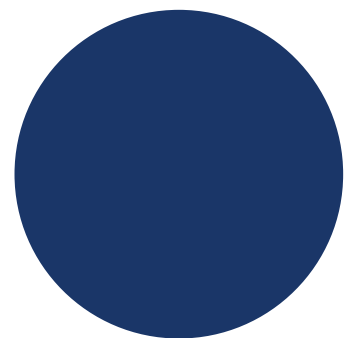
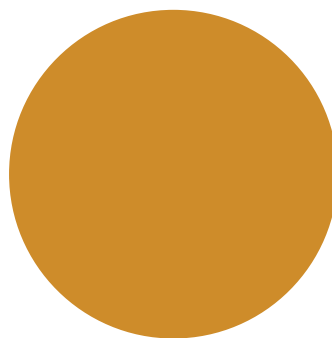
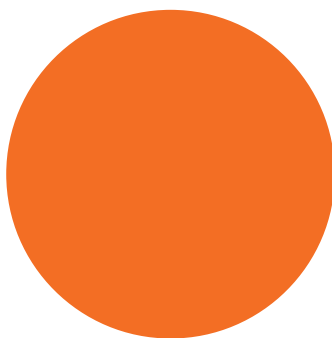
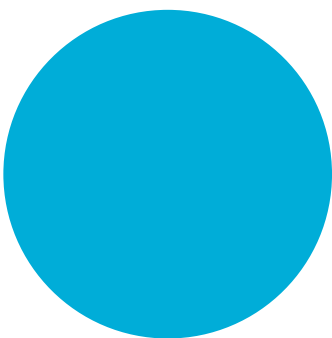
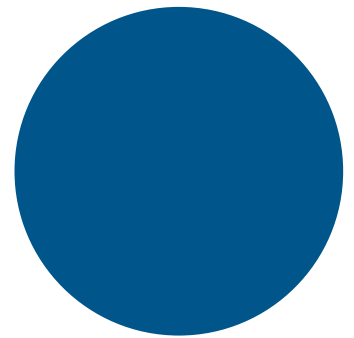
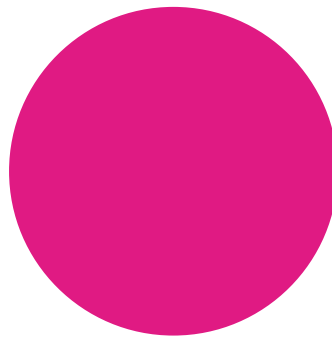
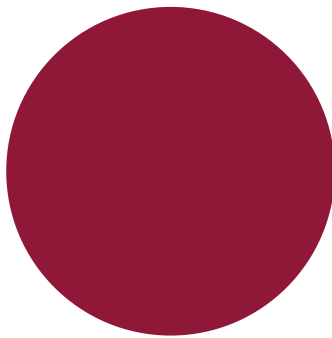
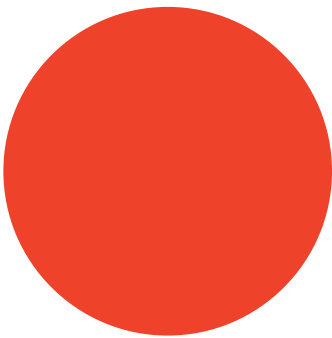
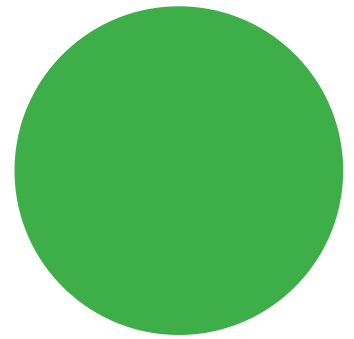
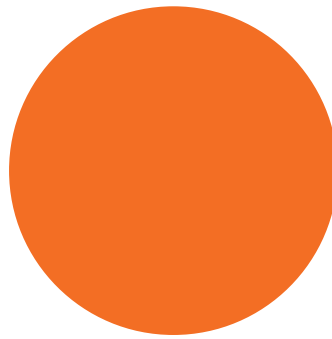
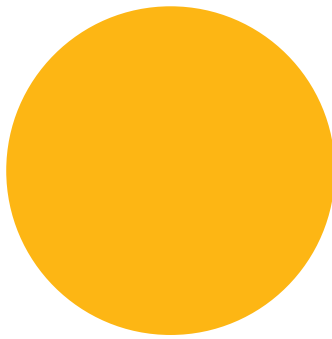
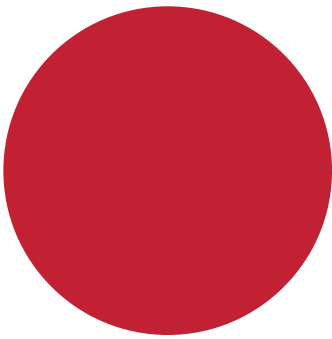
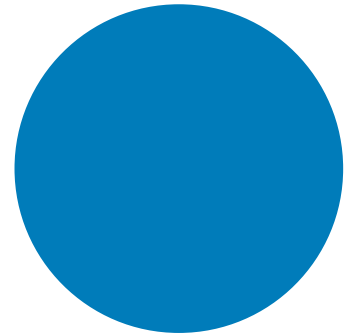


**Sustainable Development
at the University of
Duisburg-Essen**

A report by napro
2020



Thank you!

This report is full of path-breaking contributions by members of UDE.
The napro team is very grateful for your support and patience!

With the Agenda 2030 for Sustainable Development, the international community has voiced its conviction that the global challenges can only be solved together. [...] At the heart of the Agenda 2030 are the 17 Sustainable Development Goals (SDGs). For the first time, the 17 SDGs embrace all three dimensions of sustainability – social, environmental, economic – equally. The 17 SDGs are inseparable and mutually dependent. They are preceded by five key messages that elucidate the connections between the goals. They are known as the “five Ps”: people, planet, prosperity, peace, and partnership.

Federal Ministry for Economic Cooperation
and Development (2017): Der Zukunftsvertrag für die Welt.
Die Agenda 2030 für nachhaltige Entwicklung.
Bonn/Berlin. S.7.

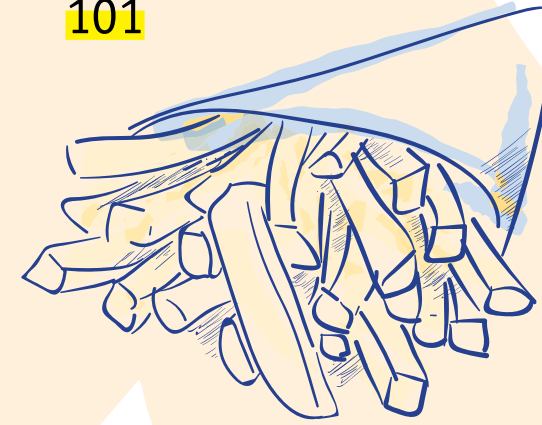


31



58

101



76

- 4 Prefaces
- 6 **The path to the Sustainability Report**
- 10 How we define sustainability in this report
- 11 Sustainability in our guidelines
- 12 Facets of UDE

- 16 **Together for sustainable development**
- 18 Process management and governance
- 28 Sustainability in research
- 44 Sustainability in teaching
- 52 Sustainability in operations
- 70 Sustainability and social responsibility
- 80 Sustainability and transfer to society
- 90 Sustainable networks
- 96 Engagement for sustainability
- 112 **Prospects for a sustainable UDE**
- 115 Sustainability: a strategic mission
- 116 napro's TOP 10 areas requiring action
- 118 Imprint
- 119 The 17 Sustainable Development Goals

Dear readers!



On our path towards a sustainable society, universities and their central mission of teaching and research have a prominent role to play: First of all, we train our future managers and decision-makers. A solid understanding of sustainability is a vital foundation for social acceptance of measures taken in the name of sustainability. Secondly, in order to achieve social change towards more sustainability, we need university research, from developing new technologies to scientific monitoring of its implications and interactions. Thirdly, as insti-

tutional actors, universities can harness the principle of sustainability to improve their own operative processes and procedures.

The University of Duisburg-Essen (UDE) is committed to the principle of sustainability and is aware of its responsibility to society. Moreover, we aspire to be a role model in this field. That is why our research, teaching, and operative activities inform our knowledge transfer on the topic of sustainability.

As one of Germany's largest and youngest universities, UDE has established a sustainability process called napro. Its aim is to pool and network our numerous existing initiatives and projects as well as identify opportunities for the university to develop further. This sustainability report is an important building block of napro on our way towards becoming a sustainable uni-

versity. It summarises UDE's sustainable activities starting in 2014.

I should like to invite you to read this report and hope you will find it interesting!

Sincerely,

Professor Dr Ulrich Radtke
Rector, University of
Duisburg-Essen

The paper in front of you is the first Sustainability Report by the University of Duisburg-Essen. For us, a university with more than 42,000 students and 5,800 employees, sustainability is a major social responsibility. In addition to making our due contribution to a sustainable society, we also want to become more sustainable as an institution. To this end, we strive to curb our resource and energy consumption, be mindful of risks and environmental aspects, and avoid any adverse health effects. Students, teaching staff, and researchers as well as technical and administrative staff are working together to achieve this goal.

This report describes how the University of Duisburg-Essen has evolved in terms of social as well as ecological and economic sustainability since

2014, deriving concrete goals and measures for the coming years.

In order to work towards climate-neutral operations, for instance, this includes developing our sustainable procurement management, expanding our energy management, and achieving more resource-efficient mobility on and between our two campuses.

I am very pleased that the topic of operative sustainability has elicited a positive response at our university. I would particularly like to thank the napro working group under the leadership of our Sustainability Officer Professor André Niemann as well as all UDE employees who helped prepare this sustainability report. The path leading to more sustainability is a learning process – so you are all most welcome to contribute your ideas.



Sincerely,

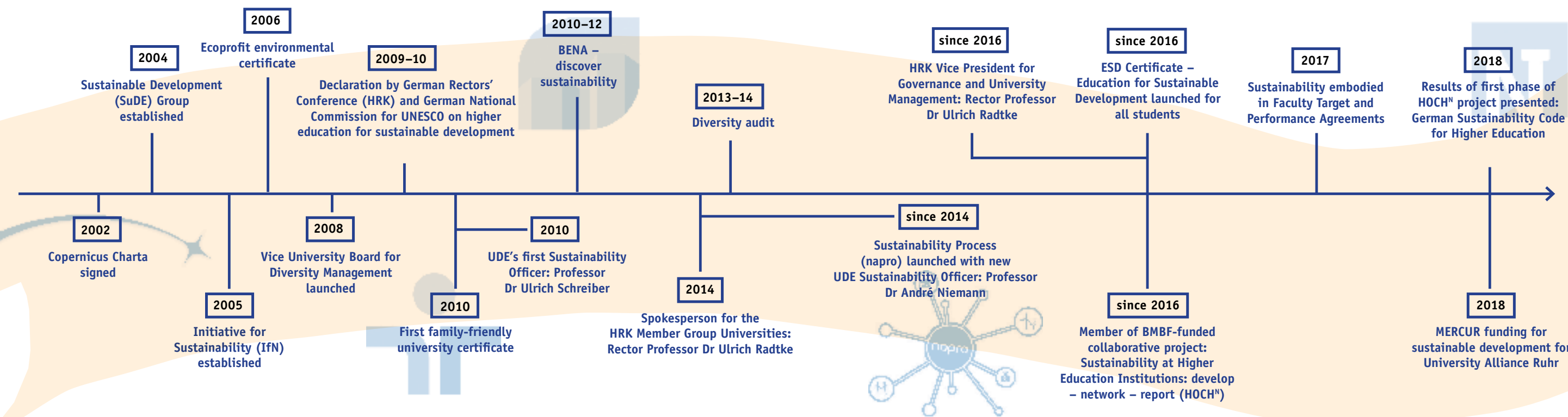
Jens Andreas Meinen
Chancellor, University of
Duisburg-Essen

The Path to the Sustainability Report

Today, sustainability is an unavoidable topic. What are the implications of such a development for this sustainability report? Or, to put it more provocatively, is sustainability at the University of Duisburg-Essen (UDE) just another attempt to live up to this mega trend? The answer in this report is a resounding “no”! And this is demonstrated by the milestones in its development that UDE has already achieved. Long before the abundance of social and political attention had coined terms like climate crisis and flight shaming, university students and staff were already working systematically to build a sustainable university.

First steps

As early as 2002, UDE signed the Copernicus Charta, paving the way towards sustainability. Against the backdrop of human destruction of the biosphere and thus the very basis of existence, the Copernicus Charta formulates guidelines and principles for action to promote sustainable development at universities. UDE undertook to support its staff and students in implementing these guidelines and principles for action.



This was followed, in 2004, by the establishment of the Sustainable Development (SuDE) Group which pooled the university's interdisciplinary expertise in research for sustainable development until 2007. Meanwhile, a number of years ago, our students had also set out on the path: In 2005, two students of Communication Studies started the Initiative for Sustainability (IfN) with the aim of acquainting their peers, lecturers and other interested individuals outside the immediate research field with the multifaceted sustainability model. The initiative became a registered association in 2010 and is still a major player in the field of sustainable change in the region to this day.

Exploring and mapping paths

The Sustainability Inventory (BENA, IfN project) for the period 2010 to 2012 was the first to pinpoint aspects of sustainability in research, teaching, administration, operations and social responsibility at UDE. These insights, and the projects and suggestions for improvement deriving from them, such as the Sustainability Guide, were recognised as an official UN Decade Project. From 2010 to 2014, UDE's first Sustainability Officer, Professor Ulrich C. Schreiber, supported BENA

and built bridges to promote sustainability between all the actors involved in research, teaching and administration.

UDE took an important step towards sustainability in 2010 when it was certified as a family-friendly university for the first time. In recognition of its commitment to a family-friendly environment, UDE was re-certified in 2014. The diversity audit "Vielfalt gestalten in NRW" (Creating Diversity in NRW), run by the Ministry of Innovation, Science and Research of the State of North Rhine-Westfalia and the Stifterverband für die deutsche Wissenschaft, followed in 2013 and 2014. The multistage audit, designed to reinforce the heterogeneous profile of students and staff at UDE as well as to improve their work situation, enabled the university to intensify internal cooperation and draw up central, tailored opportunities. For the fifth time in succession, UDE was awarded the Total Equality Seal for its forward-looking, sustainable HR policies in 2019.

Another milestone along this path is the Certificate in Sustainability at Higher Education Institutions offered by the Institute for Optional Studies (IOS) and the Joint Centre Urban Systems. Since 2016, it has enabled all students to acquire a certificate in the field of sustainability (p.46).

Text p. 9: In order to put all these activities on a firm track, UDE decided to create a contact point for all members of the university. The Sustainability Process (napro) was launched at the beginning of 2014 under the leadership of the Sustainability Officer, Professor André Niemann, who still holds the office. The aim is to drive sustainable development at UDE.

Clearly, sustainability at UDE is no superficial, passing trend.

Proceeding together

In its efforts to sustainably transform the university system, UDE is not alone. Other universities have set out on this path, too. So, why not proceed together and support one another? With the aim of making the German higher education landscape more sustainable, in 2016, UDE joined an alliance of initially ten universities. With funding from the Federal Ministry of Education and Research, they initiated the project "Sustainability at Higher Education Institutions: develop – network – report (HOCH^N)" (p.93).

But where do you start and where do you stop? How do you define a sustainability process? If you want to constitute a sustainability team and players you need

to analyse the institution itself: What courses are on offer in the broad range of topics addressing sustainability from an ecological, economic, social and educational policy point of view? Where is research exploring sustainability issues? How sustainable is our academic life, not least on a day-to-day basis? You will find initial responses to these questions in this report.

Based on the German Sustainability Code for Higher Education Institutions (HS-DNK) that UDE helped elaborate in the HOCH^N alliance (pp. 26-27), our report demonstrates how projects and people are shaping sustainable development at UDE. The individual activities are aligned to the United Nations' 17 Sustainable Development Goals (SDGs – see inside back cover), agreed by the international community: Over a period of 15 years (2015 to 2030), these goals include, for the first time for all nations, the three pillars of sustainability, social inclusion, environment and business. Finally, in each chapter we indicate where there is still need for action to make the university comprehensively sustainable. One thing is clear: the path to sustainable development is long and calls for genuine cooperation!

How we define sustainability in this report

Every institution must determine its own definition of sustainability in accordance with its specific situation, taking into account its geographical location, social and societal constitution and scientific direction.

Every institution must determine its own definition of sustainability in accordance with its specific situation, taking into account its geographical location, social and societal constitution and scientific direction.

UDE's actions are governed by ten guidelines which are embedded in the University Development Plan 2016-2020. These guidelines are a frame of reference for the definition of sustainability we use in this report: They document academia's commitment to social responsibility and its active role in transforming our post-industrial region. The guidelines also emphasise UDE's self-image as a community and the idea that all university members contribute to shaping its future. They set priorities, such as educational equity, lifelong learning, and gender equality and they underscore UDE's specialist and interdisciplinary research priorities, as reflected in its focal points of nanoscience, biomedical sciences, urban systems, and transformation of contemporary societies, among others.

Part of UDE's self-image are its close partnerships, from the regional level, such as the University Alliance Ruhr, to the international level, such as the AURORA network (p.92). The guidelines encourage everyone at the university to act and think sustainably – whether in research, teaching or operations. The aim of napro is to transfer existing approaches to a common UDE sustainability strategy. We consider it our responsibility to ensure that our actions towards all our stakeholders are social (ethically and culturally), ecological (conserving resources) and economical (efficient) in the long term. Sustainability is thus a normative principle built on morally binding rules (standards). We are tackling the challenges of the 21st century so that present and future generations can lead a good life – in close cooperation with all members of the university.

Sustainability is a normative principle that can be described as a benchmark of global and intergenerational justice in the face of challenges currently posed by an earth system in transformation. Ethically and politically, sustainable development is not a pre-determined goal that is imposed by some external entity, but rather an open-ended search process with heterogeneous target components, which therefore makes it pluralistic and culturally variable. Its focus is long-term responsibility to ensure ecological sustainability, social justice and economic performance. Its aim is to strengthen the skills required to take an active part in social life.

Vogt, M.; Lütke-Spatz, L. et al., 2018: Nachhaltigkeit in der Hochschulforschung (beta version). BMBF project "Sustainability at Higher Education Institutions: develop – network – report (HOCHⁿ)", Munich, pp.16–17.

Sustainability in our guidelines

UDE's actions are governed by the following guidelines.

The highlighted sections show how they relate to sustainability.

1. As one of Germany's largest universities, the University of Duisburg-Essen (UDE) is committed to meeting its social responsibility and making its contribution to a **sustainable, peaceful and democratic** world. It is committed to peaceful goals and fulfils its own particular responsibility for **sustainable development**.

2. In our research, education and management, we subscribe to national and international standards to carry out our research and educational mandate and to help drive the **structural transformation of the region** as well as the increasing **digitisation of private and professional lives**.

3. We view our **university as an inclusive community** that relies on active contributions by all members and disciplines. This includes **interdisciplinary networking** and appreciative, **extensive participation of every single academic, employee and student to actively shape UDE's future**.

4. We **continuously develop** our research profile with the active engagement of the **specialist and interdisciplinary research focus areas** in the faculties, the central scientific institutions and the university's cross-faculty profile focal points.

5. A constitutive element of our university is the unity of research and teaching. In all subjects and at all levels of study, we strive for the best possible conditions for studying and working to offer an excellent academic education based on science and research.

6. To this end, we strike out in **new directions**, designing undergraduate, postgraduate and continuing education programmes, e.g. in the field of e-learning/ blended learning. In this, we are guided by **various individual and societal requirements** within the context of **life-long learning**.

7. The further development of **teacher training** in research and teaching is a significant aspect of our university profile. Therefore, we design teacher training programmes based on research and are mindful of quality standards and current developments in educational policy.

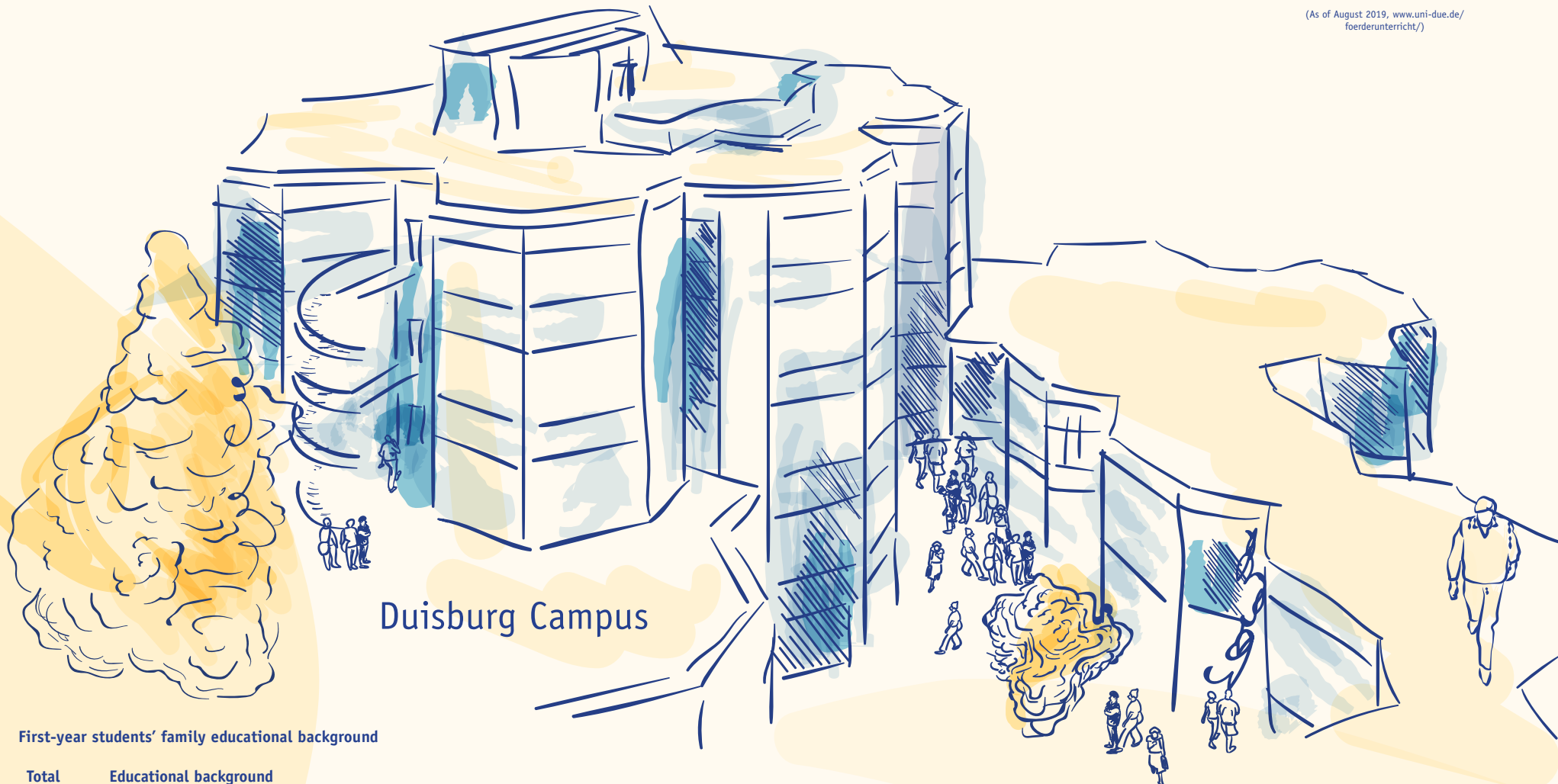
8. We look on the heterogeneity of our university community as an opportunity and promote productive diversity via dedicated **diversity management** measures. We consider diversity a contribution to **educational equity** and academic excellence. **Gender equality** is an integral part of these endeavours.

9. Our university management strives to maintain an appropriate balance between central, strategic profile development and decentralised profile development and self-governance. The instruments of target and performance agreements, budget management, cost control and personnel development are designed to ensure **continuous quality assurance and development**.

10. UDE's self-conception includes close **interconnections with regional, national and international actors in science and society**. As part of the University Alliance Ruhr (UA Ruhr), we work closely with the Ruhr Universität Bochum (RUB) and TU Dortmund University to coordinate our efforts to strengthen our national and international competitiveness and visibility, creating a unique profile and setting priorities in research and teaching.

