Educational institutions and governments should provide the institutional support, resources and legitimacy for youth-led change towards sustainability.

This requires a combination of bottom-up initiatives and top-down steering. Mechanisms should include dedicated funding, institutional integration, working space, mandates, recognition, and training for youth-led sustainability initiatives.

- UNESCO Education for Sustainable Development Youth Statement. Added as a result of a consultation process discussing the Maastricht Green Office Model.
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**ANNEX** – List of Indicators
About Maastricht University Green Office

The Green Office is Maastricht University’s student-driven sustainability department. As such, it coordinates and initiates ecological, social, and economic sustainability projects at Maastricht University, by empowering students and staff members. The Green Office promotes sustainability as a topic of active concern among students, staff and faculties, and advances a self-perpetuating process of organizational transition towards a greener campus.
List of Abbreviations

<IR> – Integrated Reporting
CAR – Climate Action Report
DEFRA – Department for Environment Food & Rural Affairs (UK)
DVEP – De Vrije Energieproducent
ECTS – European Credit Transfer System
EEP – Energy Efficiency Plan
FASoS – Faculty of Arts and Social Sciences
FdR – Faculty of Law
FHML – Faculty of Health, Medicine and Life Sciences
FHS – Faculty of Humanities and Sciences
FPN – Faculty of Psychology and Neuroscience
FS – Facility Services
GHG – Greenhouse gas
GRI – Global Reporting Initiative
HR – Human Resources
ICIS – International Centre of Integrated Assessment and Sustainable Development
ICTS - Information and Communications Technology Service
IIRC – International Integrated Reporting Council
KPI – Key Performance Indicator
MJA3 – (Third) Multiple Year Agreement
MUJoSS – Maastricht University Journal of Sustainability Studies
PBL – Problem-Based Learning
Roadmap – Maastricht University Sustainability Roadmap 2030
RVO – Rijksdienst voor Ondernemend Nederland
SBE – School of Business and Economics
SPR – Sustainability Progress Report
SSC – Student Service Centre
UM – Maastricht University
UMGO – Maastricht University Green Office
Vision – Sustainability Vision 2030
Visit

www.greenofficemaastricht.nl/impact

for our interactive report, which is consistently updated and includes all data we collect.
1 Governance

Sustainability Management

UMGO was founded in 2010 as the first of its kind. UMGO is student-run. It serves as the official sustainability department of UM, responsible for coordinating and initiating sustainability efforts. UMGO and other stakeholders closely work with FS in general and the consultant for environmental matters and sustainability in specific. Actions taken towards greater sustainability are generally a result of consultations of different departments and stakeholders within the university. For UM to reach its sustainability goals as set out in the Vision, all departments must contribute. The Vision provides many tangible goals in many areas of sustainability, though some issues may not be fully considered. It is an ambitious set of goals, but it is possible for UM to reach these. Mid-term milestones can be found in the Roadmap. Short-term goals are determined by the biennial sustainability policies. If implemented these mid- and short-term goals will allow UM to reach the goals of the Vision.

In 2015, UMGO developed the Green Office Impact Model. The model is not yet fully implemented, but nevertheless gives a general impression of how UMGO creates impact. UMGO aims at implementing this model to a greater extent. The department works on a project basis, where projects are co-developed with the consultant for environmental matters and sustainability and strategic stakeholders. The next step is the relevant member of the supervisory board of UMGO who has expertise and influence in the concerned portfolio. These, along with a UMGO coordinator, form part of a working group which further includes stakeholders capable of directly implementing decisions made. Decisions taken by the working group are then implemented towards the general university community as shown. The arrows show the working process from UMGO’s perspective, where projects are developed originally by UMGO together with strategic stakeholders while gathering input from these same stakeholders and the university community. This does not preclude projects being initiated at a different level or other similar relationships to exist between other levels of the model. UMGO also runs pilot projects internally to make small advancements and prove feasibility. How UMGO has been active in this regard is outlined below.
A key challenge that remains is the lack of a proper sustainability coordinator position. Currently the consultant for environmental matters and sustainability is able to cover some of the responsibilities of such a coordinator, but the man-hours allocated to these tasks are nowhere close to sufficient. Furthermore, working groups as indicated in the Green Office Impact Model should be implemented and be ideally set-up and accountable to the highest level of management in order to effectively manage sustainability on all levels and in all dimensions. A positive step has been the establishment of the sustainability committee which is working towards, inter alia, integrating sustainability into the strategic programme of the university for the first time.

**Monitoring and rankings**

Maastricht University does not possess a fully institutionalized monitoring system for its sustainability performance. However, UMGO and FS do try to maintain an overview of sustainability performance, also through integrated reporting. Such is reported to the higher levels of management. UMGO’s performance is monitored through UMGO’s supervisory board. Still a more systematic monitoring mechanism could further improve sustainability performance. With the integration of sustainability into the next strategic programme, the supervisory board of UM will also start monitoring sustainability at UM to the extent that it is outlined in the strategic programme. UMGO bottom-up set-up and the transparency also of negative issues achieved through these reports as well as the frequent use of student research also enable a certain degree of bottom-up monitoring.
SustainaBul
UM takes part in the SustainaBul rankings organised by Studenten voor Morgen every year since the creation of the ranking. The SustainaBul ranks higher education institutions in the Netherlands based on their sustainability performance. Over the last years UM has seen a steady decline as shown below.

<table>
<thead>
<tr>
<th>SustainaBul Ranking</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>All participants</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>15</td>
<td>&gt;15</td>
</tr>
<tr>
<td>Universities only</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>10</td>
<td>N/A</td>
</tr>
</tbody>
</table>

In the assessment of UMGO, this decrease in rankings is due to a couple of factors including the fact that while in 2012, the existence of a Green Office was unique to UM, such a student-run sustainability department is now present at nearly all Dutch universities. Furthermore, progress has stalled in many areas, also due to institutional inertia, extreme decentralisation and a lack of communication and cooperation between stakeholders.

Integrated reporting
For a couple of years now, UM aims at publishing integrated reports. In UMGO’s assessment this is not yet achieved. An annual report is published every year which includes also sustainability data provided by UMGO and FS. UMGO was already reporting on sustainability through sustainability progress reports before this was the case. However, processes for such reporting are still not streamlined and sustainability is still dealt with in a separate section. This prevents a holistic approach outlining also the interconnection between issues. This report aims to supplement the annual report. In 2015, UMGO developed the first beta version of the sustainability reporting framework UniSAF-NL to strengthen integrated reporting at UM and beyond. The framework considers 92 indicators, of which 53 are core indicators and 39 are optional indicators. The table below shows that the annual report still only covers a minority of indicators. This report performs better, but is still missing important indicators due to a lack of available information. Acquiring such information will be a key task for UMGO and the institution in the near future. The data also shows that improvements have been made, however. While the number of indicators in the Annual Report has decreased, the spread has improved as compared to the SPR, thus actually contributing to the overall improvements.

