual CO_2 emissions may remain necessary, they should only ever

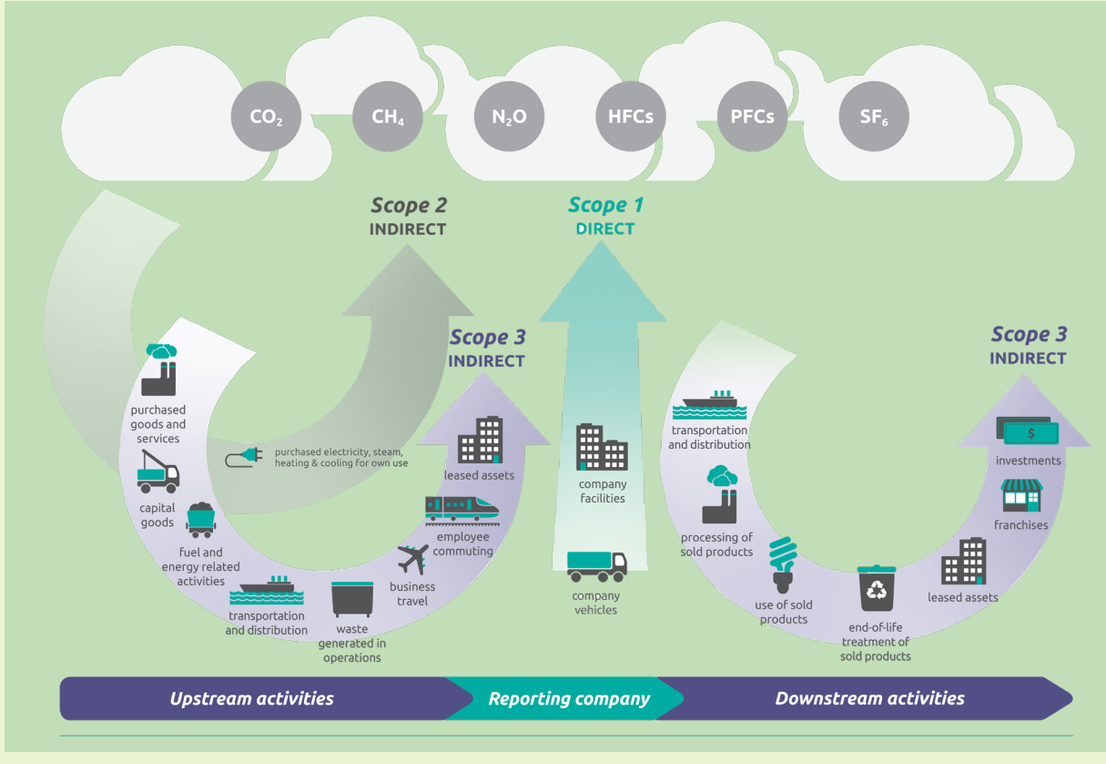
12 https://utopia.org/guide/the-inconvenient-truth-about-carbon-offsetting-programs-a-closer-look/
13 https://www.weforum.org/stories/2022/03/carbon-insetting-vs-offsetting-an-explainer/

2. Scope 1, Scope 2, and Scope 3 emissions

To provide clarity on emissions responsibility, a reporting standard has been defined by the GHG Protocol, a private-sector initiative. It aims to support organisations in credibly measuring and reporting their greenhouse gas emissions, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).

- **Scope 1** indicates direct greenhouse gas emissions that are from sources owned or controlled by the reporting entity. In the context of universities, this entails all direct emissions made by the university and its buildings and car fleet – burning of fuel, use of materials or other processes on site.
- **Scope 2** entails all indirect emissions of the reporting entity. These 'upstream' emissions are associated with energy generation, heating or cooling sourced from elsewhere but used by universities, for example their consumption of electricity generated by power plants.
- **Scope 3** covers all other indirect emissions, upstream and downstream, caused or created by products or services purchased or generated by the reporting entity. In the case of universities, this may include office supplies, air travel and hotel accommodation, staff and student commuting, emissions of purchased materials, fuels and services, including transport in vehicles not owned or controlled by the reporting entity, and outsourced activities such as data centres, banking and waste disposal.

