Industrial Perspectives of Green Chemistry in Bavaria

CHEMIE-CLUSTER BAYERN

Dr. Jörg Klein

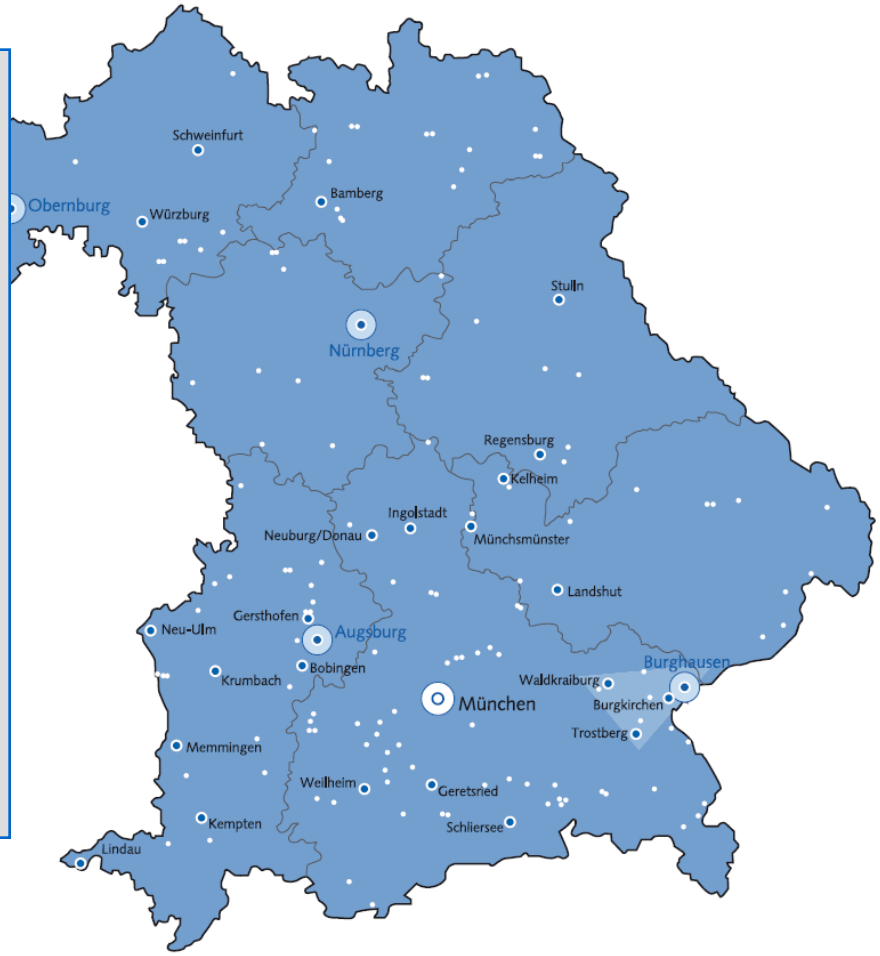
Brussels 10.10.2013

Your Programme Today

- Overview Chemie-Cluster Bayern
- Value-Creation Partnership
- Bio-economy in Bavaria
- Summary

Bavaria‘s Chemical Industry

- ca. 54.000 Jobs
- Covering 13% of all Chemical Jobs in Germany
- ca. 350 Companies
- 15,3 Mrd. € Turn Over
- Export Rate > 60 %



Foundation

- Public Mission to improve business development in Bavaria and Germany

- Industrial mission to improve efficiency of R&D and to create new types of business cooperation

- Academic mission to improve cooperation between universities and industry

Framework Conditions

	3,6 Mio. € public funding	• Creation of a business development facility, including 4 national and 2 international offices • Creation of an industry network, including 250 regional members and 2.300 international ones
VCI Verband der Chemischen Industrie e.V. - Landesverband Bayern	Joint working structures	
Universität Bayern e.V.	Supporting management structures	

The Cluster-Network (Examples of Companies)

KEIM

Sentinel-Haus Stiftung für wohngesunde Innenräume e.V.