<table>
<thead>
<tr>
<th></th>
<th>Core indicators</th>
<th>Optional indicators</th>
<th>All indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Report UM</td>
<td>19 (36%) (-8)</td>
<td>7 (18%) (+1)</td>
<td>26 (28%) (-7)</td>
</tr>
<tr>
<td>SPR 2015</td>
<td>39 (74%) (+6)</td>
<td>15 (38%) (+4)</td>
<td>54 (48%) (+10)</td>
</tr>
<tr>
<td>Total</td>
<td>44 (85%) (+9)</td>
<td>19 (49%) (+4)</td>
<td>63 (69%) (+13)</td>
</tr>
</tbody>
</table>

A positive step has been the move by both the finance department, drafting the annual report, and UMGO to move their reporting online. An online interactive report allows for the conflict between conciseness and completeness to be resolved. It may also enable the annual report to become fully integrated in the future by allowing greater flexibility and making it easier to link different sections.

¹ Each year the performance of the previous year is ranked. Thus the 2016 was included in this report on 2015.
2 Education

Sustainability Vision 2030

“Educating green change agents through a holistic approach to sustainability education and research”

Educating change agents in the field of sustainability among students, staff and the general public is a core objective of the university. To this end, the sustainable university offers a wide range of courses and extra-curricular activities in the field of sustainability and is a leader in both sustainability education and research. Crucially, concepts of sustainability are integrated in university programs to promote sustainability as an integral part of everyday life.

Goals:

- Making sustainability an integral component of educational programs offered by the university
- Offering an internationally acclaimed and innovative sustainability curriculum
- Making the university a hub for research and expertise, as well as an accessible database for stakeholders outside the University
- Increasing wide-ranging and measurable awareness of sustainability issues at all levels of university staff member
- Contributing to a more sustainable future by mapping changing trends and generating practical solutions
- Promoting inter-disciplinary research in the area of sustainability

Course Inventory

Number of courses and split between faculties

While certain limitations to this methodology exist, the number of courses focused on and related to sustainability, as well as their relative weight by ECTS credits provide an important indicator of the progress UM is making to its Vision goals in education. An inventory of such courses is maintained by UMGO since 2010. Since the academic year of 2014/15 these are also weighed by ECTS credits.

Figure 1 - Number of Bachelor Courses in Sustainability Inventory

2 The inventory may not yet be exhaustive. A certain bias towards new courses may be present when it comes to the discovery of new courses, creating an artificial upwards trend.
As can be observed in figures 1 and 2, there have been steady increases in the number of courses focussed on and related to sustainability both on a bachelor and a master level. However, increases have been modest over the last five years. Greater improvements in this area would be desirable.

When weighed by ECTS credits and increase from this academic year to the last can be observed, in line with the overall trend of the number of courses.

![Figure 2 - Number of Master Courses in Sustainability Inventory](image)

**Bachelor Courses**

![Bachelor Courses](image)

**Master Courses**

![Master Courses](image)

**Quality assessment of courses**

UMGO stays committed to conducting or initiating a quantitative assessment of sustainability courses. No data is available yet. Most faculties conduct surveys among students to assess their courses and make this information available to their students. A difficulty has been to access the evaluations of all courses included in the inventory and be permitted utilize it in any type of calculation that would then be made public.

[Find the complete course inventory along with data for each academic year in the online version.](#)
Availabilities to students

The availability of courses to all students remains a systematic barrier in UM achieving greater coverage of a sustainability curriculum. While in principle students may take courses of other faculties and departments, recognition, the availability of information and the possibility to take electives in the first place differ greatly depending on the study program. There is furthermore a lack of promotion of sustainability related courses offered by other faculties or departments. However, progress towards a joint minor system has been made. An additional difficulty is the spread of courses in faculties. Considering the spread of courses in the inventory, one observes that no master courses in the faculties of FHML and FPN are included. Also among the Bachelor courses, the Randwyck faculties are not well represented. Apart from the environmental impact of activities in the medical and psychological field, these areas of study are fundamentally connected to social sustainability issues. Health in itself is furthermore a core component of both environmental, social and economic sustainability.

Student engagement in education

Education in all of UM’s programmes is achieved by means of a system of Problem-Based Learning (PBL), which has been a key element of the university from its very foundation. This represents a nearly ideal context for education in matters of sustainability, due to the active role that students play in what they learn and how they learn it.

PBL entails a set-up of small tutorial groups, where students lead and partake in discussions, and formulate a series of learning goals. On the basis of these, students conduct individual research, only to come back to the group and share the accumulated knowledge. This process results in a firm grasp of theoretical concepts, but most importantly, their application to current real-life problems. It furthermore allows students to have a participatory role in determining parts of the content of their study and fosters a critical dialogue.

Sustain+GO

In 2014, UMGO offered its student-run sustainability course Sustain+GO for the first time. A second edition took place in 2015. The course aims to empower students by giving them the ability to build their own curricula and construct their own course manual according to their interests. Furthermore, the course aims to synergize academic and practical educational elements by linking an experiential and skills-based learning activity to each task. This methodology aims to equip students with a broader and more proactive vision of sustainability. An excursion is also organised as part of the course, enabling students to see sustainability in practice. The course did not yet provide ECTS credits. This remains a core objective of UMGO.
3 Research

Professorship Inventory

Figure 4 shows the number of professorships focused on and related to sustainability at Maastricht University as compared to other professorships. An absolute as well as a comparative steady increase can be observed since 2010. In fact, in 2015 a new professorship focused on sustainability was created for the first time since UMGO started collecting such data. Since August 2015, Prof. Dr. M. Davidson holds this professorship looking at the philosophy of sustainable development from a humanitarian perspective. The steady increase reflects a higher importance that sustainability appears to have for researchers at Maastricht University.

Research Centre Inventory

An inventory of research centres within UM related to sustainability was first made in 2010. The purpose of these institutes is to provide high-level research and education in this field, and thus, their number is revelatory for the involvement of the university as a whole, with such issues. At present, there are 10 centres that carry out research on sustainability, the same as in 2010. ICIS and ECCE are fully focused on sustainability topics. All research centres, and especially ICIS, also play a crucial role in offering courses in the area of sustainability (see Course Inventory). It is essential that close cooperation is encouraged and maintained between these and the faculties, as well as UMGO, in order to pursue the aim of further development of sustainability research and education at Maastricht University.
Sustainability Journal

In 2015, the third edition of the Maastricht University Journal of Sustainability Studies (MUJoSS) was published. The creation of the MUJoSS was an initiative of UMGO, intended to present a variety of approaches to and views of sustainability. The MUJoSS is a peer-reviewed journal that presents some of the best sustainability related research papers written by students of UM and recent alumni. The publication of the MUJoSS is followed by a corresponding symposium, during which the students present their papers and discuss them with both fellow students and academic staff. The main aim of the MUJoSS and its symposium is to promote excellence in student research on sustainability and enhance knowledge exchange.

The Living Lab

The Living Lab at UM brings together stakeholders with sustainability questions and courses dealing with related issues. This enables students to conduct research that directly answers sustainability questions stakeholders have. The Living Lab was initiated by UMGO and is currently being managed by it. To further develop the project, its ownership must at least partially be transitioned to another department of UM.