Facets of UDE

Facts and figures on a young university on the road towards sustainability



Duisburg Campus

Special educational programme for children and teens with a migrant background
 Since its founding in 1974, 17,730 pupils have been taught in these special programmes.
(As of August 2019, www.uni-due.de/foerderunterricht/)

Academic degrees 2019	Total
Bachelor's (excluding teacher training programmes)	2,148
Master's	1,795
Teacher training programmes	1,313
Medicine	241
Ph.D.	533
Habilitation	32

(As of 2019, www.uni-due.de/de/universitaet/ueberblick.php)

Top 5 EU-wide destinations of ERASMUS exchange students (2013/14 to 2018/19)

Country	Number of visits
Spain	579
Turkey	358
United Kingdom	340
France	280
Sweden	141

(www.uni-due.de/international/outgoings_erasmus_studienaufenthalte.php)

Top 5 worldwide student destinations and student trips in the PROMOS and DUE-Mobil programmes (2013/14 to 2018/19)

Country	Number of visits
USA	239
Malaysia	99
Australia	97
Spain	51
Singapore	42

(www.uni-due.de/international/outgoings_erasmus_studienaufenthalte.php)

First-year students' family educational background

Total	Educational background				
	N	low	medium	elevated	high
1494	315	518	384	277	
100%	21%	35%	26%	18%	

(As of winter semester 2018/19, www.panel.uni-due.de/)

Times Higher Education Ranking
 UDE ranks 14th out of the world's 351 best young universities and 190th out of more than 1,250 universities worldwide (2019 rankings)
(www.timeshighereducation.com/world-university-rankings/university-duisburg-essen, Abruf am 30.03.2020)

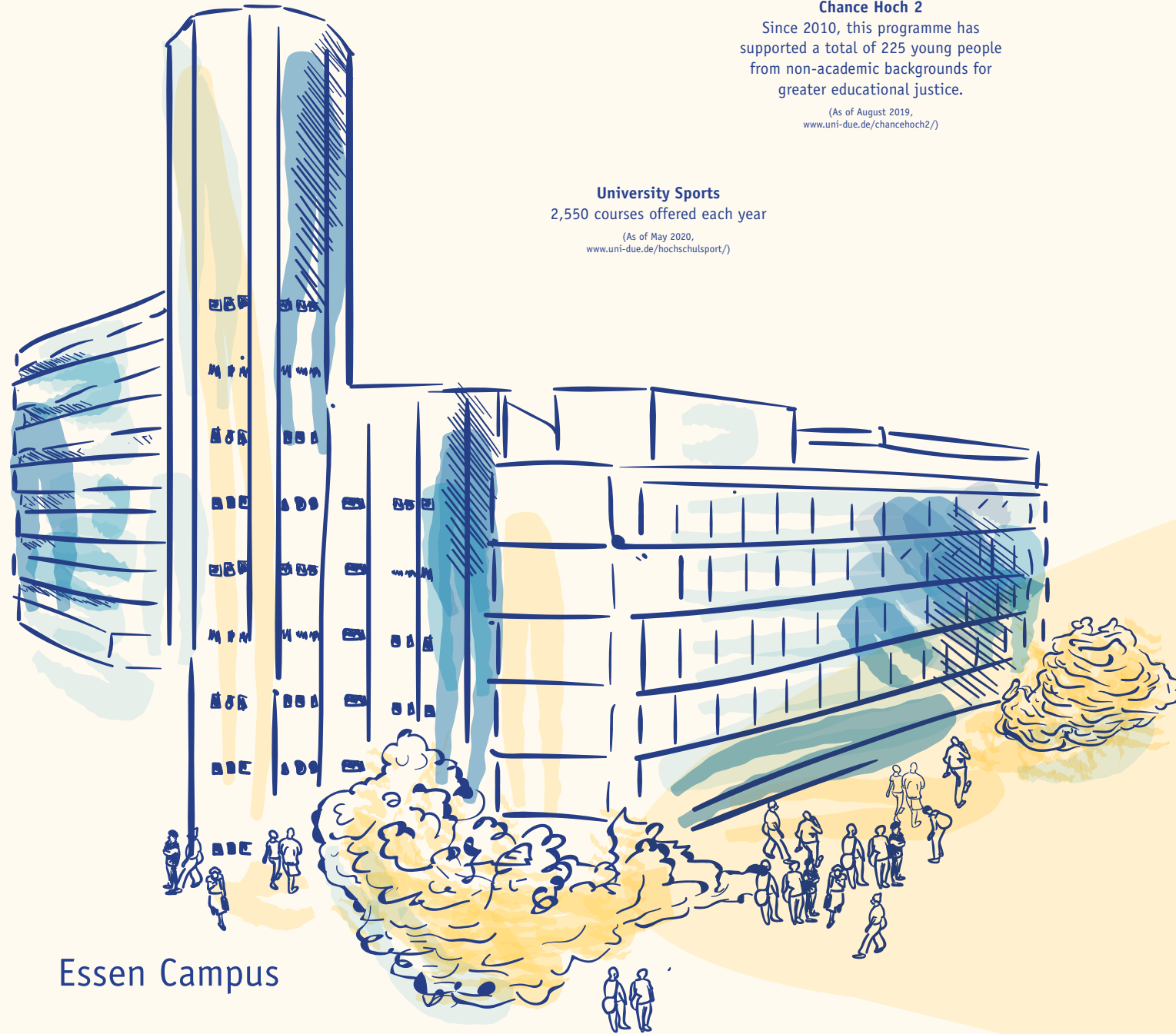
Staff	Total	Percentage of women
Total number of staff	5,881	49%
Professors	509	26%
Academic staff	3,815	46%
Other staff	1,557	62%

(As of December 2019, www.uni-due.de/de/universitaet/ueberblick.php)

Children's University
 5,000 visitors annually, of whom approx. 4,000 children and approx. 1,000 chaperones
(www.uni-due.de/unikids/)

Deutschland-Fellowship
 Total of 3,396 fellowships since 2009, 286 fellowships in 2019/20
(As of September 2019, www.uni-due.de/de/marketing/unsere_foerderer.php)





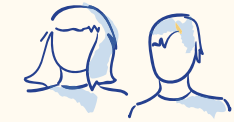
Essen Campus

Chance Hoch 2
 Since 2010, this programme has supported a total of 225 young people from non-academic backgrounds for greater educational justice.
(As of August 2019, www.uni-due.de/chancehoch2/)

University Sports
 2,550 courses offered each year
(As of May 2020, www.uni-due.de/hochschulsport/)

Centre for Information and Media Services (CIM)
 UDE averaged 33,000 users per day in 2019, with a total of more than 1,600 wireless access points and LAN network connections.
(As of March 2020, www.uni-due.de/zim/)

21 Mercator Professorships
 Amongst others, Ulrich Wickert, Joachim Gauck and Alice Schwarzer
 The Mercator Professorship was established in 1997 to carry on the scientific legacy of the famous 16th-century Duisburg cartographer and universal scholar. The Mercator Professors hail from the fields of culture, politics, business and academia.
(As of March 2020, www.uni-due.de/de/mercatorprofessur/)



Students	Total	Percentage
Total students	42,925	
Percentage of women		49%
Percentage of international students		19%
Ph.D. students	2,047	
Percentage of women		44%
Percentage of international students		25%
Students with international university entrance qualifications (optional)	6,639	
Asia		64%
Europe		23%
Africa		11%
Americas		2%

(As of March 2020, www.uni-due.de/de/universitaet/ueberblick.php)



- 11 Faculties**
- Humanities
 - Social Sciences
 - Educational Sciences
 - Economics and Business Administration
 - Mercator School of Management
 - Mathematics
 - Physics
 - Chemistry
 - Biology
 - Engineering
 - Medicine

- 5 Profile focal points**
- Nanoscience
 - Biomedical sciences
 - Urban systems
 - Transformation of contemporary societies
 - Water research
- (As of March 2020)



42 Non-profit organisations at UDE
 ranging from Amnesty International to CampusFM e.V. through to Weitblick Duisburg-Essen e.V.
(As of August 2019, www.uni-due.de/de/studium/kultur_organisationen.php)



Library
 The library holds about 2.4 million volumes, subscribes to some 1,750 print journals and offers users approximately 36,000 electronic journals. In addition, it provides a wide range of databases and an ever-growing supply of electronic books.
(As of March 2020, www.uni-due.de/ub/index.php)

More than 30 years of "Poet in Residence"
 amongst others, Ursula Krechel, Günter Grass and Yoko Tawada
(Germanistik: www.uni-due.de/germanistik/poet/)

Together for sustainable development

These cubes, which can be found in the napro offices, represent the United Nations' 17 sustainable development goals (SDGs) – important building blocks of UDE. This report illustrates the activities at UDE that contribute to the SDGs.

When the German Government's Scientific Advisory Council on Global Environmental Change (WBGU) stipulated the 'Great Transformation' towards sustainability in 2011, it was also a final call for the German science and higher education system to help shape this transformation. UDE's Sustainability Process (napro) was its first step towards systematically implementing sustainability across the university. Its aim is to expand and consolidate this strategy in the coming years.

But what does a transformation towards sustainability mean, for universities in general and for us at UDE in particular?

In this report, we will use examples to illustrate how UDE is taking action on sustainability in various fields. In compiling our report, we drew on two major reporting systems: Firstly, we pinpoint how each of our examples contributes to the different United Nations' Sustainable Development Goals (SDGs, see inside of back cover). Secondly, in the chapter on 'Process Management and Governance', we not only retrace the evolution of napro and its possible expansion into a Green Office but also explain our university-specific sustainability code (HS-DNK). It delivers the structure for this report and we show how UDE activities align with it (pp.24-27). The report covers the period from 2014 to early 2020.

A university's main fields of action can be divided into three chapters: The chapter "Sustainability in research" contains a photo series to illustrate the role of sustainability in our scientists' and scholars' research activities in various disciplines and institutes (pp.28-43). The next chapter "Sustainability in teaching" gives examples

of how UDE teaches sustainability to its students, both in terms of content and methodology as well as social aspects (pp.44-51). The following chapter "Sustainability in operations" shows how our staff work on a variety of projects to achieve resource-efficient and societal sustainability in our operations (pp.53-70).

Since this does not cover all the sustainable activities pursued at UDE, we added several more chapters: "Sustainability and social responsibility" provides information on diversity management, family-friendly university and gender equality (pp.70-79). The chapter "Sustainability and transfer to society" highlights sustainability both in terms of knowledge & technology transfer and UDE's role in the region and in society (pp.80-89). As its name suggests, the chapter "Sustainable networks" presents examples of UDE's sustainability-related networking activities at national and international level (pp.90-95). Finally, the chapter "Engagement for sustainable development" tells the story of how our university community takes ownership of sustainability in a variety of voluntary activities (pp.96-111).

And how can UDE continue to drive its transformation towards sustainability?

At the end of each chapter, we make proposals for each field of action. Finally, in the chapter "Prospects for a sustainable UDE", we look to the future with a statement by our new Chancellor, Jens Andreas Meinen, sum up our recommendations for action and list the Top 10 "to-dos" for UDE's sustainable development (pp.112-117).

Process Management and Governance

UDE on the road towards sustainability

By launching its sustainability process (napro) in 2014, UDE reaffirmed its efforts for sustainable development. But what exactly does this mean? How did the process start and what is the concept behind it? Who are the architects of napro and how do they rate its progress at UDE?

To answer these questions, the chapter “Process management and governance” illustrates napro from different perspectives.

In her statement on the creation of this sustainability report, former napro coordinator Laura Voss tells us how it all began. Process leader Professor André Niemann and current napro coordinator Ilka Roose (pp.20-21) talk about the further course as well as challenges and future projects. The section “Process management and governance” illustrates the structures and concepts on which napro is based, with a special focus on the four phases of the process that describe how the concepts were implemented (p.23).

Where did we obtain the data used in this report? The section “University-specific sustainability code (HS-DNK)” shows how the report was structured and UDE’s contribution to the project as a pilot university (pp.24-25).

Statement

Expert knowledge and creative ideas for the sustainability report

In 2014, Germany won the World Cup in Brazil, the Ice Bucket Challenge went viral around the globe, and the University of Duisburg-Essen was the first university in North Rhine-Westphalia to launch a sustainability process (napro). Its aim was to undertake a complete overview of the university in teaching, research and operations within five years.

Highly motivated and inspired by successful sustainability activities across Germany’s universities, we set out to put UDE on the road towards sustainable development. We wrote concept papers, listed action items, determined indicators and built up our network. As a team, we had many conversations that showed us UDE and its members from a whole new angle. This was the phase that impressed me the most, personally: to get a first-hand glimpse of all the hard work on the operational side, to experience our university employees’ keen interest and gracious cooperation on the subject of sustainability, and above all, to see how much had already been achieved in this field, consciously or unconsciously. For me, aggregating all this information was one of the most rewarding experiences of the last few years.

Now the final phase has begun. As a former napro coordinator, I am delighted to see how the process



Laura Voss
napro staff member
from 2014 to 2019

‘We could not have done it without the participation and help of many willing contributors inside and outside of the university!’

has evolved in recent years and how the ideas and concepts have been implemented. Thanks to a formidable line-up of expertise, creative ideas and concepts, after five years, we are now holding the completed UDE sustainability report in our hands. We could not have done this without the participation and help of many willing contributors inside and outside of the university. Now is the time to look to the future, develop new concepts, and make the sustainability process – sustainable.

4 5 8 9 11 12 13 17

'We need incentives, not proscriptions.'

How can we make our university more sustainable?

Ulrike Bohnsack (press office) interviews Professor André Niemann and Ilka Roose from the Sustainability Process Team (napro).

Professor Niemann, as head of napro, how "green" would you say UDE is?

Niemann: We are in the same boat as all the other universities: There is still plenty of room for improvement. Don't forget that UDE, with almost 50,000 students and staff, is the size of a small town. Achieving sustainability in teaching, research and, above all, operations is a long-term process. In a highly democratic institution such as a university, many people have a say, and the state makes stipulations in many areas.

You have been driving this process as our Sustainability Officer since 2013. How are you going about it?

Niemann: More than five years ago, we started by assessing the status quo: What structures are in place, which are unhelpful or missing altogether? We talked to the faculties, academic institutes and the administration and took stock of everybody's sustainability-related activities. We, in turn, showed them best-practice examples they could emulate which we obtained primarily from sustainability

networks and from the BMBF's HOCH^N project. Our main focus is on areas that have a special responsibility with regard to climate protection. For universities, these are mainly energy, mobility, procurement and travel. Rather than the much-cited "eco paper". We are currently discussing our evaluation and further steps with the University Board, which, by the way, fully supports us.

What is an example of 'unhelpful structures'?

Niemann: Purchasing. We buy items for IT, gases for laboratories etc. and office supplies to the tune of several million euros. So we sat down with the staff in charge to see whether our purchasing could become more sustainable, whether we could introduce a "green" catalogue as an alternative, whether we could place batch orders to reduce the number of transactions. Transparency is enormously helpful. It worked. However, state regulations still require us to pick the most economical offer and not the most sustainable one. So, I have to buy the plastic table because it is cheaper than the wooden one.

Do you have some commendable examples?

Roose: We serve more and more regional products in the canteens and cafeterias. We use an e-car to deliver our inter-campus mail several times a day. We have UDE classified ads where employees can offer office furniture and equipment that is no longer needed to the university community instead of just dumping it. Students have the option of obtaining an interdisciplinary ESD certificate (Education for Sustainable Development). Then there is the CampusGarten initiative. The General Students' Committee's (ASTA) environmental group has organised free rental bikes and runs green action weeks.

Niemann: The building management department has launched projects for energy-efficient action. The University Library team has its own internal sustainability programme and an energy and environmental scout. I could go on...

What do you think is still missing?

Roose: We need a central contact point where everything comes together. People are very engaged.

Ilka Roose (l.) and Professor Dr André Niemann (r.) holding some of the coloured cubes that represent the UN's Sustainable Development Goals (SDGs).



There are many activities and initiatives that simply need to be communicated and connected better, because we often don't even know they exist.

Niemann: We don't have a mobility management plan. Since we are a two-campus university, we have a special responsibility in that regard and we certainly won't meet it with a diesel bus. The cycle path between Duisburg and Essen will connect the two campuses, which is a really great opportunity for UDE. We need a long-term strategy to carefully start introducing a parking management system, options for university staff to lease bikes etc. And that brings us to the next point: In order to accomplish any climate action at all, we need an incentive system. Otherwise, we will be too slow.

What about a climate protection directive?

Niemann: No. Sustainability can't be prescribed from above. The only thing you can do top-down is steer. Communication and transparency are what motivates people to make changes, how they travel on business, how they purchase materials

and how they themselves behave at the office or around the university. Besides, our university is a decentralised organisation; there is no single person who decides everything. Progress has to happen in the individual departments. I'm thinking more of a UDE climate protection code ...

If I have an idea how to save resources at the university, do I contact you?

Niemann: You're most welcome to do so, but unfortunately, we won't be able to act upon it without more robust structures for feedback or implementing good ideas. To start with, we don't have the staff. Sustainability is an ongoing job. That's why we need a central contact point that can take up such ideas.

You're envisioning a Green Office. What is that?

Roose: The idea came from Maastricht, and many universities

already have Green Offices. A Green Office coordinates all sustainability efforts, it educates, connects, and supports both students and staff. But there is no rigid model as to how such an office should be set up. We need to get all stakeholders together to brainstorm what it might look like at UDE.

Niemann: I think we should be bolder: We should practise on campus what we preach to our students. UDE has a societal mission to take climate change and its challenges seriously, both on and off campus. We need structures that meet these demands. Our recommendation to the university leadership is to create such a permanent contact point.

The interview was abridged for this report. The full version was published in CAMPUS: REPORT 2/2020

UDE on the road towards sustainability

Establishing sustainability as a responsibility in process management and governance



The napro team (from l to r): Ilka Roose, Sustainability Officer Professor Dr André Niemann, Elisa Gansel and Laura Briese.

With more than 42,000 students and over 5,800 employees, UDE is the size of a small town, which makes sustainable development at UDE a particular challenge.

It takes clear structures and a practice-oriented framework to implement the principles of sustainability for the long term, both in campus management as well as in research and teaching.

That is why, in 2014, the University Board decided to launch a sustainability process (napro) with an initial duration of five years to embed sustainable structures throughout the university.

The process phases

The napro team developed the concept for a four-phase process that started in 2014. This report was prepared by process manager Professor André Niemann and his highly dedicated team, which consisted of a total of three research assistants, nine student/research assistants and one secretary over the five-year process. Ruth Farghaly was a team member from day one, serving as secretary to the Sustainability Office and as process assistant.

Phase I: Preparation

During the preparation and launch phase in 2014, Professor Niemann and napro coordinator Laura Voss worked out the conceptual implementation of the process, which included the four process phases as well as first steps towards sustainability reporting, the focus of phase III. At the same time, they identified willing contributors in the university landscape and external partners for further cooperation.

Phase II: Kick-off

napro kicked off the initiative and first appeared in public with its 'Sustainability Action Days' under the motto "Get involved", engaging students, teachers and employees in conversations on topics such as sustainable university, health management and mobility.

Phase III: Reporting

The reporting phase was the longest one in the process. Initially, the napro team drew upon the Global Report Initiative's (GRI) guidelines for preparing corporate sustainability reports for large companies. From 2015 to early 2020, Elisa Gansel worked at the strategic-operational level of napro and most recently served as project coordinator for the BMBF-funded project "Sustainability at Higher Education Institutions: develop – network – report (HOCH^N)". The GRI indicators were then replaced by the criteria of the university-specific

sustainability code (HS-DNK), which were developed in the context of HOCH^N and played a key role in structuring the UDE sustainability report. In addition to the HS-DNK, the report also takes account of the Sustainable Development Goals (SDGs), which are better known internationally (see inside back cover).

Phase IV: Consolidation

The process is currently shifting towards long-term consolidation. Since 2019, Ilka Roose has been responsible for the strategic and analytical tasks relating to UDE's development. The aim is to transfer the structures that have been created so far into the concept of a Green Office, a sustainability office where students and staff can jointly take the next steps towards more sustainability. We have cooperated closely with the University Board, departments, student body and other stakeholders dedicated to sustainable development at UDE in order to raise awareness for the topic and manage the complexities of sustainability governance at a university so we can make our project viable.

The university-specific Sustainability Code (HS-DNK) and its application in the UDE Sustainability Report

With the University Board's decision to introduce the sustainability process (napro) in 2013, we answered the question why we want to commit to sustainable development. The question of how to do it was now up to the napro team. Tasked with this mission, we started out by taking stock of UDE's existing sustainability activities. But what data we die we need to collect and how should we do it?

Firstly, we conducted a test phase using the Global Report Initiative's (GRI) standard criteria, a set of about 150 criteria for corporate sustainability reporting that is commonly used internationally. However, we found it to be impractical and unsuitable for the needs of a university. The napro team therefore decided to tackle this issue in cooperation with other universities. In 2015, the German Council for Sustainable Development, in a joint initiative with several universities (including UDE), started the process of revising the German sustainability code for companies in order to create a university-specific sustainability code. In early 2016, a group of about 50 university representatives

launched a test version. For UDE, this was an important strategic anchor because the universities' efforts for sustainability reporting created the basis for the BMBF-funded collaborative project: Sustainability at Higher Education Institutions: develop – network – report (HOCH^N, p.93). As part of this alliance, we partnered with the University of Hamburg and FU Berlin to tackle the work package 'sustainability reporting' in order to further develop the test version. Today, we are still part of the overall project, which also includes the other work packages research, teaching, transfer, governance and networking. From 2016 to 2018, we jointly developed the university-specific Sustainability Code and were able to incorporate our experiences from the test version directly in napro and UDE's sustainability reporting.

Twenty sustainability criteria

The code comprises 20 criteria, which can be divided into strategic (strategy: criteria 1-4), operational (process management: criteria 5-10), ecological (environment: criteria 11-13), and social (society: criteria 14-20). The criteria were developed in cooperation with various actors from different universities in a participatory process. We also developed a guide to help implement the criteria. Practical examples and possible indicators make it easier for users to collect their data and give an idea of whom to contact for each topic

In May 2018, members of the work group "Sustainability Reporting" in the BMBF-funded collaborative project "Sustainability at Higher Education Institutions: develop – network – report (HOCH^N)" joined the German Council for Sustainable Development (RNE) to present the HS-DNK in Berlin: (from l to r) Professor Dr André Niemann (Sustainability Officer UDE), Professor Dr Gerhard de Haan (FU Berlin), Marlehn Thieme (Chair RNE), Florian Frank (BMBF), Professor Dr Alexander Bassen (Project Manager HOCH^N, University of Hamburg), Professor Dr Jetta Frost (Vice President, University of Hamburg)



at the user's own university. The code is based on the principle to "only report what can be reported at a given moment", which helped napro design this sustainability report. For example, criterion 2 "Fields of action (research, teaching, operation, transfer, governance)" is reflected in the subchapters.

UDE's strengths and weaknesses

The HS-DNK highlights UDE's strengths and weaknesses in terms of sustainability. Many areas have already been covered and are illustrated with examples in the following chapters. In particular, we identified gaps in criteria 6 "Rules and processes", 7 "Assuring the quality of results", 8 "Incentive systems" and 13 "Greenhouse gas emissions". The respective chapters contain recommendations for action with suggestions as to how to address these areas. The United Nations' 17 Sustainable Development Goals (SDGs) are also reflected in the report. The convenient fold-out page inside the back cover shows which SDGs are addressed in the various projects and activities. The final section "Prospects for a sustainable UDE" (pp.112-117) explains how UDE can further exploit its potential for strategic analysis (criterion 1) and secure its efforts (criterion 4) based on the model of a Green Office.

For more information on the HS-DNK visit: www.deutscher-nachhaltigkeitskodex.de/de-DE/Home/DNK/Hochschul-DNK

The criteria were developed in a participatory process in cooperation with various actors from different universities.

How do you structure a university's sustainability indicators?

The criteria of the Sustainability Code for Higher Education Institutions (HS-DNK)

Criteria 1–4 (Strategy)

1 Strategic Analysis

The higher education institution explains how it analyses the effects of its key activities with respect to sustainable development and what understanding of sustainability these are based on. The higher education institution describes how it operates in line with the key, accepted national and international standards specific to higher education institutions.

2 Fields of Action

The higher education institution explains which aspects of sustainability are of material importance for the following fields of action, how it takes them into account in its strategy, and how it addresses them systematically:

- a) Research
- b) Teaching
- c) Operations
- d) Transfer
- e) Governance

The higher education institution explains how it promotes sustainability-related activities in the fields of action and how issues of sustainable development will be implemented in these in the future. Furthermore, the higher education institution should demonstrate how sustainability is

interconnected across its five fields of action.

3 Objective

The higher education institution explains what qualitative and/or quantitative as well as temporally defined sustainability goals it has set, how these are operationalised and how their level of achievement is monitored.

4 Organisational Integration

The higher education institution explains how sustainability aspects are integrated into the activities of the whole institution – including its downstream organisational units – and what steps it is taking to embed sustainability throughout the higher education institution and to continuously strengthen and improve the integration of sustainability.

Criteria 5–10 (Process Management: Governance)

5 Responsibility

The higher education institution explains roles and responsibilities relating to sustainability.

6 Rules and Processes

The higher education institution explains how it implements the sustainability strategy by means of rules and processes.

7 Ensuring Quality of Results

The higher education institution explains which sustainability indicators are used. It also discloses how the reliability, comparability and consistency of data is ensured and utilised both to ensure quality of results internally and for internal and external communication.

8 Incentive Schemes

The higher education institution explains to what extent its executive organisational units promote and stimulate sustainability processes in both material and non-material ways by means of project-specific or allocated budget resources and how they authorise and support such activities at all (decision-making) levels. It also explains to what extent the management of higher education institutions checks the effectiveness of such incentive systems.

9 Stakeholder Engagement

The higher education institution explains whether and how it identifies internal and external stakeholders and how they are integrated into the sustainability process. It explains whether and how an ongoing dialogue takes place with them and how the results of this are integrated into the institution's sustainability process.

10 Transformation

The higher education institution explains how it achieves a transformation in favour of sustainable development in its key fields of action by means of suitable processes. It also explains to what extent measures within the fields of action trigger a learning process for the

whole organisation and third parties and how processes entrenching the desired transformation are driven forward. This also includes maintaining an ongoing dialogue with local authorities, businesses, policy-makers and civil society.

Criteria 11–13 (Environment: Operations)

11 Uses and Management of Natural Resources

In relation to the following areas, the higher education institution explains the extent to which natural resources are utilised for its operation and the mobility of its members. Furthermore, it describes reduction and efficiency targets relating to resource usage and explains how it intends to achieve these by means of current and future measures.

- a) Life cycle of consumables, capital goods and services
- b) Circular economy and disposal
- c) Mobility, d) Nutrition
- e) Energy
- f) Water

12 Properties, Construction, Open Spaces (Campus Design)

The higher education institution explains how new-builds, extensions, refurbishment, renovations and building operations at the institution are planned and completed in a resource-efficient, climate-friendly way, including the use of renewable energy. This relates to both the way in which building work is completed and the use of space and land, including the impact on biodiversity. Furthermore, the higher education institution should explain whether it manages the buildings itself or uses

external service providers. The higher education institution explains how it designs and manages open spaces (including light smog, noise and surfacing) and how it safeguards and improves the quality of user experience (campus design).

13 Greenhouse Gas Emissions

The higher education institution discloses the extent, type and impact of greenhouse gas emissions and states its targets for reducing emissions and achievements to date.

Criteria 14–20 (Society)

14 Participation of the Institution's Members

The higher education institution explains how it encourages its members to participate in making the institution more sustainable.

15 Equal Opportunities

The higher education institution explains what targets it has set to promote equal opportunities in relation to health, gender equality, diversity, the integration of people from immigrant families, the inclusion of people with disabilities, work-life balance for employees and students, and commensurate pay for members of the institution (especially when outsourcing is used).

16 Qualifications

The higher education institution explains which targets and measures it has adopted to foster the qualifications and skills of all its members with respect to sustainable behaviour. Furthermore, it outlines how these will be adapted to cater for

demographic developments and future challenges.

17 Human Rights

The higher education institution explains which human rights conventions its work is based on and what steps it takes to uphold these in its local, national and international activities, in partnerships and in procurement. It also describes how it is working to raise its members' awareness of associated issues.

18 Common Good

The higher education institution explains how it contributes towards the common good as defined in the UN SDG in its key operating regions (regional, national, international).

19 Social Influence

The higher education institution explains how it influences major decisions by policymakers and within society. It discloses the main ways in which external social stakeholders influence the higher education institution's decisions. Furthermore, the higher education institution accounts for the origins and use of external funds.

20 Conduct that Complies with the Law and Policy

The higher education institution explains which standards, processes and measures are in place to prevent unlawful conduct and corruption. In particular, it describes how violations of the rules which apply to academic work are prevented, detected and sanctioned.

