



June 23rd. 2020

Bioeconomy in Central Germany

On the way to a European Model Region

2012: BioEconomy Cluster was founded by 23 members and organized as a regional network (BioEconomy e.V.)

Status 53 members (May 2020)

2013: Leading Edge Cluster of the German Federal Ministry of Research and Education & also supported by the Ministry of Sciences, Economic and Digitalization of the Federal State Saxony-Anhalt.

Core region: Saxony-Anhalt and Saxony (with Thuringia, Brandenburg and Lower Saxony)

European network 3BI with IAR (F), Biobased Delta (NL) and BioVale (UK)



Unique cross-linking of the core industries:

Biomass (timber), chemicals, new materials and energy



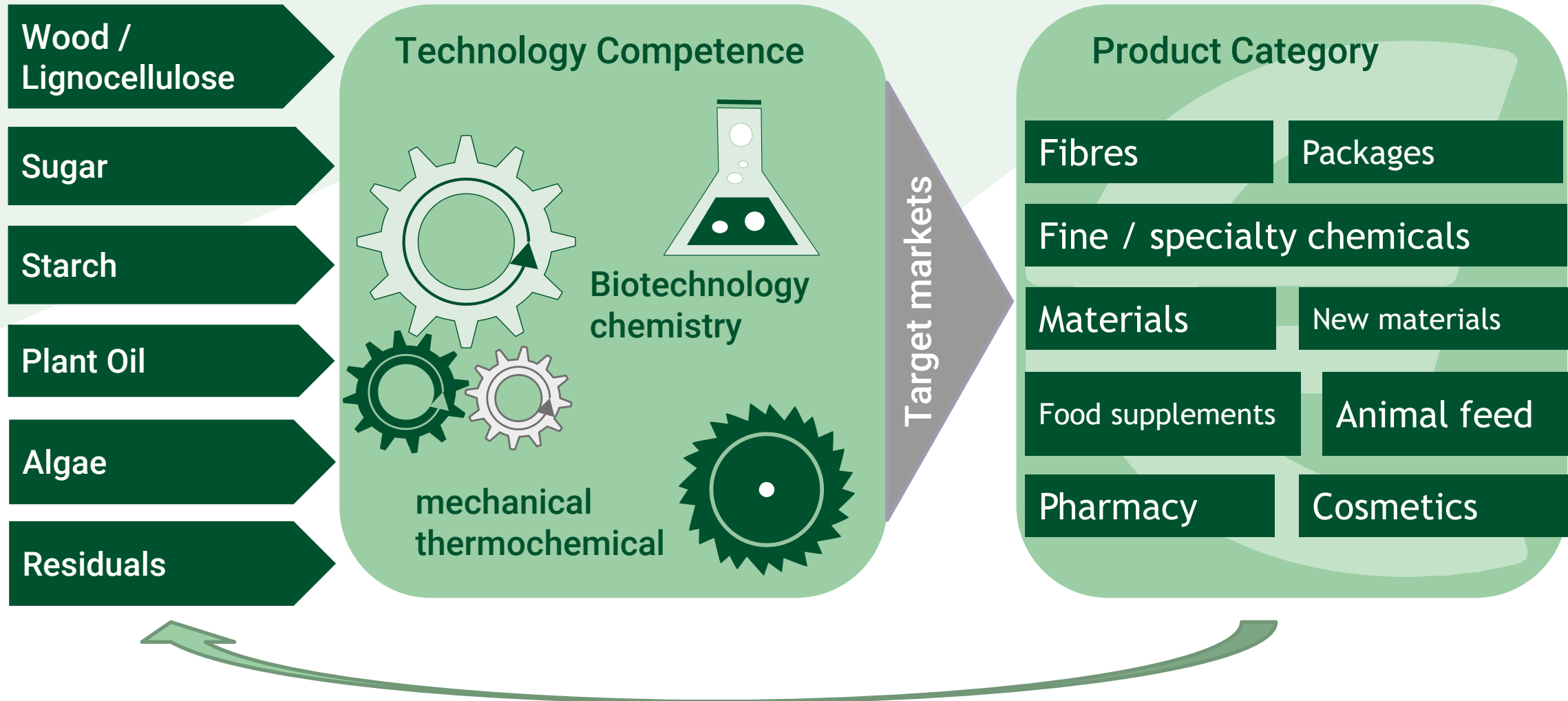
Infrastructure:

- Feedstock: 30 % of Germany's beech forest is located around the cluster region
- High density of universities and educational institutions (professionals potential)
- Important sites of the chemical and the woodworking industry
- leading research institutes with pilot facilities