Knowledge Exchange and Internal Usage

An interdisciplinary knowledge exchange platform has been set up by UMGO. In 2014 the first two symposia of this platform were conducted. Further symposia were held in 2015. The symposia provided valuable insights for the academic staff involved. Researchers from all faculties have actively been involved in this initiative. The discussions also revealed that many hurdles to interdisciplinary approaches remain, including administrative and time management issues.

Furthermore, an initiative is in development since 2014 for researchers, teaching staff and support staff to investigate sustainability improvements that could be made to UM’s real estate, thus utilizing in-house knowledge and making use of previously untapped synergies. Similar practices have been used through the living lab with relations to students on a smaller scale. The intellectual capacities of academic staff have been largely untapped for the purposes of UM’s sustainability transition so far. This is a major step to increasingly utilize existing knowledge.

PhD on institutional transformations

A PhD research project, created in collaboration with the Green Office and hosted by ICIS, started in December 2013, with an expected run-time of four years. The title of the project, “Organisational Transformation and Systemic Change: Modelling pathways towards Sustainability at the University”, reflects the need of universities to take account of their efforts in manifesting sustainability across the portfolios of their activities: namely research, education, operations, governance, communications and outreach.

This project aims to take this brief as a starting point for case-study research on pioneering Higher Education Institutions including UM and UMGO itself, amongst leading examples from NGO’s, Public-Private Partnerships and the business world. This, in symbiosis with an Action Research process that iteratively experiments and implements its findings here in Maastricht, builds towards a set of deliverables, aside from publications and a thesis, that will include policy recommendations on the sustainability governance framework and institutional ‘machinery’ of the university and UMGO.

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3 All editions of the journal are available at http://greenofficemastricht.nl/publications/ and (with university access) at http://openjournals.maastrichtuniversity.nl/SustainabilityStudies.
4 University Community and Public Relations

Sustainability Vision 2030

“Living a culture of sustainability and participatory policy making”

Sustainability efforts are driven by a culture of sustainability. Students and staff strive for a sustainable future and come to identify with the university’s sustainability goals through the participatory approach of the sustainability process. The university embraces its role as a change agent within its local context and leads in global dialogues in sustainable development.

Goals:

- Making all students & staff aware of the university’s sustainability goals.
- Using bottom-up initiatives to encourage student and staff participation and support of sustainability.
- Becoming an active participant in its local environment, adapting university policies to other contexts.
- Establishing, maintaining, and deepening strategic partnerships for sustainability with the public and private sector as well as between the university and local communities as well as other educational institutions.
- Making sustainability an important part of University Public Relations.

The Student Community

Student Organizations active for sustainability

The involvement of the student community of Maastricht University also plays a significant role in promoting the sustainability transformation of the institution. An inventory of student organisations, which has been updated regularly since its initial publication in the CAR 2010, serves as a good indicator of such involvement on the side of the general student body. Although the list is not exhaustive and the number does not represent a fully reliable KPI of the level of student engagement in matters of sustainability, the list as such does give an accurate image of the broader involvement of the community.

An issue that student organizations are frequently faced with when engaging in projects for the improvement of sustainability is poor internal organization or lack of continuity between successive boards. A positive step in this regard is a manual for the boards of student organizations currently being prepared by the Student Project Team.

The WE festival

The WE festival is organized every year by several student organizations. The festival aims at fostering sustainability and creativity. There are workshops offered around sustainability, community, activities, cooking and creativity. This is additional to creative performances. The WE festival is organized entirely by volunteers. Since its initiation in 2010, the festival has grown significantly in size and importance and is now a major player in Maastricht’s and UM’s transition towards greater sustainability.

Find the complete student group inventory in the online version.

4 http://www.we-festival.org/.
Internal communication and awareness
Academic and support staff is frequently involved with sustainability concerning specific projects. Furthermore, initiatives are taken by staff members to make the institution more sustainable. An issue that remains is that often staff initiatives occur unnoticed and uncoordinated and therefore lose out on synergies. An important goal for the future should therefore be the greater involvement of the staff community by UMGO and FS in order to coordinate such efforts better.

Also in terms of the awareness of the sustainability structures and efforts at UM, improvements could and should be made. A representative study in early 2016 revealed that only around 46% of students have heard of UMGO. Only around 25% feel that UMGO is visible. Both UMGO and the university as a whole must put greater emphasis on communicating their actions and sustainability as a value to the students of the institution. No general strategy has been developed for internal communication of sustainability as of yet.

The Display
One method of raising awareness identified by UMGO is to utilize information screens already present at various facilities to inform students and staff about the energy usage of their faculty compared to the other faculties of UM. Such information will be shown on these screens from early 2016 onwards.

External Communication
Currently there is still a lack of external information about sustainability other than what UMGO provides on its channels, which primarily reach the university community rather than outside stakeholders. Some information is on the Maastricht University website including links to the UMGO channels. No general strategy has been developed for external communication of sustainability as of yet.
5 Operations

**Sustainability Vision 2030**

“Making a positive environmental impact”

The sustainable university generates a positive environmental impact by reducing its environmental footprint in the following ways:

**Energy**: The sustainable university has zero net energy consumption and is independent from the electricity grid. Through renewable on-campus energy production the energy that powers research, education and daily life at the sustainable university is emission free. At the same time the university strives to increase energy efficiency, avoiding energy waste. Virtualization and adhering to the highest standards for building and renovation also improve the efficiency of the university’s ICT infrastructure.

**Waste**: In a sustainable university waste is no longer seen as an undesirable yet inevitable end product of consumption. Instead, waste becomes a new resource. The sustainable university reuses, recycles or composts, engaging in Cradle-to-Cradle approaches and aiming to reduce the amount of residual waste to the minimum. Paperless learning and teaching, for example, contribute to lower waste production.

**Procurement & Catering**: The sustainable university considers its ecological and social responsibility and takes it seriously. Strict ecological and social criteria are therefore implemented and closely monitored in all its procurement activities including Catering.

**Water**: Addressing the increasing global significance of available clean water, the sustainable university reuses rain water wherever possible and continues to develop innovative ways of reducing its total water consumption.

**Transportation**: Reducing its contribution to global climate change is one of the sustainable university’s central goals. When possible the university seeks to reduce university related travel and to find alternatives or compensation for unavoidable carbon-emitting transportation.

**ICT**: The university prioritizes the fostering of a holistic and systematic approach to address the challenges of ICT infrastructure energy efficiency. As ICT infrastructures are rapidly growing due to digitalization and technological advancements the role of ICT becomes increasingly important to achieve a sustainable university.

Goals:

- Reducing net energy consumption for all facilities to zero.
- Using 100% renewable and self-generated energy.
- Increasing energy efficiency.
- Using a Cradle-to-Cradle approach to reuse, reduce and recycle waste.
- Decreasing the use of paper and packaging.
- Implementing strict ecological and social criteria for 100% of the university’s contractors, including Catering.
- Using fresh water wisely and rain water where possible.
- Reducing travel-related greenhouse gases through different modes of travel, reduction and compensation.
- Implementing maximum energy efficiency in ICT.
In 2015, the electricity consumption in the inner city has, with a 0.1% decrease, virtually remained levelled. In Randwyck on the other hand there has been an increase of 2.5%, contributing to an overall increase of 1.8%. This brings UM’s electricity consumption to the highest level since at least 2007.