Sustainability in research

The experts' responsibility

Given society's awareness of sustainable development objectives, great hope is being placed in research. Experts at universities are called upon to meet the challenges of the 21st century by generating knowledge that gives shape to the catchword "sustainability". But what does sustainability in research mean? On the one hand, it is a question of choice of topic: is research orientated towards current sustainability issues? The focus is often on research into clean energy sources or transportation options, for example, that is, research in the natural sciences and engineering. But are they solutions that can bring about social justice and a good life for all? How should we envisage a sustainable economy in which such innovations occur? This is where research in the humanities and social sciences can provide answers. It becomes quite evident that one discipline on its own cannot do justice to sustainability in research. Rather, sustainability is a cross-cutting topic that may play a role in every field of research.

On the other hand, sustainability in research is a question of implementation: how can I create a sustainable research setting and research process? In order to embrace social responsibility, researchers and research institutions must meet this challenge when devising and conducting their research. Thus, for the Sustainability Report, we need to ask: Who are the experts at UDE? How are they working with a view to sustainability and on what? Our five profile research areas form an overarching framework for research at UDE: urban systems, transformation of contemporary societies, nanosciences, water research and biomedical sciences. In total, cooperation involves researchers in eleven faculties, at twelve research institutions and eleven institutes associated with UDE. There is also a Ruhr-spanning collaboration: The University Alliance Ruhr connects the three universities in Bochum, Dortmund and Duisburg-Essen. By presenting exemplary articles on various research projects and institutes, this chapter illustrates the diversity and wealth of sustainability research at UDE.

Statement Responsible research

Humanity is facing major challenges, ecological, economic and societal. Researchers deliver innovative solutions to these complex issues and make recommendations for shaping future-looking action. The spectrum ranges from basic research through to practical applications. At UDE we breathe life into sustainability with our image as a university with a strong research base, by enhancing our appeal for junior researchers as well as by expanding knowledge transfer and start-ups.

A glance at our range of faculties, the five profile research areas and UDE's associated institutes illustrates the sustainable orientation of our research. One example is the establishment of the most recent profile area at the beginning of 2020: water research. The world's ever more intensive use of the resource water means that a sustainable global water cycle is one of the biggest societal challenges of our time. Under the leadership of the Centre for Water and Environmental Research, 90 water experts from 29 UDE departments pursue cross-faculty research on water-related topics together with colleagues from UA Ruhr and associated institutes as well as partners in business. Another example is the Hydrogen and Fuel Cell Centre (ZBT), an



Professor Dr. Dagmar Führer-Sakel
Vice-Rector for Research, Career
Development & Knowledge Transfer

associated institute that is one of the leading institutions for research into fuel cells, hydrogen technologies and energy storage in Europe. With this focus, it is a coveted partner for sustainable technologies which are already in use in UDE's vehicle fleet.

The research structures in the region are also sustainable, as emphasised by the dedicated collaborations within UA Ruhr. The competence field "Metropolitan Research" (KoMet), for example, in the heart of the "Reallabor Ruhrgebiet" (Ruhr Field Lab) is an internationally visible centre for inter- and transdisciplinary metropolitan research (p.41). In 2019, another competence field followed with "Energy – System – Transformation" (EST): Here, researchers want to advance the energy transition in its entirety by researching into selected technologies as well as their economic and societal interlinkages. In recent years, UDE has specifically created tailored structures to promote junior researchers, amongst others by successful participation in the Federal/Länder Programme WISNA (short for junior researchers) and the DFG-funded Clinician Scientist

Programme for junior doctors with a documented interest in research. By introducing Tenure Track (TT) Plus, Graduate Center (GC) Plus and the Research Academy Ruhr (RAR, UA Ruhr), UDE addresses the needs of junior researchers from the late Master's phase through to junior professorship.

In addition to research and teaching, the transfer of knowledge to society is one of the most important missions of a university. UDE interacts with business, politics and society to promote start-ups. In order to investigate ideas and research results to establish their precise transfer potential and guide them into applications, UDE pools its start-up activities in the new Centre for Start-ups and Innopreneurship (GUIDE). Funded by the Federal Ministry for Economic Affairs and Energy, it particularly targets regional networking: We want to create momentum together and generate knowledge in overarching university networks.

For detailed information on UDE's research activities, visit our annual Research Report www.forschungsbericht.uni-due.de/en/



What's happening in research?

The following photo series shows selected examples of UDE's sustainability-related research projects, programmes and institutes and how they relate to the 17 Sustainable Development Goals (SDGs).



From l to r:
Julius A. Kontchou
 Ph.D. student in the
 Department of Aquatic Ecology,
Lotta Hohrenk
 Ph.D. student in the
 Department of Instrumental
 Analytical Chemistry

Research College **FUTURE WATER**

Since mid-2014, the Ministry of Innovation, Science and Research of the state of NRW has been supporting the structured doctoral programme "Research College FUTURE WATER". In it, twelve very diverse inter- and transdisciplinary doctoral projects share a common topic: securing sustainable water management. The research focuses on handling micropollutants in our waters and sustainable ways to adapt to climate change.

InZentIM

Interdisciplinary Centre for Integration and Migration Research

The Interdisciplinary Centre for Integration and Migration Research (InZentIM) pools research on integration and migration at the University of Duisburg-Essen, encourages collaboration with researchers from other scientific institutions and enhances UDE's research profile in a national and European context. With more than 80 UDE researchers from various disciplines engaged in research on integration and migration, InZentIM covers a very broad range of topics. Its key issues are multilingualism, education, labour, social participation, health, political governance, transnational processes, intercultural communication and economic development. All these topics relate to current problems and conflicts that impact our society and the international community. Their breadth reflects the complexity of the challenges that threaten sustainable development in our societies today more than ever before. InZentIM strives to be resource- and climate-friendly in its daily operations.



Professor Dr Hermann-Josef Abs
Deputy Director



Team imobis (from l to r):
Kerstin Kopal, Sina Diersch,
Professor Dr Dirk Wittowsky,
Sara Klemm, Domenic Ganter,
Dorota Kempa

imobis

Institute for Mobility and Urban Planning

The Institute for Mobility and Urban Planning (imobis) uses an interdisciplinary approach to study resource-efficient ways to organise and optimise transport and urban structures. Since future-proof, ecological and climate-friendly forms of mobility are a top priority, we must modernise and redevelop cities and infrastructures so that all means of transport coexist equitably, and we must do so in the spirit of a socially and ecologically fair transformation. Interdependencies between city and mobility as well as climate and energy policy objectives require research into acceptance levels and participatory processes as well as the dynamics of changing mobility patterns and cultures in the context of superordinate social change. As complexity increases and disruptive new technologies generate new dynamics, the focus of our research is on structural and systemic transformation and the associated changes in mobility and cities.



Research Training Group 1949

Immune Response in Infectious Diseases – Regulation between Innate and Adaptive Immunity

Globalisation has changed the way pathogens develop, spread and cause disease. Infections caused by bacteria, viruses, parasites or fungi account for approximately twelve million deaths worldwide each year. Even in highly developed countries such as Germany with its excellent healthcare system and high hygiene standards, serious infections continue to be a clinical and therapeutic challenge. Despite intensive research efforts, effective therapies or vaccines are still only available for a limited number of pathogens. To develop future prevention strategies and therapies, it is therefore essential that we gain a precise understanding of the patho-mechanisms of infectious diseases and the corresponding immune responses. Junior researchers in the Research Training Group GRK 1949 are trained in the fields of infectiology and immunology and conduct research on the interactions between innate and acquired immune responses during an infection. The goal is to ensure long-term progress in this important research area in the Rhine-Ruhr region.

3



Professor Dr Astrid Westendorf
Spokesperson



Project team (from l to r): **Ruben Langer,**
Professor Dr Andreas Niederberger,
Professor Dr Achim Goerres, Professor Dr
Rüdiger Kiesel, Anne-Kathrin Fischer,
Björn Fischbach

Big Risks

Interdisciplinary perspectives on major risks to society

This group's research focuses on major risks to 21st century societies, such as climate or demographic change. Its hallmark is its interdisciplinarity, comprising researchers in financial mathematics, political science and philosophy, which allows the group to tap a broad spectrum of scientific methods and perspectives. Its particular focus is on climate change issues: What makes climate change a social risk as opposed to a technological risk? What role do the media and culture play in the public perception of climate change? How can risk and time preferences be separated and adequately reflected in climate models? An important objective of this project is to identify interdisciplinary overlaps in order to make the available approaches rewarding for various disciplines.

3 10 13



Professor Dr Thomas Kuhlbusch
Nanoparticle process technology/
Faculty of Engineering;
Federal Institute for Occupational Safety
and Health (BAuA)

nanoGRAVUR

How safe are nanomaterials?

A project by the Center for Nanointegration Duisburg-Essen (CENIDE) and the Institute for Energy and Environmental Technology (IUTA)

The term nanotechnology is often used in connection with sustainability because it can enable entirely new, useful properties in conventional materials. Nanomaterials, which is a subfield of nanotechnology, can replace critical materials that are either scarce or toxic, and usually require much less starting material to achieve the same effect. However, the abundance of different nanomaterials and their modifications make it difficult to conduct a comprehensive risk assessment. Currently, each individual nanomaterial modification is assessed individually. This is where nanoGRAVUR comes in. The project title stands for “grouping according to occupational safety, consumer and environmental protection and risk minimisation”. Its aim is to group nanomaterials to enable safe handling and use without the need to test each nanomaterial individually.

9 12

EKfG

Essen College for Gender Studies

Gender studies examine the significance of biological and social gender for the realities of human life, opportunities for social participation and access to material and immaterial resources, including aspects such as norms, values and rights. EKfG's interdisciplinary, intersectional approach defines gender as a category that is closely interlaced with other criteria that distinguish one person from another, such as socio-economic situation, ethnic origin, educational background or age. In addition to interdisciplinary gender studies, one priority is to promote junior researchers of all disciplines in order to raise their awareness of the gender dimension as an important quality feature of sustainable research and to identify new starting points for developing further research questions in the various disciplines.

3 4 5 8 10 16



From l to r:
Dr Andrea Kindler-Röhrborn
Deputy Director
Professor Karen Shire, Ph.D.
Director
Dr Maren A. Jochimsen
Head of Operations

SEnECA

Strengthening cooperation with Central Asia.
EU-funded project by the Institute of Political Science

Central Asia is thousands of miles away, but the five states of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan are located at the intersection of Europe and Asia and thus have major economic and cultural potential. The European Union has a great interest in stabilising the region politically and building stronger alliances, both for economic and security reasons, such as energy trade and the fight against terrorism. In 2019, the EU revised its Central Asia Strategy with the aim of strengthening its partnerships with these five countries. The objective of the project SEnECA – Strengthening and Energizing EU-Central Asia relations – was to showcase scientific expertise on both sides and thus strengthen cooperation between scientists from Central Asia and the EU. In addition, it made recommendations for Europe’s policy in the region as well as identifying future economic and cultural fields of action in order to expand existing measures.

17

Professor Dr Michael Kaeding
Project Manager



Dr Ani Melkonyan-Gottschalk
Project Management
Klaus Krumme
Project Management



ILoNa

Innovative logistics for sustainable lifestyles

Promoting sustainable lifestyles is an important lever for reducing the consumption of resources. Lifestyles have received little academic attention so far despite their close connection to modern logistics services. Launched in 2015 and coordinated by the Centre for Logistics and Transport (ZLV), the BMBF project “Innovative Logistics for Sustainable Lifestyles” (ILoNa) delivers common research approaches by systematically integrating socio-economic and ecological aspects. ILoNa is the first research project to study the inter-connection between lifestyles and the high service levels provided by the logistics industry in sustainable and urban economies. The project aims to strengthen companies’ transformative potential. Amongst other things, it investigates novel collaborative concepts with regional food producers as well as delivery and supply concepts, taking the Vienna metropolitan area as an example. It also analyses sustainability issues and potentials in e-commerce supply chains, developing sustainable modes of dispatch.

9 12 13



Professor Dr Jens Martin Gurr
KoMet Spokesperson for UDE

KoMet

Competence Field Metropolitan Research
of the der University Alliance Ruhr (UA Ruhr)

In KoMet, more than 100 scientists from all three member universities of the University Alliance Ruhr work in eight research fields on key questions of metropolitan research. Many of the projects revolve around sustainability, be it in relation to blue and green metropolitan infrastructures, urban development in times of climate change, sustainable mobility, logistics and supply, urban public health issues, social participation and educational justice, sustainable construction and dwellings, or sustainable consumer behaviour. A major project that connects many of these aspects is research for the final phase of the renaturalisation of the River Emscher in close cooperation with the Emschergenossenschaft. The wide range of disciplines involved in the project is a unique feature that distinguishes it from other centres of urban and metropolitan research. KoMet is the central, UA Ruhr-wide platform for integrating research, teaching and transfer on all aspects of metropolitan research.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Käte Hamburger Kolleg/ Centre for Global Cooperation Research

**'By sustainable, we mean the creation of reliable,
crisis-proof patterns of cooperation.'**

Given the limitations of the Earth system, global threats can only be countered by global cooperation. Sustainability Goal 17 "Partnership for the goals" is therefore an overarching requirement without which none of the other sustainability goals can succeed in practice. By "sustainable", we mean the creation of reliable, crisis-proof patterns of cooperation. The legitimacy of institutional action is currently being undermined by populist movements. However, solutions can only be sustainable in the long run if they can be sufficiently legitimised in their respective policy fields. Sustainability Goal 16 "Peace, justice and strong institutions" requires efforts to seek a broad consensus on social action. Democratic legitimisation processes are being challenged in many ways. This is why the sustainability goals in their entirety are one of the Centre's preferred research focus areas.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Professor Dr Sigrid Quack
Director



napro's recommendations for action

Loose bolts and how to tighten them

Sustainable research must be visible to all!

Tools and strategies to promote research in the name of sustainability relate to two different aspects: the research setting, i.e. how our research activities affect the environment, climate and society; and our research direction, in other words, how we integrate current sustainability issues and which trans- or interdisciplinary approaches we pursue. But where should we tighten the bolts to optimise the basic conditions for sustainability-oriented research at UDE? And what are the tools we should use to do so?

The following recommendations for action are an attempt to answer these questions. They are based on the recommendations of the project Sustainability at Higher Education Institutions (HOCH^N).

Tightening the bolts: Monitoring

Setting priorities – The United Nations' Sustainable Development Goals (SDGs) provide an internationally recognised and comprehensive point of reference. As we continuously correlate UDE's research projects with these 17 goals, the main areas of our sustainability-related research at UDE become more visible and generate contact points for further networking.

Another option is to classify our scientific publications according to the SDGs. The project "Bibliometric Analysis" by the international university network AURORA is currently working on creating an analysis tool to automatically correlate publications with the sustainability goals (see box).

Tightening the bolts: Communication

Vernetzungsmöglichkeiten schaffen – Nachhaltigkeit ist ein Querschnittsthema und bietet damit viel

Creating networking opportunities – sustainability is a cross-cutting topic and thus offers great potential for synergies. But regular inter- and transdisciplinary exchange is the only way to identify similarities and differences in the way we define terms, in our levels of knowledge or our research interests. In the past, UDE already created networking opportunities of this kind, such as the lecture series on sustainability held by Urban Systems or the 2016 symposium "NRW's universities on the road to sustainability" (p. 94). We should continue to hold such events in order to regularly highlight and exploit our synergy potentials.

Communicating results – Beyond communication within the scientific community, we must also systematically share our research findings on sustainability issues with the general public. To contribute to the public debate and thus also to sustainable development, we should be mindful of accessibility as we disseminate our results, both in terms of content and media. Target group-oriented language and strategic use of appropriate channels, for example, will help us share research results with the relevant practitioners on the ground and facilitate the transfer of scientific insights into concrete applications.

Assuming social responsibility in business – The German research landscape is known for its innovative power and broad technology transfer from science to industry. UDE cultivates this knowledge and technology transfer via its Vice-Rectorate for Research, Career Development and Science Transfer whilst our Vice-Rectorate for Social Responsibility, Diversity and International Affairs is in charge of transfer in our region and our role in society.

In the spirit of sustainable action, it is worthwhile to clearly name the special responsibility that comes with transfer activities and to be very

specific about each context in our discussions with the actors involved (see also chapter "Transfer").

Tightening the bolts: Institutionalisation

Making structures permanent – In order to make sustainability-oriented research a binding requirement, we need to clearly define contacts and responsibilities as well as allocate adequate space, human and financial resources. For research, this means establishing appropriate, permanent support services that assist both with monitoring as well as with communicating sustainability-related research. Specifically, such tasks can be delegated to a Green Office, which coordinates sustainability topics across the entire university.

Are you conducting sustainability-related research, do you have any additional ideas and suggestions or would you like to see an article about your project or institute in our report? Write to us at nachhaltigkeit@uni-due.de. We are looking forward to a proactive exchange!

Source: Kahle, J.; et al., 2018: Nachhaltigkeit in der Hochschulforschung (Betaversion). BMBF-funded project "Sustainability at Higher Education Institutions: develop - network - report (HOCH^N)", Lüneburg and Munich.

SDG analysis



How can we measure sustainability in research?

UDE's University Library (UB) is involved in the European Aurora network's (pp.92-93) bibliometric project "SDG-Analysis: Bibliometrics of Relevance", which studies the influence of research at individual universities on social developments.

The focus is on the United Nations' 17 Sustainable Development Goals (SDGs), which were incorporated in the 2015 Agenda for Sustainable Development. These sustainability goals have been kept very general, indicating individual areas of development for greater sustainability (for example "No Poverty", "Clean Water").

The Aurora Project is searching for a method to identify how the participating universities' research relates to these UN goals. Using search queries, publications are retrieved from databases and examined with regard to their scientific and social impact.

The UB is deeply involved in this project, developing software tools for automated data processing on the one hand, and generating and validating search queries for individual SDGs on the other. Individual researchers from UDE and partner universities are also involved in the project to evaluate the search queries.

For more information, visit www.aurora-network.global/project/sdg-analysis-bibliometrics-relevance/

Sustainability in teaching

Future-proof teaching and learning

Universities train the specialists and managers of the future – a future in which they will be facing challenges such as climate change and growing global inequality. This begs the question: What skills do students need to drive tomorrow’s sustainable transformation, and how do they acquire them?

The UNESCO World Action Programme “Education for Sustainable Development” (ESD) states: Teaching and learning must be holistic. It is no longer sufficient to absorb and reproduce knowledge in individual disciplines. The complexity of sustainability issues requires more: Students must be able to reflect and generate knowledge and learn together through inter- and transdisciplinary approaches. They need to be able to think ahead and act autonomously. Sustainability in teaching is therefore not just a question of content. In order to reinforce what are often normative skills, the methodology will also have to target holistic learning. This means fostering the ability to reflect on one’s own actions and value structures and to negotiate sustainability-related topics in the context of conflicts of interest. ESD therefore inspires critical thinking. Students are encouraged to take a stance in the sustainability discourse and participate in societal decision-making processes. An important prerequisite for this is social sustainability in teaching, which means, in particular, striving for equitable access to education and diversity amongst students and teachers.

The following chapter presents examples of how the University of Duisburg-Essen promotes sustainable development in teaching in terms of content, methodology and social aspects.

Statement

Quality of learning and teaching

In its University Development Plan, UDE has committed to promoting sustainable thinking and action in its core fields of activity to ensure that the sustainability process as a strategic, cross-sectional task also takes effect in studying and teaching. UDE pursues an approach that explicitly encourages its members to act in an ethically responsible and sustainable manner. In teaching, for example, this translates into a consistent focus on resources, progress and implementation. Studying and teaching at UDE aim to form academically educated and reflective individuals who are able to think across disciplinary boundaries and take responsibility for environment and society, both as students and post-graduates. Established formats such as Service Learning, which is facilitated by the Centre for Social Learning and Civic Responsibility (UNIAKTIV) at the Institute for Optional Studies (IOS), enable real and tangible knowledge transfer to society. Since the winter semester 2016/17, IOS, in close cooperation with the research field “Urban Systems”, has also been offering a “Certificate in Education for Sustainable Development”, a transparent written record of a student’s acquired skills and knowledge in the field of sustainability.

Furthermore, UDE is committed to a particular educatio-



Professor Dr Isabell van Ackeren
Vice-Rector for Teaching and Learning

nal policy mandate: Educational equality and participation as well as unlocking potential are core characteristics of UDE’s profile. We systematically foster these objectives in the projects Focus on Equity in Education (BiF), which is part of the Quality Pact on Teaching, Professionalisation for Diversity (ProViel), which is funded under the Quality Initiative for Teacher Training, the TalentKolleg Ruhr and the Talent Scouting programme. We place a special focus on the initial phase of the degree course, which has a significant impact on future academic success. The projects also radiate into secondary schools in the region, forging systematic connections between secondary schools and higher education.

UDE’s digitisation strategy for studying and teaching also docks

onto the realities of student life by offering more flexible options in teaching and learning. The use of e-learning and blended learning (with attendance phases) offers sustainable solutions to better adapt curricula and access to learning content to our students’ time constraints and needs, thus meeting specific prerequisites for students’ satisfaction with and success in their studies.

In terms of sustainability in an increasingly digitised and internationalised world, remote and e-based self-study phases in combination with meaningful attendance phases as well as digital learning materials also promote resource-efficiency in terms of mobility and consumption of supplies.

UDE is a system-accredited university and thus authorised to self-(re-)certify its own programmes. In this regard, we have developed our quality management in the spirit of sustainable quality development in studying and teaching as well as in completing the quality cycle.

These activities are framed by the 2019 teaching-learning strategy that explicitly addresses the topic of sustainability, referencing the United Nations’ Sustainable Development Goals (SDGs).

UDE certificate in “Education for Sustainable Development”

In the summer semester 2016, Master’s student Nina Kiedrowicz successfully devised a certificate in “Education for Sustainable Development” in the context of the project seminar “Sustainable Higher Education Units – Practice oriented research for sustainable development of the UDE and urban areas” (p.49). The certificate enables all students at UDE to address the topic of sustainability scientifically in an interdisciplinary setting and integrate it meaningfully into their degree course. Drawing on the best practice examples and sustainability reports of other universities as well as a detailed analysis of the situation at UDE, the idea of a certificate emerged.

Integrating the certificate in the curriculum

The certificate does not rely exclusively on voluntary engagement. The allocated credits can be integrated into the curriculum. In order to be able to make this option available to all students without directly interfering with the curricula of all 200-odd degree courses, it seemed sensible to establish the certificate in the portfolio of elective subjects that are an integral element of most students’ Bachelor’s degrees. Moreover, students from the most diverse subject areas come together at Studium liberale events, facilitating interdisciplinary thinking and working – a fundamental competence for mastering sustainability-relevant topics.

Furthermore, to ensure that analysing sustainable development did not take place piecemeal and in isolation but that students gained an integrated understanding, criteria were developed for the composition of the courses to be taken: one precondition is that everyone has to attend an introductory seminar in sustainable development so that they can acquire a fundamental understanding that enables them to put the more in-depth knowledge they accrue later into a broader context. In addition, they also do two specialisations or one specialisation and one practical project. To be granted the certificate, students must take at least three courses and gain at least eight credits.



Nina Kiedrowicz (left, urban systems alumna) developed the UDE certificate in “Education for Sustainable Development” together with Dr Elke Hochmuth (centre, Academic Coordinator for the Master’s course in urban systems) and Sabine Dittrich (right, head of Studium liberale in the Institute for Optional Studies).

Institutional home

Once Nina Kiedrowicz had managed to recruit UDE’s Institute for Optional Studies and the profile area of “urban systems” as a potential institutional home, she presented her concept to the Vice-Rector for Teaching and Learning in July 2016. Funding for the certificate was approved.

As well as the teaching positions funded by the University Board and managed by the Institute for Optional Studies, existing UDE courses were opened to the certificate thanks to targeted acquisitions. Moreover, successful collaboration with the University of Bremen’s Virtual Academy of Sustainability was established, providing access to a total of 22 e-learning courses. Twelve additional courses are currently being offered by UA Ruhr. Thus, by the winter semester 2019/2020, students could choose from no fewer than 59 sustainability seminars.

For further information, visit www.uni-due.de/zertifikat-bne

4

Education for sustainable development

An article by Dr Christa Henze,
Diploma in Education, Faculty of Biology

Not all students at the University of Duisburg-Essen yet have the chance to engage intensively with the issues and challenges of sustainable development in the context of their degree courses. But the sustainability process that was launched a few years ago at our university does actively support greater engagement. Furthermore, based on my observation, there is an increase in the number of students who (robustly) demand a debate on issues relating to sustainable development in teaching and critically question how sustainable their own university really is.

With my contribution to education for sustainable development in teaching and research I would like – together with others – to set something in motion that I consider to be one of a university’s core educational missions: to debate the issues and challenges of (non-)



Dr Christa Henze, Senior Lecturer and expert in the field of education for sustainable development.

sustainable development, to reflect on values, to convey knowledge and build the capacities people need in order to be able to play a responsible role in sustainable development processes. These are the very ideas that were endorsed once again by the German Rectors’ Conference in November 2018: that research and teaching should make important contributions to the conversation on sustainability and advocate ‘a culture of sustainability’.

I help students from various subjects as they tackle education for sustainable development – whether with the compulsory elective module on the Master’s course “Communicating biodiversity” in the Faculty of Biology, with the seminar portfolio on “Education for Sustainable Development” in the educational sciences or by various offers in the field of “Optional Studies”. These offers address the Agenda 2030 and the Sustainable Development Goals it contains by compiling and critically examining the prospects for social transformation towards greater sustainability. In all my teaching it is important to me to promote systemic thinking, to support individuals in building sustainability-relevant competences and to spark creativity and curiosity. Increasingly, some of my courses are chosen by students who want to acquire the certificate in Education for Sustainable Development.

I also consider a variety of collaborations within UDE as well as at regional, national and international level to be indispensable. An example is the ESD Expert Net. Established in 2010, it connects experts from Germany, India, Mexico and South Africa in a global partnership, and I am actively involved as the UDE representative. Motivated by a shared vision of education for sustainable development, we work to implement sustainability topics and education for sustainable development in the educational landscapes of the various countries.

4 17

Sustainability in teaching is very varied!

The projects selected here give an impression of how sustainability in teaching at UDE is being driven forward with regard to content and methods as well as socially. Each of the articles is also assigned to the United Nation's Sustainable Development Goals, SDGs.