Adapted from Allwood et al., 2014 (Glossary Annex, Fifth Assessment Report of the IPCC) and Kiehle et al., 2023



'Scope3 Calculation Guidance -updated' by World Resources Institute (WRI) is licensed under CC BY-SA 4.0.

complement, not replace, reductions in emissions (e.g. see Loughlin, 2024). Where needed, better solutions have been proposed. When offsets are used, they should be based on a realistic assessment of the true costs. TU Delft uses an internal carbon pricing of €150 per tonne, showing that commonly available carbon offset schemes, such as those used by the airline industry ($1.50-4.50 per tonne in 2019, Wong et al., 2024), woefully underestimate the true cost of carbon offsetting. The Province of Utrecht currently uses an internal carbon pricing of €875 per tonne[14], and an updated estimate at TU Delft suggests using a price of €1050 per tonne of CO_2.

14 https://www.binnenlandsbestuur.nl/ruimte-en-milieu/energietransitie/utrecht-vertien-voudigde-de-co2-prijs-helpt-dat

Above, we identified differences across universities in terms of both their timelines and the nature of their climate goals. Another dimension is the *scope* of a university's climate policy. As we will see, this too varies considerably from one university to another.

3.3 The scopes included varies widely by institution

So far, we have seen that universities differ considerably in their target years and – sometimes even internally – in the terms they use to describe their goals. A further level of variation can be found when we consider which aspects of university operations fall within the scope of their individual policies.

	Scope 1	Scope 2	Scope 3
Amsterdam Medical Center UvA*			
Delft University of Technology			
Eindhoven University of Technology			
Erasmus University Medical Center			
Erasmus University Rotterdam			
Leiden University			
Leiden University Medical Center			
Maastricht University			
Maastricht University Medical Center+			
Radboud University			
Radboud University Medical Center			
Tilburg University			
University Medical Center Utrecht			
University of Amsterdam			
University of Groningen			
University of Twente			
Utrecht University			
Vrije Universiteit Amsterdam			
VU Medical Center*			
Wageningen University & Research			

Scope stated explicitly

Scope inferred from documentation

Scope missing

Figure 3: Variability in the extent to which universities specify the scope of their sustainability policies. Note: inferring scope is an inherently subjective task. Others may arrive at a slightly different interpretation and are advised to examine the reports for themselves. The ambiguity involved further highlights the importance of clarity and transparency.

* AMC UvA and VUmc have merged into Amsterdam University Medical Center in 2018.

At international level, GHG emissions are divided into three categories, Scope 1, Scope 2 and Scope 3, making it easier to account for them when considering reduction policies. Box 2 on page 14 explains this in more detail and provides external resources. Briefly, Scope 1 covers *direct* emissions, namely all GHG emissions produced directly by the university itself by burning fossil fuels and using materials or running processes on site. Scope 2 covers *indirect* emissions, for instance from fossil or other fuels burned by external power plants that deliver energy to the university. Scope 3 is hardest to pin down, and includes all other *indirect emissions*, both upstream and downstream, caused or created by products or services purchased or generated by the university.

In short, institutions differ in which scope or scopes are covered by their policy, and this decision has an unmistakeable impact on its reported carbon footprint and on the extent to which their reports can be interpreted or compared.

Our inventory shows that only seven of the universities and umcs are sufficiently explicit about the scope or scopes addressed in their policy documents. This is remarkable, as an explicit statement of scope is crucial for defining policies and monitoring progress on actions. For the majority of the universities and umcs, we had to infer the scope by interpreting the types of energy use discussed and reported on. Universities varied considerably in their choice of scope or scopes. In fact, where the scope is either stated explicitly or can be inferred (Figure 3), we found almost every combination of scopes represented in some form.

