

Bioeconomy in NRW:

The strategy and the role of clusters

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BIO.NRW Cluster Biotechnologie North Rhine-Westphalia
CLIB2021 Cluster Industrielle Biotechnologie



Bioeconomy Strategy and Implementation Process in NRW

- ❖ State wide study of KBBE potential performed by Capgemini Consulting: “Roadmap for the Development of a Knowledge-Based Bio-Economy in North Rhine-Westphalia”, 2010
- ❖ Since 07/2012: 12 round table meetings covering various key science and business bioeconomy topics and initiating a discussion process between industry, academia and politics
- ❖ In 07/2013: The Bioeconomy Strategy of the state NRW was published.



Bioeconomy Strategy of NRW

NRW's Definition of Bioeconomy: development of new products and services by sustainable usage of biological resources for the transition from a petroleum-based to a society based on renewable resources.

NRW bioeconomy strategy includes health sector

Key aspects:

- Biopolymers / functionalized surfaces and materials
 - Rubber from dandelions (Taraxacum)
- Biorefinery
 - Kerosin from microalgae;
 - Usage of green waste and food waste for biorefineries
- Biopharmaceuticals / Diagnostics and Medical engineering
 - Innovative cell therapy to fight cancer

Trans- and interdisciplinarity; involvement of social sciences and humanities

Different resorts of NRW are involved: Ministry of Innovation, Science and Research has the leading role; Ministry of Economic Affairs, Energy and Industry, Ministry for Climate Protection, Environment, Agriculture, Conservation and Consumer Affairs, Ministry of Health, Equalities, Care and Ageing

BioEconomy Science Center and CleanTechNRW



BioEconomy Science Center:

- first research facility in the EU dedicated exclusively to Bioeconomy research and using an integrative overall concept.
- founded in 2011 by RWTH Aachen, Universities of Bonn and Düsseldorf, Forschungszentrum Jülich



CleanTechNRW founded in 2010:

- over 100 partners
- focussing on the innovative potential across the four industrial interfaces of energy, steel, chemistry and biotechnology
- reducing CO₂-emissions and energy exertion



Actions to support the Bioeconomy in NRW

- **BioEconomy Science Center**

- Basic science and research activities in the field of bioeconomy are clustered
- Funding for initiation phase of projects