53 percent of UDE students are educational climbers. Women account for 48 percent of UDE students; amongst doctoral candidates, 44 percent are female (as of 2019 www.uni-due.de/en/overview.php)

“Bildungsgerechtigkeit im Fokus” Quality pact-teaching project

With its quality pact-teaching project “Bildungsgerechtigkeit im Fokus” (Focus on Equity in Education) UDE develops and promotes the potential of young people whose degree courses and circumstances confront them with enormous challenges. The project pools the majority of UDE activities designed to further develop the initial phase of study. The second phase of the project (2016–2020) expands, interlinks and structurally embeds the approaches towards sustainably reinforcing the initial phase of study that have already been successfully tested. In this context, diagnosing, mentoring and capacity building are interconnected to enable students to analyse their own strengths and weaknesses at an early stage, integrate them in mentoring systems and support them with curricular and extracurricular opportunities. Within the project, the activities are combined to form thematic part-projects. These include the UDE mentoring system, the development of blended learning at UDE, designs for embarking on STEM subjects, the systematic promotion of writing skills and fluency, the quantitative evaluation of academic progress with the aid of examination data and surveys, and a trial project on individualised standard study periods in the engineering sciences.

For further information, visit www.uni-due.de/bif/

4 10 16

ProViel Professionalisation for diversity

Dynamic, reflexive, evidence-based – with the complex challenges of school practice in mind, this is the way teacher training at UDE is set to develop. In the framework of the “Qualitätsoffensive Lehrer*innenbildung” (quality campaign for teacher training) run by the Federation and Länder, UDE started ProViel in 2016. It supports the expansion of its training focus on “Managing heterogeneity in schools” and contributes to honing the profile of teacher training. ProViel

comprises the fields of action: diversity and inclusion, SkillsLabs | new learning settings, and quality development and assurance. A fourth area was also included: the working group on digitisation in teacher training. Altogether, innovations in teacher training are implemented in nine faculties and 26 part-projects. In 2018, the application for a second funding phase was approved, so that the project could be extended until the end of 2023.

The products and measures developed in ProViel are specifically designed with a view to sustainable use in teacher training. ProViel conducts its operations by choosing climate-friendly rail for business trips, observing sustainability aspects when organising events and using sustainable products.

For further information, visit www.uni-due.de/proviel/

4 5 8 10 16

Sustainable Higher Education Units A project seminar

In the context of the Master's programme on urban systems, in the summer semester 2016, students worked on various aspects of sustainability at UDE. The aim was to present scientifically-sound, creative suggestions for transformation which could be implemented in the future. ‘The concepts produced by the students are very valuable for our sustainability process. They reflect the enormous range of different areas of activity that are extremely important for our path to a sustainable future at UDE,’ says Professor André Niemann who organised the project seminar together with his napro team and the profile area on urban systems. The following examples offer some insights:

In an online survey, students were asked about their ideas for a sustainable lounge area on campus. Where did people prefer to be – outside or inside? Rather hammocks or re-cycled pallets? According to the students, the lounge area should not only be environmentally friendly but also promote social sustainability by being a place where people could communicate.

A focus on student initiatives constituted another object of study into social sustainability. A project group held

qualitative interviews with representatives of the university, AStA and other student groups to determine the importance of student engagement. The mobility behaviour of university members was also evaluated with the help of questionnaires. The project group investigated, amongst other things, the distances covered between the campuses whilst another group concentrated on commuters and drafted a sustainable mobility strategy.

1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17

TKR TalentKolleg Ruhr

The University of Duisburg-Essen's “TalentKolleg Ruhr (TKR)” targets school students, people with or without professional qualifications potentially interested in taking a degree, migrant academics and those interested in returning to higher education. The TKR is a collaboration between three institutions of higher education – UDE, the Fachhochschule Dortmund (University of Applied Sciences and Arts) and the Westphalian University of Applied Sciences – which seek to develop, test and evaluate advisory services and qualification courses for the above target groups. These courses...

- ...are designed to offer guidance and help prepare for a degree or vocational training,
- ...smooth the path into a degree course or the transition into vocational preparation and
- ...thus increase the region's participation in education and potential educational success.

The joint goal of all three institutions is to guide talents towards a form of education specifically suited to them in accordance with their individual needs and interests. At the University of Duisburg-Essen, the TKR offers the following programme of sequential building blocks:

- offers for school students (campus scouting, talent academy, JobInsider)
- offers for international academics and refugees (clearing house for migrant academics and refugees, Smart for Study for migrants)

- offers for young people doing a voluntary social year (FSJ) or voluntary academic year (BFD)
 - offers to study without Abitur and to return to higher education (clearing house for those with vocational qualifications, Smart for Study for those with vocational qualifications)
 - offers of a potential analysis for participants in the various programme lines
- Funded by the Mercator Foundation, the project expired on 31 December 2019.

For further information, visit www.uni-due.de/talentkolleg

4 5 8 10 16

E-Learning-Allianz

Digitisation strategy in studying and teaching

The University of Duisburg-Essen (UDE) sees the digitisation process as an opportunity to drive the development of university teaching and learning. Digital media offer innovation potential and new options for flexibility and networking. In the context of these developments, UDE focuses on its students. Knowing how important the combination of specialist, methodological and digital competences will be for their graduates' later jobs or professions, the university promotes the handling of digital tools using a holistic approach which includes learning settings and conditions of study. Special attention is paid to encouraging the ability to manage their own learning and to acquire soft skills. Being a university with a heterogeneous student body, UDE is committed to the potential inherent in digital media to address learners' differing needs.

Within its digitisation strategy in studying and teaching the university has introduced measures such as participation in education through flexible teaching/learning opportunities, inclusive offers for students with varying needs, the use of digital media to help prepare for working life and to make learning conditions easier.

4 8 10 16

IOS

Institute for Optional Studies

IOS teaches students skills of use in higher education, working life and society in order to make them fit to meet the global challenges. Over and above degree courses, a palette of teaching offers in (foreign) language learning, methodological, personal and soft skills as well as interdisciplinary courses enables students to expand their educational horizons in accordance with their own level of knowledge and objectives. In most cases, students can acquire credits for their subsidiary subjects. Moreover, the capacity to study is of great relevance to the programme which is geared to educational equality. In addition to internationalisation and social responsibility, sustainability is one of the core themes: IOS thus organises the certificate in Education for Sustainable Development (p. 46) in cooperation with the urban systems profile area. IOS's operations are also run sustainably: Gender equality in the workplace and in teaching sessions is crucially important. Moreover, many members of staff come to work by bicycle or public transport whilst rail is the preferred means of business travel. IOS is also committed to becoming a paperless office and is careful to order sustainable products.

1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17

napro's recommendations for action

Sustainability in teaching calls for sharing and structure!

In its University Development Plan 2016 to 2020, UDE cites sustainability as one of its core objectives in teaching. And much has already been achieved: Since the winter semester 2016/2017, students in all subjects have had the opportunity to acquire a certificate in sustainability. In addition, teaching staff from different faculties address the topic and thus drive it on the respective degree courses. This does not, however, mean that all the possible measures to promote education for sustainable development (ESD) have been introduced by a long chalk. Just like sustainability in research, further efforts in communicating and institutionalising the topic can also help to make sustainability in teaching more accessible for lecturers and students.

Training programmes and networking meetings

'What does my subject have to do with sustainability?' some teaching staff might ask themselves. But as the articles in this chapter show, sustainability in teaching does not depend on discipline. Creating an overarching ESD training programme for all teaching staff puts sustainability on a broader footing in all subject areas.

ESD itself is a work in progress, and a one-off training programme is not going to produce teaching methods and contents that are appropriate for the present day. Sharing ideas with other lecturers helps us to look beyond the horizon of our own discipline. In September 2019, for example, UDE teaching staff took part in a workshop on "Methods for teaching the notion of sustainability at higher education institutions" at the Hochschule Bonn-Rhein-Sieg (University of Applied Sciences). Meetings of this kind would also promote networking within the university so that teaching staff at UDE who have a connection to ESD

could get to know each other and share their experiences. Moreover, specific events for different subject areas are a good way of keeping teaching staff updated on sustainability-related developments in the respective disciplines.

Institutionalising structures for greater efficiency

The articles in this chapter illustrate the diversity of sustainability in teaching in the various faculties and institutions at UDE. In the absence of a cross-university strategy, however, these activities are in danger of generating unwanted parallel structures and neglecting synergy effects. A central institution in the form of a Green Office that oversees the university's sustainability-related activities in teaching and organises the above-mentioned networking opportunities ensures effective structures and helps teaching staff to integrate ESD.

Many of the examples in this chapter involve practitioners in the teaching, making it possible to apply what has been learned in practice and build professional contacts for students. Contacts like this are, however, often dependent on the lecturer's own portfolio. This is where a Green Office could help to foster long-term relationships to practitioners, irrespective of the duration of courses and projects.

Furthermore, an active debate at various UDE leadership levels about the binding adoption of ESD in the curricula and degree courses would lead to greater awareness of the importance of sustainability in teaching in all disciplines.

Source: Bellina, L.; Tegeler, M.K.; Müller-Christ, G.; Potthast, T., 2018: Bildung für Nachhaltige Entwicklung (BNE) in der Hochschullehre (Betaversion). BMBF Project "Sustainability at Higher Education Institutions: develop – network – report (HOCH)", Bremen and Tübingen.

Sustainability in operations

Resource-friendly, economic and social organisation

Operations is a core driver of the ecological dimension of sustainable development. Introducing reduction and efficiency measures in our handling of natural resources not only generates ecological but also economic advantages. If we are to achieve this, we need to define both our goals, processes and measures at the strategic and operative levels, as well as determining where accountability and responsibility lie.

'You get on with your studies, research and teaching. We do the rest.' This is the motto that characterises the work of UDE's administration, with a keen eye to sustainability. The Staff Unit for Occupational Safety & Health and Environmental Protection as well as and the Departments of Economic and Financial Affairs, Facility Management, Human Resources and Organisational Management in particular, reinforce and steer the ecological/economic dimension of operational sustainability at UDE. Moreover, continuous quality assurance in HR development addresses social sustainability from an operational point of view. The adoption of binding inhouse sustainability efforts in target and performance agreements is a further important step towards more sustainability in UDE operations. These agreements, which refer to teaching and research as well as HR and structural development, are updated and adjusted every two years. In addition to members of the university, Operations also actively involves external university partners like the municipality, local district, supply companies and service providers. Be it waste disposal on the campus itself (pp.64-65), procurement of more sustainable office supplies (p.64), responsible handling of unwanted furniture (p.65) or the implementation of an energy management system (p.59), UDE brings together a raft of intrinsically motivated staff and interested parties from outside who make a valuable contribution to sustainability in Operations. This chapter showcases a selection of impressive initiatives and activities within UDE Operations.

Statement

Structurally sustainable agenda

As Vice-Rector for Development & Resource Planning I am passionate about systemically embedding sustainable processes at UDE. Here are four examples to illustrate the point:

1) Sustainability has been embedded in all our target and performance agreements.

2) For many years, universities' state financing has not been adequately covered by regular budgetary resources alone but combined with competitive programmes. The fixed-term additional funding (for example from the Higher Education Pact 2020) was originally transferred to the faculties for individual measures. We then changed our policy to provide faculties with a budget to cover a period of several years, subject to student uptake and numbers. This gives the various budget recipients – just like the funding allocation system that was modified in 2016 – greater planning security and leads to improved transparency.

3) In order to create sustainable structures for studying and teaching, UDE's quality assurance system was revised. This resulted in system accreditation in 2016. The time required to certify/accredit degree courses was reduced significantly; at the same time, inhouse quality

management and the responsibilities of the faculties and their members were reinforced. As a university with an accredited system, UDE itself has since had the right to award the accreditation certificate for all degree courses – including teacher training courses. In the context of a voluntary interim evaluation in 2019, we revisited the processes involving all stakeholders which will bring about even leaner processes.

4) In its university strategy, UDE formulated its understanding of appreciative HR development: 'Holistic HR development at UDE embraces systemic promotion and development of its staff's skills in all sectors of UDE in order, on the one hand, to promote each individual employee's professional development and, on the other, to achieve and secure the university's strategic goals.' (UDE University Board (eds.), 2015: University Development Plan 2016-2020, p.40) As early as 2014, UDE set itself the goal of reducing the number of part-time and underpaid fee-based contracts in its "Guidelines for fixed-term employment relationships and rules of good practice for employees in mid-level academic positions." Subsequent consideration informed a service agreement between the University Board and the Staff Council representing academic and artistic employees, concluded



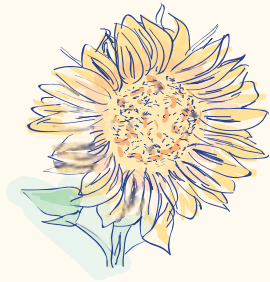
Professor Dr Thomas Spitzley
Vice-Rector for Development
and Resource Planning

in 2019. By introducing the Tenure Track Programme (TTPlus) and the Graduate Center Plus (GCPlus), secure, longer-term career paths were also created for junior researchers. The HR development plan PEPlus advanced and sealed reinforcement of the entire staff.



What is UDE's climate and ecological record?

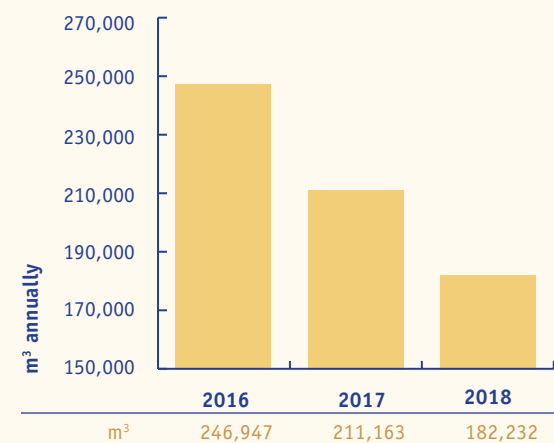
Key factors at a glance



In terms of number of members, UDE is the size of a small town with a correspondingly heavy impact on climate and the environment. But how large is UDE's carbon footprint? How can we measure our environmental and climate impact? So far, UDE has lacked a holistic balance sheet, which is particularly complex to draw up for two campuses, each of which has its own, different conditions. The facts and figures presented here illustrate the extent of the factors relating to climate and environment at UDE:

Water

Consumption of drinking water in UDE-owned buildings



Source: Department of Facility Management



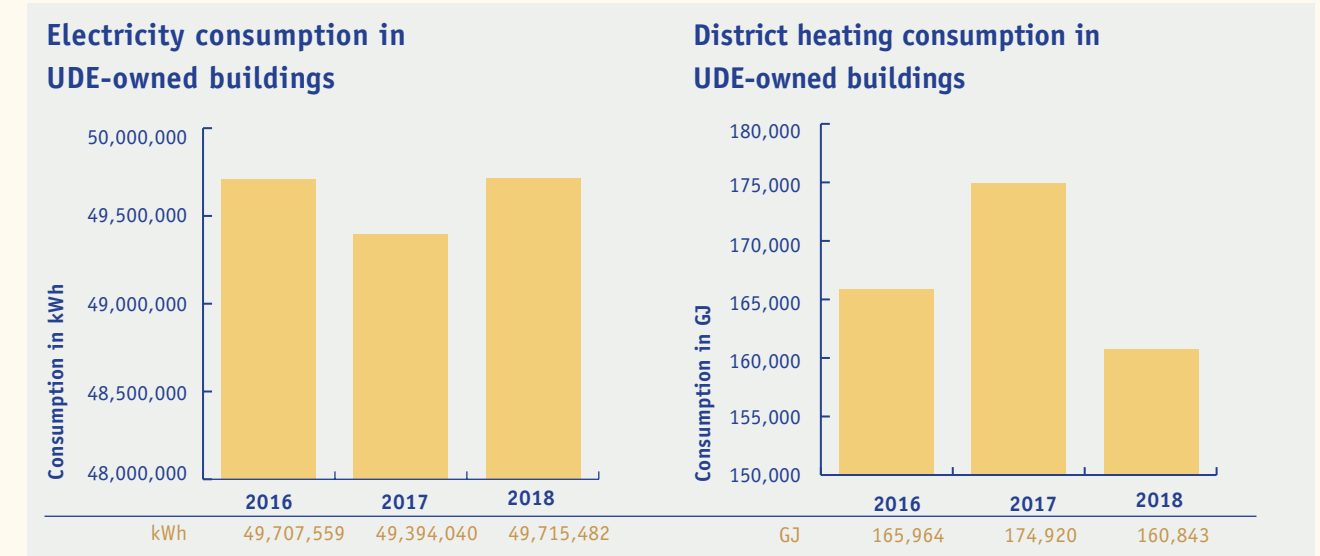
Eco tip:

Drinking water dispensers are available in the LK building on Duisburg Campus and in the Humanities and Social Sciences Library on Essen Campus. We are planning to instal more such dispensers throughout UDE.

Energy

100% green electricity! Since the beginning of 2020, UDE has obtained all of its power from renewable sources.

Power consumption in UDE-owned buildings has been stable since 2016, despite increasing student numbers.



In addition to its own buildings, UDE also rents a number of buildings.

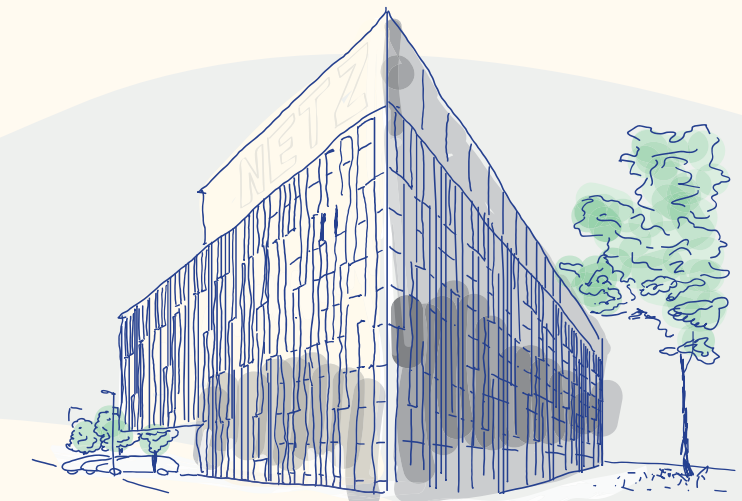
Accounting for energy consumption in rented buildings is more complex due to different metering and billing procedures. Two of the most energy-hungry buildings are the DU computer centre (annual consumption in 2018: 20,777 kWh) and the Weststadttürme (annual consumption in 2018: 364 kWh)

Source: Department of Facility Management

Our energy champion: The NETZ research building on Duisburg Campus

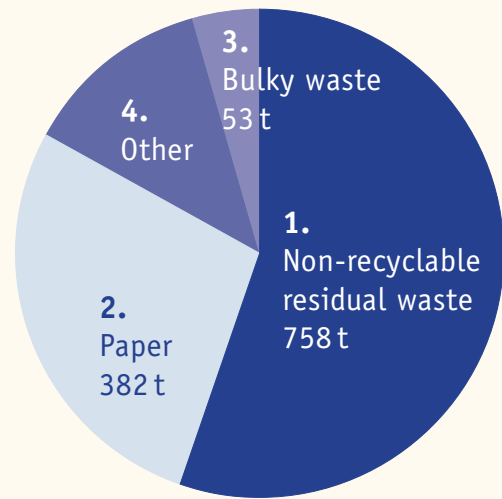
Effective heat exchangers in the exhaust air systems significantly decrease the need for externally supplied district heat. In addition, waste heat from the systems that run in the building is captured and fed into the exhaust air systems. The photovoltaic system on the roof has a peak output of 23 kVA.

(NanoEnergyTechnologyCenter: www.uni-due.de/cenide/netz/index_en.php)



TOP 3 types of waste 2018:

(Source: Staff Unit Operational Safety and Ecology & Waste Management)



Waste

Total in 2018:
1,371 metric tons

The largest waste categories have the greatest potential for reduction. Everyone can help avoid bulky waste and paper waste. Have you heard of our UDE classified ads (p.65)?

For more on waste management at UDE, turn to pp.64-65.

Business travel

Business travel is one of the biggest climate killers at universities. ETH Zurich, for example, has found that more than half of its greenhouse gas emissions stem from business trips. 93 percent of these emissions are due to air travel (ETH Zurich mobility platform: www.ethz.ch/flugreisen, accessed on 03.04.2020). At UDE, emissions from air travel for business are a blind spot, which is why napro is developing a project to monitor and configure UDE employees' travel behaviour.

For more information on mobility at UDE, turn to pp.60-61.



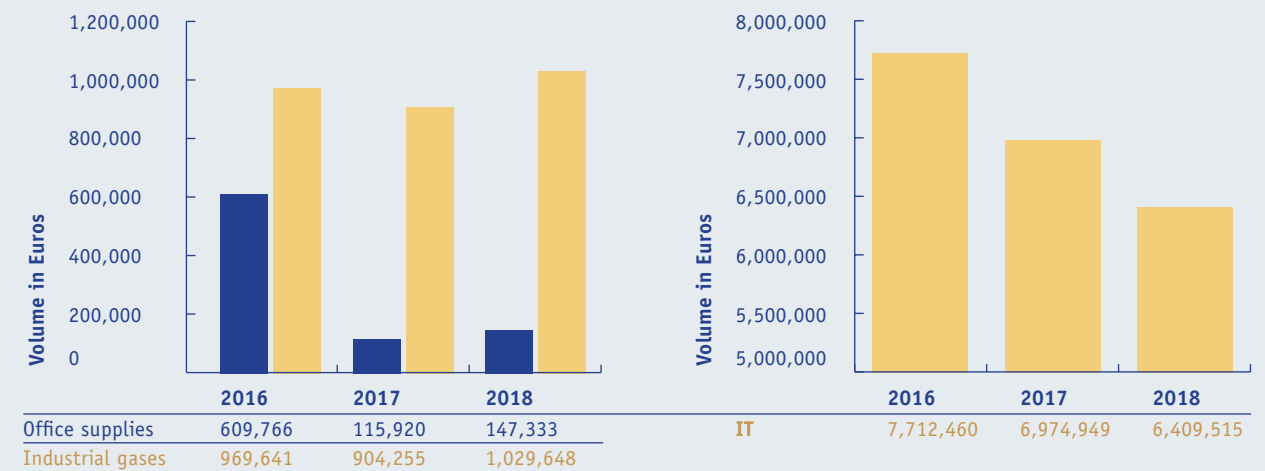
Mobility to and between campuses

In this area, we see both positive developments and issues that need attention. Thanks to an agreement between the student council AStA and Metropolrad Ruhr, students can use rental bikes free of charge. The shuttle bus that connects the campuses, however, still runs on diesel. The inter-campus postal service, on the other hand, has already made the switch to electric cars.

Procurement

The Procurement Department also strives for sustainability (p.64). But it is difficult to draw up an accurate balance sheet because it would need to include the carbon footprint of all the products purchased. The following figures provide an overview of expenditures and most frequently purchased product categories:

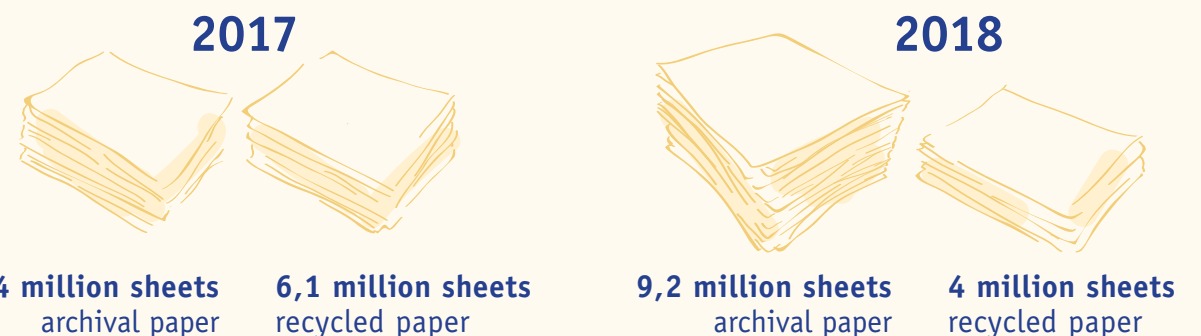
Purchases of office supplies, industrial gases and IT



(Source: Procurement Department)

Comparison of paper orders: 2017 and 2018

We are becoming increasingly digital, but we have not reached the point where we can go paper-free. To comply with legal retention regulations for important documents, for instance, we are often required to use archival paper. Orders of recycled paper dropped at UDE between 2017 and 2018. N.B.: although paper is one of the most visible consumables at UDE, it is only a minor factor in the climate balance.



(For simplification, DIN A3 paper orders were converted to DIN A4. Source: University Print Centre, Procurement Department, Stock)



Circulator pumps returning the heat flow in the heating circuit at the NETZ building on Duisburg Campus. The flow rate is demand-controlled and amounts to 38 m³/h per pump.

Optimising the energy management system Documentation by the Department of Facility Management

Optimising energy use has always been one of the main pillars of our daily activities in technical systems operation and maintenance.

In recent years, for example, continuous energy savings have been achieved by renovating buildings and replacing old systems with energy-efficient systems in cooperation with the owner of the buildings, the construction and real estate company of the state of North Rhine-Westphalia. Consumption and energy monitoring are a crucial basis for energy management. The GEFMA 402 guideline defines energy controlling as follows: 'Energy controlling primarily involves evaluating metered and measured values. The aim is to record energy flows and associated cost structures and make the data available for further processing (e.g. cost accounting, benchmarking, error diagnosis). Effective energy controlling requires an appropriate meter infrastructure. The quality of the meter infrastructure is determined by the meters used and the type of meter network.' That is why, in 2012, the Department of Technical Facility Management presented a concept for improved energy controlling to the University Board. The introduction of an energy management system was subsequently incorporated in the target and performance agreements (ZLV) for 2013-2015. As a first step towards energy management in technical facility management, ZLV stipulated that a documentation system should be established to illustrate specific energy flows in a timely manner. The documentation system has now been in use since 2012 and our server system currently stores consumption data from approximately 252 measuring points. In order to read the meters automatically, we needed to either replace the old meters or instal new metering points in the existing supply lines. This project

has been delayed due to the existing building structure and location of the supply lines as well as the need to maintain continuous operation. So far, it has only been possible to convert 112 metering points to automated reading. The action item "measures to optimise consumption" is, therefore, still in the planning phase. We are progressively retrofitting meters that cannot be read automatically and will continue to treat this as a priority item in operational technology (see Development Report ZLV 2016-2018). As our documentation system, we chose the ENerGO+® software package, which is a professional, comprehensive energy information and billing system. It covers both the technical side of energy controlling, such as load profile analyses, leakage detection and facility dimensioning, and the commercial side, such as reliable consumption and cost determination, reporting and billing to third parties.

In 2018, Andreas Kleine and the UDE Facility Management team were honoured for their efforts in sustainability-oriented resource management in the energy sector (pp.108-109).