The per capita electricity consumption improved in 2015, however. After being stagnant for several years, 2015 brought about a 2% decrease. It is now at the lowest level since at least 2007.

Consumption per m² of area used has increased by 0.9%. It is now at the highest level since 2010, but remains lower than in the years from 2008 to 2010.
All faculties have decreased their electricity consumption per Capita in 2015. The biggest savings have been made by SBE, which consumed 10.9% less electricity per student and staff member. FHS, FPN and the Law Faculty each consumed between 6% and 7% less. The lowest savings were made by FHML (2.7%) and FASoS (2.1%). The ranking has remained unchanged.

Server virtualization and a sustainable data centre

The ICT service centre (ICTS) of Maastricht University is working towards greater server virtualization and sustainability in its data centres.\(^5\) After a baseline analysis via the BlueICT Scan in 2012, virtualization and a potential outsourcing of all UM servers is investigated by ICTS also in cooperation with the UMGO. If implemented, these efforts could have very large positive effects on UM’s energy efficiency.\(^6\)

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5 Server virtualization is a technique that involves partitioning physical servers into a number of small, virtual servers with the help of virtualization software. In this way, the capacity of physical servers can be used to a larger extent which increases energy efficiency substantially.

6 UM will still be responsible for the energy usage at the data centre when it is outsourced. Increased efficiency for UM occurs because such a data centre is more efficient than the current placement of servers.
Gas

The total gas consumption has increased in 2015. The decrease was, with 14.1% quite significant. However, it came after the lowest consumption since at least 2007 was reached in 2014 as a result of a 27.6% decrease. High fluctuations occur due to varying weather conditions.

To account for varying weather conditions, one must account for heating degree days. When this is done, there is still an increase compared to 2014, but only of 1.9%. Compared to previous years, this does not represent a significant change. Despite the increase, the value of 2015 is the third lowest in since records were kept, being only slightly higher than in 2012. There appears to still be an overall downwards trend. Nevertheless, this increase is not desirable. However, one must also consider that there is a very high error of margin when accounting for heating degree days, which is why changes are often amplified.\(^7\)

\(^7\) Heating degree days is a value calculated on the basis of average weather conditions during a year thus accounting for the need to heat during any given year. There is a high error of margin in such a calculation in itself. This error of margin is amplified by the required division formula when applying it to gas consumption and by the impact of buildings not being heated when not used.
Also heating efficiency per m$^2$ of area used has increased slightly, by 1.1%. Nevertheless, this is the second lowest value after 2014 that has been measured. Since these numbers account for heating degree days there is a high margin of error.

A similar trend can be observed in heating efficiency in terms of staff members and students where a 1.9% increase has occurred. The 2015 value is the third lowest measured, being slightly higher than the 2012 value. As these numbers account for heating degree days there is a high margin of error.

In line with the overall increases, most faculties saw an increase in their heating energy usage per capita in 2015. Only FHML managed to continue their downwards trend with a 4.7% decrease. While the Law faculty nearly kept its consumption with an increase of only 0.8%, FASoS experienced the greatest increase with 9.6%. While no changes in the ranking occurred, the difference between FPN and FHS on the one hand and FASoS and SBE/Law on the other hand increased significantly. SBE and Law remain virtually tied, with SBE still performing slightly better. Since these numbers account for heating degree days there is a high margin of error.
Water

Water consumption at UM has decreased by 5.0% in 2015 after the all-time high in 2014. The decrease comes from Randwyck (10.8%), but is not enough to make up for the extreme increase in 2014. In 2014, there were two large water spills in Randwyck pushing the numbers up to this unprecedented level. Since the consumption in Randwyck in 2015 was higher than in 2013 though and considering the increase in the inner city in 2015 (7.5%) it does appear that there is an overall upwards trend. UM should more strongly investigate measure to decrease water consumption, rather than seeing it increase.

Also the consumption per student and staff member has decreased. The decrease of 8.6% does not make up for the increase in 2014 however. While the value is better than the measurements up to 2011, UM already performed better in 2012 and 2013.

Concerning water consumption per capita, faculties have performed very differently in 2015. While the Randwyck faculties’ (FHML and FPN) consumption per capita decreased significantly after the 2014 water spills drove these values up, the consumption of all inner-city faculties increased. FASoS and the Law faculties saw their numbers more than double. This pushed FASoS from the second best to the second worst faculty and the Law faculty from best to rank four out of six. With its significant decreases, which also lowered the consumption below 2013 levels, FPN moved from fifth into first place.
Water saving devices

In 2014, water saving devices were placed in several facilities across the university. These add air pressure to water taps while reducing the water used. This has the same cleaning effect for washing hands, but reduces the water consumption.

Energy Commitment

Maastricht University has, in 2008, joined the Multiple Year Agreement (MJA3). This agreement, set up by RVO, obliges institutions that are part to it, to increase energy efficiency by 2% every year until 2020. UM’s energy efficiency plan (EEP) for the years 2013-2016 has been approved by RVO and the municipality of Maastricht. The plan foresees improvements of 11.76-15.61%, therefore exceeding the required 8%. However, these savings are calculated savings and do not account for decreased efficiency over time. Nevertheless, the EEP causes UM to take significant energy efficiency measures.

At this point UM is on track with the EEP commitments. In fact, UM has now taken most of the possible smaller measures. This is a great success and UM now must take on larger and more innovative projects to keep up its energy efficiency goals.
In 2012 a pilot of waste separation into three waste streams was introduced at the inner-city university library. This was an initiative of UMGO and FS. Plans are being made within FS to expand this initiative to other facilities in 2016. By 2017 waste separation should be implemented throughout UM. Paper waste is already separated from paper and cardboard waste at all facilities. Some additional waste streams are collected at facilities where such waste often occurs. Nevertheless, residual waste still makes up more than half of all waste. In 2015, the quantity of residual waste has increased for the first time since 2011, by 13.6%. It is now at the highest level since the spike in 2011, which was likely influenced by a measurement error. Since measurements began in 2002, the only other year where levels were this high was in 2005. The increase can partially be explained by large renovations producing high quantities of residual waste. Paper waste on the other hand has decreased by 15.1%, bringing the value down to its lowest value since 2003. This is a worrying development, as greater separation should lead to an increase in paper (and in the future plastic waste) and a decrease in residual waste. Effective waste separation at all facilities must be implemented to significantly reduce residual waste. All separated non-residual waste is recycled.

Also per capita increases can be observed. Residual waste increased by 9.3%, while paper and cardboard waste decreased by 18.3%. Overall there has been an increase of 3.6%. This is the first increase since 2011, but the overall levels remain lower than they have been up to 2012.
Hazardous Waste

Hazardous waste has, after decreasing for two years, increased again. This year it rose by 22.8%, bringing it to its highest level since 2012 and the second highest overall. Considering the increased research activities, this trend is not unexpected.