- **Regional Innovation Networks**

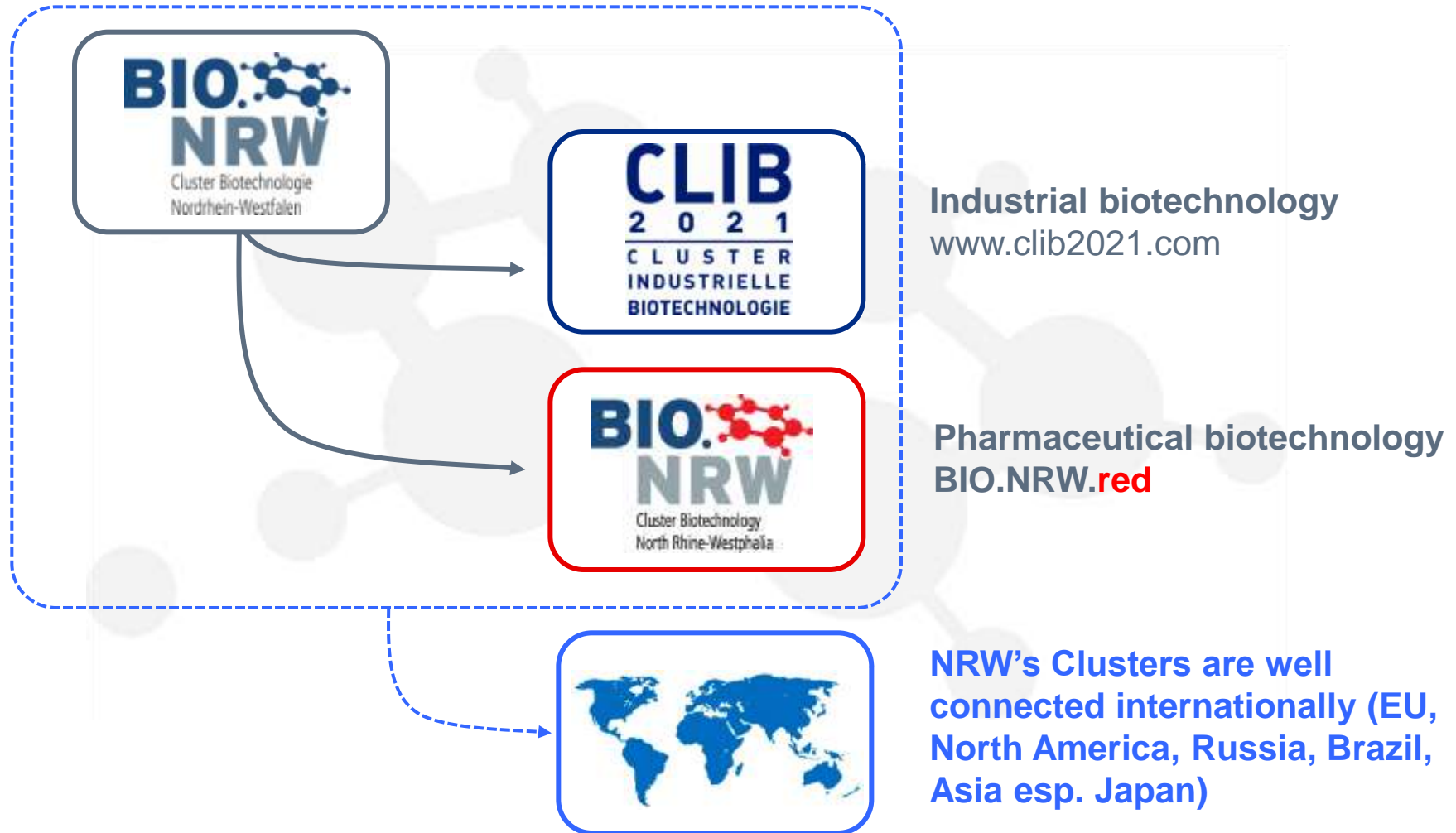
- Funding for networking activity to build a trans- and interdisciplinary consortium
- Addressing social challenges like climate protection, resources efficiency, health and demographic change

- **Regular Bioeconomy meetings with Dr. Dr. h.c. Christian Patermann who is the “Bioeconomy Consultant” of the state NRW**

International Bioeconomy Initiative

- **Trilateral *Joint Bioeconomy Initiative* of NRW, The Netherlands and Flanders**
- **Started in October 2012**
- **Letter to ministries in April 2013**
 - Pointing out strength of the region
 - Common interests
 - Asking for support
- **Workshop on 8th November in Brussels : "*Regions as motors of new growth through smart specialisation – matching strategies for common goals*"**
- **CLIB is member of the two Bioeconomy PPPs SPIRE and BBI**
- **CLIB is part of the “Bio Base North Western Europe” project**, funded under the INTERREG IVB NWE framework and has the objective to support the development of the bio-based economy in North West Europe