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Mobility at UDE

One of the key tasks to reduce our ecological footprint

On the occasion of the Climate Action Day on 20 September 2019, UDE's Rector and the Chancellor called on everyone not to come to university by car if at all possible – a request that, if heeded, has great potential: Almost 50,000 people work and study at UDE. Their movements from, to and between the campuses put an enormous strain on the environment and the climate – a challenge UDE must face in the interests of sustainability. But what does mobility at UDE look like at the moment? And how can we go “car-free”?

Public transport and shuttle buses

In the 2016 project seminar „Sustainable Higher Education Units - practice oriented research for sustainable development of the UDE and urban areas“ (SHEU, p.49), organised by napro and the Urban Systems profile area, students took a closer look at UDE's mobility situation and discovered that 60 percent of UDE students commute from surrounding cities. Each commute takes an average of 76 minutes. One way of commuting is to use the semester ticket (or job ticket for employees), which is included in the semester fees and can be used for local public transport throughout NRW. Between campuses, students and employees can take the university's shuttle bus (still unfortunately runs on diesel), which is free of charge and takes about 20 minutes. This helps reduce the use of private motor vehicles. The free app myUDE, provided by the Centre for Information and Media Services, shows the departure times of the UDE shuttle bus as well as public transport timetables.

Cycling

Cycling is an eco-friendly alternative to motorised transport. Thanks to an agreement between the

student council AStA and nextbike/Metropolradruhr, students can rent up to two bicycles free of charge for one hour. Each additional half hour or fraction thereof costs 50 cents (per bike). Conditions apply throughout NRW, with the exception of Bonn, which charges an annual fee of 3 euros. But there is still room for improvement. Throughout the sustainability process, there have been repeated requests to make the campuses more bikeable: safe bicycle parking facilities at all major campus locations, support for company bicycles for staff and access to (existing) showers are some of the possible action items (for more information on cycling, visit: www.uni-due.de/fahrrad/radservice.php).

E-mobility

E-mobility plays a key role in making motorised transport more climate- and eco-friendly. UDE combines its research with practical applications: Between 2012 and 2017, UDE was the scientific partner in the electric car sharing project RuhrautoE. In cooperation with the Chair of Economics and Business Administration and Automotive Economics, the Chair of Mechatronics and the Faculty of Engineering's profile area “Energy and Resource Engineering” as well as other partners from the public transport and the private sectors, more than 50 modern electric vehicles were made available for flexible use in a car sharing system.

Eight UDE chairs participated in the electromobility project cologneE-mobil (2010-2015), contributing scientific research and supporting a total of thirteen project partners. In this project, a charging station was installed at each campus and the campus postal service ran a test with two electric cars. In cooperation with Cologne-based vehicle manufacturer Ford, the partners were able to put a total of 53 electric and plug-in hybrid vehicles into routine operation. In November 2019, the campus postal service permanently switched to electric



The first section of the bicycle expressway Ruhr (RS1) leads directly past Essen Campus and currently ends in Mülheim an der Ruhr. The plan is to extend the RS1 to cover 101 km from Duisburg to Hamm.

vehicles. The Rector will also be using an eco-friendlier car with a hydrogen drive.

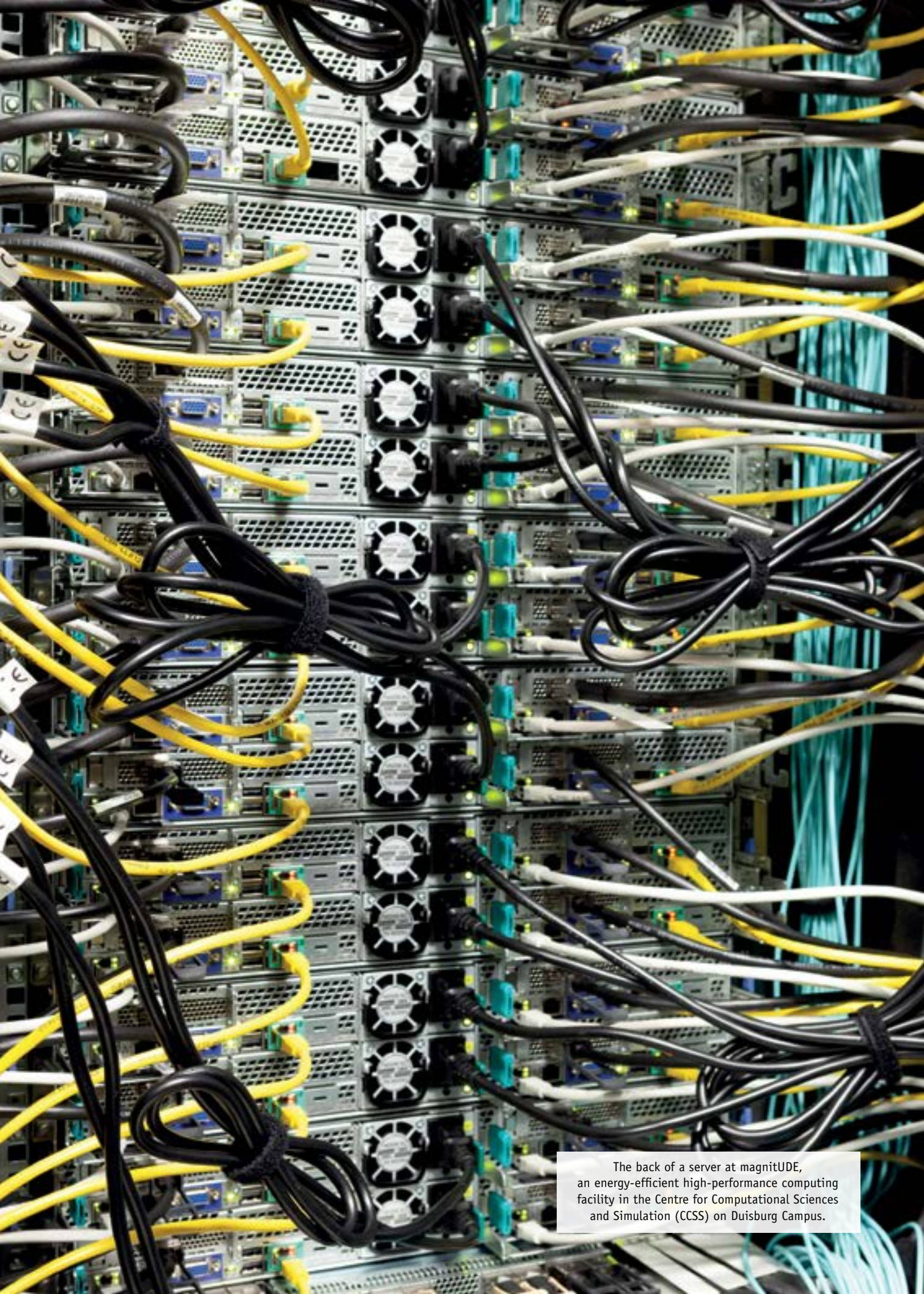
Climate killer business travel

However, we must not forget that business travel is a major element in the carbon footprint of research, which puts researchers in a dilemma: On the one hand, they have to network internationally. On the other, they are more aware than most of the negative climate impacts of travel, especially air travel. This is why more and more German researchers at universities have decided to “walk the talk” and are calling for a ban on short-haul flights. At UDE, a travel monitoring system in combination with a travel code could be an incentive for more climate-friendly practices. Some other European universities are already leading the way and could serve as a model (see ETH Zurich or the University of East Anglia).

A holistic mobility concept

Socially and politically, mobility has been recognised as one of the major issues of the future, but how to handle mobility is still the subject of heated debate. We at UDE also have yet to exhaust our full potential. In order to adequately and responsibly address the complexities of this issue, we need to develop a holistic mobility concept for UDE. Recommendations can be found in the proposals for action (pp.68-69) and in the Top 10 to-dos in the chapter “Prospects for a sustainable UDE” (pp.116-117).

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The back of a server at magnitUDE, an energy-efficient high-performance computing facility in the Centre for Computational Sciences and Simulation (CCSS) on Duisburg Campus.

GREEN IT

The Centre for Information and Media Services combines economically sound action with ecological thinking

One of the major infrastructural prerequisites for a university's success is a secure, functioning IT system. Over the years, the growing importance of IT has seen a concomitant need for vast energy resources for operation and cooling. This is why the Centre for Information and Media Services (CIM) at the University of Duisburg-Essen is modernising its IT infrastructure with a differentiated action package to limit IT-related power consumption. CIM's approach combines economically sound action with ecological thinking.

Computer centres are a key aspect of "Green IT" because they are among the hungriest power consumers. The implementation of cold aisle containment in the Schützenbahn server room (www.udue.de/gGuRo) in 2013 has led to a considerable drop in power consumption. Today, hardware purchases are made with a focus on high computing power per watt. This benchmark allows us to procure economical hardware with great computing power, which was also an important criterion in the selection of the new HPC system in 2016. The new high-performance computer magnitUDE, which is operated by CIM, ranked 384th amongst the top 500 in November 2016. In the category "Green IT", it ranked 72nd worldwide and 2nd amongst German universities. magnitUDE is significantly more efficient than many other supercomputers in terms of computing power per watt. The choice of Duisburg's Logport as a rental space for the new data centre was also determined by aspects such as modern energy-saving concepts and energy efficiency.

Every workplace generates energy costs. It is therefore recommended to limit the equipment to the actual requirements of the workplace. CIM has also published a guide for Green IT in the workplace (www.udue.de/greenit and www.udue.de/vgQVG) as well as an overview of sustainable IT tips (www.udue.de/be-greener/) that are available to all university mem-

bers online. Another step was the implementation of a Virtual Desktop Infrastructure in connection with what are called "thin clients". This offers decisive advantages: Thin clients have a much longer service life than normal desktop PCs, thus decoupling hardware and software lifecycles; their manufacture is more energy- and material-efficient and they are easier to transport; they also require much less power. This is possible because they mainly draw on server resources, which in turn means they can be exploited more effectively. This improves the flexibility of the entire IT system as IT workstations for new employees or short-term special tasks can be deployed very quickly.

The Centre for Information and Media Services strives to continuously reduce its resource needs to operate UDE's IT. Via websites and social media posts, it raises awareness for the topic of Green IT and sustainability across the entire UDE community.

Increasingly, CIM employs video conferences to eliminate the need for face-to-face meetings. The tool DFNConf allows participants to easily join a conference on and off campus. Moreover, CIM encourages staff to use public transport for business trips and on-site meetings. Already, many employees choose not to come to work by car but use bicycles or other sustainable options.

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Examples of sustainable operations

The following articles provide insights into how motivated employees practise sustainability in their everyday work. Their activities are aligned with the United Nations' 17 sustainable development goals.

Engaged employees for sustainable procurement

Every sustainable action matters.

When it comes to consumption, both central and decentralised procurers and buyers, such as office administrators and other employees, can have an impact by the way they tender and procure products, goods and services. In addition to economic efficiency, they are thus also responsible for ensuring compliance with ecological and ethical criteria. In this context, UDE's Procurement Department considers how to offer university members more sustainable products and how to invite suitable tenders for such products. In 2017, UDE partnered with TU Dortmund University, the University of Cologne and Heinrich Heine University Düsseldorf to establish criteria for sustainable office supplies. They decided to use these criteria to issue a joint invitation to tender. Contracts were awarded to selected suppliers, for example to providers whose product catalogue featured at least 75 percent of sustainable items. An important ecological aspect was the type of fuel suppliers used for their vehicle fleets. To highlight sustainable products in the SAP purchasing system for both procurers and buyers, they were explicitly advertised on the procure-

ment homepage. This campaign quickly gained traction and demand for more sustainable products increased. Regarding office furniture, the UDE Procurement Department will hold further negotiations with potential suppliers to reconcile economic, ecological and social aspects.

8 12 13 17

Waste

Avoid - reuse - recycle

Waste management must take account of ecological, legal and economic requirements, which raises a variety of practical questions at the University of Duisburg-Essen: What waste do we produce, in what quantity and of what types? How easily can we separate waste? Where can we situate waste containers for separate collection? What disposal/recycling options are available for the different types of waste? The Staff Unit for Occupational Safety & Health and Environmental Protection (A&U) is responsible for these issues. It manages the proper and eco-friendly disposal of all waste generated by university operations. This includes continuously developing concepts to further improve sustainability in waste disposal, such as the concept for a central waste disposal/recycling centre described in the following example. Until 2013, waste containers for landfill, paper, bulky waste, scrap metal and electronic waste were scattered across Essen Campus.

Because they were openly accessible to the public, the waste containers were often filled incorrectly as well as being an eyesore on campus. There was not enough space to collect different recyclables in separate containers. When it became technically necessary to build a new chemical waste storage facility, it was an opportunity to create a unified waste disposal/recycling centre. In 2014, the "waste disposal centre S08", which also houses the new chemical waste storage facility, was put into operation. It provides sufficient space to accommodate the various waste containers that used to be scattered around the campus as well as additional containers. Now, paper, bulky waste, wood, scrap metal, electronic scrap (various types such as small elec-



The waste disposal centre on Essen Campus has sufficient space to collect landfill separately from other types of waste.

trical appliances, monitors, cables, refrigerators, large/laboratory electrical appliances, fluorescent/energy-saving lamps and batteries), construction waste, film waste, toners, flat glass, organic waste (mainly spoiled vegetable waste from animal husbandry) and animal litter is now collected separately from landfill. The A&U office has regular opening hours during which staff are available to advise and assist all university members and help prevent incorrect waste disposal. By collecting waste according to type, it can be fed into a high-quality recycling process, reducing disposal costs. Some types of waste, such as paper, metal and electronic scrap, even generate revenue. The MF building on Duisburg Campus also has a central waste collection point, including a chemical waste storage facility, but it only has limited space for containers for separating waste.

The best waste is waste that is not produced at all

However, waste separation and recycling only actually take third place in the waste hierarchy. First place goes to avoiding waste – something everyone can contribute to on a daily basis. In second place comes reuse. Office furniture, scientific equipment or other objects

and materials that are no longer needed are often still intact and too good to be thrown away. When usable everyday office items are advertised on UDE's classified ads portal (p.65), they may find a new home at the university. This helps conserve resources and saves acquisition and disposal costs at the same time.

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UDE Classifieds

An internal sharing portal

Since April 2017, the university community has been able to offer office furniture, scientific equipment, books and other items they no longer need, or search for items they do need, on the UDE Classifieds portal. It was set up jointly by CIM and the administration with the aim of preventing the unnecessary disposal of usable everyday office equipment and minimising the need for what are often expensive new work-related purchases.

Posting and managing items at www.uni-due.de/kleinanzeigen/ or www.udue.de/ka is quick and easy. Over the last two years, approximately 65 percent of the items posted were successfully placed with other UDE users via the Classifieds portal, sometimes within a few hours, which means it makes a valuable contribution to sustainability and economic efficiency at the university.

12

Sustainability at the Duisburg-Essen University Library

Duisburg-Essen University Library (UB) currently holds 2.4 million printed books and journals as well as 37,576 e-journals and 257,500 e-books for study, research and teaching across six specialist libraries with 2,500 workstations. UB registers an average of 2.3 million visits per year. The campus delivery service

physically transports about 100,000 media between Duisburg and Essen annually. Some 150 employees work in the back offices and in direct contact with the public. As a scientific library, it provides reliable information for everyone. The topic of sustainability has been on the agenda of libraries, including UB Duisburg-Essen, for quite some time.

The United Nations' Agenda 2030

Every book that is borrowed from a library rather than purchased saves paper and thus helps protect the environment. By providing printed books, e-books and e-journals, etc., libraries guarantee their users' right of access to information and thus an equal opportunity for everyone. By offering workstations and free internet access, libraries provide a place to work for anyone who needs it, thereby also contributing to social justice. In addition to these general library services, Duisburg-Essen University Library also takes hands-on action in the name of the Agenda 2030, setting up, for example, an official drinking water dispenser in the LK library. At locations labelled with "refill stickers", visitors can refill their own water bottles free of charge, thus saving on plastic bottles. By participating in the initiative, UB is leading this effort at UDE.

Sustainability Action Days

On the occasion of the United Nations World Conference on Sustainable Development (Rio+20) in 2012, the German Council for Sustainable Development (RNE) launched "German Action Days for Sustainability". Since 2015, these Action Days have been held as part of the European Sustainability Week. Their purpose is to raise public awareness for the topic of sustainability and encourage people to act sustainably. UB has taken part twice, joining many other participating clubs, associations, schools, universities, companies and public authorities. The activities and lectures during its "Sustainability Action Days" focused on health, specifically, on "exercise" in 2018 and "nutrition" in 2019. To introduce the topic of sustainability, UB also offered an in-house training course titled "Sustainable Healthy Living". UB will continue its commitment in the coming years.

"Green Library" Network

UB is networking at national level via the Green Library Network, which it joined in 2019. The Interest Group for Ecological Sustainability was founded in Berlin in early 2018 by library and information scientists as well as students of librarianship and libraries, amongst others. Today, the network has about 25 members and is constantly growing.

UB hopes that its membership will facilitate the implementation of projects, especially the goals of the UN Agenda 2030 for sustainable global development.

Sustainability in target and performance agreements

After sustainability had been included in the target and performance agreements concluded between the University Library and the university, the library appointed an internal sustainability coordinator who serves as contact person for all library staff. She also contributes interesting sustainability-related aspects to the library's internal training programme. In 2019, the programme included a lecture on "Sustainability in the Workplace" (e.g. paper waste, high consumption of overhead transparencies, sustainable procurement). In the future, the library will also examine its own resource consumption for heating, transport, consumables, copying machines, computers etc. UB works to raise awareness of the issue and, as an organisation, strives to strengthen practical ecological and social competencies. The long-term goal is to make everyday library life ecologically sustainable – from planning and construction to equipment and administration all the way to user services.

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The topic of sustainability is on everyone's mind at Duisburg-Essen University Library. On "Librarians' Day" and via the "Green Library Network", it works with other institutions to explore how libraries can help implement the Agenda 2030.

napro's recommendations for action

UDE needs a holistic climate protection concept!

The articles in this report show that sustainability is being considered and practised in many different areas throughout our operations. However, we cannot deny that an organisation as large as UDE has a correspondingly large impact on the climate and environment. It is therefore important to make our existing efforts more visible or to consolidate them via monitoring. Moreover, it is advisable to view Operations as a holistic system and craft a comprehensive roadmap towards sustainability.

A holistic climate protection concept

More and more cities are responding to the climate crisis with their own climate protection strategies. The UDE community is the size of a small town in terms of numbers, but we still do not have our own climate protection concept. What is UDE's actual carbon footprint? What is it composed of? How much CO₂ can and should UDE save, how and by when? A climate protection concept can help answer these and many other questions. Such a concept must be holistic because a variety of different fields of action are often closely interwoven. Take the examples of energy and construction:

(Sustainable) energy and construction

Since 2020, UDE has been using 100 percent green power – a clear, impactful milestone on our road towards a more sustainable future. In addition, power consumption at the university remained relatively constant between 2014 and 2018 at around 49.5 million kWh per year, with a slight downward trend – despite increasing student numbers and newly acquired land and buildings! On Duisburg Campus, new buildings include the LX lecture hall and the lecture hall centre whilst in Essen, the S06 building has been erected. In addition, building opening hours have been changed. Some buildings are now open for seminars and lectures several times a week until 10 pm, rather than only until 5 pm. These longer usage times as well as the ongoing renovation of technical systems and building exteriors have yielded gains in efficiency. They are, however, difficult to measure as we are currently unable to record the energy consumption of individual building complexes at UDE. Furthermore, in its construction project, UDE also adheres to the minimum standards set by the state of NRW. There is potential for action here. On the one hand, UDE could apply its own engineers' expertise on-site to convert existing buildings or building sections for improved energy efficiency and, on the other, we could set higher standards for the construction of new buildings.

Mobility

Mobility should also be a top priority in a holistic climate protection concept. In particular, business trips by air increase the carbon footprint at universities considerably. napro is therefore working on a project to make business travel behaviours more sustainable. Professor Dirk Wittowsky, Head of the Institute for Mobility and Urban Planning (imobis), also sees a wide range of opportunities for more sustainable mobility at UDE:

'The Ruhr area, and thus also UDE, are still modelled on the 1950s concept of a car-friendly city. We absolutely need systematic restructuring and a change in awareness to facilitate mobility for all university members that is both sustainable and compatible with urban living. There are plenty of alternatives: car pooling, more bicycle parking spaces and bicycle expressways, and more car-sharing and e-bike offers are just some easily implemented ways to promote networked, collaborative mobility and to restructure transport hierarchies. To improve quality of life for all, our goal must be to efficiently combine all available means of transport to create an urban mobility structure whose cornerstone is an appealing public transport system. In addition, we might consider further price reductions for public transport. The UDE staff ticket is only ten percent cheaper than the standard ticket. In addition, domestic air travel within Germany could be minimised and we could set up an incentive system where employees and students are rewarded for collecting "green miles". But besides the many possible pull-measures, we must also discuss push-measures such as reducing the number of available parking spaces, introducing parking management as well as palpable speed limits and capacity reductions in the UDE environment. It is important that we all rethink mobility together. Action days such as the "Car-free Day", last held on 20 September 2019, could make creative use of carparks, visualising how much valuable space is taken up by parked cars that could be used for green spaces or meeting areas. Sustainable mobility also means breaking comfortable habits and launching flagship projects in urban labs now. UDE is located in the heart of the Ruhr area, which means that the cities must also do their part and coordinate across the region to transform mobility together. These and other considerations should be incorporated into our design for a holistic mobility concept for UDE. The time is ripe for change. We can harness digitisation, there is



Professor Dr Dirk Wittowsky
Institute for Mobility and Urban Planning

a growing environmental awareness and the fact that young people tend to be less emotionally attached to their cars. Today's forms of mobility will undoubtedly change and become more sustainable and more diverse. A change in mobility culture seems inevitable. In addition to infrastructure and technical measures, mobility management at UDE can also play a central role in implementing climate-friendly models and sustainability strategies. It will take courage, a clear vision and a strong will to introduce systemic changes, which may be unpopular initially, if we are to successfully transform transport and mobility in the Ruhr region.'

Sustainability and social responsibility

Structures for social and academic diversity

Social responsibility goes hand in hand with the normative definition of sustainability in this report. The theme is consequently like a “green” thread running through all the chapters. The examples taken from UDE’s core business in the chapters on research, teaching and operations demonstrate how social responsibility is implemented in practice.

Social responsibility is, however, no random by-product. In order to be structurally effective, it must be triggered, promoted and steered. This chapter highlights UDE’s strategies regarding social responsibility and sustainability and correlates them with the 17 Sustainable Development Goals (SDGs). How does UDE do justice to the increasing importance of diversity in society? How does it manage to embed this diversity in the university system and how is it reflected in its student body and staff? How do students deal with these topics?

Answers can be found in the statement by the Vice-Rector for Social Responsibility, Diversity and International Affairs, Professor Barbara Buchenau, as well as in the articles by Diversity Management (pp.71-76), Student Counselling and Academic Career Services (p.78) and the Autonomous AStA Women’s Department (p.77).

Statement Critical reflection – UDE fulfils its obligation

Embedded in a region undergoing ecological, economic, social and cultural transformation, the University of Duisburg-Essen fulfils its obligation to reflect critically on its unique geographical, social and historical position. Against the backdrop of its location at the intersection of two favoured European areas, UDE involves itself in the urgent search for answers to a raft of globally significant questions about sustainable development (Roger Brunet, 2002: “Les lignes de forces de l’espace européen”, Mappemonde 2).

The campaign for sustainability in education, society, the environment and technology is not only an integral part of research and teaching at UDE but also a fundamental aspect of its governance, as illustrated by the realignment of the Vice-Rectorate for Diversity Management to focus on social responsibility, diversity and international affairs. In this context, sustainability is not just a theory but part of university practice, because as a university, UDE (including being embedded in the region as well as in nationwide and international networks) addresses key transformation issues: How, amongst other things, should the treatment of contaminated sites be handled,



Professor Dr Barbara Buchenau
Vice-Rector for Social Responsibility,
Diversity and International Affairs

how should the resource-friendly transformation to digitised industry (and medicine) be accompanied; the transition to a peaceful, democratic, ageing majority society must be successful and, after a century of growth and contraction, urbanised areas and societies need visions for a sustainable future. When it comes to responsible scientific action, the United Nation’s 17 global development goals, adopted in September 2015, are of the essence.

The Vice-Rectorate for Social Responsibility, Diversity and International Affairs supports the university in developing approaches to solving these complex issues. Testing the respective approaches also needs to be accompanied because modern societies’ resilience depends on their ability to use scientific progress to solve societal challenges innovatively and responsibly.

‘When it comes to responsible scientific action, the United Nation’s 17 global development goals, adopted in September 2015, are of the essence.’



Diversity Management at UDE

Sustainability in diversity

Ever since it was founded, UDE has been instrumental in creating sustainable, responsible and inclusive structural change in the region and beyond. One focus area linked to this mission is Diversity Management, firmly established since 2008.

Diversity Management sees diversity as one of an academic institution's major strengths and potentials. This reflects a deeper understanding of diversity and plurality, difference and divergence, as well as mutual recognition as core characteristics of a strong university. Our university guidelines on diversity recognise educational social mobility, performance heterogeneity, maximising potential and equal opportunities as key elements of our mission as a university. It is therefore UDE's goal to promote the diversity that is indispensable for good academic achievements and, as far as possible, to shield university processes from discrimination and inappropriate criteria at the same time.

Diversity Strategy

UDE's Diversity Strategy was adopted in September 2015. It outlines the strategic areas of action in which UDE sets and continuously develops its focus in Diversity Management, which combines the key principles of participation and cooperation as well as bottom-up and top-down approaches. On this basis, the measures formulated are sustainably and securely embedded in the university.

Teaching

In the key areas of studying and teaching, the agreed goals include designing the initial phase of study in a diversity-friendly way and making mentoring opportunities diversity-aware and non-discriminatory, specifically promoting talents, and continuing to make the range of courses and structures more flexible. Projects, institutes and central facilities that practise and promote diversity management in studying and teaching at UDE include Talentscouting NRW, TalentKolleg Ruhr, the quality campaign ProViel, action for diversity and inclusion, the Institute for Optional Studies (IOS) as well as the Centre for Societal Learning and Civic Responsibility, UNIAKTIV, that belongs to IOS.

Research

With several institutes and central facilities in the field of diversity research, UDE has a very broad base. This is exemplified by the Essen College of Gender Research (EKfG), the Interdisciplinary Centre for Integration and Migration Research (InZentIM), the Interdisciplinary Centre for Educational Research (IZfB) and the Centre for Turkish Studies and Integration (ZfTI). As well as driving the development of teaching, the research institutions and their pertinent research results help to facilitate and implement high-quality promotion of research on diversity topics at UDE.

