Sustainability at the University of Duisburg-Essen (UDE)
The Development of a Process towards Sustainability

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Head of sustainability process group at UDE
20th REFORM meeting Salzburg, September 3rd, 2015
University of Duisburg-Essen (UDE)

In the Heart of Europe

Source: http://www.uni-due.de
University of Duisburg-Essen

Number of Students

- Merge of two Universities in 2003
- Thus one of the youngest and largest Universities in Germany (4400 Employees and researchers)
- Wide range of studies in the humanities, economics, natural sciences and engineering

Source: Numbers provided by Universities
UDE – an international University

Percentage of international students

<table>
<thead>
<tr>
<th>University</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uni Duisburg-Essen</td>
<td>18.0 %</td>
</tr>
<tr>
<td>RWTH Aachen</td>
<td>16.7 %</td>
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<tr>
<td>Goethe-Uni Frankfurt</td>
<td>15.7 %</td>
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<tr>
<td>LMU München</td>
<td>14.8 %</td>
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<tr>
<td>Uni Hamburg</td>
<td>12.0 %</td>
</tr>
<tr>
<td>Uni Köln</td>
<td>10.1 %</td>
</tr>
<tr>
<td>FernUni Hagen</td>
<td>9.6 %</td>
</tr>
<tr>
<td>Uni Erlangen-Nürnberg</td>
<td>9.5 %</td>
</tr>
<tr>
<td>Uni Münster</td>
<td>8.0 %</td>
</tr>
<tr>
<td>Uni Bochum</td>
<td>7.9 %</td>
</tr>
</tbody>
</table>


Source: Websites of Universities
Sustainable Development
Declaration of Brundtland (1987)

In 1987, publicity of „Our Common Future“, also known as Brundtland Report, by the World Commission of Environment and Development.

• Sustainable development is defined in the report as:

  • “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”
  (Brundtland Report, p. 51)

  • “Educational institutions and governments should provide the institutional support, resources and legitimacy for youth-led change processes towards sustainability”
  (UNESCO Education for Sustainable Development Youth Statement, Japan 2014)

Education for sustainable Development

• Targeting transfer of knowledge for sustainable thinking and acting

Vision:
• Humans should make decisions for the future in relation to their actions and how they will affect future generations and their life in different countries

Declaration: Universities for sustainable Development
• Within education, research and administration, german Universities commit to a worldwide sustainable development.

➢ Declaration of the German Rectors’ Conference and the German UNESCO-Commission
Definitions of Sustainability?

...the widespread situation...

Source: Smits, Radboud University, Nijmegen
Definitions of Sustainability

Source: Smits, Radboud University, Nijmegen
a look on existing networks and cooperations in the context of sustainability in Higher Education Units

- [http://netzwerknbe.jimdo.com](http://netzwerknbe.jimdo.com)
- [http://www.netzwerk-n.org](http://www.netzwerk-n.org)
- [http://www.nachhaltigkeitsrat.de](http://www.nachhaltigkeitsrat.de)
- [http://www.unica-network.eu](http://www.unica-network.eu)
Sustainability of Higher Education Units
Application of the Global Reporting Initiative (GRI)

GRI-Vision
- Development of a global and sustainable economy, where organisations are able to manage responsibility and report transparency with its economical, ecological and social efficiency.

GRI@Universities (registered in the sustainability disclosure database)
- Worldwide: 53
- USA: 18
- Asia: 3
- Europe: 18
- Germany: 2

> 1.8% of 108 Universities in Germany

> Rising tendency, increasing activities

Source: Global Reporting Initiative (GRI): https://www.globalreporting.org/Pages/default.aspx
### Sustainability at Universities

<table>
<thead>
<tr>
<th><strong>Christian-Albrechts-University Kiel</strong></th>
<th><strong>ETH Zürich (Executive department Sustainability)</strong></th>
<th><strong>University of Hamburg (Centre for sustainable University - CSU)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Development concept - Climate Protection (funded by BMUB and NKI)</td>
<td><strong>Sustainable Worlds</strong> as strategic priority of the universities development</td>
<td>• Process: <em>University for a Sustainable Future</em></td>
</tr>
<tr>
<td>Goal: climate-neutral University until 2030</td>
<td>• Commited outline for environmental and energy improvement by University administration office</td>
<td>• CSU is used as scientific network and innovation laboratory</td>
</tr>
<tr>
<td>Environmental prize for replacement of old hardware and devices</td>
<td>• 2. Sustainability report by GRI-Standard (2011-2012)</td>
<td>• Funding of scientific papers, sustainability analysis and student initiatives by CSU</td>
</tr>
<tr>
<td>Environmental Management (EMAS certified)</td>
<td>• Summer + Winterschools for students with focus on sustainability</td>
<td></td>
</tr>
</tbody>
</table>

Source: Websites of Universities
Sustainability @ UDE

2002: Signing - Copernicus Charta

2004: Foundation - SuDe Group

2005: Foundation - Initiative for Sustainability (driven by students)

2010-2012: BENA - Spotlight Sustainability

2008 / 2009: Eco-profit (Environmental Certificate)

Since 2014: Sustainability Process@UDE

2014: Diversity audition

2010: Certificate - family friendly University
Steps and milestones of the sustainability process

- **sustainability reporting** (every 2 years)
- establishing sustainability guidelines

- continuation and embedding of the process in education, research and administration
- permanent integration of university administration, especially by usage of data acquisition systems, reporting obligations, etc.