Strong Base: Expertise and infrastructure of the BioEconomy Cluster Germany



Development of high-quality, market-ready, innovative products through intelligent use of natural material properties and functionalities



Bioeconomy in Saxony Anhalt

Industrial
Biotechnology

Biobased
Products



Research &
Development

Network

Bioeconomy in Saxony Anhalt



Sugar beets / Grain



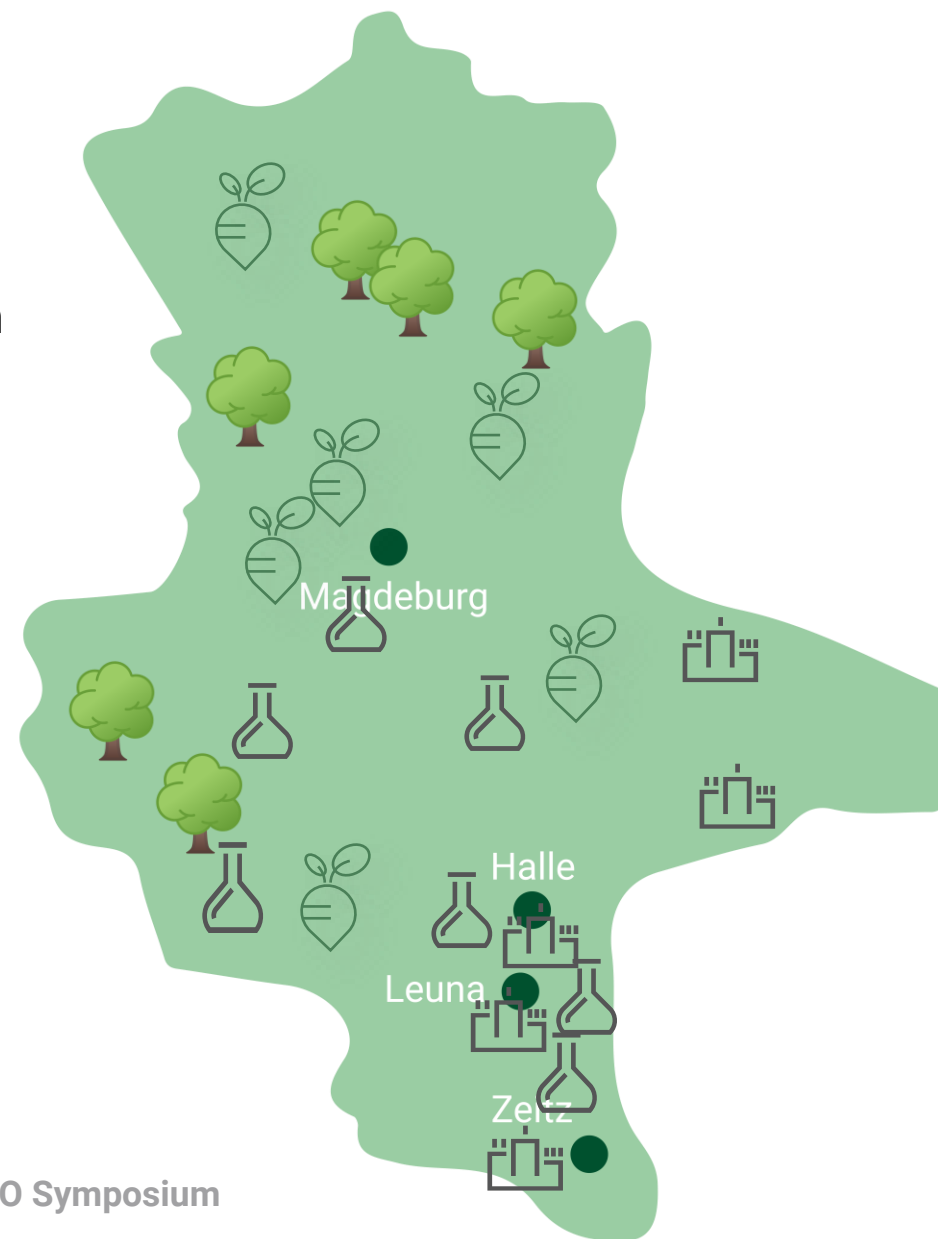
Wood



Research
Facilities



Chemisty parks



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Industrial Biotechnology

- **Basic chemistry**
 - Fragrances
 - E-Fuels
 - Cellulosics-Lignin
 - Isobuten
- **Bio-Pharma**
 - malaria drug
 - vaccines
 - alzheimer's drug
 - chitosan
- **Bioplastics**
 - 3D print
 - Effimat