HR and quality development

Successful diversity management demands HR development that takes full account of diversity. The main goal of strengthening internal communicati-

The Vice-Rector for Social Responsibility, Diversity & International Affairs, Professor Dr Barbara Buchenau, welcoming guests at Diversity Day 2019.



on and participation structures is both to perpetuate equality activities on a sustainable basis and adapt them to changing needs as well as to continue developing a diversity-based, results-driven organisational culture. Against this backdrop, cooperation with the Department of Human Resources and Organisation Management and the Centre of Higher Education and Quality Development is essential. Quality development and an empirical grounding are decisive in this regard, which is why configuring management tools and quality management systems in a way that respects diversity is a feature of UDE's diversity management.

Social responsibility

The University of Duisburg-Essen's social responsibility does not confine itself to an exclusive sphere of activity. In times of major transformation, it is crucial for science and society to communicate actively with one another. Universities thrive on vibrant, multi-way transfer: On the one hand, we train students and produce knowledge, often in cooperation with the students themselves, that facilitates technological and social progress. Critical reflection on this progress is also one of UDE's core duties. With their fundamental working freedom on the other hand, academic institutions are inspired by suggestions, challenges and interventions

from the political arena, business, society, culture and academia. It is the goal of social responsibility to promote and actively craft quality-based, mutual knowledge sharing between the university and social actors.

Internationality

Internationality is both a necessary condition for and an effect of excellent teaching and research. Within the university's core mission of research and teaching, social, cultural and geographical mobility play a substantial role. The objective is to promote and shape the international contest for the best ideas in teaching, research and management in a way that enables the achievements in the fields of equal opportunities and educational equity to become fully effective.

For additional information as well as the Diversity and Internationalisation Strategies of the Vice-Rectorate for Social Responsibility, Diversity International Affairs, visit www.uni-due.de/en/diversity_management.php

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Gender and family mainstreaming

Sustainably implementing and practising gender equality

Ever since the University of Duisburg-Essen was founded in 2003, equal opportunities and family-friendly policies have been key strategic goals. Equal opportunities were established as a cross-cutting issue by implementing extensive gender mainstreaming that permeates the university with structural and individual measures at both central and decentral levels.

As early as 2009, UDE was awarded the Gender Award for “University Strategies for Gender Equality” by the then Ministry for Innovation, Science, Research and Technology in NRW in recognition of its outstanding equal opportunities agenda. Its success in pursuing this path has been validated by the Total E-Quality certificate that UDE has been granted every three years since 2007. It recognises universities that practise equal opportunities and diversity as cross-cutting issues beyond the call of legal requirements. In 2019, UDE once again received the certificate for equal opportunities as well as the additional certificate for diversity.

More female professors, more women in leadership and university bodies

One milestone along the path to increasing the percentage of female professors at UDE is its success in the programmes to promote female professors (Programme I, 2008 and Programme II, 2013) as well as in NRW’s 2012 and 2016 programmes for gender equality at universities. With an innovative equal opportunities strategy, UDE succeeded in acquiring funding to promote female professors under Programme III in 2019.

The University Board and University Council have been composed of equal numbers of female and male members since 2018! The Senate and three of the seven University Commissions are headed by women. In 2019, approximately 25 percent of UDE professors were female. Two factors particularly contributed to the significant increase in the proportion of women professors: the quotas embedded in the NRW Higher Education Act and the Tenure Track Programme to Promote Early-Career Researchers run by the federal and länder governments (WISNA). In order to drive equal opportunities, UDE aims for fairness, esteem and transparency in its appointments procedures. Reliable career paths for top female researchers are thus sustainably embedded at UDE.

Since 2018, all status groups have been represented on the equal opportunities team (left to right): Ellen Meister, Elke Währisch-Große, Professor Dr Christine Heil, Dr Regina Hauses.



Promoting female researchers during the qualification phase

If we consider the entire spectrum of subjects it becomes clear that, up to doctoral level, women and men are roughly equally represented in science and research. This quickly changes in the post-doctoral phase. Sustainable support for women in this sensitive phase was firmly established in 2019 with the Graduate Center Plus (GC Plus) and continues to expand with a wide range of career development opportunities.

Cliché-free professional and academic guidance

Equal opportunities means equal opportunities and equal participation in subjects that are still associated with traditional gender roles. In order to achieve sustainable change here, too, UDE pursues three goals: to recruit female students, support their progress and promote their careers. Gender-appropriate measures are already introduced at school level. Firmly-established regional opportunities such as “freestyle physics” and the SummerUni in the Sciences and Engineering (SUNI) allow female school students to gain insights into areas and degree courses which gender-specific socialisation processes tend to prevent them from considering – or even make them reject categorically.

Family mainstreaming

According to the extended definition adopted by UDE, family includes all forms of cohabitation in which people assume long-term social responsibility for one another. Improving the reconciliation of family life with research, job and studying is a key issue for the future: all members of the university are called upon to help achieve it and ensure it is implemented.

Open culture of debate and involvement

The equal opportunities offices in the faculties and central facilities form an important network for discussing equality-related issues against the backdrop of various disciplinary cultures and establishing them within the university. They make a crucial contribution to highlighting and pursuing the cross-cutting issue of gender and family mainstreaming in participatory processes as a joint responsibility of all members of the university.

Profile-building: Gender research generates ideas

Many researchers, working groups and institutions at UDE are engaged in gender and gender issues. They are coordinated by the Essen College of Gender



Thanks to an open culture of debate, the decentralised equal opportunities officers in the faculties and central facilities help to highlight gender and family mainstreaming as a cross-cutting issue in participatory processes.

Research (EKfG). In the dialogue between the Women's and Gender Research Network NRW and EKfG, an alliance has emerged that has gained international momentum. Close cooperation with the equal opportunities officers generates ideas for a more gender-equitable science system as well as transfer to society.

audit family-friendly university

Since 2010, UDE has used the "audit family-friendly university" and the "berufundfamilie Service GmbH" to sustainably develop family-friendly conditions for working and studying. Currently, UDE is in the second phase of re-auditing, a consolidation phase that aims to infuse the university with family-friendly offers. In 2020, the auditing process will become a dialogue process.

Unique feature: collaborative daycare

Students' children are cared for in childcare facilities run by Student Services. In order to promote the reconciliation of family life and work, since 2005, UDE has operated a Family Service Office (FSB) which includes, amongst others, the university's own collabo-

orative daycare facility Campinis (until 2019: DU-E-KIDS). In 2019, Mahdesta Knauf took on overall leadership of Campinis and the Family Service. UDE is looking to expand its childcare options in the future.

Kurzzeitbetreuung

Die Kurzzeitbetreuung hilft Betreuungslücken zu schließen, die über reguläre Angebote nicht abgedeckt werden können – insbesondere nachmittags und in den frühen Abendstunden. Darüber hinaus organisiert das Familienservicebüro Betreuungsmöglichkeiten bei Tagungen und Kongressen an der UDE.

School holiday care

UDE's school holiday care caters for the children of university/university hospital staff and students up to and including the age of 12 during school holidays. A varied, age-specific programme of activities is offered during the Easter, summer and autumn holidays.

Family Service Office advisory portfolio: new focus on fathers and care

The establishment of the Family Service Office (FSB) for all staff at UDE guarantees the availability of comprehensive advice on all issues relating to the reconciliation of family life and work – from childcare to maternity leave, parental leave, parental allowance and nursing care. In 2016, working with fathers was adopted as a new focus and is being extended. Both UDE and the university hospital have fathers' representatives.

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Autonomous AStA Women's Department Students for feminist sustainability

The Autonomous Women's Department is organised by students as part of an autonomous AStA department. In recent years, we have organised many feminist events of all kinds.

Apart from our weekly vegan brunch on both campuses during term-time and occasionally in the holidays, we issue invitations to many other events aimed at strengthening women and fighting sexism on the campus and beyond. These have included various workshops, especially for LGBTQ+, such as a percussion workshop, a skills-sharing workshop, a "Zicken sticken" (bitches stitching) evening and many others partly designed to empower women.

Some of our activities have involved inviting various speakers to share their feminist work with us and the students. In the context of a series on Simone de Beauvoir, Julia Korbik spoke on the relevance of the writer today, Lani Döring talked about de Beauvoir's theories and we organised a reading group on her work *The Second Sex*. Veronika Kracher also informed students about the Alt-right, Hannah Obert talked about "Marching to Madness: Antisemitismus als blinder Fleck feministischer Bewegungen" (Marching to Madness: antisemitism as a blind spot in feminist movements) whilst Lann Hornscheidt demonstrated how discriminatory language can be and what can be changed in order to avoid it. Felicia Ewert gave a talk on "Transfeindlichkeit und Transmisogynie im Feminismus (Anti-trans hostility and transmisogyny in feminism) and Noami Novieku spoke on the topic of "Wohlfahrtsstaat gegen das Patriarchat" (The welfare state against the patriarchy).

In addition to our events, we sometimes – especially at the beginning of the semester – stand around



At "Zicken Sticken" (bitches stitching), during the 2019 Summer Fair, the Autonomous Women's Department invited visitors to be creative with multicoloured threads and boldly patterned textiles.

the campus making contact with students to sensitise university members to sexism. We are also active in the Student Parliament where we have gained a third position for the Autonomous Women's Department.

It was important to us to change our statutes and electoral regulations so that the Women's Department is not only elected by and composed of CIS women. If you have any questions or requests, please write to us: frauenreferat@asta-due.de

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Student Counselling and Academic Career Services (ABZ)

Support during all phases of student life

Student Counselling and Academic Career Services is a central operating unit and, as such, one of the University of Duisburg-Essen's service facilities. In providing advice and support for prospective students, current students and those graduating, ABZ is particularly mindful of its special responsibility for realising the Sustainable Development Goals (SDGs) long term. This especially applies to ensuring barrier-free, non-discriminatory access to quality education and to gender equality during the entire student life cycle and to successfully completing degrees. Moreover, with a view to the specific challenges facing prospective female academics, it also applies to tailored support in achieving good degrees and transferring to the labour market.

By offering personalised advice and various support formats, ABZ helps to ensure that students choose the right courses, complete their degrees and make a successful transition to the labour market.

The topics dealt with by the advisory service frequently also touch on personal issues. In this context, ABZ offers assistance both from its own psychological counselling service and in the framework of advisory and support options. Students with disabilities and/or chronic health conditions are supported by ABZ's inclusion counselling service. The advisor is also the officer responsible for students with disabilities or chronic health conditions.

In the case of educational conflicts, discrimination and exclusion, ABZ offers assistance through its ombudsperson institution. It also identifies any structural injustices and imbalances.

UDE's strategic focus on opening up the university, diversity and educational equality are the core missions and goals of ABZ's portfolio, as well. They constantly inform advisory services as well as special formats such as the projects "Talent scouting NRW" and "Chance hoch 2" which are located at ABZ.



From tailored advice on starting a degree course via the course itself through to the Careers Service. ABZ provides personalised advice and support.

Permanent reflection on the gender issue is a constitutional component of ABZ's main mission. By offering gender and diversity appropriate advice on choosing courses as well as during the courses themselves, ABZ makes a significant contribution to the issue of gender in studying and teaching. This is flanked by additional, specific measures such as the Summer Uni, Girls' Day, Boys' Day, ProDiversity and the DiMento Mentoring Programme. Through these programmes ABZ also contributes to transfer to society by cooperating, for example, with business representatives.

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napro's recommendations for action Sustainability means social viability

According to the German Advisory Council on the Environment (SRU)*, sustainable development does not only imply responsibility for the natural environment but, equally, for our shared social world and personal living environment. Socio-ecological transformation can thus only succeed if the stakeholders are aware of their social and ecological responsibility at local, regional and global level. Ongoing critical reflection on sustainability processes (napro) at UDE is therefore necessary and important. The following recommendations for action address everyone who wants to drive social and ecological responsibility through sustainability at UDE.

Social responsibility at events

Events like meetings, conferences, seminars, workshops and panel discussions are a feature of ordinary university life. From environmentally-friendly mobility for the members of the university and the procurement of fair-trade products at local and regional level through to waste management – in organising logistics and hospitality there are many ways of acting in a socially and ecologically sustainable fashion. When the respective university programme is being planned it is vital to ensure that all status groups at the university are involved. The gender equality component also needs to be observed in allocating projects and work because this is a way of promoting socially sustainable networks.

Social responsibility in communications

The university is a place of communication. Publications, scientific presentations, articles in traditional and digital media as well as social network posts are examples of common formats. In every case, sustainability-sensitive, non-violent language should be used

that guarantees non-discriminatory communication; a barrier-free internet presence is an important step on this path. In order to facilitate good, sustainable implementation, sensitivity for sustainable communication processes should be developed across the entire university. Funding opportunities and best-practice examples should be offered in order to stimulate structural inclusion.

Social responsibility in everyday working life through life-long learning

In everyday working life there are many opportunities to engage with social and ecological responsibility. HR development at UDE regularly offers continuing education courses on various topics. Every year, seminars on skills development, personal development and also health, such as workshops on the work-life balance and stress prevention programmes, are offered and developed further (see www.uni-due.de/peoe/fortbildung). In these and many other areas, the concept of a Green Office (p.116) can be very helpful. A Green Office is a sustainability office that coordinates sustainability-relevant topics together with students and staff, which means social and ecological responsibility can be secured under the umbrella of UDE's Diversity Management.

(*Source: German Advisory Council on the Environment (SRU), ed., 1994: Umweltgutachten 1994. Für eine dauerhaft-umweltgerechte Entwicklung, Metzler-Poeschel, Stuttgart, p.51.)

Sustainability and transfer to society

UDE's exchange with practice

The German higher education system benefits from state funding which is borne by society as a whole. Transfer to society is therefore a way of giving something back and means that the university contributes its expertise to shaping the social order and thus, amongst other things, legitimises its social utility. Transfer to society is, however, not a one-way street. By engaging with practice the university receives feedback on its critical self-reflection of its scientific actions: whether through collaborations between practice and teaching which promote degree courses' relevance to applications and the students' employability, or through research processes which derive questions from social issues or test technologies in practice. When universities and society work hand in hand to try and achieve sustainable development it is possible to enhance everyone's level of knowledge and capacity to act. At UDE, two Vice-Rectorate deal with the various facets of transfer: The Vice-Rectorate for Research, Career Development & Science Transfer is responsible for research and technology transfer and supports the transfer of university research results, such as patents and start-ups, to commercial exploitation. The Vice-Rectorate for Social Responsibility, Diversity and International Affairs is responsible for the university's positioning in the region and its role in society. It deals, in particular, with issues relating to how the conversation between university and society can be crafted to benefit both sides (see www.uni-due.de/en/transfer.php, accessed on 3 April 2020). In order to conduct transfer at the university a common understanding is essential. UDE has identified seven building blocks (see box) that summarise its comprehensive understanding of transfer. With the aid of some examples, this chapter shows how the University of Duisburg-Essen involves a host of actors in putting its notion of transfer into practice with an eye to sustainability.

Our understanding of transfer

Transfer is the shaping of social responsibility; this task permeates teaching and research.

Transfer links technological aspects with social and ecological challenges that affect social groups or society as a whole.

Transfer arises both on the initiative and on the basis of the expertise of the disciplines as well as through the work of central, interdisciplinary approaches.

Transfer includes the ethical dimension in the sense of responsible research (Responsible Research and Innovation - RRI, EU approach).

Transfer is based on the participation of a large number of people, of formal and informal, institutional and individual networks of civil society.

Cooperation with local, regional, national and international actors from business and society enables the mutual generation and social utilisation of scientific expertise, teaching knowledge and services.

The initiative of the university members, supported by central services, is the supporting pillar of the transfer.

(s. <https://www.uni-due.de/en/transfer.php>, accessed on 05.05.2020)

Statements by the Mayors of Duisburg and Essen Transfer between the cities and the university for sustainable development in the Ruhr science region



Sören Link
Mayor of the City
of Duisburg

**‘UDE undertakes
a very important
task in social
sustainability.’**

Sustainability is of vital importance to a city like Duisburg, which is a modern service location with a strong industrial core and also a significant European logistics hub thanks to its convenient location. The “Fairtrade Town” of Duisburg therefore supports this process to ensure future sustainability with projects such as ESPADU - Saving Energy at Duisburg Schools and ÖKOPROFIT® Duisburg or by participating in the European Energy Award. The annual Duisburg Environment Days are also dedicated to sustainability. The University of Duisburg-Essen is an important player in this process. The city partnered with UDE, for example, to develop a climate protection concept for Duisburg. UDE also conducts application-oriented electromobility research in cooperation with the utilities provider Stadtwerke Duisburg AG (project “e-connect Germany”). Moreover, UDE is working on solutions to minimise CO₂ emissions from the local steel industry (“Carbon2Chem” project) as well as to produce eco-friendly energy (hydrogen and fuel cell technologies). The list of projects and activities goes on, but there is one often neglected

aspect that I would like to highlight: With its special educational policy commitment, UDE undertakes a very important task in terms of social sustainability. Its diversity management focuses on educational success, a broad spectrum of attainment and unlocking potential. With this, it makes a specific and valuable contribution not only to ecological and economic sustainability, but also to social sustainability in the Rhine and Ruhr regions.

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The University of Duisburg-Essen (UDE) is an indispensable part of Essen – as an academic research and teaching institution, but also as an employer. As Mayor of Essen, I therefore support sustainable cooperation between the City of Essen and the University of Duisburg-Essen and other partners. Our existing long-term collaborations range from sustainable urban district development via neighbourhood management, educational and climate projects, through to the “Science City Essen” initiative. UDE’s interdisciplinary profile area Urban Systems, which covers all dimensions of sustainable urban development, offers a wealth of opportunities to cooperate with the City of Essen, such as the Climate Initiative Essen: In the competition “Energy-efficient city”, the Federal Ministry of Education and Research funded a joint project by the City of Essen with the University of Duisburg-Essen and the Institute for Advanced Study in the Humanities (KWI) as scientific partners, the Essen-based consulting company TRC GmbH as well as Stadtwerke Essen AG, Allbau GmbH and Ruhrbahn GmbH. The aim of the project was to conceptualise and organise

a new Essen Climate Agency as a hub for climate protection in the city. During the five-and-a-half-year funding period, we were able to network different stakeholders in urban society, many of whom are already active champions of climate protection. We developed and implemented innovative services and communication tools for a sustainable, energy-efficient city. Collaborations like this are great examples of our city’s potential. Looking to the future, I am sure we will be able to continue building on close, collaborative partnerships amongst our various stakeholders in the interests of our city, spearheaded by the University of Duisburg-Essen.

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**‘Looking to the future,
I am sure we will be
able to continue
building on close,
collaborative part-
nerships amongst our
various stakeholders
in the interests of our
city, spearheaded
by the University of
Duisburg-Essen.’**



Thomas Kufen
Mayor of the City
of Essen



Let's think outside the box

A selection of projects for transfer to society and how they contribute to the 17 Sustainable Development Goals

UDE at the heart of the European Green Capital 2017

Each year, the European Commission awards the title of “European Green Capital” (EGC) to a European city that has made a special effort to improve its urban environment and create healthier and more sustainable living spaces for its residents. In 2017, the city of Essen was awarded this honour, which also created a “green” connection with the local university. Members of the UDE community initiated a series of activities to showcase the “Green Capital” to a broad public from a university perspective. Here are some of the activities we offered:

Workshop “Zero Waste - a waste-free city of Essen. Ways from utopia to reality”

Under the direction of Estelle Fritz, former UNI-AKTIV employee at UDE, students and citizens of Essen jointly developed project ideas on predefined topics. Each topic was introduced by an expert lecture, followed by discussion rounds. An expert jury then awarded prizes for the best ideas: “Returnable Cup

At the Science Slam “Paradises and Utopias”, held under the auspices of the “European Green Capital” in June 2017, Dr Nicolas Wöhrl (Faculty of Physics and Centre for Nanointegration, CENIDE) explained how to ‘make diamonds in a microwave’. UDE hosted the event in cooperation with the “Science City Essen”.

System” and “No-Waste-App”. The “Returnable Cups” project is an individual model for a cup deposit system for the city of Essen. It has already been implemented in various cafés in the Rüttenscheid district as well as in the cafeterias on UDE’s Essen Campus. The “No-Waste-App” features useful information and reminders to help users avoid waste and lead an environmentally conscious life.

Day of Movement

For the “Day of Movement”, the centre of Essen turned into a sort of green theme park under the motto “Science to touch and feel.” Jana Dömel, a PhD student in Aquatic Ecosystem Research, introduced school students to the great biodiversity of the Southern Ocean and showed them methods to measure it. She also allowed the young researchers to do their own experiments to extract and evaluate DNA from tomatoes. In order to showcase his “Urban Gardening” work experience programme at the Bonnekamp Foundation, Dr André Matena had visitors plant seedlings in raised garden beds. Under the title “Good Bacteria - Bad Bacteria”, Dr Ivana Kraiselburd from Aquatic Microbiology illustrated how crude oil pollutes the ocean and which bacteria can decontaminate the sea. At the stand of the Institute for Primary Social and Science Education (ISU), Professor Inga Gryl encouraged visitors to design their own village with the simulation model “StadtStart2 - it’s getting green”, and participate in designing sustainable mobility concepts with “Planet Move 1 - I’m crazy about it”.

Science Slam “Paradises and Utopias”

At the Science Slam, hosted by UDE in cooperation with the Essen “City of Science”, researchers had the opportunity to present their research projects in short, entertaining monologues. UDE’s Dr Christian Krumm “slammed” about historical analyses whilst Dr Georg Hein addressed the mathematical possibility of building a bridge with children’s building blocks. Physicist Dr Nicolas Wöhrl examined the idea of producing diamonds in a microwave.

UDE created its own internet portal to showcase its EGC contributions (events, research projects, etc.): https://www.uni-due.de/greencapital/index_en.phpg



Climate Initiative Essen

Living a new climate culture and the Climate Workshop Essen

The project “Climate Initiative Essen - Living a New Climate Culture”, which concluded in 2017, primarily focused on sustainable, energy-efficient urban development strategies. The Institute of Urban Planning and Development (ISS), the office of the Centre for Logistics and Transport (ZLV), the Department of Participation Culture at the Institute for Advanced Study in the Humanities and TRC Transportation Research Consulting GmbH cooperated with the City of Essen, the Essen public transport system (Ruhrbahn) and Stadtwerke Essen AG on energy efficiency in urban development, mobility, buildings and renewable energies. The project used innovative tools to support new service offers and networks for decentralised, community-based energy concepts. Through systematic networking, it identified actors who are already making contributions to climate protection, paving the way for new services and offers for a sustainable, energy-efficient city. These elements of the project promoted “living a new climate culture” as they reinforce a smart mix of incentives, lifestyles, infrastructures and regulatory frameworks in our urban community (citizens, institutions, companies, local administrations

and politics). Communication tools, such as campaigns, significantly helped facilitate this process, which ultimately led to the creation of the “Climate Agency Essen” (today: Green Capital Agency) with a concrete consulting portfolio. The umbrella brand “Climate Workshop Essen” is a work and communication platform to facilitate cooperation between all players in the Essen area.

For additional information, visit www.klimawerkstattessen.de.

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Duisburg.Sustainable

Together for urban climate protection

Duisburg.Sustainable – Scientists from the profile area Urban Systems developed this climate protection strategy (2015-2017) under the direction of UDE’s Centre for Logistics and Transport (ZLV) in close cooperation with the City of Duisburg (https://www.uni-due.de/zlv/klimainitiative-essen_en.php, accessed on 03 April 2020). The concept, which is part of the National Climate Protection Initiative of the then Federal Ministry for the Environment, Nature Conservation, Construction and Nuclear Safety (BMUB), is a strategic decision-making basis and planning aid for Duisburg’s future climate protection.

It reveals the potential for reducing CO₂ emissions technically and economically as well as the concomitant measures for lowering energy consumption and climate-damaging emissions. Duisburg.Sustainable is aligned with national climate protection targets and committed to the mandate to reduce emissions by 80 to 95 percent by 2050. The plan focuses on seven fields of action that take account of Duisburg’s special situation as an urban-industrial production location and European logistics hub.

Fields of action for Duisburg.Sustainable

1. Industry and business
2. Transport and logistics
3. Climate-friendly urban development
4. Energy savings, increased energy efficiency,

5. buildings, energy and heat supply
5. Climate-friendly procurement (here: in local government)
6. Sharing economy / collaborative consumption (such as swapping, sharing, co-usage)
7. Gender and diversity in climate protection (e.g. different degrees of impact, risk perceptions and approaches)

(see www.duisburg.de/vv/produkte/pro_du/dez_v/31/vi-01/102010100000055548.php, call on 03.04.2020)

Various projects in this concept rely on the central notion that the city with all its resource and information flows is a metabolism (circular economy) as well as on the principle of joint knowledge production by all stakeholders. The creation of a new Sustainability Alliance is a “clearing house” to accompany and lend transparency to local transformation processes: A community of actors uses technological means to collect existing knowledge, develops and discusses new ideas and then makes a coordinated effort to implement them.

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UNIAKTIV Centre for Societal Learning and Civic Responsibility

UNIAKTIV (Centre for Societal Learning and Civic Responsibility) offers services and innovative collaborative tools for universities and communities. In particular, it provides advice and support to UDE’s faculties and university leadership as they plan and implement social transfer activities, research projects and development processes that combine research and teaching with a focus on the public interest or social commitment. UNIAKTIV was founded in 2005 at the Laboratory for Organisational Development (Professor Wolfgang Stark), financially supported by the Mercator Foundation (until 2009) and externally evaluated by HIS GmbH in 2009. In 2013, UDE institutionalised UNIAKTIV, setting up its own coordination office



Uni goes city: a campaign against food waste in the context of a UNIAKTIV Service Learning Seminar.

to expand its campus-community partnerships with a special view to developing and integrating service learning. UNIAKTIV’s aim is to facilitate cooperation between UDE and (civil) society actors, thus strengthening teaching and research as well as social cohesion. Civil society actors can turn to UNIAKTIV with their concerns at any time. In addition, UNIAKTIV tests other forms of campus-community partnerships in individual projects, such as community-based research, design thinking and social entrepreneurship. Since May 2017, UNIAKTIV/Service Learning has been a working unit at the Institute for Optional Studies (IOS); concurrently, UDE’s contributions to the “Green Capital” were implemented at the university in cooperation with napro.

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13 14 15 16 17

Talent scouting

In Germany, young people’s educational paths are often determined by their family background rather than their ability. This is where NRW Talent Scouting comes in. A central aim of the programme is to level the playing field of educational opportunities for young people regardless of their parents’ income, educational level or origin. It encourages talented young people from underprivileged backgrounds to consider university studies or vocational training and supports them on their educational journey. For this purpose, the Ministry of Culture and Science (MKW) of North Rhine-Westphalia has earmarked up to 6.4 million Euros annually until 2020. Currently, the programme comprises 14 NRW universities, which were selected by a jury in a nationwide tendering procedure. At UDE, the NRW Talent Scouting Programme contributes to sustainability by providing access to education, advice and mentorship for young people.