To move forward, we suggest that all universities and umcs should a) specify the scope of their policies, b) unify the scopes across institutions and c) be encouraged to include Scope 3 emissions. Although Scope 3 emissions require more effort to quantify, they can represent over 90% of an organisation's total GHG emissions, according to the GHG Protocol Scope 3 Standard. As such, Scope 3 emissions provide the greatest opportunity for universities to reduce their environmental impact across a wide range of activities. By actively addressing Scope 3 emissions, universities can demonstrate leadership in sustainability, increase their carbon 'handprint', mobilise their partners, and prepare their students to drive widespread environmental change.

3.4 The length, level of detail and nature of the reports and vision documents vary widely by institution

We have already seen a striking level of policy heterogeneity across universities, with plans differing widely in the goals they identify, the timeline for achieving them, and what they cover. The same level of heterogeneity can also be found in the nature of the reporting. The documents we examined varied in what they called themselves (e.g. plans, vision documents, reports), formatting, structure, size and composition of the team of authors, and many more aspects. Although longer does not necessarily mean better, it can at least function as an imperfect proxy for the concreteness, level of detail, and thoroughness of the current plans, and in that respect the difference between the reports is noteworthy. Given the scope of the challenge, the number of people directly and indirectly involved, and the sheer complexity of the transformation necessary to achieve the desired goals, any adequately detailed

report will realistically run to a nontrivial number of pages. Figure 4 visualises the length of each university/umc report. Where the institution has published multiple reports, page numbers are added; if the climate plans are only a subset of a larger document, the relevant pages are counted. The differences in length are significant, and we would argue that many plans are insufficiently detailed to allow for proper assessment and progress monitoring.

