



Education for resource efficiency and resource conservation in Higher Education

European Resources Forum, Session 12

Berlin, 03.11.2020

Holger Rohn

Universities in Germany – key points

- **394 universities** in Germany
 - 121 universities,
 - 216 universities of applied sciences, and
 - 52 art and music colleges (2019)
- **260,611 full-time employees**
 - there of 48,547 professors, 3,177 C4 professors (2019)
- **2.9 million students** (2019)
- About **19,839 study programs** (2019)

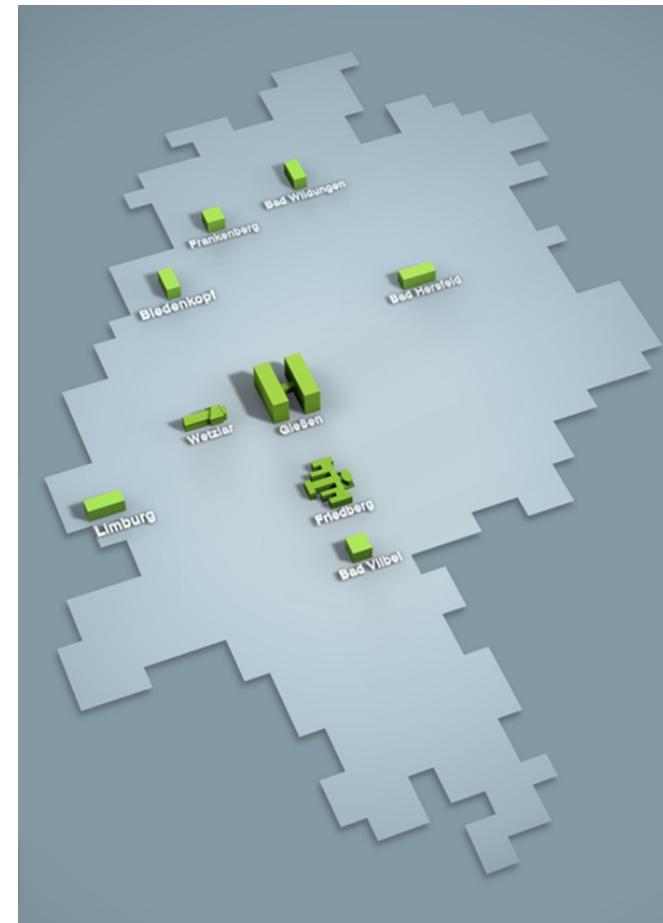
Source: Detatis (2018)

TH Mittelhessen – University of Applied Sciences

- 18.610 Students
- Gießen 11.100, Friedberg 5666,
Wetzlar 1844
- 12 Faculties
- 81 degree courses
- 41 Bachelor's, 40 Master's Degree

Faculty Industrial Engineering and Management:

- Ca. 2.000 Students
- 4 degree courses (2 B.Sc., 2 M.Sc.)
- Life Cycle Management (B.Sc., M.Sc.)

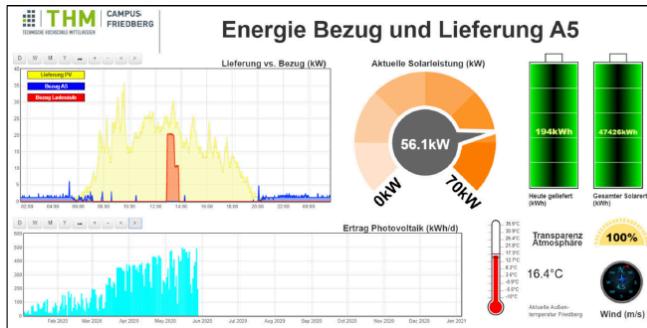


Source: www.thm.de

THM: Sustainability and Resource Efficiency (Examples)

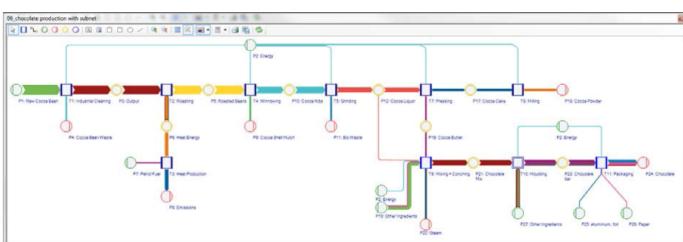
■ Whole Institution Approach:

- Reporting
- Governance
- Education
- Research
- Operations
- Transfer



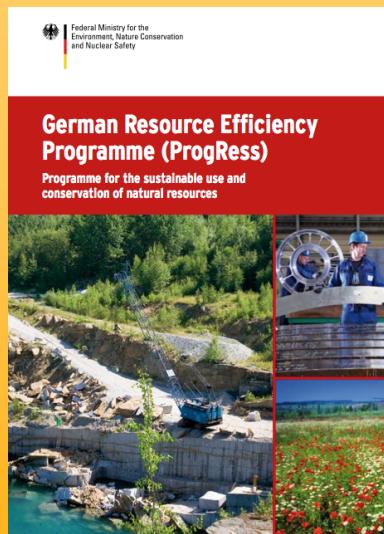
Energie- und Ressourcenbericht 2019

Berichtszeitraum 2014 - 2019



Starting point for the research project BilRess 2012

ProgRess asks for
educational changes
which affect all areas in
the educational system.



BilRess
education for
resource conservation and
resource efficiency



General Education



University

aims to contribute to
the goals of resource
policy through an
educational strategy.