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napro's recommendations
for action

**Sustainability must be
visible and accessible!**

The articles in this report are examples of how to initiate, conceptualise and implement sustainability transfer. UDE actively works to optimise this transfer, based, amongst other things, on the resolution passed by the 2017 German Rectors' Conference on "Transfer and cooperation as tasks of the universities" and the German Science Council's position paper "Knowledge and Technology Transfer as an Element of Institutional Strategies."

The position paper laments a lack of strategy and/or awareness for the issue of 'transfer at universities.' UDE does not, however, suffer from a deficit in this regard, as evidenced by its transfer activities and the fact that they are firmly embedded at the university. Moreover, UDE underwent an in-depth "transfer audit" by the Stifterverband in 2017; the in-depth analysis resulted in concrete recommendations (see www.stifterverband.org/transfer-audit). This report is not the place to repeat such a comprehensive evaluation, which is why we would just like to conclude this chapter by highlighting a few options for UDE to reinforce sustainable development in its transfer activities.



Making yourself heard

Podcasts are a very popular and up-to-date communication tool. Hardly any other modern medium can hold its listeners' attention to a given topic for longer. A UDE sustainability podcast could help communicate sustainability-related research to actors in the fields of politics, business, administration and civil society, thus enhancing the visibility and impact of these results.

Creating an experience

Transfer can promote sustainable development by reaching out at public events. At European level, for example, UDE is involved in a Sustainability Lecture Series within the AURORA network (p.92). At such public lectures, both university members and external visitors easily gain insights into how research at the various partner universities contributes to the United Nations' Sustainable Development Goals (for more information visit <https://aurora-network.global/event/sustainability-lecture-series/>). At local level, UDE

In October 2017, napro supported the two-day event "Cities as Drivers for Alternative Economies" run by the "Reclaim Our Economy" initiative. Transfer to society was not only reflected in the various collaborations with the profile area Urban Systems, the Green Capital Europe Essen 2017, the state initiative StadtBauKultur NRW, the Initiative for Sustainability and the Club of Rome, but was also practised by utilising different types of venue such as the Freiraum Weberplatz (see photo) and the Kreuzeskirche Essen.

held Sustainability Action Days in 2015. The articles in this report show that considerable progress has been achieved in sustainable development since then. If held regularly, such Action Days provide many opportunities to make sustainability a tangible experience at UDE and to enter into an active, informal conversation with interested students, staff, local initiatives and companies via a varied programme of activities.

Being responsive

UDE's Transfer Department already has a number of people available to be contacted on various topics. A Green Office could act as a further contact point to support transfer on the overarching topic of sustainable development. As a future Green Office would ideally network with all areas of the university and be co-founded by students, there would not be any redundancies with existing institutions. Instead, it would function as an intersection, collecting sustainability-related enquiries and processing them together with the appropriate partners. Moreover, a Green Office can actively shape sustainability-related transfer by providing organisational support for the above-mentioned communication tools and networking opportunities.

Sustainable networks

Thinking and linking sustainability together

Shaping universities so that they align with the goals of sustainable development is a complex topic. Institutions that are committed to sustainability know that it is essential to leverage new insights, evolving technologies and instruments to promote sustainable development appropriately. Sharing experiences, evaluating target achievement and reporting are ways of reinforcing this process and enhancing its visibility. In this context, it is very helpful to maintain continuous and active communication between researchers and practitioners via networks.

The following chapter illustrates UDE's existing network structures that help shape the university's sustainability strategy. The mission of the HOCH^N network, which connects members from several German universities, is to achieve a sustainable university landscape at national (and now also partly at international) level (p.93). At European level, UDE is part of the AURORA network, which is dedicated to combining research excellence with social responsibility (p.92). At international level, UDE is a member of ISCN (International Sustainable Campus Network) where top universities from all over the world share ideas and learn from each other (p.93). Similarly, events such as the symposium "NRW's Universities on the Road to Sustainability" or the NRW network hub "Building and Establishing Sustainability at Universities" illustrate the importance of interactive exchange between different interest groups to identify varying perspectives and strengthen sustainable networks (p.94).

Statement

Living sustainability together

When we think of sustainability, it is typically in terms of ecology, economics and social issues. However, this three-pillar model should be extended to include networks, as well. The path to more sustainable development at universities is difficult to navigate alone. While we were working on the sustainability process, my colleagues and I always encouraged exchange with other universities. I still remember my first event at the University Forum of the National Platform for Education for Sustainable Development (BNE) in Munich in 2015, which brought together representatives of universities from all over Germany. We all shared one goal: to encourage our universities and colleges to transform and prioritise sustainability within their institutions. Everyone faces similar challenges, drivers and obstacles in our efforts to establish sustainability at our universities. Whether an institution is large or small, the path to sustainable development is always a process. I always took away valuable input for our daily work from these meetings.

But what is more, we are still collaborating in a great project group with other highly engaged universities throughout Germany. Since 2016, I have had the honour



Elisa Gansel
napro staff member from 2015
until early 2020

'As we share our results, we also share our wealth of experience with others. We work continuously and interactively on practical solutions to help implement sustainability step by step.'

of being actively involved in shaping the project "Sustainability at universities: develop - network - report (HOCH^N)" as a research associate. As we share our results, we also share our wealth of experience with others. We work continuously and interactively on practical solutions to help implement sustainability step by step. Through our mecur.admin project "Establishing cooperation between UA Ruhr Universities on sustainability", we are also clearly showcasing sustainability-oriented research and teaching programmes at the level of our university alliance. We are laying the foundation for even more cooperation in a jointly organised sustainability office that will serve all three universities, based on the model of a "Green Office" designed by the University of Maastricht. These developments clearly show that sustainability is a process that we must think and practise together.

Regional, national and international university networks at UDE

Examples of our partnerships for sustainable development

Sustainability in UA Ruhr

A governance responsibility



from l to r: Elisa Gansel (former research assistant, UDE), Bastian Stahlbuck (coordinator, Sustainability Working Group, TU Dortmund University), Anna Krewald (energy manager, Ruhr-Universität Bochum).

For UDE, the University Alliance Ruhr is one of the most important collaborative partnerships in the field of metropolitan research within the Rhine-Ruhr area. The idea to focus UA Ruhr's efforts on sustainability was born in 2016 at a joint meeting of TU Dortmund University's sustainability working group with our napro team. It quickly became clear that we also wanted to get Ruhr-Universität Bochum on board. This was the beginning of several meetings during which we addressed a central question: How do we best organise our team activities when we all still have so much work to do on sustainability at our respective universities? Based on our experience at napro, we had the idea of

preparing a sustainability report to determine how we could work together meaningfully and which priorities we could set for the coming years. With the support of the Mercator Research Center Ruhr GmbH, we were able to hire student assistants at the three universities for one year, starting in 2018, to draft the report and take a structured approach to our universities' joint sustainable development.

17

AURORA UNIVERSITIES NETWORK

In autumn 2016, UDE was a German founding member of the AURORA network, whose common strength lies in its members' combination of research excellence and social responsibility. The high priority AURORA affords sustainability as well as the United Nations' Sustainable Development Goals (SDGs) reflects its main mission to combine academic excellence with social relevance. AURORA means learning from each other. To do this, the network works in different groups on six main topics: Diversity and inclusion, societal impact and relevance of research, students, innovation of teaching and learning, internationalisation and, of course, sustainability. The sustainability group coordinates joint activities such as the "SDG Lecture Series." In June 2019, this series began with a lecture on SDG 17, "Partnerships for the goals", at Vrije Universiteit Amsterdam. The group is also working on a mechanism to offset the emissions generated by the network's meetings. Its more ambitious goals include creating a travel tracker, setting up Green Offices at the member universities and achieving climate neutrality. One of the key projects of the Societal Impact and Relevance of Research group also refers to the SDGs. Using bibliometric analysis, publications by AURORA members are associated with the SDGs in order to identify research focus areas (p.43).

For additional information on the network's activities, visit www.aurora-network.global/.

4 17

HOCH^N

Sustainability at universities: develop – network – report

Since 2016, UDE has been working with ten other universities and universities of applied sciences as well as with the support of more than 120 other institutions of higher education in Germany to promote the sustainable development of the German higher education landscape. The joint project HOCH^N, funded by the Federal Ministry of Education and Research (BMBF), has been an essential part of napro's day-to-day operations. UDE has been involved in the project from the very first "round table" discussions with the German Council for Sustainable Development via the project application to the BMBF all the way through to approval and launch. The project is organised in six work packages: research, teaching & education, governance, operations, transfer and sustainability reporting. In the latter, we have assumed a leading role alongside the University of Hamburg and, in the early years, FU Berlin. The project also has an advisory board and a HOCH^N network consisting of partners, partner universities and multipliers. Until the end of 2020, napro will actively help expand the network, from organising and co-hosting events at national and international level, reflecting on our common notion of sustainability, implementing and applying measures and methods, through to adapting previous work and transferring the individual guidelines into an overall guideline. We have developed a university-specific sustainability code and corresponding guidelines as well as consulting services and other tools for sustainability reporting. We hope this will make it easier for our university and others to start reporting and transparently presenting sustainability activities for all interested parties.

17

International Sustainable Campus Network (ISCN)

The International Sustainable Campus Network (ISCN) supports universities around the world in their exchange of information, interests, ideas and best practice examples to promote a sustainable campus in teaching and research. The network includes numerous prestigious universities (Harvard University, Massachusetts Institute of Technology, University of Oxford and many more) as well as over 70 other institutions of higher education on five continents. UDE was the first university in North Rhine-Westphalia to join the network in 2016, initially limited to a five-year membership. Participating in ISCN facilitates exchange and networking on the topic of sustainable campus development with nationally and internationally leading universities around the world. Membership in this network can benefit UDE by enabling a give and take of incentives and an exchange of knowledge on promoting sustainable development. By sharing our own experiences and progress, UDE and our sustainability initiatives can also serve as a model for others. Currently, the other German members are Leuphana University of Lüneburg, FU Berlin, TU Darmstadt University and the University of Applied Sciences in Stuttgart.

17

Symposium "NRW's Universities on the Road to Sustainability" Exchange and networking for a sustainable higher education landscape

What do universities in NRW need in order to drive sustainable development? What role does federal state policy play in this? How do we implement sustainability in research and teaching? These and other questions were discussed on 24 November 2016 at the symposium "NRW's Universities on the Road to Sustainability", jointly hosted by napro and the then Ministry for Innovation, Science and Research



from l to r: Sustainability Officer Professor Dr André Niemann (UDE), then Minister for Innovation, Science and Research, Svenja Schulze, and President and Scientific Director of the Wuppertal Institute for Climate, Environment and Energy gGmbH, Professor Dr Uwe Schneidewind, share their thoughts on a sustainable university landscape in NRW.

of the State of NRW (now the Ministry for Culture and Science of the State of NRW). At this event, napro brought together representatives from various universities, research institutions and ministries. Intensive workshops on topics such as sustainability research and reporting, university teaching and student involvement complemented the programme. The event concluded with a highlight, a round table discussion that gave participants the opportunity to put questions to Svenja Schulze, the then Minister for Innovation, Science and Research of the State of North Rhine-Westphalia. The lively discussion at the conclusion of the symposium revealed a wealth of different approaches, ideas and opportunities to put NRW's universities on the road to sustainable development. This is why we need all stakeholders to share their ideas in a common framework for action. The symposium was the very first platform for exchange of this kind.

napro's recommendations for action Together for more sustainability – sharing ideas creates synergies

Whether at national or international level – exchange and networking are particularly useful when it comes to sustainability. Universities, in particular, should be pioneers in dealing with global challenges. In a mutually supportive network, members benefit from new input from outside to apply to their own structures.

Members learn from one another and thus avoid mistakes as they implement diverse sustainability projects. We at UDE's napro team have been able to continue developing our activities and thinking by being involved in national and international networks. To maintain this successful practice, we recommend that existing networks be maintained and that further third-party funding be acquired at both federal state and federal level. Another leading network in the field of sustainability at universities is the Green Office movement. napro has already been in close contact with representatives and recommends that we join, as well. We should also encourage more members of our university community to take part in the existing networks. napro warmly invites everyone to participate.

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Engagement for sustainability

Volunteering boosts motivation

Volunteering is indispensable for sustainable development at our university. It proves that UDE's sustainability guidelines are not lost in the hustle and bustle of everyday professional and student life. On the contrary, the voluntary projects and initiatives at UDE, some of which are showcased here as examples, demonstrate the intrinsic motivation of our stakeholders, thus creating advocacy for sustainability from within. At the same time, they achieve concrete sustainability goals, such as preserving biodiversity in the Campus Garden (p.106) or fighting inequality and ensuring high-quality education through the initiatives Weitblick (p.106) and ArbeiterKind.de (p.105).

The topics are varied and show that anyone and everyone can take ownership of successful sustainable development. The focus of this chapter is student engagement, whether on behalf of the General Student Council (AStA) (pp.102-103), the various student councils, or the more than 40 other registered associations and organisations at UDE. In addition, students are involved in numerous informal organisations to promote greater social cohesion in the UDE community.

But it is not only the students who are motivated and embrace ownership. As the examples in this chapter illustrate, "Studierendenwerk" (Student Services, pp.98-99), the Protestant Student Community (p.106) and university staff members (p.107) have all become involved and contribute their various ideas to crafting a more sustainable UDE.

Statement

Engagement for sustainability shows the way forward

The more than 42,000 students at the University of Duisburg-Essen are a highly diverse community of stakeholders. We, Darius Dreßler (student of civil engineering) and Ilka Roose (PhD student in the ARUS programme), therefore believe that sustainability at the university can only be achieved by and with its students. Darius Dreßler: 'Volunteering has been an integral part of my everyday life since I started university. At the time, I was elected to my faculty's student council and helped organise info events for fellow students. One student told me about the Amnesty International group in Essen (p.105) and invited me to come along. I have been with the group for about three years now. The wonderful thing about volunteering in this group is not only the social aspect, but also to see that we really can make a difference. The simple act of writing letters or activities to educate others are immensely helpful. Particularly in times when Europe is increasingly fortifying its borders and not all people enjoy the same rights, Amnesty International is determined to counteract these developments and defend human rights!' Ilka Roose: 'University is the perfect time of your life for gaining new perspectives and getting actively involved. As an undergraduate, I heard a lecture by Dieter Welfonder at UDE which first made me aware of ways to fight climate



Ilka Roose
PhD student, member of the Initiative for Sustainability and napro staff member since 2019



Darius Dreßler
Student, member of Amnesty International, Essen centre group

change and promote sustainability with the help of EU funding. This was the beginning of the initiative LOCO₂L HEROES (p.108). In 2017, I joined the Initiative for Sustainability (IfN) (p.104), which was founded by UDE students in 2005 and has since become an integral part of Essen's sustainability scene. In October 2017, IfN and napro supported the event "Cities as Drivers for Alternative Economies" run by the international initiative "Reclaim Our Economy" (ROE). UDE PhD students and I co-founded ROE and were delighted to find support at the university, especially from napro.' The activities we present on the following pages are examples of sustainability in practice at and around UDE. We, Darius Dreßler and Ilka Roose, consider it essential that the university actively provide spaces and structures for engagement in sustainable development. Given the current and predicted consequences of climate change, we call upon the university to clearly acknowledge the climate emergency in its university policy. To this end, we consider it necessary to permanently institutionalise sustainable development at UDE. A "UDE Green Office" run by students and staff for students and staff is an important step towards making a serious commitment to a sustainability transformation.

Sustainability at “Studierendenwerk Essen-Duisburg”

Studierendenwerk, a student services provider, is an integral part of everyday life at the university, offering services in catering, housing, student financing and childcare as well as social and psychological counselling for over 48,000 students and employees. As an important player on campus, Studierendenwerk feels that it has a special social responsibility to promote sustainable development.



Oben: Studierendenwerk sources a large part of its foodstuffs from certified traders in the region. At regular intervals, we visit suppliers to inspect products for freshness and quality on site.

Unten: Catering, BAföG student grants and housing: As a regional company with 370 employees, Studierendenwerk consciously assumes responsibility for ecological and social fairness on campus.

Regional and seasonal dishes on the menu

From the act of purchasing to the food on your plate – sustainable management is a core principle of Catering at Studierendenwerk. In its seven canteens, eight cafeterias and one restaurant across four different locations, Student Services minimises food waste by optimising its purchasing practices and matching food production with demand. Resources are recycled and reused as much as possible: In modern waste management, waste separation and reusable products are a matter of course, which includes reprocessing oils and fats in biogas plants for reusable energy. In addition, a balanced range of vegan and vegetarian dishes and a preference for regional suppliers and producers help save natural resources whilst also curbing emissions. One side effect of sourcing regional products is that it supports local agriculture. As a certified company, Studierendenwerk strictly follows the guidelines of the DE-ÖKO-039 control authority. Coffee is offered exclusively in organic and fair-trade quality. As an eco-friendly alternative to the conventional paper cup, Studierendenwerk operates a deposit system with reusable cups. Moreover, to encourage students to reject the environmentally harmful disposable version, in the cafeterias, hot drinks in returnable cups are cheaper.

Energy efficient housing

Studierendenwerk is also committed to sustainable development in student housing. It provides more than 2,500 rooms in 19 student residences in Essen, Duisburg and Mülheim. Over the past decade, various residential complexes have been renovated and modernised for higher efficiency and lower emissions. Windows, roofs and facades have been modernised to improve insulation, making the interiors more comfortable, reducing heating costs and protecting the environment. Further renovations will follow. Sustainable living is also promoted through ecological technologies such as motion detectors, shower fittings

with an automatic shutoff, room temperature regulation systems and bathroom ventilation. Rainwater is collected in grey water tanks and then used to flush toilets. Studierendenwerk also operates two photovoltaic systems, which are installed on the roofs and facades of student residences. The electricity they generate is fed into the company's own grid, saving fossil fuels and reducing operating costs by using renewable energies.

Sustainability starts at source

Sustainability is a core value of Studierendenwerk's corporate culture. Action days, climate-neutral print media, CO₂-saving travel by public transport, motion detectors in offices and in-house training are just a few of the many measures already introduced to raise awareness of the topic amongst the approximately 370 Studierendenwerk employees. Studierendenwerk cares deeply about social sustainability in its own operations and supports its employees by responding to their needs and promoting their potential. Its management culture rests on the principles of equality, fairness and work-life balance (for example, through flexible working hours, telework, part-time work for older employees), making Studierendenwerk a sustainable and social employer. Studierendenwerk always aims to adopt new ideas, implement further measures and expand existing processes whilst also subjecting them to critical scrutiny. Together with the eleven other student services companies in North Rhine-Westphalia, Studierendenwerk is working on guidelines for sustainable corporate management, which will require all stakeholders to commit to sustainable resource management.

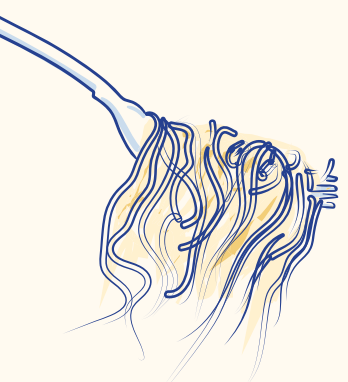
7 11 12

Food and drink at UDE

Information from STUDIERENDENWERK (STUDENT SERVICES)

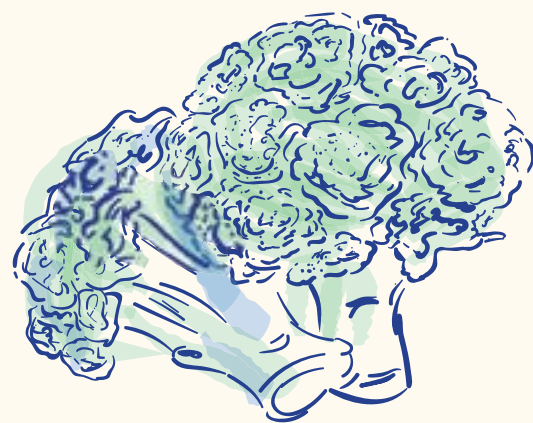
At UDE, STUDIERENDENWERK operates

- 3 canteens
- 1 restaurant
- 7 cafeterias and bistros



Top 5 vegan dishes 2018

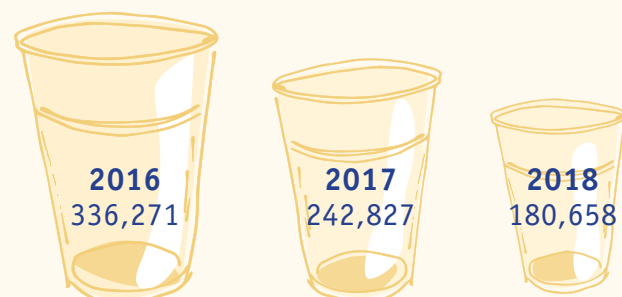
Vegetable lasagne	9,521
Soya Bolognese with fresh vegetables and wholegrain pasta (organic)	8,414
"Spätzle" pasta with vegetables and cranberries, served with mushroom sauce	6,732
Couscous in a pan with nuts and dried fruit	6,655
Chili sin carne with nachos	6,648



Sales of vegan and vegetarian food

Year	Vegetarian	Vegan
2016	103,309	156,689
2017	89,602	172,478
2018	98,987	171,510

Drinks served in disposable cups*

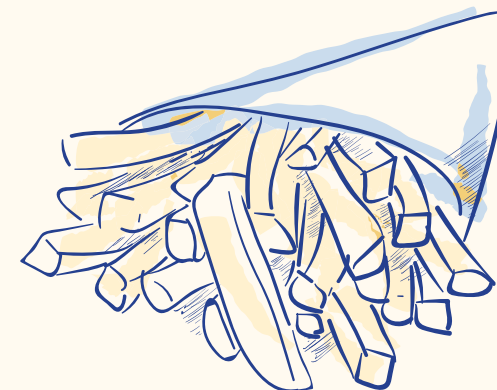


*The disposable cups used by Studierendenwerk are made of 100% corn starch (PLA) and are 100% biodegradable.

Sales of top 3 side dishes

Side salad	136,522
Chips	122,977
Soup of the day	49,152

Fun fact: Duisburg campus sells more side salads. By comparison:



Campus Essen
41,172 side salads

Campus Duisburg
95,350 side salads

Top 3 "Eat Organic" specials in the summer semester 2019

1. Pork escalope on braised white cabbage with Westphalian ham, herb potatoes and tomato-cucumber salad
2. Kirchhellen asparagus with turkey escalope, served with sauce hollandaise or melted butter and new potatoes
3. Roast turkey breast with a mustard crust, served with parsley sauce, potatoes tossed in butter and mixed salad



Organic products in the cafeterias

- Coffee
- Tea bags
- "Lemonaid"



STUDIERENDENWERK regularly runs tests for organic dishes with meat from animals that have been treated humanely:

'We are concerned about sustainability and the welfare and protection of farm animals. Our guests are also gradually rethinking the way they eat. More and more consumers want to eat regionally sourced food and meat from animals that have been treated well and butchered humanely. However, the biggest challenge is and remains the acceptance of the inevitably higher price of meat products from animals that have been treated humanely.'

Achim Herrmann
(Head of Gastronomy)



Regional potatoes and onions from Bottrop 2018

54,420 kilos of potatoes
15,120 kilos of onions

The Student Council AStA

The Student Council (AStA) is the executive committee representing UDE's student body. Currently, its work is undertaken by five departments: social policy; ecology, mobility and health; culture; and press and public outreach.

These main areas are complemented by autonomous departments which conduct anti-discriminatory activities at UDE. They include the Autonomous Womens' Department and the LGBTQ Department ("Referat Trans Inter SchwubiLe") that represents the interests of the lesbian, gay, bisexual, transgender and queer communities.

These main areas are complemented by autonomous departments which conduct anti-discriminatory activities at UDE. They include the Autonomous Womens' Department and the LGBTQ Department ("Referat Trans Inter SchwubiLe") that represents the interests of the lesbian, gay, bisexual, transgender and queer communities.

Use of alternative means of transport

Apart from the semester ticket that enables students to use public transport in the whole of NRW, AStA's Department of Ecology, Mobility and Health campaigns for additional sustainable transport strategies at UDE. Cooperation with the firm Nextbike means all students can utilise the Metropolrad Ruhr system of rental bikes in all the towns and cities in the Ruhr. Thanks to the establishment of further Metropolrad Ruhr rental stations at the university, everyone can reach the various university sites in Essen and Duisburg quickly and sustainably.

Campus gardens and eco education

As a result of collaboration between the Initiative for Sustainability and AStA's Department of Ecology, Mobility and Health, in 2014, the Campus Garden Duisburg-Essen was born. In 2017, a university group of the same name was established. The aim is to revitalise areas that have been lying idle and have now been released for use by the university administration for the project Education for Sustainable Development in order to make the campus more attractive (p.106).

When the City of Essen was named "Green Capital of Europe", in July 2017, AStA built a raised bed on the Essen Campus between the S05 and S05T buildings.

At the regular film evenings, discussion rounds and lectures organised by the Department of Ecology, Mobility and Health on sustainability topics, there is also a special focus on urban gardening in connection with the "edible city" concept. An added bonus is that students can gain practical experience in this thematic field.

Fairsharer

On both the Essen and Duisburg Campuses there is a "Fairteiler" that is operated by the external Foodsharing Initiative in cooperation with AStA. People can bring and take food to prevent it being thrown away. Usable



Left: The Department of Ecology, Mobility and Health regularly organises events on sustainability issues. An important topic is urban gardening in connection with the "edible city" concept.

Right: UDE students can ride a bicycle for an hour a day free of charge. Thanks to an agreement with the firm Nextbike, students at UDE enjoy special conditions for using the Metropolrad Ruhr rental bike system.



books, electronics and other useful items can also be brought and taken – not only sparing the environment, but students' slim budgets, as well.

Future plans

The department has other projects in the pipeline, including

- introducing an organic fruit and vegetable box scheme
- setting up drinking water dispensers at UDE
- organising clothes-swapping parties
- educational events on sustainability and environmental topics

Moreover, AStA is currently working on a concept to use its facilities for pilot projects on renewable energies and energy saving.

In representing the student body vis-à-vis (technical) Building Management and Studierendenswerk (Student Services), the Department of Ecology, Mobility and Health helps to communicate students' ideas and suggestions, especially on the ecological design of the university (such as the new main refectory building at Duisburg).



Diverse IfN projects and initiatives pursue the goal of sustainability.