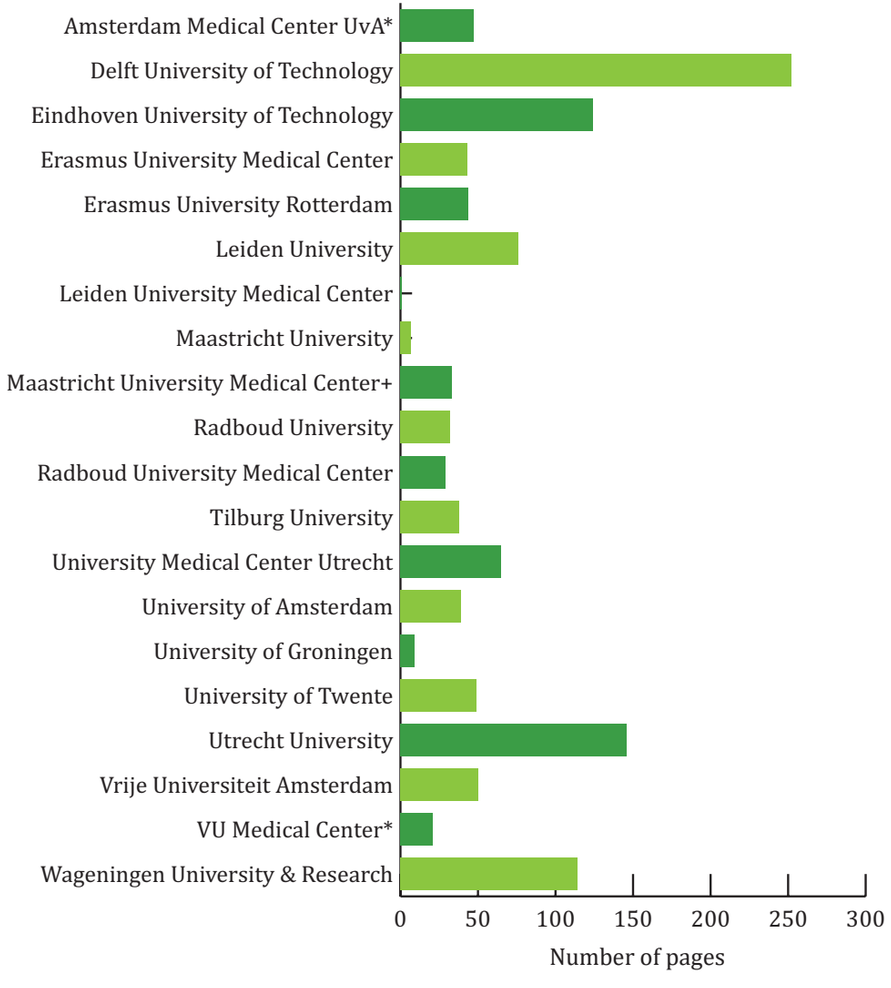


Figure 4: Length of report or reports per university

* AMC UvA and VUmc have merged into Amsterdam University Medical Center in 2018.

4. OUTSTANDING ISSUES

We have so far compared quantifiable and objective indicators of the various reports. However, not all that counts can be measured. In the next section, we discuss qualitative differences between the reports that point to specific areas for improvement.

4.1 If not us, then who?

From the above, it is clear that universities differ considerably in what they aim to achieve (neutrality, emissions reduction), which emissions they count (Scopes 1-3), how they aim to go about achieving their goals (plans), and when (ranging from 2024 to 2050). In many cases, they fail to answer an equally important question: *who* will ensure that universities achieve their goals, monitor and report on progress, and coordinate efforts?

As the report by TU Delft states, university activities involve the activities of more than 20,000 individuals. In other words, making any meaningful progress towards sustainability requires a dedicated staffing effort. Ambitious climate *plans* are a good place to start, but they will only have the desired impact if supported by a commensurate staffing commitment as well as staff and logistical support. This is not always the case. Radboud University, for instance, states (p. 12) that *'Eigen initiatief en ideeën van medewerkers, studenten, patiënten en partners krijgen dan ook volop de ruimte'* ('Initiatives and ideas by employees, students, patients and partners are given all the necessary leeway [for development]'). Although there is undoubtedly a positive, community-building spirit underlying this quote, such bottom-up initiatives can only have a material impact if they are backed up by institutional support and consistent recognition. We therefore examined each report for organisational

commitment in terms of allocated staff. Although a definitive assessment based only on the reports or websites proved difficult, the reports do give some indication of the staffing commitment made to address sustainability challenges. The most extensive commitment was noted in the report[15] by TU Delft, which listed three main authors in relatively senior positions, supported by 114 (named) individuals divided under 18 headings. In contrast, several other universities had no identifiable staff responsible for achieving their stated goals.

One key risk in this regard is not (just) the number of staff but the continuity in staffing, or lack thereof. Over the past few years, sustainability initiatives and plans have often been the first to suffer when budgets are cut. For instance, EUR Rotterdam had one of the most ambitious climate goals, hoping to achieve net neutrality in 2024 and be eco-positive in 2030. However, in a well-publicised change of direction, it discontinued multiple sustainability initiatives and did not renew its sustainability officer's contract.[16] A similar trend can be noted at Tilburg University. In its 2019 plans (TU3, p. 21), it stated that 'Tilburg University wants to stop using unsustainable (fossil) sources of energy by 2025' and committed itself to establishing a Green Office in 2019. Three years later (TU1, p. 54.), these ambitions had been watered down to '*We mikken op een snelle afbouw van het gebruik van fossiele brandstoffen*' ('We're aiming to rapidly reduce our use of fossil fuels'), and as of June 2025, it has not yet established a green office despite committing to do so in 2019. Although budget cuts are always challenging, universities must find a way to ensure some policy continuity if they want to have any chance of achieving their stated goals. If those responsible for transforming an institution of tens of thousands of individuals only ever work with a two- to three-year employment horizon, we can safely assume that none of the stated targets will be achieved (and, perhaps, that there was never a real commitment to do so). Moreover, the current pattern of peaks and troughs in investment and appointments of skilled professionals is inefficient, leads to a loss of expertise (often built up over several years), and disrupts the internal relationships needed to implement real and lasting change.