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Biobased Products

- **Wood**
 - KosLigCel
 - WPC
 - pulp
 - Modern wood products
- **Plants**
 - Algae
 - Grain
 - Sugar Beets
- **Phytopharmaceuticals**
- **Oils and Fats**



**Supply Chain for 500.000
t/a beech wood**

**150.000 t/a (2022)
Bio-Monoethylenglykol Bio-
Monopropylenglykol and
Lignin**



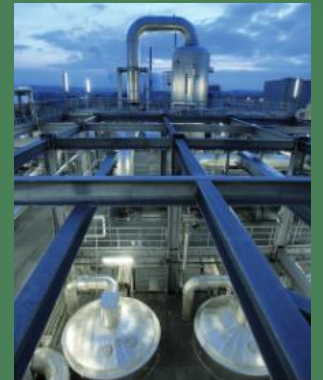
**Supply Chain for
4.000.000 t/a sugar beads**

**bioethanol plant capacity of
660.000 m³/a bioethanol**



**Supply Chain for
3.250.000 t/a grain**

**bioediesel plant capacity of
600.000 m³/a biodiesel**



Bioeconomy in Saxony Anhalt

- 4 universities
 - 4 extramural research institution
 - 10 Transfer and research infrastructures
 - **pilot plants**
-
- BioEconomy Cluster e. V.
 - Polykum e. V.
 - HIZ - Holzimpulszentrum Service UG Rottleberode
 - Biozentrum Halle (Saale)
 - TGZ - Technology and Start-up Centre Bitterfeld-Wolfen