Biotechnology Clusters in NRW



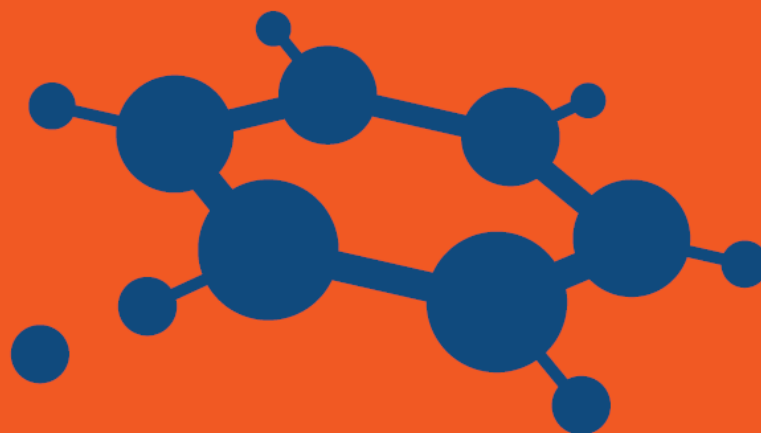
BIO.NRW

Cluster Biotechnology North Rhine-Westphalia



Fields of activities BIO.NRW





Spot on Biotechnology Science

ExcellenceNRW
Cluster North Rhine-Westphalia



NEW
EDITION
2012/13

Spot on Biotech

ExcellenceNRW
Cluster North Rhine-Westphalia



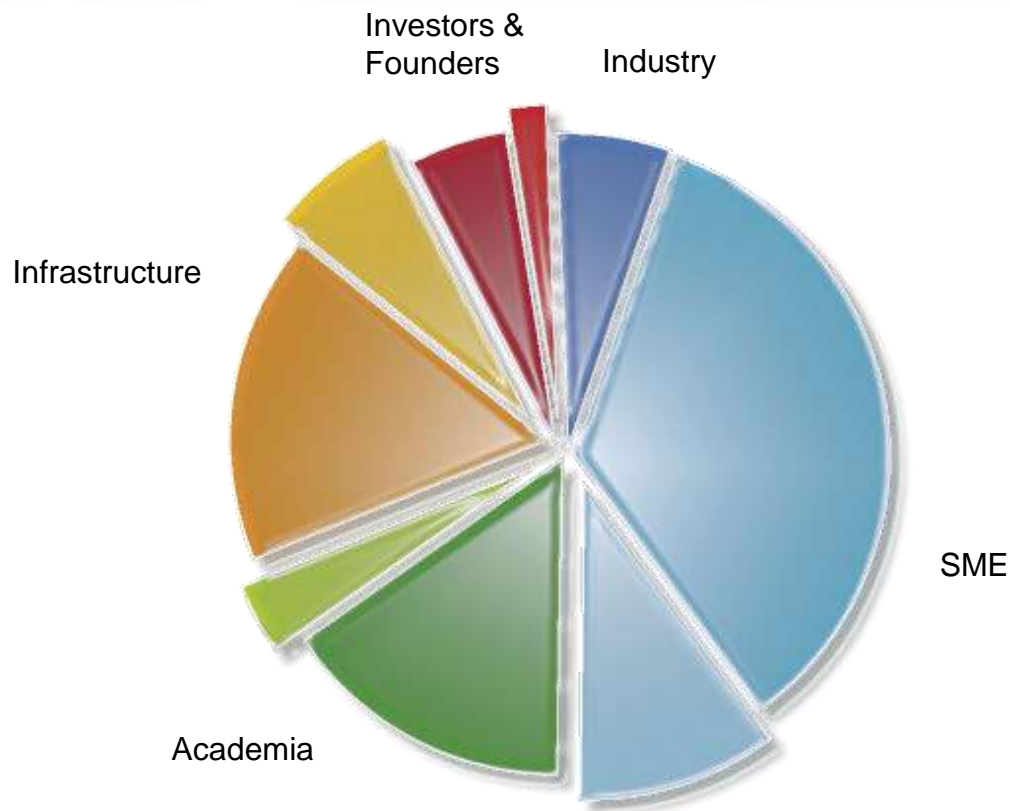
BIOTECH

BIO BIOCHEMICAL GENETIC SCIENCE RESEARCH KNOW-HOW

CLIB2021 –

**The bioeconomy open
innovation cluster for
international chemicals
and energy markets**

CLIB2021 - Overview



highlighted segments show international members

- Founded in 2008
- Winner of the BMBF competition **“BioIndustrie2021”**
- **96** members
 - 40 % SME
 - 30 % international
 - 70 bn EUR acc. sales
- Initiated R&D projects with a volume of **61 m EUR**