UNIVERSITÄT BAYREUTH

PCI Für Bau-Profis

Neue Materialien Bayreuth

QUANTUM TECHNOLOGY GROUP

AlzChem

ECKART Effect Pigments

THE LINDE GROUP Linde

TUM TECHNISCHE UNIVERSITÄT MÜNCHEN

Vinnolit Leadership in PVC

WESSLING Quality of Life

KLÜBER LUBRICATION

GWP

CLARIANT

BRÜCKNER

ecoatech Systems

SCIOMSYN scientific organometallic syntheses

WACKER

UnaveraChemLab

AIKAA-Chemicals GmbH

Naturhaus NATURFARBEN

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

CSC jäklechemie Distribution · Beratung · Service

Iris BIOTECH GMBH

Straubing-Sand BioCampus

REMA TIP TOP

BIOMWB white biotechnology

Kelheim Fibres

Nexans

Roche

NG

Gerlinger Klebeband

NRC Nordmann, Rassmann SINCE 1912

VBCI

LV Bayern VCI

ChemDelta Bavaria Key to the World's Chemical Industry

dtd

The International Network

Overview Business Units

BUSINESS UNIT RESEARCH AND DEVELOPMENT

- Core competence „Full Service – innovation management“

BUSINESS UNIT MARKET DEVELOPMENT

- USP „answering industrial challenge statements“

INTEGRATED SERVICES

- REGIONAL: local innovation networks as profit centers
- INTERNATIONAL: project initiation or partner match making by EU projects or inhouse initiatives

GENERAL SERVICES

- General consulting within the regional chemical industry‘s association
- Events, databases, „atlas of competences“, workshops, delegations, marketing

Value-Creation Partnership

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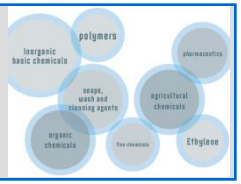
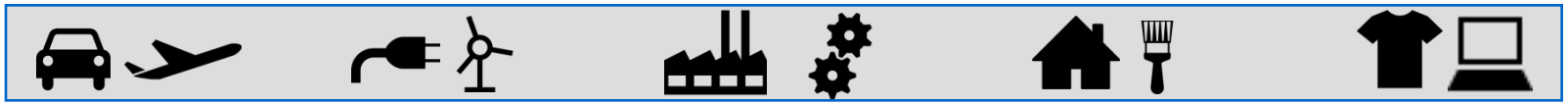
Members of Chemie-Cluster Bayern:
160 companies, 40 universities, turnover 87 bn €