Also hazardous waste per capita (FHML and FPN only) has increased, by 18.2%. It remains lower than in 2012 or 2013.
E-Waste

![E-Waste Graph](image)

In 2014 there has been an increase of 125.5% of centrally disposed e-waste. In 2015, there was a further increase of 26.9%. In the past only a minority of e-waste has in fact been disposed centrally. Most e-waste produced by UM had been disposed of by faculties and departments individually. Any e-waste not centrally disposed could not be included in these measurements. In many cases it may have been disposed of responsibly, in others it may not have. UMG0 worked with FS in 2014 to develop an e-waste policy that was approved and started to be implemented within 2014. This was probably the largest factor leading to an increase in centrally disposed e-waste in 2014 and 2015. The increases must therefore be seen as a success, due to the guarantee that centrally disposed e-waste is now recycled and ultimately disposed in a socially and environmentally responsible manner. In 2016 UMG0 and FS will continue to implement the e-waste policy of 2014 fully to ensure that all e-waste is disposed of centrally.

Nuclear waste in the electricity supply chain

Maastricht University is not only responsible for waste produced by its members or waste disposed in its facilities. One must also consider the nuclear waste occurring in UM’s supply chain of electricity. Nuclear waste is at this point stored in places that are deemed safe for the next couple of years. There currently is no solution on how to handle this waste that will continue to pose a danger to any living being up to hundreds of thousands of years. Nuclear waste resulting from electricity consumption is reported on in this report for this reason as well as due to general dangers of nuclear energy and its negative impacts on public health. While nuclear waste resulting from energy consumption is generally
not yet reported on by the institutions consuming energy,\(^8\) it is standard in environmental reporting of electricity providers.\(^9\)

Since 2009 there has been a steady decrease of radioactive waste in the electricity supply chain. In 2015 there was a decrease of 43.5% compared to 2014, primarily due to the energy provider of AzM nearly eliminating nuclear from their energy mix. While this is certainly a positive development, UM should in the long term consider eliminating nuclear power from its energy mix entirely.

**Procurement**

In the Netherlands, public sector institutions have the obligation to conduct 50% of their procurement, in accordance with the sustainability criteria imposed by RVO.\(^10\) UM has taken up a more ambitious goal of reaching 100%. This was achieved in 2011, but failed to be reached in 2012.\(^11\) However, in 2013, the university returned to 100%, and successfully maintained this in 2014 and 2015.

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\(^8\) It is for example not included in the GRI standard.

\(^9\) Energy providers will generally report greenhouse gas emissions and nuclear waste per kWh, as did UM’s provider upon request of their GHG emissions.


\(^11\) Inkoopsbeleidplan Universiteit Maastricht 2012-2015.
Nevertheless, it must be noted that the criteria employed are only applicable to purchases on the central level and not to those made by faculties or other departments which are not processed by the purchasing office. Moreover, there are criteria available for only approximately 20% of purchases. Therefore, despite the 100% achieved, only a limited share of purchases is covered by the criteria. Furthermore, only a certain percentage of the purchases is generally required to be sustainable (see Catering below), as opposed to the entire sum of products. Finally, the criteria themselves primarily touch upon environmental issues and only deal with social sustainability to a limited extent. Furthermore, these only make limited demands. At the same time, UM does usually negotiate more ambitious criteria than those provided for by RVO. For UM to reach the goals set out in Vision 2030 regarding procurement, greater weight must be set upon sustainability criteria in tenders, and constructive dialogue with existing tenders must be encouraged towards improving the university’s sustainability performance in matters of procurement.

Catering
Albron is UM’s primary provider of catering services. Contractually Albron is required to supply 40% of its product range in sustainable products as defined by the RVO. From 2012 to 2013 Albron was far from meeting this requirement. While there is no contractual requirement for organic products, reaching only around 5% was also far from desirable. In 2013 Albron took a first positive step, in cooperation with UMG0 and FS, by introducing a sustainable vending machine. In 2014 UMG0 initiated a long-term dialogue with FS and Albron to further improve the share of sustainable products in catering. Albron took many positive steps as a result. The share of both sustainable and organic products rose by 10 percentage points. The contractual requirement of 40% was still not met. However, most measures were only introduced in mid-2014. Therefore, the first half of 2014 still lowered the overall share for the year. Furthermore, Albron could have probably achieved 40% sustainable products with the same effort and financial commitment if it had not raised the share of organic products as well. This would have been less desirable.
In 2015, finally, the share of organic products rose even further to now 17.0% and the share of sustainable products rose to 41.0%. Compared to 2013, before lobbying by UMGO started, this is a significant increase. Albron, FS and UMGO can be proud of this achievement. Lastly, Albron has also changed, at the request of UMGO and FS, all but one of its packaging materials to be mono-stream so they could be recycled. Further improvements can be made if Albron, FS and UMGO maintain this constructive dialogue in the future and stay committed to raising the level of sustainability in catering.

**Albron (94%)**

![Graph showing the increase in organic and sustainable foodstuff at UM offered by Albron from 2011 to 2015.](image)

*Figure 23 - Organic and Sustainable Foodstuff at UM offered by Albron*

Apart from Albron, there are two more catering services on UM’s campus. Coffeelovers has one branch at the student service centre. Coffeelovers was unable to provide any data on its sustainability performance upon request. Banditos Espresso has one branch at FASoS and another at FPN. Their total value of purchasing is 1:20 as compared to that of Albron. Banditos Espresso estimates that at least 99% of its products are organic. The only products that are not organic are raising agents and their hazelnut essence which only make up around 0.1% of their purchasing. Banditos Espresso manages to keep lower prices than most competitors despite providing nearly 100% organic products. This should serve as an example to other catering services and proves that it is well possible to provide socially and environmentally friendly catering services at competitive prices.
Printer optimization and efficiency
In 2014 a new printer tender was concluded. As a result, printers were replaced with more energy efficient models. Double-sided printing will be introduced as the standard everywhere (was already the standard setting for most machines). The weight of paper was reduced from 80g/m\(^2\) to 70g/m\(^2\). The location of printers is being optimized and as a result reduced by up to 40%. These changes should be viewed as a significant positive step. UMGO is working with ICTS and the printer supplier to further reduce the number of decentralized printers\(^{12}\) and to investigate draft printing as a default setting.

\(^{12}\) Printers purchased and operated by individuals or departments.
Staff commuting behaviour was first investigated by Maastricht Bereikbaar in 2010. The results showed that most UM staff members preferred the bike as a means of transport. The most recent data from 2015 shows that the use of both bikes and cars have decreased slightly. UM staff members appear to opt more and more for public transport, e-bikes and other means of commuting. These values are decent, also compared to other clients of Maastricht Bereikbaar. However, if UM is to achieve its goal of becoming a car free university, even greater effort will be required.
Staff travel

In 2016 a study was conducted on staff business trips in 2015. The travel behaviour of staff at FPN and SBE were considered and on this basis, a preliminary estimation for the entire university was made as shown in figure 26. The data is shown in terms of expenditure. No comparison to previous data is possible as this data was collected for the first time in this study. Air travel still makes up a significant 40% of foreign business trip expenditures. UM should not only aim at reducing this number, but also consider compensating these emissions. Several providers offer Greenhouse Gas emission compensation schemes for flights, which UM could easily make use of. Perhaps more significantly, also 12% of domestic business expenditures were air travel. While this number is inflated due to higher costs for flights, it still appears higher than it needs to be considering the size of the Netherlands and its sophisticated public transportation system. UM consider not allowing domestic flights to be compensated as business expenditures.