To conclude, each university or umc that claims to be serious about its climate commitment should ensure that there is appropriate, consistent support and leadership to achieve their stated goals. This requires, first of all, continuity in the staffing of sustainability departments, ideally with permanent, rather than fixed-term, contracts. We are not blind to the realities of budget cuts, but careful policy can ensure that sustainability is not *disproportionately* affected. This can be done, for instance, by reserving a fixed percentage of overall FTE for sustainability roles, as this will ensure that budget cuts are equitably distributed. This is a policy step encouraged in the *Duurzaam denken, duurzaam doen* manifesto (*Think green, act green. Manifesto for knowledge institutions.* De Jonge Akademie, 2025). Notably, evidence suggests that this approach may save, rather than cost, money; a preliminary economic analysis at the RUG demonstrated that its sustainability policies have already saved 16 million euros[17], demonstrating not just the intrinsic value of sustainability but, when well executed and supported, the financial benefits too.

Second, it is crucial to ensure that staff members who work on sustainability have decision-making powers proportionate to the task at hand. This can be implemented in different ways but can include having sustainability coordinators regularly attend high-level decision-making meetings, employing existing senior staff in part- or full-time sustainability roles, and ensuring close ties between sustainability coordinators and operations managers. Such moves would help sustainability coordinators effectively navigate the often complex policymaking processes at universities.

Finally, in addition to dedicated sustainability staff, universities should also recognise the 'soft power' of committed staff members who contribute to grassroots sustainability initiatives and green offices. These efforts should be explicitly recorded in annual appraisals in a manner similar to outreach and other activities, in the spirit of the Recognition & Rewards programme.

4.2 Transparency and accountability

The ultimate goal of the universities and umcs is to achieve genuine progress towards sustainability over time, but they will only do so if they are sufficiently transparent about their operations and commit to adequate accountability. One particular approach may provide a useful model. Since 2024, many European companies have been bound by the *Corporate Sustainability Reporting Directive* (CSRD).[18] This EU guidance sets out a uniform, mandatory framework for how to report on sustainability activities and progress. While educational institutions are exempt from the CSRD mandate[19], they can nevertheless learn a great deal from the approach that it advocates: the introduction of a uniform, structured template for the many aspects of sustainability reporting that are, at present, entirely idiosyncratic across institutions. This lack of standardisation has been identified in the literature

15 https://filelist.tudelft.nl/TUDelft/Research sites/Sustainability/Sustainable TU Delft - Vision ambition and action plan v5.3_220927.pdf

16 https://www.erasmusmagazine.nl/en/2024/11/21/anger-and-disappointment-over-delay-and-abandonment-of-sustainability-projects/

17 https://www.rug.nl/about-ug/profile/facts-and-figures/duurzaamheid/praktische-informatie/go-c-b-methodological.pdf

18 https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

19 We are aware that the remit of the CSRD is continuously in flux. For example, the recent Omnibus amendment would significantly decrease the number of companies that it covers. This does not detract from our point, however.

as a key barrier to progress on sustainability (Valls-Vall & Bovea, 2021, p. 2523). A lack of clarity and consistency in definitions, scope and goals leads to ambiguous plans that are difficult to verify and impossible to compare.

A recent initiative, launched as we were writing this report, provides tools to overcome this problem. The *Handreiking vrijwillige duurzaamheidsverantwoording*[20] (*Guidance on Voluntary Sustainability Reporting*) provides sector-specific guidelines (i.e. tailored to academia) for the voluntary implementation of the CSRD principles to achieve more uniform and transparent sustainability reporting. The tool has several benefits. First and foremost, it supports the 'plan-do-check-act' cycle[21], a dynamic, four-stage approach to achieving change in large institutions. Second, by adopting these guidelines, many of the problems identified above will disappear or be mitigated, namely the lack of comparability and uniform terminology and the fragmented nature of current reports.