Research &
Development

Network

Examples for pilot- and demoplants in the BioEconomy Cluster region



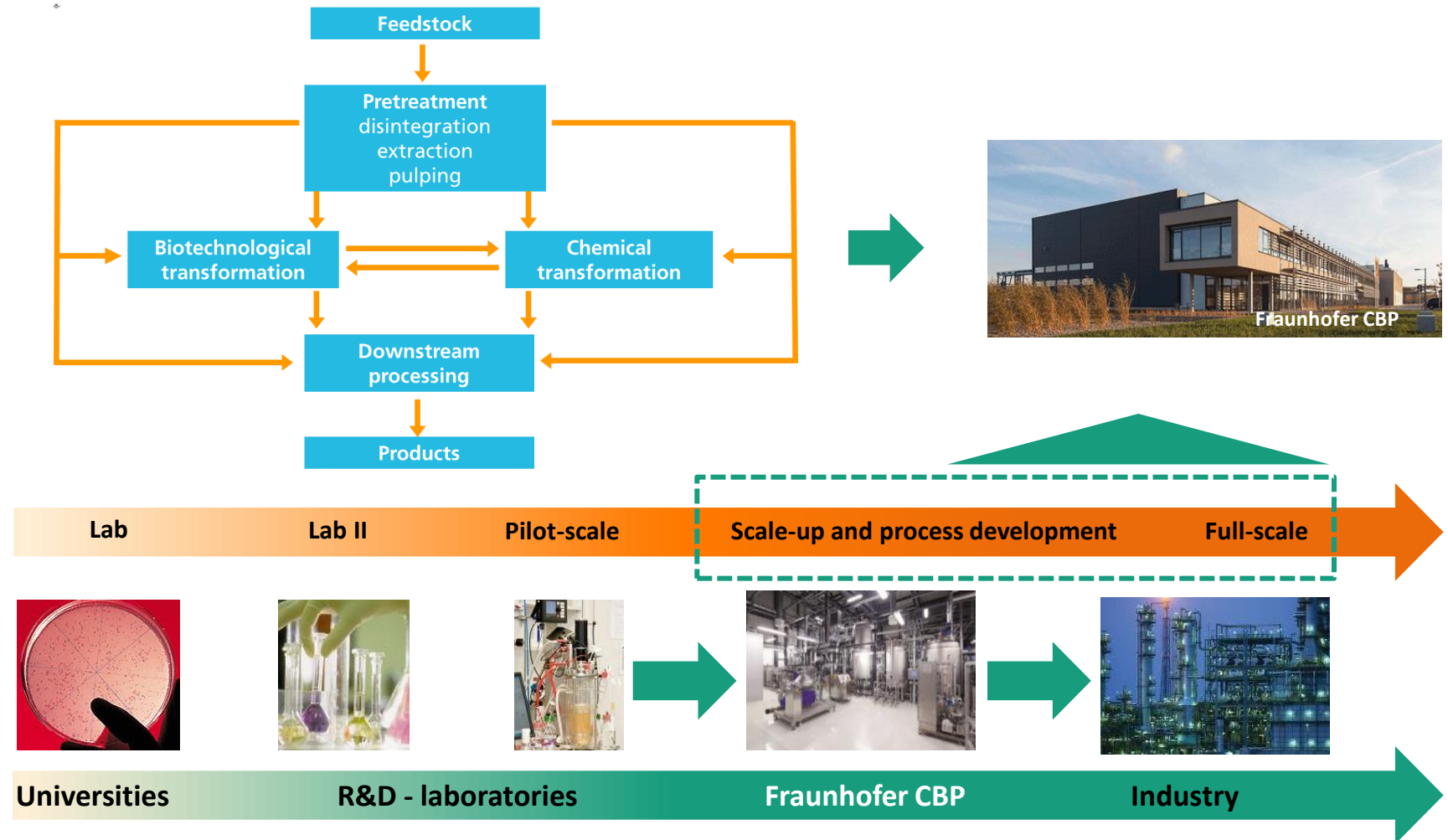
EW Biotech, Leuna

- Serving global customers, located in the Chemical Park Leuna, Germany
- Member in the BioEconomy Cluster Germany
- Extensive experience in delivering biotech products for applications in industrial markets, with food and feed perspective.
- Reliable and cost efficient, without compromising on quality and safety
- Flexible and transparent customer service
- Scale-Up up to 85 m³ Scale (lab, pilot, demo) – operated 24/7
- Data mining system
- Working in accordance to ISO 9001:2015
- HACCP in place
- Kosher and Halal certified
- Production capacity up to 1500 tpy
- Food / feed grade production line



Fraunhofer Center for Chemical-Biotechnological Processes - CBP: From laboratory to industrial scale

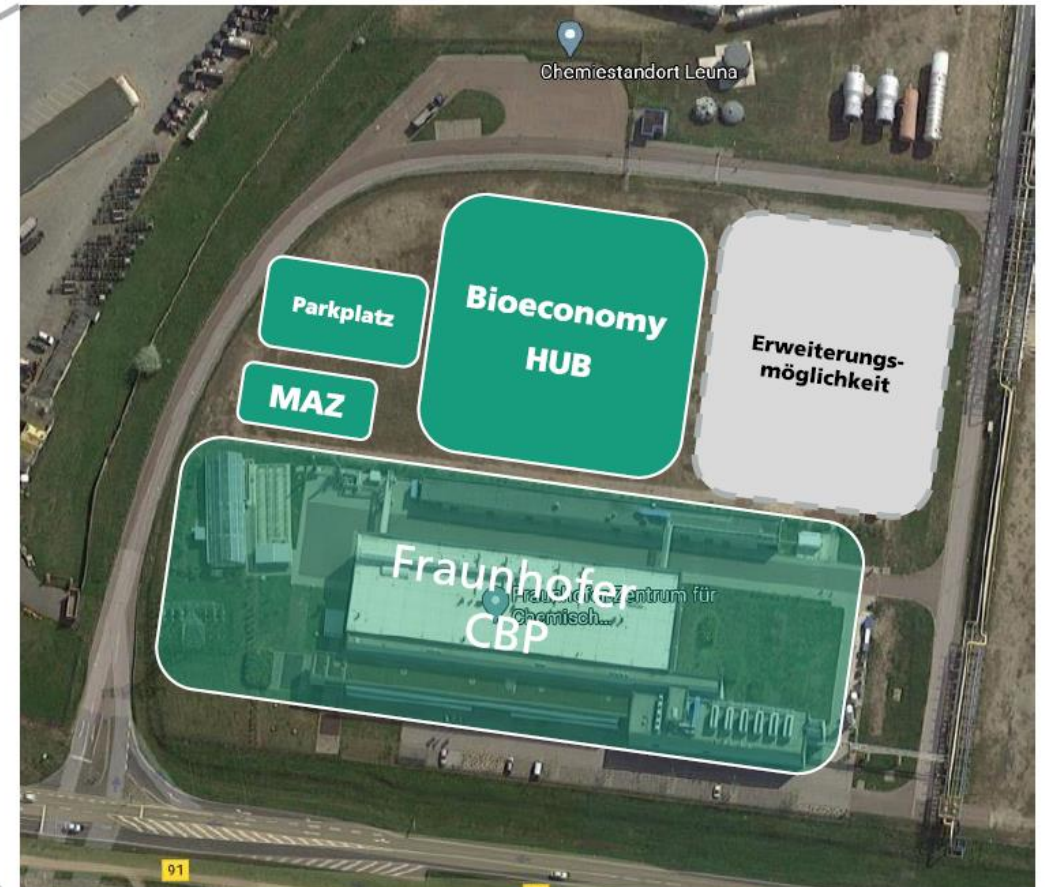
- microalgae
- technical enzymes
- lignocellulosic biorefinery
- fermentation
- thermal separation
- chemical conversion