Mobility policy

In 2014, UMG0, FS and HR developed a transportation policy that is pending final modifications and approval. Core measures introduced by the transportation policy will include communication and awareness initiatives, providing bikes to employees, promoting carpooling, promoting the use of public transport and park and ride schemes, implementing charging stations for electric cars as well as compensation schemes and a reduction of flights. Approving and implementing this policy will be vital in the next couple of years to further reduce the travel related carbon footprint of UM.

Figure 26 - Split by means of Transportation for Business Trips in 2015

More data on mobility is available online.

Greenhouse Gas Emissions

This report has presented large quantities of data on many different aspects. All information provided is important in reporting on UM’s state of progress concerning sustainability. There is no one number that can show where the university currently is or where it needs to go.

An attempt to consider UM’s impact on climate change is made with a greenhouse gas (GHG) emissions calculation. The values given are calculated in CO₂ equivalents. The footprint is divided into three scopes. Scope 1 constitutes direct GHG emissions produced by UM (natural gas combustion). Scope 2 constitutes emissions directly consequential to UM’s activities (electricity purchased). Scope 3 constitutes further indirect emissions. For scope 3 infinite additional factors could be considered. A selection was made here. The emissions considered are as follows:

### Scope 1

<table>
<thead>
<tr>
<th>Source</th>
<th>Emissions</th>
<th>Change to 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas combustion</td>
<td>3597</td>
<td>+14%</td>
</tr>
</tbody>
</table>

### Scope 2

<table>
<thead>
<tr>
<th>Source</th>
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<th>Change to 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity purchased directly</td>
<td>3851</td>
<td>+3%</td>
</tr>
<tr>
<td>Electricity purchased through azM</td>
<td>3700</td>
<td>+9%</td>
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</table>

### Scope 3 D15

<table>
<thead>
<tr>
<th>Source</th>
<th>Emissions</th>
<th>Change to 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff commuting</td>
<td>3772</td>
<td>-11%</td>
</tr>
<tr>
<td>Lifecycle of waste</td>
<td>1224</td>
<td>+12%</td>
</tr>
<tr>
<td>Water usage</td>
<td>59</td>
<td>-6%</td>
</tr>
<tr>
<td>Business Travel</td>
<td>3264</td>
<td>N/A</td>
</tr>
</tbody>
</table>

In 2015 UM did not manage to reduce its GHG footprint compared to 2014 due to a higher consumption of energy. Since electricity providers did not change, their energy mix was not a significant factor in the difference. Scope 1 and 2 emissions are lower during the spike in 2013, but are

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14 Quantity of CO₂ that would have the same effect as the actually emitted Greenhouse gases.
15 The selection is termed “Scope 3 D15”. It is used for the footprint for 2015. The other measurements of “Scope 3 D12” covering years from 2012 onwards and “Scope 3 D09” covering years from 2009 onwards have been used in older reports and are used here to compare longer-term trends.
16 These numbers differ from those reported in the annual report. Some conversion factors were not yet updated.
18 The electricity purchased through azM was provided by GDF Suez. Source for the conversion factor: [http://www.wisenerdland.nl/groene-stroom/leverancier/gdf-suez](http://www.wisenerdland.nl/groene-stroom/leverancier/gdf-suez).
19 The lifecycle of waste was considered from production to disposal at UM. Since data on purchases is difficult to obtain this method was used to account for purchases was well. UK conversion factors of DEFRA were used. See [http://www.ukconversionfactorscarbonsmart.co.uk/](http://www.ukconversionfactorscarbonsmart.co.uk/).
20 UK conversion factors of DEFRA were used. See [http://www.ukconversionfactorscarbonsmart.co.uk/](http://www.ukconversionfactorscarbonsmart.co.uk/).
higher than at any point since 2009. Scope 3 D12 emissions have decreased to their lowest point since they have been recorded, largely due to decreases in emissions relating to staff commuting. Using a conversion factor identified by researchers at Harvard University, the scope 1&2 emissions of UM in 2015 still caused social damages of over 2 million Euros.\textsuperscript{21}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure27.png}
\caption{Total Greenhouse Gas Footprint}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure28.png}
\caption{Greenhouse Gas Footprint accounting for Offsetting}
\end{figure}

It is UM policy to compensate scope 2 emissions by purchasing certificates of origin. These are purchased based on a prediction of consumption. Due to this method, the actually compensated emissions may not always be identical to the emission emitted. Furthermore, UM only compensates the electricity supplied by UM’s provider. Emissions arising out of UM’s usage of azM facilities are not compensated by UM.\textsuperscript{22} Scope 1 emissions were compensated as well, though not entirely. For large buildings, 100% of emissions were compensated, while for smaller buildings only 25% were compensated. Unfortunately, no data on which buildings specifically were compensated how is available, thus not allowing for this factor to be included in the calculation. UM should aim at compensating all its scope 1 and 2 emissions in the near future.

In 2014 UM compensated 131\% kWhs it itself purchased, but only 69\% of total kWhs it consumed and 48\% of total scope 1&2 emissions. In 2015 the same value of kWh was purchased in the form of certificates. Due to different consumption, these only covered 124\% of UM’s provider, 67\% of total electricity consumption and

\textsuperscript{21} Factor of $220 per tonne. Source: Moore and Diaz “Temperature impacts on economic growth warrant stringent mitigation policy”. Derived from: \url{http://www.eenews.net/assets/2015/01/13/document_cw_01.pdf}.

\textsuperscript{22} These are partially compensated by azM.
46% of total scope 1&2 emissions. UM has thus over-purchased certificates in relation to its policy, but fails to compensate all emissions it should compensate.

In the last couple of years, major improvements have been made to how UM purchases certificates of origin. In 2011 only 10% of certificates purchases came from Dutch wind power, while a large share of certificates came from Norwegian Hydropower. Such a practice has a limited market impact. In 2012 this share was raised to 40% and to 100% in 2013 and 2014. From 2015 onwards, these are now bought from a local renewable energy producer. These improvements in terms of from where the certificates of origin are bought were significant steps into the right direction. To make more headway, UM should purchase certificates to cover all scope 1&2 emissions in the short-run and should consider purchasing renewable energy straight away in the long-run by including such criteria in the next tender offer.