The above guidelines only address the *reporting* side of the coin, of course, and not the *verification* side. Several reports (but certainly not all) mention some form of auditing, either internal or external, taking place at varying frequencies (e.g. annually). The adoption of a uniform *reporting* framework is, in our view, also the right time to adopt a uniform *auditing* framework for independently assessing progress and reporting. Various accounting frameworks exist, but one in particular, the 'limited assurance' approach[22], is considered less burdensome, especially after the initial assessment in the first year. Verification of this kind could be undertaken by an independent party. This need not necessarily be a corporate accountancy or consultancy firm; a panel composed of experts from universities and related organisations would also suffice (see, e.g., innovations in sustainability accounting at Avans Hogeschool[23]). Such centralised reporting and assessment would go a long way towards ensuring transparency, comparability, and findability. A clear and consistent system across universities is crucial for monitoring and comparing ongoing plans, and above all for celebrating progress where it is made.

4.3 Borrowing liberally from one another

A final notable feature of the universities' and umcs' reports is their splendid isolation. Almost every report has been written as if the university in question stands alone in facing the climate crisis, and only a small number even mention other universities or their affiliated institutions (either the university or the umc), or explicitly acknowledge the wider community and ecosystem to which they belong. This has several drawbacks, including less cross-fertilisation of ideas, considerable inefficiency (as many of the systems and structures are idiosyncratic), and a lack of comparability.

This is a pity, because despite our criticisms above, the reports also discuss a sizeable number of truly impressive innovations, policies, and plans. We therefore recommend that universities share best practices and the many ideas already circulating in each one internally. There is much to learn, share and imitate for mutual benefit. Below, we give several inspiring examples - by no means an exhaustive overview.

Energy transparency

A particularly impressive example of innovation and transparency is the University of Twente's Energy Dashboard.[24] This allows up-to-date, hour-by-hour monitoring of multiple sources of energy and resources (electricity, heat, water), as well as solar power generation, for all its buildings. The expression "To measure is to know' seems particularly apt here. This level of public granularity and transparency is the first and crucial step towards mapping the efficacy of policy and behavioural changes and building renovations in the upcoming years. Expanding this digital and hardware infrastructure to all universities should be within reach, a move that will simultaneously improve transparency, ease the reporting burden, and offer students, scientists, and policy experts a unique resource to track progress and policy impacts.

Living labs in action

One particularly inspiring aspect consists of various 'living labs', where experimental sustainability innovations are tested in the university setting. Also known as green labs, they combine several unique strengths of universities, i.e. innovativeness, capital, and operational scale. A living lab can be just as valuable for testing activities that ultimately do not work out as for those that do. For instance, the UU report notes that an experimental collaborative project (*Geothermie Oost-Utrecht Duurzaam* or GOUD) to source heat from 'ultradeep geological drilling' was discontinued because there was insufficient evidence of efficacy.[25] Sharing initiatives with disappointing outcomes is at least as important as sharing 'successful' projects, given the sheer scope of innovation required.

20 https://samenverantwoordenonderwijs.nl/thoughts/889
21 https://asq.org/quality-resources/pdca-cycle
22 https://www.greenomy.io/blog/limited-reasonable-assurance-csrd-reporting
23 https://www.bwno.nl/en/lectoraten/duurzame-finance-accounting/
24 https://energydata.utwente.nl/
25 https://www.uu.nl/en/news/research-into-ultra-deep-geothermal-energy-in-utrecht-east-stops-but-research-into-less-deep