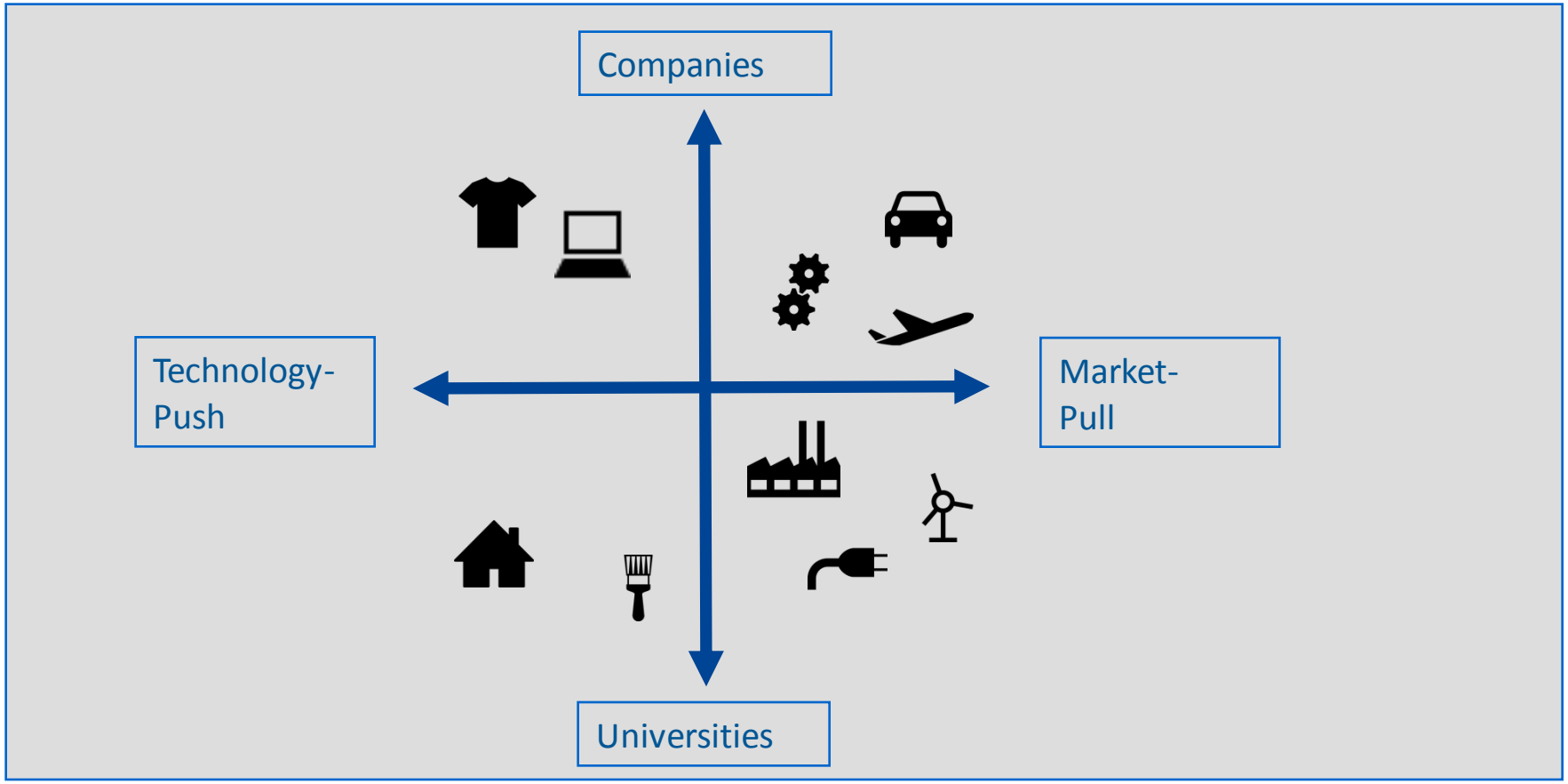
20 bn € turnover:
Chemical Sector

6 bn € turnover:
End users

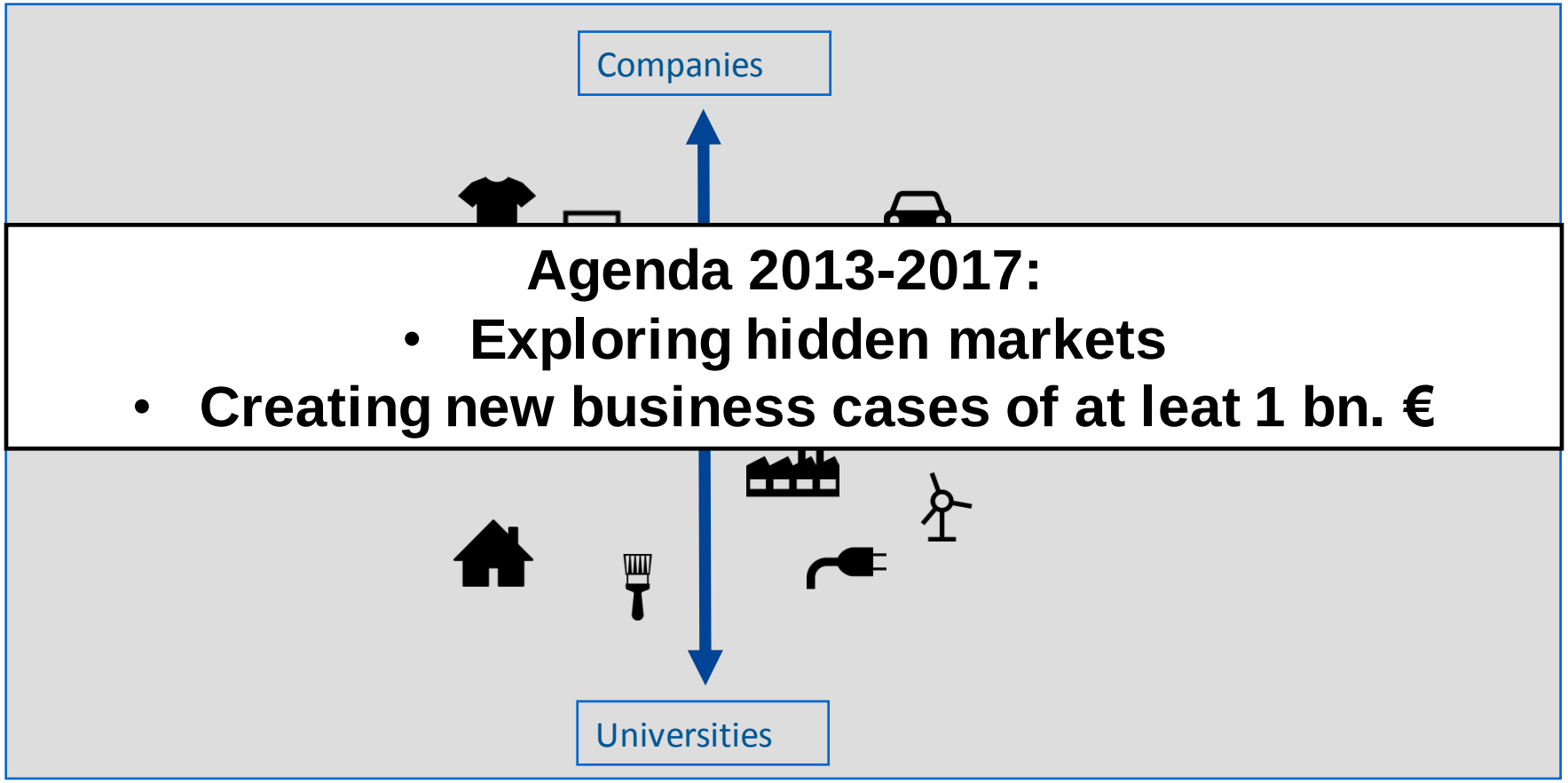
61 bn € turnover: industrial suppliers and OEM