The emissions per capita appear to mirror the overall trends. This shows that increases are not merely a sign of a growing university, but a real issue that needs to be addressed. Reductions have been accomplished in scope 3 emissions, due to lower emissions relating to staff commuting. Energy emissions have increased significantly though.
Overview and Conclusion

Maastricht University is transitioning towards a sustainable university. Despite some negative trends, a more attention is given to sustainability in the curriculum, to which new sustainability courses are consistently added. More research is conducted on sustainability as evidenced by the growing number of professorships, both in absolute terms and as compared to the total number of professorships hosted at the university. In terms of the student community, the involvement of UMGO was a major milestone. The recent expansion of the WE festival and the formation of new sustainability related student organisations shows that also the student community at large is active in the field of sustainability. At the same time, it can be observed that students are not sufficiently aware of sustainability initiatives, such as UMGO. In operations, there were some significant set-backs in 2013. After 2014 brought about more positive results, most indicators have once again worsened in 2015. Still, many long-term trends, such as energy efficiency, show improvements. Positive developments can be observed regarding staff commuting, decreasing nuclear power usage, catering and e-waste. At least the latter two are a direct result of collaborative projects between UMGO, FS and Albron/ICTS respectively. Many more initiatives have been taken, but are yet to be implemented. In this regard, institutional inertia, a lack of clear sustainability management structures beyond and integrated UMGO and extreme decentralisation are the main constrains. The current version of the SPR confirms the conclusion of previous versions that greater effort is needed in sustainability at UM as progress is too slow and some areas even appear to regress. All members of the academic community and all relevant stakeholders should take their responsibility in making UM sustainable. Success stories such as are present in catering, e-waste or changes in GHG offsetting policies show that progress is possible where there is constructive collaboration between different departments and where the issue is taken seriously by all involved. More such actions are needed along with structural changes to sustainability governance if UM is to accomplish its Vision goals.
## ANNEX – List of Indicators

<table>
<thead>
<tr>
<th>Indicator Nr.</th>
<th>Topic</th>
<th>Indicator</th>
<th>Value 2015</th>
<th>Page Number</th>
</tr>
</thead>
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<td><strong>Governance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1-1</td>
<td>Policy</td>
<td>Vision</td>
<td>See Report</td>
<td>5</td>
</tr>
<tr>
<td>G1-2</td>
<td></td>
<td>Policy</td>
<td>See Report</td>
<td>5</td>
</tr>
<tr>
<td>G1-3</td>
<td>Structure</td>
<td>Coordination of Sustainability Efforts</td>
<td>See Report</td>
<td>5</td>
</tr>
<tr>
<td>G1-5</td>
<td></td>
<td>Monitoring of Sustainability</td>
<td>See Report</td>
<td>6</td>
</tr>
<tr>
<td>N/A</td>
<td>Ranking</td>
<td>SustainaBu Ranking</td>
<td>&gt;15th place</td>
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<tr>
<td>G1-6</td>
<td>Reporting</td>
<td>Integrated Reporting</td>
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<tr>
<td>G1-7</td>
<td></td>
<td>Coverage of Indicators</td>
<td>70% (+15) total, 85% (+18) core, 51% (+13) optional</td>
<td>7</td>
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<tr>
<td>G2-6</td>
<td></td>
<td>Training of Staff</td>
<td>See Report</td>
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</tr>
<tr>
<td>G2-9</td>
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<td>Non-Financial Assistance Available to Staff</td>
<td>See Report</td>
<td>-</td>
</tr>
<tr>
<td>G2-10</td>
<td></td>
<td>Union Rights</td>
<td>See Report</td>
<td>-</td>
</tr>
<tr>
<td>G3-4</td>
<td>Students</td>
<td>Funds Allocated to Scholarships</td>
<td>See Report</td>
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<tr>
<td>G3-5</td>
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<td>Students Receiving Scholarships</td>
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<td>G3-7</td>
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<td>Social Assistance Available to Students</td>
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<tr>
<td>G4-2</td>
<td></td>
<td>Further Participation of Students and Staff</td>
<td>See Report</td>
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<td>G5-1</td>
<td>Finances</td>
<td>Debt</td>
<td>See Report</td>
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<tr>
<td><strong>Education</strong></td>
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<tr>
<td>E-1</td>
<td>Curriculum</td>
<td>List of Courses Focussed on and Related to Sustainability</td>
<td>See Report</td>
<td>9 (link)</td>
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<tr>
<td>E-2</td>
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<td>Number of Courses Focussed on and Related to Sustainability</td>
<td>31 (+2) Focussed, 39 (+3) Related</td>
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</tr>
<tr>
<td>E-3</td>
<td></td>
<td>ECTS Provided by Courses Focussed on and Related to Sustainability</td>
<td>183.5 (+15) Focussed, 225 (+20) Related</td>
<td>9</td>
</tr>
<tr>
<td>E-7</td>
<td></td>
<td>Involvement and Availability Level of Involvement of Students</td>
<td>See Report</td>
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<tr>
<td>E-9</td>
<td></td>
<td>Availability of Courses Focussed on and Related to Sustainability</td>
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<td><strong>Research</strong></td>
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<td>R-1</td>
<td>Professorships</td>
<td>List of Professorship Focused on and Related to Sustainability</td>
<td>See Report</td>
<td>11 (link)</td>
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<tr>
<td>R-2</td>
<td>7 &amp; 9</td>
<td>Number of Professorship Focused on and Related to Sustainability</td>
<td>5 (+1) Focussed, 36 (+2) Related</td>
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<tr>
<td>R-3</td>
<td>9a</td>
<td>Percentage of Professorship Focused on and Related to Sustainability</td>
<td>3.4% (+0.6) Focussed, 28.3% (+0.9) Focussed or Related</td>
<td>11</td>
</tr>
<tr>
<td>R-4</td>
<td>10 &amp; 11</td>
<td>Research Centres List of Research Centres active in Sustainability Research</td>
<td>See Report</td>
<td>11 (link)</td>
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<tr>
<td>R-5</td>
<td>12</td>
<td>Number of Research Centres active in Sustainability Research</td>
<td>10 total (no change), 2 focussed (no change)</td>
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<tr>
<td>R-8 &amp; R-9</td>
<td>14 &amp; 14b</td>
<td>Level of interdisciplinary Research and In-house usage</td>
<td>See Report</td>
<td>12</td>
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**Community and Communication**

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<thead>
<tr>
<th>C-1</th>
<th>15 &amp; 16</th>
<th>Student Community Student Groups for Sustainability</th>
<th>See Report</th>
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<tr>
<td>C-2</td>
<td>18</td>
<td>Communication Behavioural Change</td>
<td>See Report</td>
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<td>Level of Awareness</td>
<td>See Report</td>
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<td>Internal Communication</td>
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<td>C-5</td>
<td>17</td>
<td>External Communication</td>
<td>See Report</td>
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**Operations**