Source: Fotolia
The UDE sustainability process („napro“)

• „The University of Duisburg-Essen (UDE) focuses on its corporative task, to contribute to local and global sustainability ambitions. In that case, as the first one in Northrhine-Westphalia, the University will develop and initiate an innovative sustainability process.“

• to pool, display and promote sustainable development in the fields of:

  - Administration
  - Research
  - Education

  Sustainability Process

Source: University of Duisburg-Essen presidents Declaration, 04.09.2013 : http://www.uni-due.de
UDE’s ways towards sustainability

• strategical and coordinating approach
• decentralized process design
• active integration of all contributors and activities within all sustainability indicators
• definition of responsibilities matching of joint interests within participating units
• process development as a key activity
• a lot of activities are already existing
relevant sustainability Indicators at UDE

- 149 indicators included in GRI.
- After first survey, 98 indicators relevant for the University of Duisburg-Essen
The Sustainability Code (DNK)
Benchmark for sustainable development

- target group: small and medium-sized enterprises (SME)
- criteria of indicators by GRI, OECD, UN-Global Compact ...
- 20 criteria included:
  1. Strategy
  2. Process management
  3. Environment
  4. Society

➤ revised version for implementation at Universities → work in progress

Source: German council for sustainable development: http://www.deutscher-nachhaltigkeitskodex.de/en/home.html
Sustainability Indicators by GRI

G4-EN3 – Energy Consumption within organization
Sustainability indicators by GRI
G4-EN3 – Energy consumption within organisation

Total power consumption [kWh/a]

- RWTH AACHEN (2012): 74,652,000 kWh/a
- RUHR-UNIVERSITY BOCHUM (2006): 63,000,000 kWh/a
- UNIVERSITY OF DUISBURG ESSEN (2013): 49,447,417 kWh/a
- UNIVERSITY OF GÖTTINGEN (2011): 45,000,000 kWh/a
- FU BERLIN (2013): 43,500,000 kWh/a
- TU DARMSTADT (2007): 41,283,000 kWh/a
- UNIVERSITY OF BREMEN (2012): 41,000,000 kWh/a
- UNIVERSITY OF MARBURG (2012): 38,387,000 kWh/a
- UNIVERSITY OF MÜNSTER (2008): 28,713,000 kWh/a
- UNIVERSITY OF KASSEL (2012): 20,680,000 kWh/a
- TU DORTMUND (2010): 10,000,000 kWh/a
- LEUPHANA UNIVERSITY OF LÜNEBURG (2006): 3,973,336 kWh/a

Allocation [kWh]

- Campus Essen: 23,846,329 kWh (48%)
- Campus Duisburg: 25,601,088 kWh (52%)

Costs: ≈ 9 Mio. €/a

Source: information provided by Universities
Sustainability indicators by GRI

G4-EN3 – Energy consumption within organisation

Total heat consumption [kWh/a]

- RWTH AACHEN (2012): 124,000,000 kWh/a
- RUHR-UNIVERSITY BOCHUM (2006): 113,400,000 kWh/a
- UNIVERSITY OF DUISBURG-ESSEN (2013): 53,246,537 kWh/a
- UNIVERSITY OF GÖTTINGEN (2011): 65,000,000 kWh/a
- FU BERLIN (2013): 82,000,000 kWh/a
- UNIVERSITY OF BREMEN (2012): 96,000,000 kWh/a
- UNIVERSITY OF MARBURG (2012): 85,422,000 kWh/a
- UNIVERSITY OF MÜNSTER (2008): 57,309,000 kWh/a
- UNIVERSITY OF KASSEL (2012): 31,020,000 kWh/a

Costs: ≈ 3.5 Mio. €/a

Allocation [kWh]

- Campus Essen: 24,127,693 kWh (45%)
- Campus Duisburg: 29,118,844 kWh (55%)

Source: Websites of Universities
Energy management system at UDE

- Statistical data of consumption for analysis and documentation of energy distribution

- Strategic plan 2013-2015:
  - Implementation of an energy management system by ISO 50001

Completed tasks:
- Development of a documentation system with appropriate software
- Organisation of Management-layer
- Modernization of 200 power measurement counters for automatic data inquiry
Power measurement counters
Energy Management System with EnerGo+  

- trend monitoring by using weekly load profiles of energy consumption
Energy Management System with ENerGo+

- decentralized input and trend monitoring of consumption

- all energy related data integrated in one tool
  → key tasks: management of lab facilities

- summary of lodger settlements (student services, AstA, gym,...)

- diverse report analysis options like trend analysis and annual reference value
Aims achieved within the sustainability process at UDE

- Development of organizational structures within „napro“
- First survey of GRI indicators
- Network development with internal and external competence centers and partners (regional, nation-wide, international)
- Sustainability campaign for public awareness (students, employees, researchers, public, …)
- Promotion of students, employees and researchers to think about a more sustainable way of their actions and to make decisions for the future
raising awareness: Sustainability Days in 2015

- four days sustainability campaign, including, lectures, information desks, film presentations and forums
- presentation of internal and external partners (e.g. smergy, consumer advice center NRW, etc.)
- e-car presentation and mobility forum
- …and a lot of other activities
Thank you for your attention