Students and UDE staff engage with sustainability

The following articles are a selection of projects and initiatives organised voluntarily at UDE; they are assigned to the 17 Sustainable Development Goals.

Initiative for Sustainability

The Initiative for Sustainability (IfN) was founded by two women students at UDE in 2005. It provides a space for students, lecturers and other interested parties to actively work together for the multifaceted mission of sustainability. In 2010, the initiative became a registered association and has a constantly growing membership. The goal of sustainability is to create quality of life for current and future generations today by practising responsible social, environmental and economic behaviours. IfN pursues this goal through various projects and initiatives: Practical everyday information and raising awareness for environmentally-friendly, climate-friendly consumption, energy use and nutrition stand alongside hand-on opportunities and support for campaigns for additional cycle paths. In its efforts, IfN cooperates with many stakeholders and local initiatives and also

supports the development of new initiatives, such as the Essen Nutrition Council. Amongst others, the regional cycling initiative VeloCityRuhr and the international group Reclaim Our Economy are also part of IfN. In December 2018, IfN, together with other partners, opened a “Specialist Shop for Urban Transformation” (Fachgeschäft für Stadt Wandel) in Essen-Holsterhausen. It is a place where people can come together to practise and experience neighbourliness and sustainability in their own social environment. If you would like to plan, share and implement ideas and projects revolving around sustainability with welcoming, creative people, just drop into the Specialist Shop or write to us.

For additional information and contacts, visit www.initiative-fuer-nachhaltigkeit.de



ArbeiterKind.de

For all those who are the first in their family to go to uni

In Germany, the likelihood of a young person going to university depends to a high degree on their family background: statistically, 79 out of 100 children from academic families embark on a university course whilst the figure for children from non-academic families is 27 out of 100 (Study by DZHW, May 2018). ArbeiterKind.de therefore encourages school students from non-academic backgrounds to attend university and supports them on their path to a degree and first job. Relating their own educational histories and encouraging by personal example is the successful formula used by ArbeiterKind.de. Together with the local group in Duisburg-Essen, ArbeiterKind.de informs school students, students and parents about day-to-day life at university and the ways of financing a university course. Employing a highly successful peer-to-peer approach involving many people who are themselves the first generation in their families to

attend university, open meetings, surgeries, information events, a hotline, a personal mentoring session, a website and its own social network ensure that those seeking advice are met with a low-threshold, credible and personal service. In order to implement comprehensive sustainability, it is advisable to raise awareness amongst university staff, too (starting uni, study abroad, first jobs, careers in science). The permanent staff at ArbeiterKind.de NRW can be approached in this regard.

4

Amnesty International Essen-Mitte

In many countries, people who campaign for human rights are in danger. Much has improved in recent years, but we still experience governments and political groupings massively restricting human rights. People like lawyers, journalists, environmental activists and other critical voices who campaign for their rights are particularly threatened. Amnesty International is the world's largest human rights movement and we in the university group Essen-Mitte are a mixed bunch who work together on a voluntary basis. In the heart of the Ruhr area, we do our part to protect these people and their rights. Our website contains background information, details of campaigns and our individual cases as well as insights into our work. We welcome anyone who is interested and warmly invite you to take part in our campaigns or group meetings.

5 10 16

Weitblick Duisburg-Essen e.V.

Weitblick Duisburg-Essen is a student initiative that aims to play a role in achieving fairer access to education worldwide. Our principles include, amongst others, sustainability and action orientation. The projects we fund must, therefore, conform to our social, ecological and economic objectives (<https://weitblicker.org/en/idea/>). In order to promote projects as

sustainably as possible, we select them very carefully: they must be viable and also have been on the agenda of local people. We thus support projects that are embedded in local structures and promote the notion of capacity building. For us, education is the starting point: in the future, well-educated people will find it easier to realise their goals. Therefore, in the past, we have helped to build schools in Ghana and Senegal, for example. Currently, we are financially supporting a school class in Bangladesh in cooperation with Netz e.V. and, through our donations to MVCP, helping to run a hygiene and sexual health workshop for girls in Togo.

For additional information, visit <https://weitblicker.org/en/duisburg-essen/>.

4 10

Campus Garden Duisburg-Essen

A registered university group, Campus Garden pursues various goals aimed at making the campuses in Duisburg and Essen more sustainable. Creating green spaces at both university sites on the basis of protecting the environment and encouraging insect life helps, on the one hand, to improve the ecology of the existing spaces whilst, on the other, drawing the attention of university students and staff to the value of green spaces – all of which provides for a pleasant learning and teaching atmosphere. Every year, the Campus Garden also yields Campus Garden honey which is produced in cooperation with a Duisburg beekeeper. Moreover, the Campus Garden also aims to bring together students from different disciplines and cultures, working together in the garden. This is a joint activity that can even surmount language barriers and help to generate a sense of community. Our project “Chinese Garden”, for instance, encourages close cooperation with Chinese students and contributes to cultural exchange.

For additional information and times, visit www.facebook.com/CampusgartenDuE/.

11 15

“Level up!” Protestant Student Community Duisburg-Essen



500 plastic caps finance one polio vaccination.

Level up! – a sustainability project run by the Protestant Student Community (ESG) in which everyone on campus can participate by collecting plastic bottle caps which are then sent for recycling. Every 500 caps finance one polio vaccination, meaning everyone can help – without donating money – to give others a better chance of a healthy life whilst conserving our world’s finite resources. The project was a huge success! Thanks to the support of many students and university staff as well their friends and families, over time, we collected ever more caps. Collection boxes mounted next to the drinks vending machines in the refectories and cafeterias run by Student Services helped to draw attention to the campaign. In many departmental tea kitchens and at central locations around the university, such as the library area and the International Office, there were mobile collection boxes and people could also bring bags full of caps to ESG in the BRÜCKE building. In the end, we were collecting a good five big refuse sacks every month, each containing 10,000 caps! “It’s great to see how many people on campus are taking part, doing something in their everyday lives for social sustainability and plastic recycling. On top of which, the project

is very communicative and gets a lot of people talking to one another,” said Dr Claudia Andrews, ESG’s student pastor. ESG regularly supports and initiates sustainability projects which are the concrete manifestation of local ecumenical efforts for peace, justice and safeguarding creation. Initiated and conducted by ESG Duisburg-Essen, the project “Level up!” ran for four semesters from the winter semester 2017/18 to the summer semester 2019. Unfortunately, on 30 June 2019, the sponsoring association that backed it, “deckel drauf e.V.”, stopped providing free nationwide transport and marketing logistics.

3 12 16

The UniversityNetworkSecretariats (UNS) works sustainably!

Nothing is as permanent as change – this is a principle university staff are all too familiar with because they are the ones who put the innovative force of science into operational practice. The enormous speed with which “Arbeit 4” (future of work) is challenging all staff at universities demands dedicated cooperation amongst colleagues. Research and teaching can only be excellent if researchers are given the best possible support. UNS networkers provide this support on a daily basis. In order to secure (administrative) knowledge and efficiency in internal processes, the network organises conversations amongst colleagues and meetings across the boundaries of subjects and faculties, communicates suggestions for improvement and coordinates further training needs with the relevant units. The network is used as a platform for sharing, designed to facilitate good communication. In this way, the staff’s expertise makes an important contribution to quality assurance in all opinion-forming procedures on topics relating to life in society. “We support people” – the network embraces this motto in many ways through its support for students, researchers, visiting researchers and colleagues.

9



Ilka Roose (left, research associate, UDE) and Evrim Ceren Kaya (right, Master’s student, UDE) at a brainstorming for LOCO₂L HEROES.

LOCO₂L HEROES

LOCO₂L HEROES is the first climate protection initiative at the universities in the Ruhr metropolitan area. Those involved in the initiative on campus want to raise awareness for climate protection and reducing CO₂ emissions; they campaign to establish a climate protection culture at the university. Students at all levels and on all courses can volunteer to support LOCO₂L HEROES. Since it was founded in 2010, the initiative has already received a number of awards, including being selected as a flagship project in the dm/UNESCO initiative “Ideas Initiative Future” as well as for its “Werkstatt N-Projekt” by the German Council for Sustainable Development.

The climate protection initiative sees the university not only as a place of education but also of living and experience and therefore develops special actions to campaign for social learning situations. In 2019 and beyond, together with Studierendewerk (Student

Services) Essen-Duisburg and international start-ups, the initiative is working on the introduction of shared student accommodation with a climate protection focus, indoor farming and the use of an e-cargo bike for particularly challenged students.

For additional information, visit www.loco2lheroes.de / info@loco2lheroes.de

11 13 17

Commendation for engagement for sustainability

UDE says thank you

UDE's multi-faceted engagement for sustainability should not go unnoticed. Consequently, since 2016, napro has issued commendations at UDE's Summer Fair, expressing its gratitude on behalf of the university, especially to students and staff for their commitment to promoting sustainable development. To date, they have recognised individuals from different sectors of UDE who have actively put various ideas into practice: in the context of ecological sustainability, for example, napro recognised a student initiative to introduce a sustainable deposit system for returnable cups, as well as AStA Duisburg's "Umsonstraum" (something-for-nothing space) and the creation of an environmentally and resource-friendly product catalogue for office supplies by the procurement team. Resource conservation is also the aim of the university's UDE Classifieds, an inhouse portal for the exchange of furniture, equipment and materials that are no longer required (p.65). Commendations also go to projects devoted to social sustainability. Academic staff have, for instance, set up PCs with superfluous UDE computers at refugee accommodation in Essen; the student initiative ENACTUS introduced deposit donations to support projects for homeless people and, together with the "Level Up" initiative, the Protestant Student Community helped to finance a programme to vaccinate children against polio (p.106). Amongst others, commendations also recognised Studierendennetzwerk (Student Services) Essen-Duisburg for purchasing and promoting regional products (pp.98-99) and

the University Library for its inhouse commitment to sustainability (pp.66-67). Additional commendations have gone to the cross-faculty certificate "Education for Sustainable Development" that enables students to transparently demonstrate the skills and knowledge they have acquired in the field of sustainable development (p.46). The aim of the commendations is to motivate and inspire all members of the university to engage with sustainable development. Visit napro's website for an overview of all the commendations issued to date: <https://www.uni-due.de/sustainability/welcome.php>

1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17



2019: Social, ecological and economic engagement

from l to r: Sustainability Officer Professor Dr André Niemann, former Chancellor Dr Rainer Ambrosy, Dr Claudia Andrews (Student Pastor in the ESG, commended for the "Level up!" initiative), Rector Professor Dr Ulrich Radtke, Nicole Walger (Head of UB, commended for sustainability in the library), Maximilian Jung (student, commended for the student initiative ENACTUS), Monika Brinner (UB's inhouse sustainability officer), Jennifer Schollmeier (student, commended for the student initiative ENACTUS).



2018: Ideas that conserve resources

from l to r: Sustainability Officer Professor Dr André Niemann, Lisa Prepens, Renata Maracic, Halid Omerovic and Ibrahim El-Haj (students, commended for a returnable cup deposit system), former Chancellor Dr Rainer Ambrosy, Rector Professor Dr Ulrich Radtke.



2018: Sustainability in logistics

from l to r: Sustainability Officer Professor Dr André Niemann, Klaus Krumme (former Head of the Centre for Logistics and Transport and his team, commended for their showcase project on sustainability-related research in logistics ILoNa), Rector Professor Dr Ulrich Radtke, former Chancellor Dr Rainer Ambrosy.



2018: Sustainable energy management

from l to r: Sustainability Officer Professor Dr André Niemann, Rector Professor Dr Ulrich Radtke, Andreas Kleine (Head of MSR Building Management and his team, commended for their activities in the field of sustainable energy management), former Chancellor Dr Rainer Ambrosy.



2017: Sustainability for everyone

from l to r: Sustainability Officer Professor Dr André Niemann, Nina Kiedrowicz (alumna of the Master's course on Urban Systems, commended for developing the certificate "Education for Sustainable Development"), Rector Professor Dr Ulrich Radtke.



2017: Culinary sustainability

from l to r: Rector Professor Dr Ulrich Radtke, Johanne Peito (staff member of Studierendenwerk Essen-Duisburg), Gerd Schulte-Terhusen (Head of Gastronomy at Studierendenwerk Essen-Duisburg and other members of the team, commended for sustainable catering at UDE), Sustainability Officer Professor Dr André Niemann.



2017: Recycling management

In a group with Rector Professor Dr Ulrich Radtke (far right) and Sustainability Officer Professor Dr André Niemann (third from left), UDE staff (commended for the UDE Classifieds portal, from l to r: Anja Lhotak (Department of Economic and Financial Affairs), Fabian Strachanski (CIM), Martina Buiting (Staff Unit for Occupational Safety & Health and Environmental Protection), Guido Kerkewitz (deputy head of CIM), Britta Mauritz (Department of Facility Management) und Benjamin Krawieczek (former member of Department of Economic and Financial Affairs).



2016: Sustainable purchasing, student engagement and help for refugees

from l to r: Former Chancellor Dr Rainer Ambrosy, Rector Professor Dr Ulrich Radtke, Sabine Engelke (member of UDE's Procurement Department and team, commended for sustainable purchasing), participants in the AStA Department of Ecology and Mobility (and team, commended, amongst others, for the "Umsonstraum"), André Kreft (Dean's Office, Faculty of Biology with Arnim Spengler from the Institute for Construction Operations and Management, commended for setting up PC stations in refugee accommodation and schools in the north of Essen using superfluous UDE computers), Sustainability Officer Professor Dr André Niemann.

napro's recommendations for action Making engagement sustainable!

If we take a look at the registered organisations and associations at UDE two gaps are immediately obvious: only very few initiatives seem to address the fields of ecology and culture (theatre, film, music, journalism). The examples in this chapter, by contrast, show how diverse people's engagement is at UDE in the various areas. So, the question arises: How can UDE organise and promote inhouse engagement in a way that makes it sustainable and visible? The following paragraphs describe some options for action:

Creating permanent structures

Engagement for sustainable development should aspire to be sustainable itself. Particularly when it comes to student engagement, there is a problem: fluctuation. Students come to uni, develop new projects or take part in existing initiatives and then move on into working life. How can we secure the structures when someone is always leaving? A Green Office composed of a mixed team of university employees and students could be a solution. As staff are employed long-term, they can accompany the transition to the next generation of students and thus ensure that sustainable structures are maintained.

Uniting motivation and ideas

At the same time, a Green Office can be a port of call for questions and ideas, a place where people with similar goals can come together. The napro team frequently receives suggestions from staff and students as to how UDE could be made more sustainable. When the people behind these ideas meet in a Green Office, they can devise concrete projects jointly. If we look at the university as a system, these connections generate emergence: the interplay of the individual elements creates new possibilities.

If we adhere to the idea of a system, we realise that there seems to be a weak point: the connection between student engagement and university leadership. A Green

What everyone can do. An example:

Vast amounts of crockery disappear from the cafeterias at our uni on a regular basis. We are delighted that so many people prefer a "proper" cup to a paper cup (which even saves money). But, to save resources, it is just as important to bring the cups and other crockery back again!

Office can cement this connection. It is consequently located mid-way between top-down and bottom-up processes. It pools students' questions and ideas and facilitates communication.

The idea of pooling student engagement is, however, not that new at our university: UNIAKTIV (pp.86–87) represents UDE interests in its third mission, that is, in the field of social engagement. The Green Office should therefore draw on existing structures and collaborate with them.

Attracting attention

The napro team's experience has shown that there is engagement and interest in sustainability in many sectors – not just amongst students but also in Operations and in the Faculties. But often, one hand does not know what the other hand is doing. Networking activities, such as the Sustainability Days that were held in 2015, make the various initiatives and ideas more transparent and accessible.

Prospects for a sustainable UDE

“Open-minded”, the motto of UDE, is taken literally and implemented successfully by many committed sustainability stakeholders. Whether accompanied and initiated by napro or organised independently – the research projects, courses, operational and social engagement, transfer activities within and outside of the university as well as the efforts to institutionalise sustainability are all cause for hope as we look to the future. Student and staff engagement in initiatives and activities at UDE as well as university members’ intrinsic motivation in research, teaching, operations, transfer, social responsibility, engagement and networking are remarkable. Now it is important to keep the momentum going in both existing and future activities. This chapter illustrates where napro thinks UDE needs to take concrete action and how a joint sustainability strategy could help to put it into practice.

The colourful towers on Essen Campus are a hallmark of UDE and are also known as the “beacons of knowledge”. The colours reflect the wealth of variety at UDE.



Statement

UDE's future is sustainable



Jens Andreas Meinen
Chancellor

versity. They guide us and commit us to always aligning our working practice with our guiding objectives.

- We support research and teaching.**
- We practise efficient organisation.**
- We lead with commitment and dedication.**
- We lead with respect and appreciation.**
- We build on information and involvement.**
- We unlock potential.**
- We promote health.**
- We trust people.**

In August 2019, in the middle of the protests by the Fridays4Future movement, I became the new Chancellor at the University of Duisburg-Essen. Right from the start it was clear what a crucial role sustainability plays for the future of UDE. This report illustrates the extent to which UDE staff and students are already driving the topic in many sectors. The diversity of the articles reveals that our university thinks ecologically, socially and economically. In the administration, too, there is a keen awareness of our responsibility for the success of our university and for our employees' work satisfaction. This is embedded in eight management principles that formulate our understanding of our duties and our role within the uni-

I am very much looking forward to being able to play my part in helping this still young and internationally successful university to continue its development. With regard to sustainability, the path is strewn with societal challenges that we as a university must and, indeed, want to address: one such topic is digitisation. How can we implement our administrative processes wisely and usefully with the means offered by digitisation? UDE's building development is another key point. How do we deal with renovation projects? With research buildings? In order to craft needs-based solutions in line with sustainability we must involve our students in the planning stage.

Of course, staff recruitment and HR development are also an important topic for UDE as an employer. The university is located in a region that has been shaped by structural change from an industrial to a service-based economy. The transformation towards sustainability is an opportunity for UDE to head-up progress in this science region.

Sustainability: a strategic mission

Reinforcing the path to greater sustainability

Today, the impacts of climate change and global inequality are ever-present, not just in the Global South but at national and regional level in and around the Ruhr cities of Duisburg and Essen, too. So, it comes as no surprise that socially and politically the topic of sustainability is rapidly gaining in importance.

This report shows why and how UDE as a responsible university addresses this topic in diverse ways. At the same time, the recommendations for action and our Top 10 clearly indicate that instituting napro in the form of a Green Office is decisive for reinforcing the path to sustainable development. School students who take part in the Fridays4Future movement and similar initiatives will soon be coming to university and demanding straightforward answers to the questions of sustainability. Today, already, students at UDE engage with the topic. Closer cooperation with students and university staff is therefore essential for continuing sustainability efforts. Against this backdrop, napro recommends taking the following short- and medium-term (2020 to 2022) steps to embed sustainability as a strategic mission:

1. Acquisition of funding for a Green Office concept for a period of at least three years with the option of permanent implementation.
2. Creation of a Green Office team of staff and students responsible for the individual fields of action: teaching, operations, research, transfer and social matters.
3. Identification of actors willing to actively support the respective fields of action. On this basis, a sustainability strategy should be implemented in the medium- to

long-term which takes account of sustainability as the basis for all decisions in the fields of teaching, research, operations, transfer and social matters, using a Green Office concept as the connecting link. The aim is to drive UDE's development into a holistically sustainable university. To this end, measures can be introduced in all areas that will transform the entire university in the coming years. In order to get ever closer to the vision of a sustainable university, sustainability-oriented actions by all members of the university are the key to success. With the help of a permanently established Green Office as a hub where everything comes together, this and other measures could be implemented in a coordinated and structured fashion. The degree of support from the University Board (top-down) and the dedicated members of UDE (bottom-up) inspire hope for the future.

napro's TOP 10 areas requiring action

Ten steps towards greater sustainability at UDE

The previous chapters show that UDE is on the right path to ascribing special importance to sustainability. Many dedicated members of the university have conducted impressive (research) projects and events in recent years. The Top 10 areas requiring action for greater sustainability are based on napro's experience and the recommendations for action in this report. In our opinion, they are the ten most important fields of action at UDE that we want to tackle together in the next few years. Currently, they are being discussed with the university leadership.

1. Establishing sustainability guidelines

UDE's existing guidelines address some aspects of sustainability but do not specifically showcase the topic. In order to make its commitment to sustainability more visible and to target university members more effectively with its sustainability efforts, sustainability guidelines should now be drawn up addressing the topics of mobility, HR, student and societal engagement as well as resource-efficient behaviour.

2. Securing napro through a Green Office concept

In order to secure napro's work to date and support staff and students in their efforts to establish sustainability at UDE in the long term, napro needs to be institutionalised by expanding the existing unit and implementing a Green Office concept. For the purpose of coordinating additional actors and being able to conduct joint projects, well-connected, permanent contacts are essential. In a Green Office concept, the napro team could be expanded to include additional student or academic assistants and voluntary actors and thus guarantee the involvement of all sustainability-minded university members, not least the students.

3. Developing target and performance agreements on sustainable development

Since 2016, sustainability has been embedded in a specific passage in the target and performance agreements concluded with all institutions at UDE. It requires them to report to the Sustainability Officer and team once a year on their sustainability activities. So far, the form and scale of the report has been left up to the institutions themselves. Now the recommendation is, on the one hand, to simplify reporting by introducing a standard format for teaching, research and operations and, on the other, to increase both measurability and comparability as well as the commitment to greater sustainability.

4. Preparing a holistic mobility concept

As already indicated in the chapter on Operations, mobility is one of the areas at UDE that has potential for development. Efforts should be made to devise a holistic concept for all members of the university that meets the needs of a "commuter university". This means both student and staff mobility as well as mobility necessitated by Operations. See pp.68-69 for additional recommendations for action.

5. Continuing to develop sustainable procurement management

The range of more sustainable office supplies and furniture should be extended and assigned a stronger presence in the inhouse SAP area. Just like other large operations, UDE could urge its providers to reveal their CO₂ balance sheet.

6. Climate protection concept (incl. CO₂ accounting)

So far, it has unfortunately not been possible to conduct a meaningful CO₂ audit at UDE. At present, it is impossible, for example, to register consumption in certain individual buildings. Nor can we precisely determine the ecological footprint of business travel. To address this, adaptations need to be made to our SAP that would enable us to systematically determine the CO₂ emissions generated by business travel. This and other factors should then flow into a holistic UDE CO₂ audit covering everything from the faculties through to the central facility level. In order to cover the entirety of ecological sustainability at UDE, the CO₂ balance sheet should be embedded in a UDE-wide climate protection concept. Climate protection goals and measures must be defined and established.

7. Promoting an overarching communication strategy

The sheer number of university members and the dual campus situation with sites in Duisburg and Essen demands a unified communication strategy. Regular posts on all the available platforms through to campaigns

should encourage active participation in sustainability processes.

8. Extending the energy management system

The digital energy management system in use at UDE, enerGO+, is not in operation across the entire university for technical reasons. Digitisation is an important topic in the energy transition (towards greater energy efficiency and resource-friendly energy use) and should be utilised to a greater extent for managing the buildings. In this context, the state of NRW, in particular, should provide support to facilitate the expansion of digital solutions (such as enerGO+).

9. Accrediting curricula – instituting sustainability

The certificate in Education for Sustainable Development and many other courses were the first steps on the path to more sustainability in teaching. Further consideration should now be given to the range of courses to introduce a special focus on sustainability. It would be desirable to promote education for sustainable development not only in the form of a general introduction to the topic but also as an advanced specialisation in the respective subjects.

10. Establishing a strategy for sustainability monitoring (incl. the creation of incentive and scoring systems)

To make sustainability measurable, so that the results can be read, is no easy matter. What is known as sustainability monitoring is firmly established in sustainability research and makes it possible to analyse (trend) developments and incorporate control mechanisms. This should be introduced at UDE in order to develop scoring systems and/or other sustainability incentives (both on material and non-material levels) that are tailored to the needs of our university.

Sustainable development at the University of Duisburg-Essen

A report by napro. 2020

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Project coordination, text and editing

Professor Dr André Niemann, Dr Ilka Roose,
Elisa Gansel, Laura Briese

Design, composition and layout

Studio Ra, Paran Pour

Infographics

Studio Ra, Sandra Tebbe

Translation

ResearchComm Ltd, Dr Lynda Lich-Knight

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What we do today determines what the world will look like tomorrow.

Marie von Ebner-Eschenbach (1893):
Aphorisms, Paetel, Berlin.

The 17 Sustainable Development Goals

In formulating its 17 Sustainable Development Goals (SDGs), the United Nations have agreed on targets for a period of 15 years (2015 to 2030). For the first time, equal weight is given to the three pillars of sustainability: social, environmental and economic. The SDGs build on the Millennium Development Goals (MDGs) which were ratified by heads of state and government from around the world in New York in 2000 and include a total of eight development goals. In contrast to the MDGs, which focus in particular on the countries of the Global South, the SDGs address all states. They are mutually dependent and are thus inseparable. The 'five Ps', that is, the key messages that head up the 17 SDGs, clearly illustrate this connection: people, planet, prosperity, peace, and partnership. With its slogan, "leaving no one behind", the SDGs emphasise that no person in the world community should be overlooked. In order to achieve the SDGs, intensive cooperation is required amongst countries everywhere, all of which are called upon to report on their progress at global and national level (BMZ 2017: Agenda 2030 für nachhaltige Entwicklung).

This report responds to the above call by assigning UDE's efforts to the 17 Sustainable Development Goals.

- 1 No poverty**
End poverty in all its forms everywhere
- 2 Zero hunger**
End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- 3 Good health and well-being**
Ensure healthy lives and promote well-being for all at all ages.
- 4 Quality education**
Ensure inclusive and equitable quality education and promote life-long learning opportunities for all.
- 5 Gender equality**
Achieve gender equality and empower all women and girls.
- 6 Clean water and sanitation**
Ensure access to affordable, reliable, sustainable and modern energy for all.
- 7 Affordable and clean energy**
Ensure access to affordable, reliable, sustainable and modern energy for all.
- 8 Decent work and economic growth**
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- 9 Industry, innovation and infrastructure**
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- 10 Reduced inequalities**
Reduce inequality within and among countries.
- 11 Sustainable cities and communities**
Make cities and human settlements inclusive, safe, resilient and sustainable.
- 12 Responsible consumption and production**
Ensure sustainable consumption and production patterns.
- 13 Climate action**
Take urgent action to combat climate change and its impacts.
- 14 Life below water**
Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- 15 Life on land**
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- 16 Peace, justice and strong institutions**
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
- 17 Partnerships for the goals**
Strengthen the means of implementation and revitalize the global partnership for sustainable development.

SUSTAINABLE DEVELOPMENT GOALS