CO_2 tax: Carrot and stick

One tool that has been the subject of international political debates is the CO_2 or carbon tax. Often discussed as a national and transnational tool[26], a CO_2 tax can also be used internally to push policy in a climate-positive direction. In its report, TU Delft sketches (p. 69) several routes for this. First, a CO_2 tax can be a genuine tax added to the cost of a good or service. For example, a return flight between a conference location and Amsterdam would generate 2.1 tonnes of CO_2, so in addition to the price of the ticket, the person flying would also pay the carbon tax (e.g. €150 per tonne would come to €315), which might be deposited into a centralised resource used to support sustainability goals. To our knowledge a tax of this kind has not been fully implemented at any university so far, but it might prove to be a potent tool for realigning internal funds. The second approach, currently used by TU Delft for major acquisitions, is to impose a *virtual* CO_2 tax. This entails adding the CO_2 tax virtually when making decisions concerning the procurement of large-scale investments, buildings, projects, goods, or services to explicitly and transparently weigh the climate impact of various alternatives. Adding the tax gives decision-makers a transparent decision tool with which to favour one bid over another, even if the less-sustainable solution is nominally cheaper. Expanding this approach to all universities, either as an internal decision tool or a full-fledged tax, would incentivise more sustainable choices internally and increase the demand for more sustainable alternatives for providers.

Preserving history and the future

One unique challenge universities face is that they are often (partly) housed in older buildings, ranging from medieval structures to energy-inefficient buildings dating from the 1960s. It would be undesirable to encourage universities to sell off historic buildings solely to remove their (inherently) poor energy footprints from the books. If anything, universities are far more likely than other organisations to make historically valuable buildings as energy efficient as they can be. Universities have the capital, as well as an appreciation of the intrinsic heritage value of such buildings, to do the best possible. One example from TU/e shows how this can be done.[27] During renovation of its main building, the Atlas Building (built in 1963), the university removed the gas-fired heating system, decoupled the building from the gas grid, and connected it to its heat/cold storage system, one of the largest in Europe. This demonstrates that even old buildings can be updated and improved considerably with innovative approaches. Similarly, Leiden University has an explicit, building-by-building roadmap (LU1, p. 5) designed to make its historic inner-city campus more sustainable. It seems obvious that integrating best practices to make buildings more energy efficient while preserving their historic legacy saves time, money, and climate resources.

26 See e.g. https://taxfoundation.org/data/all/eu/carbon-taxes-europe/

27 https://www.unica.nl/klantcases/duurzaam-atlas-gebouw-technische-universiteit-eindhoven

We are confident that much closer integration and collaboration is possible, desirable, and would yield a number of 'quick wins'. At present, sustainability coordinators participate in an ad hoc network, but more institutionally supported integration and frequent meetings will likely bear considerable fruit.

5. DISCUSSION AND RECOMMENDATIONS

In this report, we surveyed the plans for a sustainable future at the thirteen Dutch research universities and seven umcs. While our report aims to explore a global problem, we explicitly recognise the arbitrary boundaries that we had to draw. Institutional boundaries are a pragmatic and logistical reality, but should not blind us to the global nature of the challenge before us. Our hope is that our initial efforts will ultimately be extended to include universities in the Dutch Caribbean, universities of applied sciences and other knowledge institutions across the Netherlands, and the cities and communities within which they are embedded.

After reading the reports in question, we can conclude that all the Dutch research universities have ambitious publicly voiced green plans. Public-facing comments suggest that universities want to 'take a leading role in the sustainability transition' (VU), be 'a leading institute' (UU) and play 'a leading role' (UL). These ambitions also extend to comparisons and rankings, with everyone jostling to be 'the best in the rankings' (EUR) and to have 'a spot in the top 10 Green Metric University rankings' (Tilburg). Several even aim to be 'the Netherlands' most sustainable institution of higher education', to take an 'international leadership position' and to be 'the world's most sustainable university' (TU Delft).

This level of ambition is to be encouraged, but the publicly accessible plans do not yet provide a clear roadmap for how to achieve it. The plans vary in their timelines (which year they aim to achieve their goal), substance (what is the goal), scope (what is covered), how they are assessed, interim goals, and whether staffing is commensurate with the magnitude of the challenge ahead. Our assessment of these shortcomings leads us to make five recommendations on how to move forward.