Funded and supported by:



Ministry of Innovation, Science
and Research of the German State
of North Rhine-Westphalia



CLIB provides a network communication platform

CLIB conference

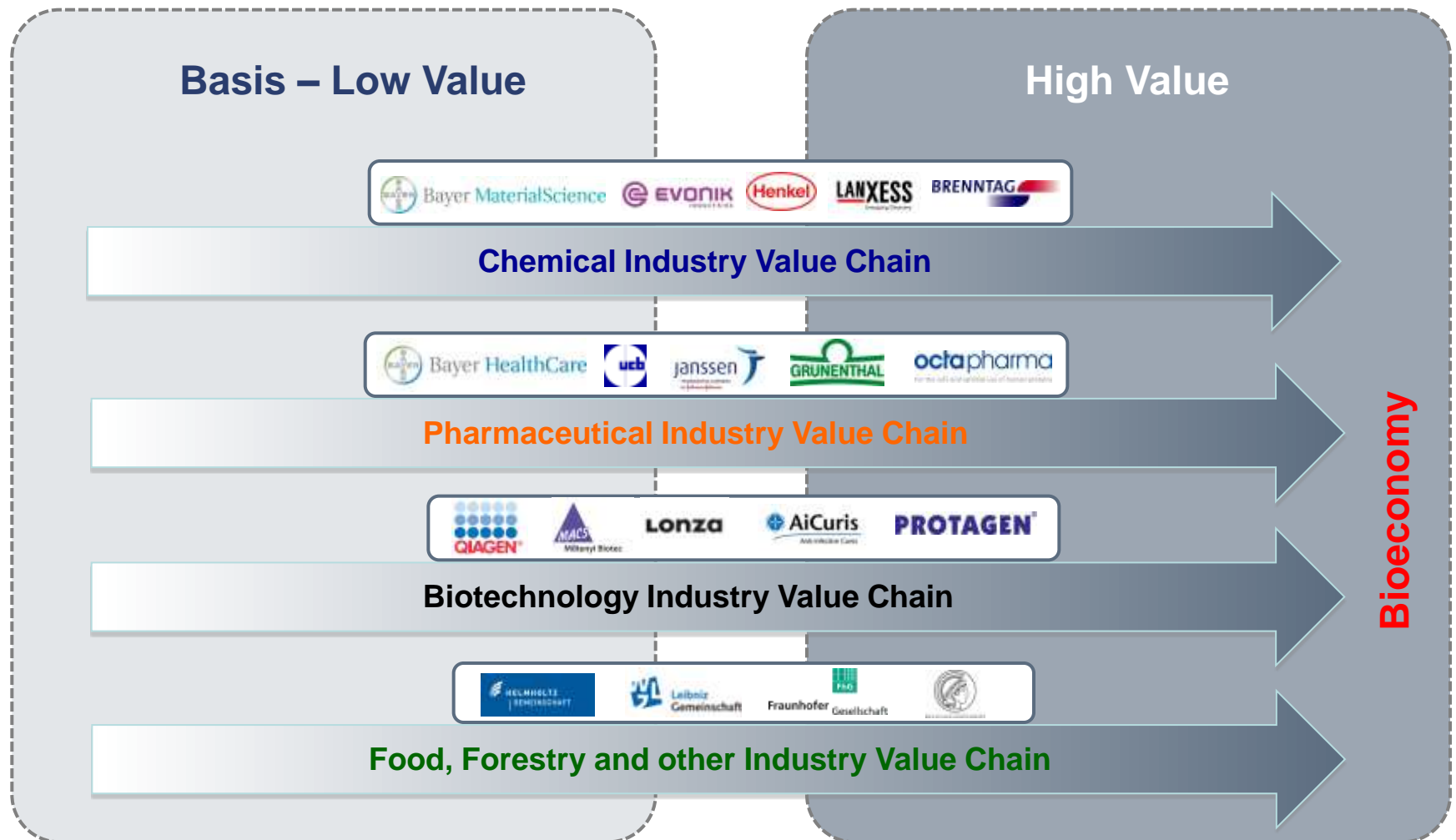
Forum events

Networking, scientific exchange and developing business contacts:

- Established in 2010
- 2 day program
- > 160 participants
- > 50 talks



Connecting Value Chains for Bioeconomy in NRW



Bioeconomy – driver feedstock flexibility

Feedstocks of chemical industry¹ (Germany, 2010):

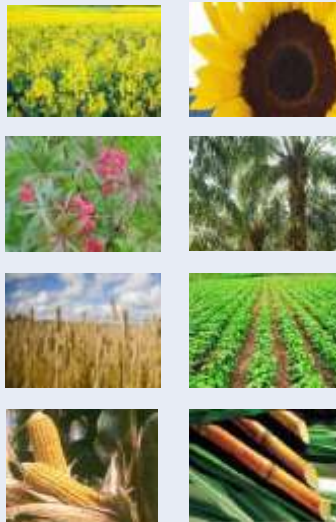
- Oil 72 %
- Natural gas 14 %
- Bio-based 13 %
- Coal 1 %

Emerging fields:

- 2nd gen. biorefineries
- Feedstock agnostic processes (biotech, catalytic, thermo-physical)

Today

Sugar & vegetable oils



Tomorrow

Lignocellulose



After tomorrow

CO₂, CO, H₂

Gasification of biomass and organic waste

Non-biogenic waste gases

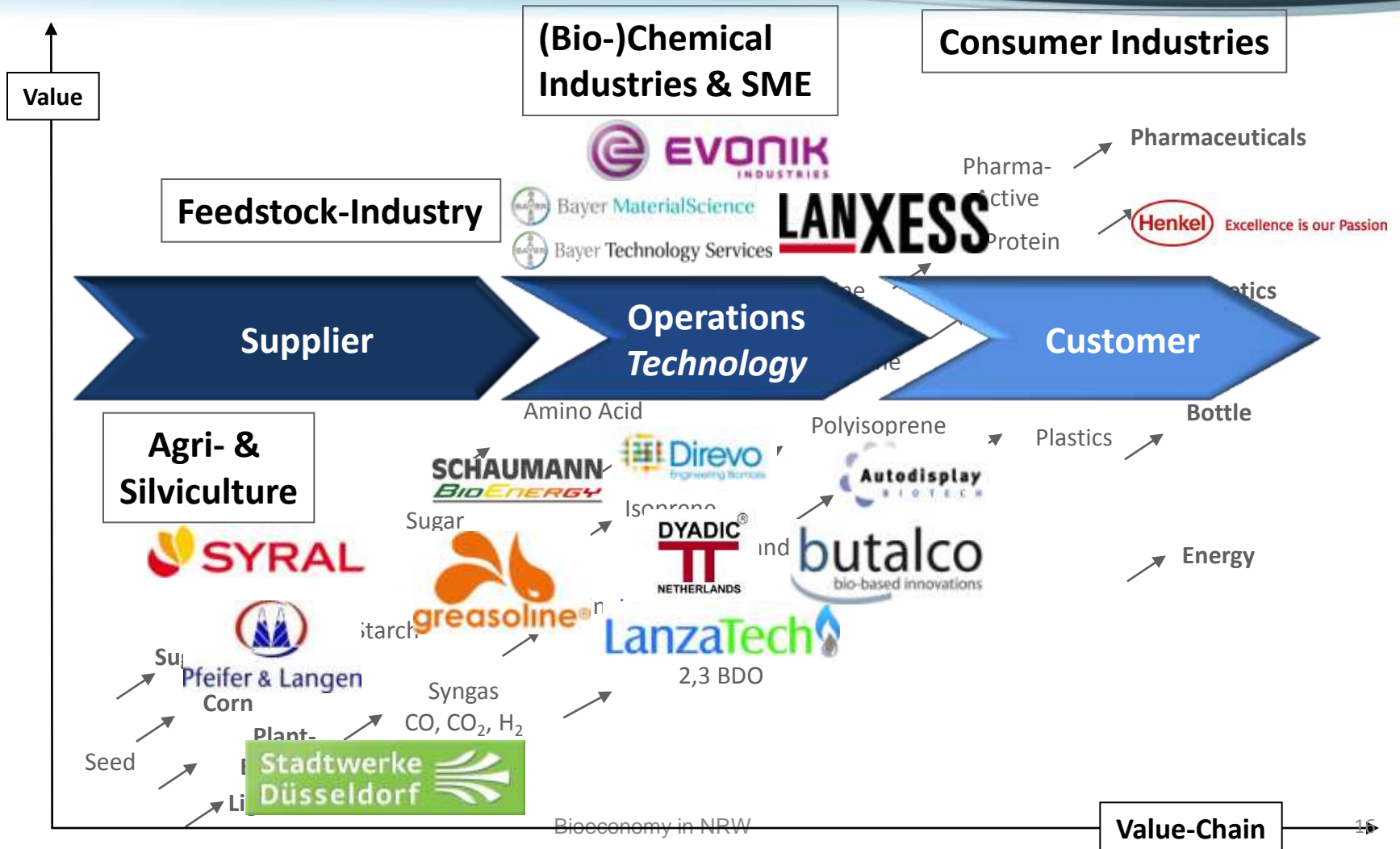
Gasified coal

Renewable energy to reduce CO₂

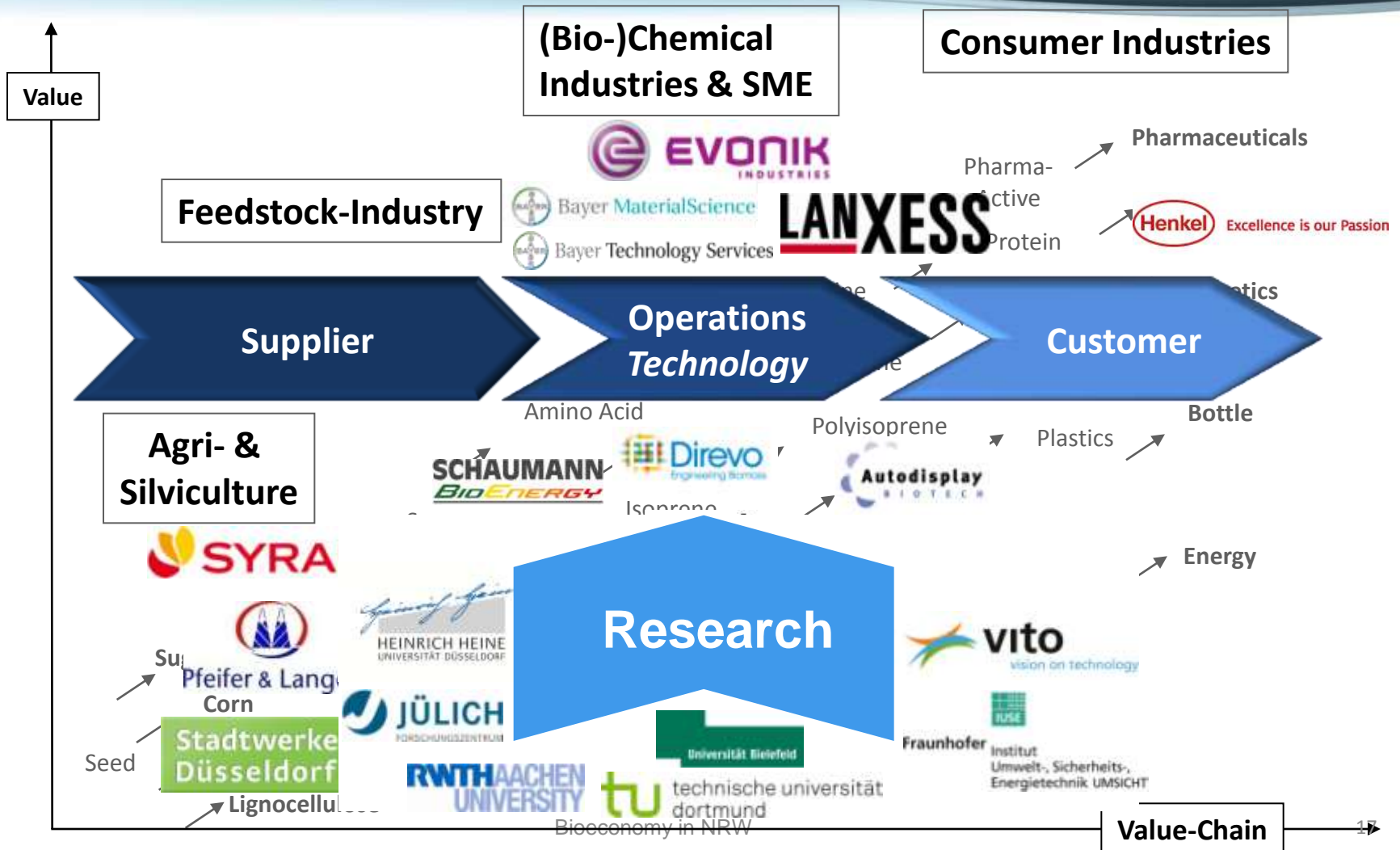
etc.