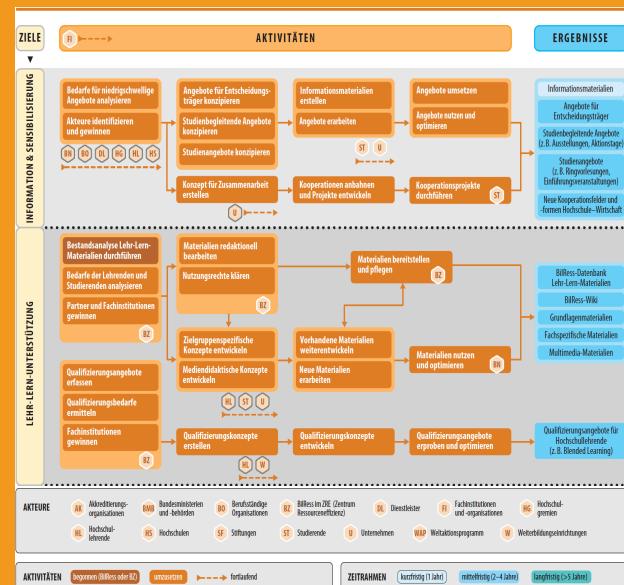
Apprenticeship



Vocational Training

*Bil in the acronym BilRess stands for Bildung (education)

Project Results: BiRess Roadmap and Network



The BilRes-Roadmap serves as a concept for orientation and comprises an inventory of existing educational opportunities (determination of contents, structures, competencies and actors).

The open **BilRess-Network** plans to expedite political measures to firmly establish the conservation and efficient consumption of resources in the society's awareness as well as to foster an appropriate behavioural culture.



BilRess Roadmap: Key results overarching perspective

Information and sensitization

- Establish BilRess-Competence Centre in existing structures
- Launch BilRess-Campaign
- Promote networking
- Interface management

Project development and incentives

- Conduct and promote resource projects
- Competition and awards



Support of teaching / learning

- Creating BilRess-Platform 2.0
- Developing teaching-/learning-materials
- Qualification offers

Formal anchoring

- Integrating R&R into formal educational regulations



BilRess Network: Activities and participation

BilRess Network

Education for **Resource Conservation**
and **Resource Efficiency**



A framework for the exchange of ideas concerning education for resource conservation and resource efficiency.
The BilRess-Network is growing: already **577 members** (10/2020)

Events:

- Network Conference:
Twice a year, Berlin
and Frankfurt am Main
- BilRess-Local WS
- BilRess-Webseminar

The network offers:

- Information
- Newsletter
- WIKI
- Presentations
- Learning/Teaching
materials

Participation:

- Attend events
- Supply materials
- Contribute to
discussion
- Co-operation in
Events

BilRess-Research

- Jugend forscht
- Travelling exhibition
- Roadmap R&R
- Places of resource
education

BilRess inventory university – key points

- **394 universities** in Germany (121 universities, 216 universities of applied sciences, and 52 art and music colleges) (2019)
- About **19,839 study programs** (2019)
- Of these, only about **100 study programs** in which resource conservation and resource efficiency are explicitly dealt with, with a slight upward trend (initial survey 2012/13, subsequent surveys 2016, 2019)
- **Teaching-learning materials** and media on resource conservation and resource efficiency are only available to a very limited extent (freely available)

Quelle: Detatis (2018); hrk (2015), Rohn et al. (2013), (2019)

Conclusion

- Resource conservation and resource efficiency are not yet systematically and comprehensively anchored in German universities and study programs (Whole Institution Approach)
- The Bilress roadmap shows essential paths of action - across and within educational sectors
- The German resource efficiency program ProgResS has included education as an important approach
- Existing approaches to resource formation must be significantly expanded and extended to develop resource competence
- The large number of universities, study programs, training through the Bologna Process and densely packed curricula make implementation difficult
- The Bilress network offers a platform in Germany for resource formation - take part! (www.bilress.de)

Save-the-Date

16/03/2021 - 14th BilRess network conference

Resource-light information and communication technology. What kind of resource formation is needed?

You can find further information at www.bilress.de

Follow us on Twitter: [@IZT_Future](https://twitter.com/IZT_Future) #BilRess

RessKoRo – Resource Competence for Raw Material Use in Global Value Chains:

An Exemplary Analysis Based on the Example of Study Programmes in Design and Engineering Sciences

- **Client/sponsor:** German Environment Agency (Umweltbundesamt – UBA), Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), FKZ 3701 6102 0
- **Project Partner:** Technische Hochschule Mittelhessen University of Applied Sciences; IZT – Institute for Futures Studies and Technology Assessment
- **Duration:** 09/2020 - 02/2023
- **Goal:** The project focuses on the global perspective of product development and production and combines the use of raw materials in value chains with the education of resource competence. The aim is to strengthen the resource competence in the study courses design and engineering sciences.
- **Budget:** 327.260 €
- **Online:** <https://wupperinst.org/en/p/wi/p/s/pd/930/>



Thank you very much for your attention!



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BilRess Network
Education for Resource Conservation
and Resource Efficiency

Further Information:
www.bilress.de

Das BilRess-Netzwerk wird im Rahmen des „Kompetenzzentrum für Ressourceneffizienz“ betrieben,
der bei der VDI Zentrum Ressourceneffizienz GmbH (VDI ZRE) angesiedelt ist.

Im Auftrag des:

 Zentrum
Ressourceneffizienz

 Institut für
Zukunftsstudien und
Technologiebewertung

 Bundesministerium
für Umwelt, Naturschutz
und nukleare Sicherheit