Market Segmentation



Market Segmentation



Agenda 2013-2017

„Hidden Markets“	System integraters discuss solutions only with tier 1 → Lack of innovation capability!
Cluster-Mission 2013 - 2017	1. **Identifying** industrial end users‘ needs 2. **Creating** new sets of materials and chemicals 3. **Optimise** industrial processes and products.

Most Promising „Hidden Markets“

Segment			
Market	• Safety systems from new materials • Reduction of operating costs by eco-efficient chemistry	• Top Performance Materials for outstanding customer needs • High-tech materials for classical toys with new functions	• New sets of chemicals for most efficient exploration, mining • Chemical upgrading of metal products
Partners	• Constructing companies of navy ships and freighters • Aerospace companies	• Leading producers of sports equipment • Producers of high-class toys	• Leading providers of exploration engineering; mining companies • Steel producers

Market	Direct Customers	Innovation Topics
	Automotive	• Leight Weight
	Textiles Furnitures	•Recycling •Joining Technology
	Engineering	•Environmental Technologies
		•Energy Efficiency
	Coatings, Paint Construction Wood	•Raw Material Processing

Plastics-Processing

Metall-Processing

Electronics

Market	Direct Customers	Innovation Topics
	Plastics-Processing; Metall-Processing; Electronics; Automotive	• Nanotechnology
	Textiles; Furnitures	•New packaging
	Engineering	•Intelligent coatings
		•Functional surfaces
	Coatings, Paint; Construction; Wood	•Anti-corrosion technologies

Value Creation Partnership

Cooperation Database:

International cooperation requests

Technology-Evaluation-Sheets

Tech-Database

„Chemistry meets...“

Public Campaign:

Workshops, Fairs etc.
(German and English)