1.BE MORE AMBITIOUS

Most importantly, we argue that universities have both a moral obligation and a duty to society to be frontrunners, and that they have the capital and infrastructure to do so. Simply abiding by the Paris Agreements and/or the Dutch Climate Act is not enough. We recommend that universities set more ambitious goals, as suggested in the *Think green, act green* manifesto (De Jonge Akademie, 2025): to become climate-neutral by 2050 at the latest, with interim CO_2 reduction targets of at least 60% in 2030 and 90% in 2040, based on a full carbon footprint (Scopes 1, 2, and 3).

2. STANDARDISE SUSTAINABILITY PLANS

Second, universities must agree to use the same terminology, definitions, and, ideally, Key Performance Indicators (KPIs), to set comparable targets, and to organise their reporting and communication in a similar manner. To achieve this, universities should report their plans and achievements, and monitor their progress, using a standardised, uniform document, developed by a centralised, independent partner. A suitable template can be found in the recently published *Handreiking Duurzaamheidsverantwoording* (*Guidance on voluntary sustainability reporting*). Implementing this uniform template across universities will improve efficiency, comparability, and transparency and may encourage mutual exchanges of best practices and lessons learned.

3. BE ACCOUNTABLE AND TRANSPARENT

At present, universities vary in both the metrics they track and who assesses them. This is not a viable approach for dealing with the challenges ahead. Reporting and progress should be audited centrally and independently, ideally by an external or at least neutral party. Transparency also pertains to the substance of the reporting: we recommend only reporting absolute (not offset-adjusted) emissions, and framing goals and targets in these terms. This will ensure greater transparency and comparability and align with the goals set out in the Dutch Climate Act (which pertain to reductions, not net emissions).

4. ENSURE CONTINUITY AND AUTONOMY

The only way for universities to achieve their long-term sustainability goals is to ensure commensurate staffing support. At present, staffing at the more senior level (e.g. sustainability coordinators) has been shown to be unstable. To achieve long-term ambitious goals, universities must ensure robust, senior staffing (i.e. with decision-making authority and institutional access to other decision-makers), and avoid short-term contracts. We further encourage each university's executive board and supervisory board (RvB/CvB) to ensure one of its members has sustainability explicitly as part of their portfolio. In line with the *Think green, act green* manifesto (De Jonge Akademie, 2025), we recommend setting the staffing levels of sustainability coordinators and others assigned environmental tasks at a fixed

percentage of overall FTE. Doing so acknowledges the reality of budget cuts without their having a disproportionate impact on sustainability goals.

5. COLLABORATE MORE

Finally, universities are largely acting individually in defining their sustainability ambitions and in their innovation and implementation efforts. Reading the reports, we see that many 'quick wins' can be made simply by borrowing and implementing best practices and innovations from other institutions. One simple way to improve collaboration and cross-fertilisation is to establish the institutional infrastructure for regular (at least annual) meetings between all sustainability coordinators. The minimal cost incurred by a centralised body such as UNL, KNAW, KIN, NWO, or UMCNL to support such meetings would be far outweighed by a significant improvement in efficiency. Another way to maximise this potential is to initiate an informal 'peer review' system between universities, ensuring that their sustainability reports are read and assessed not only by individuals within their own organisations, but also by those working in comparable positions elsewhere.

6. CONCLUSION

In this report, we have assessed the sustainability plans of thirteen Dutch research universities and seven umcs. We find considerable disparity in their ambitions and timelines, the nature of their publicly voiced goals, and the roadmaps they have developed to achieve them. We have made a series of recommendations for maximizing integration, collaboration, and, ultimately, the impact of their efforts on the climate. By delivering impactful education, conducting innovative research, and running climate-compatible operations, we believe that universities and associated knowledge institutions can play a key role in creating a sustainable country, and planet, for future generations. In the coming years, we will work together to assess the progress made in climate plans and, where necessary, engage in discussions to determine how progress can be supported centrally.

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