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<thead>
<tr>
<th>O1-1</th>
<th>19</th>
<th>Energy</th>
<th>Electricity usage</th>
<th>18,279,245 kWh (+1.8%)</th>
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<tr>
<td>O1-2</td>
<td>20</td>
<td></td>
<td>Electricity usage per m2</td>
<td>94 kWh per m2 (+0.9%)</td>
<td>16</td>
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<td>O1-3</td>
<td>21</td>
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<td>Electricity usage per Capita</td>
<td>910 kWh/capita (-2.0%)</td>
<td>16</td>
<td>43</td>
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<td>O1-4</td>
<td>22</td>
<td></td>
<td>Electricity usage per Capita by Faculty</td>
<td>FASoS 170 kWh (-2.1%), SBE 225 kWh (-10.9%), FHML 1502 kWh (-2.7%), FHS 341 kWh (-6.0%), FPN 596 kWh (-6.7%), Law 124 kWh (-6.5%)</td>
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<td>-</td>
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<td>O1-5</td>
<td>23</td>
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<td>Natural gas usage</td>
<td>1,909,486 m3 (+14.1%)</td>
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<td>O1-6</td>
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<td>Heating Energy</td>
<td>713 Nm3 (+1.9%)</td>
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<td>O1-7</td>
<td>25</td>
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<td>Heating Energy per m2</td>
<td>3.7 Nm3/m2 (+1.1%)</td>
<td>19</td>
<td>-</td>
</tr>
<tr>
<td>Page</td>
<td>Column 1</td>
<td>Column 2</td>
<td>Column 3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>O1-8</td>
<td>26</td>
<td>Heating Energy per capita</td>
<td>36.9 Nm3/capita (+1.9%)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>O1-9</td>
<td>27</td>
<td>Heating energy per capita by faculty</td>
<td>FASoS 1.7 Nm3/capita (+9.6%), SBE 1.5 Nm3/capita (+2.3%), FHML 4.8 Nm3/capita (-4.7%), FHS 3.4 Nm3/capita (+2.3%), FPN 2.6 Nm3/capita (+7.5%), Law 1.5 Nm3/capita (+0.8%)</td>
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<tr>
<td>O1-10</td>
<td>28</td>
<td>Water usage</td>
<td>58,373 m3 (-5.0%)</td>
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<td>O1-11</td>
<td>29</td>
<td>Water usage per capita</td>
<td>2.9 m3/capita (-8.6%)</td>
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<td>O1-12</td>
<td>30</td>
<td>Water usage per capita by faculty</td>
<td>FASoS 3.3 m3/capita (+310.8%), SBE 1.2 m3/capita (+17.2%), FHML 3 m3/capita (-3.6%), FHS 1.3 m3/capita (+2.3%), FPN 1.1 m3/capita (-36.6%), Law 1.9 m3/capita (+188.1%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O1-14</td>
<td>31</td>
<td>Energy savings according to MJA3</td>
<td>11.76% - 15.61% between 2013 and 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O1-15</td>
<td>31</td>
<td>Energy efficiency measures</td>
<td>See Report 16-21, 28, 44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O2-1</td>
<td>32 &amp; 33</td>
<td>Waste</td>
<td>Waste disposed at UM Total 736,387 kg (+7.6%).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O2-2</td>
<td>34</td>
<td>Waste per Capita</td>
<td>Total 910 kg (-2.0%) See Report for Categories.</td>
<td>22</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>------</td>
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<td>-------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>O2-3</td>
<td>33</td>
<td>Share of waste that is recycled</td>
<td>33% (-6)</td>
<td>22</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O2-4</td>
<td>33</td>
<td>Hazardous Waste disposed by UM</td>
<td>43,263 kg (+22.8%)</td>
<td>23</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>O2-5</td>
<td>37</td>
<td>E-Waste</td>
<td>10,790 kg (+26.9%)</td>
<td>24</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O2-6</td>
<td>38</td>
<td>Radioactive Waste in the Electricity Supply Chain</td>
<td>1.1 kg (-43.5%)</td>
<td>24</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O3-1</td>
<td>39</td>
<td>Mobility</td>
<td>Share of Tenders to which RVO Sustainability Criteria were applied</td>
<td>100% (No change)</td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td>O3-2</td>
<td>41</td>
<td>Organic Food in Catering</td>
<td>Main Caterer (94/100) 17.0% (+2.2) Banditos (6/100) &gt;99% (No change)</td>
<td>26</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O3-3</td>
<td>40</td>
<td>Sustainable Food in Catering (incl. organic)</td>
<td>Main Caterer (94/100) 41.0% (+5.4) Banditos (6/100) &gt;99% (No change)</td>
<td>26</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O4-1</td>
<td>43</td>
<td>Transportation Mode Split of Staff Commuting</td>
<td>Bike 42% (-1), Car 29% (+1), Train 15% (-1), Bus 2% (No change), E-Bike 4% (+2), Other 8% (-1)</td>
<td>29</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O4-2</td>
<td>44</td>
<td>Carbon Emissions resulting from Staff Commuting</td>
<td>3,772 tonnes (-11%)</td>
<td>31</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>44a</td>
<td>Transportation Mode Split of Staff Travel</td>
<td>Foreign: Air Travel 40%, Car 1%, Taxi 21%, Train 25%, Bus 5%, Metro/ Tram 4%, Unknown Public 4%</td>
<td>30</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carbon Emissions resulting from Staff Travel</td>
<td>Domestic: Air Travel 12%, Car 1%, Taxi 29%, Train 33%, Bus 3%, Unknown Public 23%</td>
<td></td>
<td></td>
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<td>--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O4-4</td>
<td>44b</td>
<td>3,264 tonnes (New)</td>
<td></td>
<td>31</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>O6-1</td>
<td>46</td>
<td>Carbon Footprint</td>
<td>Scope 1 &amp; 2 Carbon Emissions</td>
<td>11,148 tonnes (+8.4%)</td>
<td>31</td>
<td>44</td>
</tr>
<tr>
<td>O6-1</td>
<td>47</td>
<td>Scope 3 Carbon Emissions</td>
<td>D12 5,055 tonnes (-6.4%)</td>
<td>D15 8,319 tonnes (New)</td>
<td>31</td>
<td>44</td>
</tr>
<tr>
<td>O6-2</td>
<td>48</td>
<td>Scope 1 &amp; 2 Emissions Accounting for Offsetting</td>
<td>6,067 tonnes (+12.4%)</td>
<td></td>
<td>32</td>
<td>44</td>
</tr>
<tr>
<td>O6-2</td>
<td>49</td>
<td>Scope 1-3 Emissions Accounting for Offsetting</td>
<td>D12 16,203 tonnes (+3.3%)</td>
<td>D15 19,467 tonnes (New)</td>
<td>32</td>
<td>44</td>
</tr>
<tr>
<td>O6-3</td>
<td>50</td>
<td>Scope 1 &amp; 2 Emissions per Capita</td>
<td>0.56 tonnes/capita (+4.3%)</td>
<td></td>
<td>33</td>
<td>-</td>
</tr>
<tr>
<td>O6-3</td>
<td>50a</td>
<td>Scope 1 &amp; 2 Emissions Accounting for Offsetting per Capita</td>
<td>0.30 tonnes/capita (+8.2%)</td>
<td></td>
<td>33</td>
<td>-</td>
</tr>
<tr>
<td>O6-3</td>
<td>51</td>
<td>Scope 1-3 Emissions per Capita</td>
<td>D12 0.81 tonnes/capita (-0.6%)</td>
<td>D15 0.97 tonnes/capita (New)</td>
<td>33</td>
<td>-</td>
</tr>
<tr>
<td>O6-3</td>
<td>51a</td>
<td>Scope 1-3 Emissions Accounting for Offsetting per Capita</td>
<td>D12 0.55 tonnes/capita (-0.9%)</td>
<td>D15 0.72 tonnes/capita (New)</td>
<td>33</td>
<td>-</td>
</tr>
</tbody>
</table>