¹ Fachagentur Nachwachsende Rohstoffe

Bioeconomy builds cross-industry partnerships



Bioeconomy builds cross-industry partnerships



Venue

Representation of the State of
North Rhine-Westphalia to the European Union
Montoyerstraat 47 Rue Montoyer, B - 1000 Brussels
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Biotechnology: A Key Enabler for the Bioeconomy in Various Sectors

Grand Challenges – Answers from
North Rhine-Westphalia

November 7, 2013, Brussels

ExcellenceNRW
Cluster North Rhine-Westphalia



Program

The Conference will be held in english

11:45	Welcome	Bioeconomy structures in NRW reflecting Regional, European and Global interfaces
12:00	Beginning	Dr Achim Marx Evonik, Vice President Bioeconomy, CLIB [®] Chair of the board
	Rainer Steffens Director of the Representation of the State of North Rhine-Westphalia to the European Union	Dr Christoph Sievering Vice President, Strategic Energy Management, Bayer MaterialScience AG and Clustermanager CleanTechNRW
	Svenja Schulze Minister for Innovation, Science and Research of the State of North Rhine-Westphalia	FuPol (Functionalization of Polymers) - an Innovation Alliance between Academia and Industry
	Jens Hoegel European Commission, DG Research and Innovation, Directorate Biotechnologies, Agriculture, Food	Dr Thorsten Eggert evocatel GmbH (CEO)
	Responsible Research and innovation for a Bioeconomy of the Future	Small & Medium Enterprises: Key players in the successful European Lead Factory drug discovery platform
	Prof Dr Daniel Barben VDI Professorship of Futures Studies, Institute of Political Science, RWTH Aachen University, Member of the Bioeconomy Council of the German Federal Government	Dr Dimitrios Tzalis Taros Chemicals GmbH & Co.KG (CEO)
		Moderation: Dr Bernward Garthoff Clustermanager BIO.NRW
		1:15 Get-together and buffet



Thank you!



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