BIOECONOMY HUB

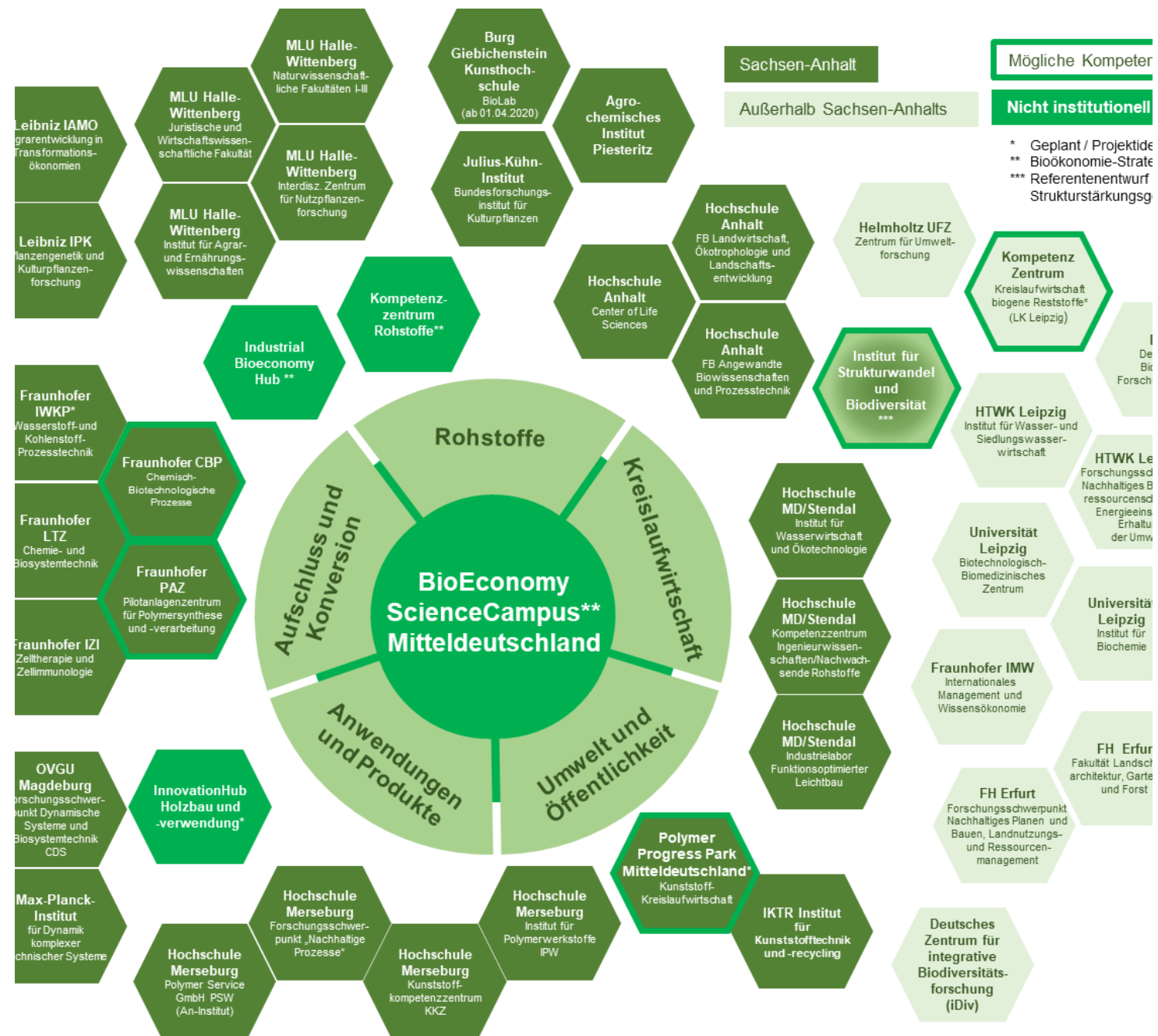
Modulares Plattform-Konzept zur Nutzung von Regenerativen Ressourcen für eine nachhaltige Chemie
Modular platform concept for using regenerative resources for a sustainable chemistry

Ausbauplanung



Formation

ScienceCampus Central Germany



Objectives:

Model region of Bioeconomy

Objectives for strategy implementation

- New and marketable products
- opening up new markets
- Implementation of robust process technologies
- Stable raw material supply incl. supply logistics
- Provision of space and media; high-performance infrastructure
- Qualified employees
- Efficient research and development environment



Bioeconomy in Central Germany

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