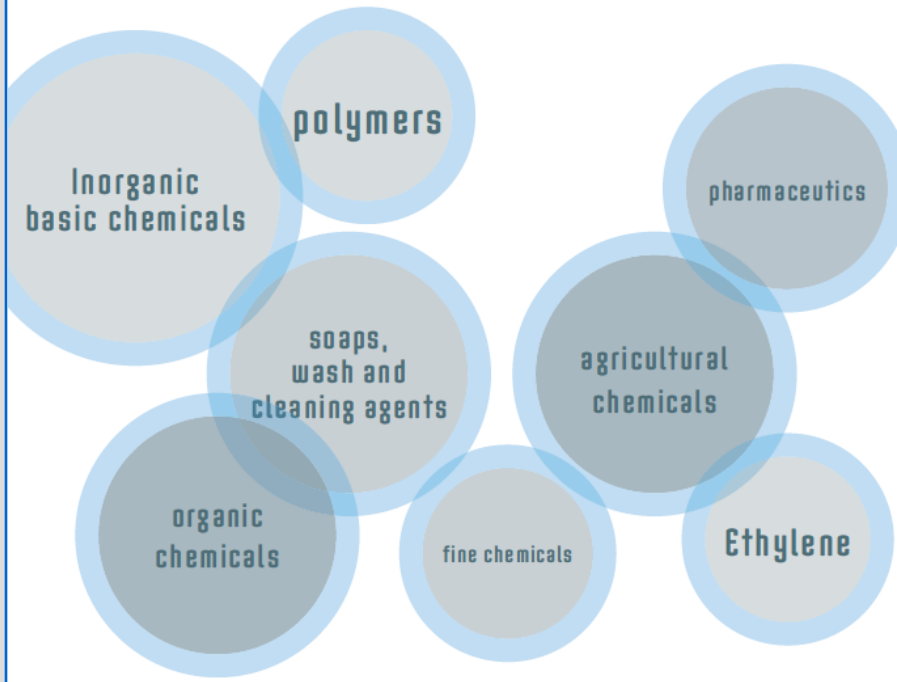
Technology-Push

Market-Pull

Value Creation Partnership

5 Steps for Innovation Partner

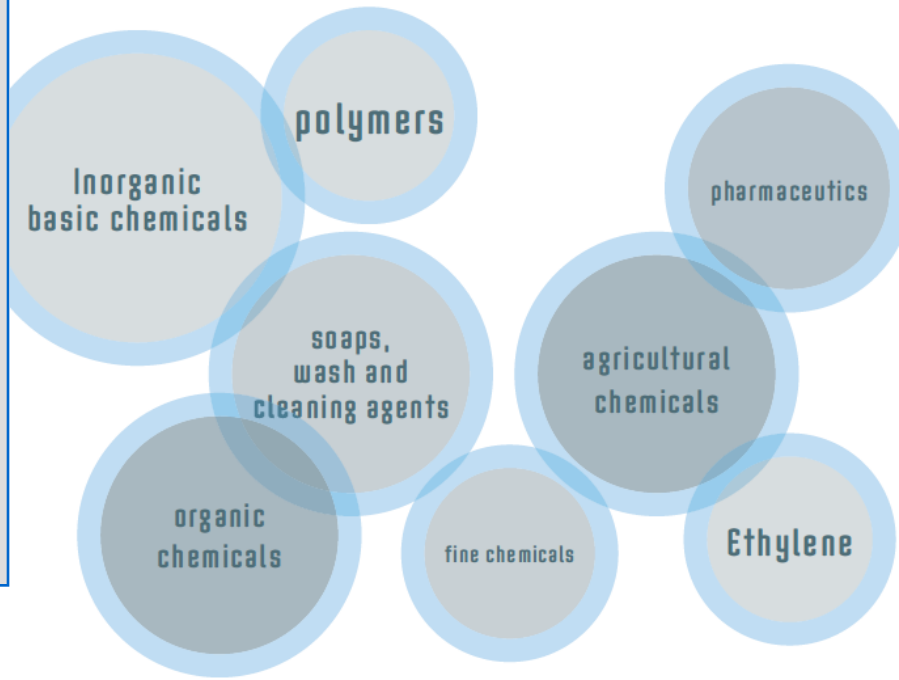
1. Phrase Challenge Statements (7-10)
2. Initial scouting through CCB and joint selection of 3-5 topics
3. Signature of NDA
4. In-house workshop with developers
5. Follow-up on development



Best Practice

New Product Solution

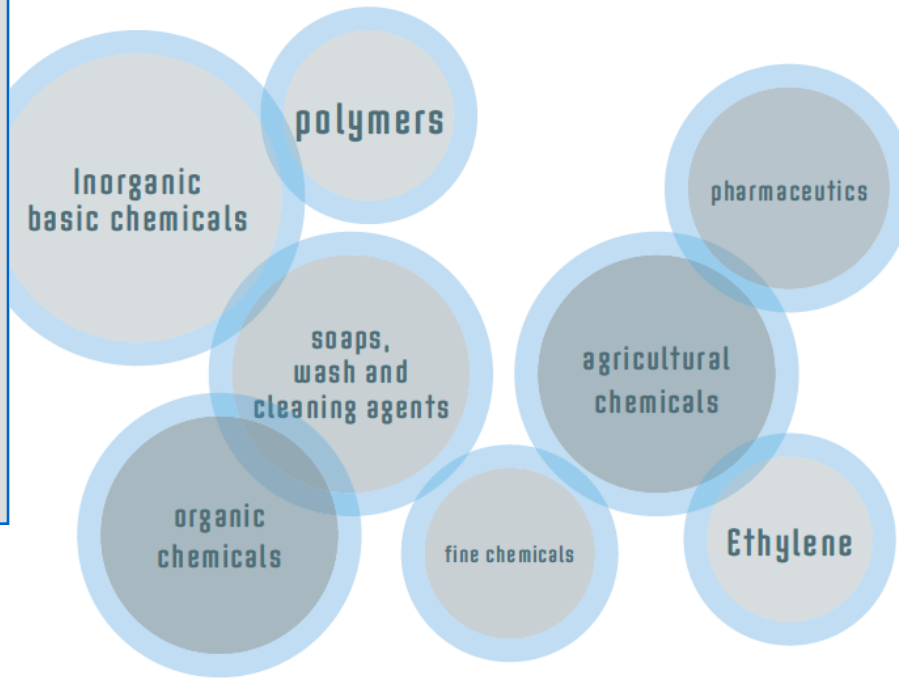
- Together with Boeing, CCB has elaborated specific properties for materials inside the cabin: Having discussed the concrete needs with certain potential suppliers during a workshop, a big Bavarian company was able to provide the requested material.



Best Practice

Enriching Product Portfolio

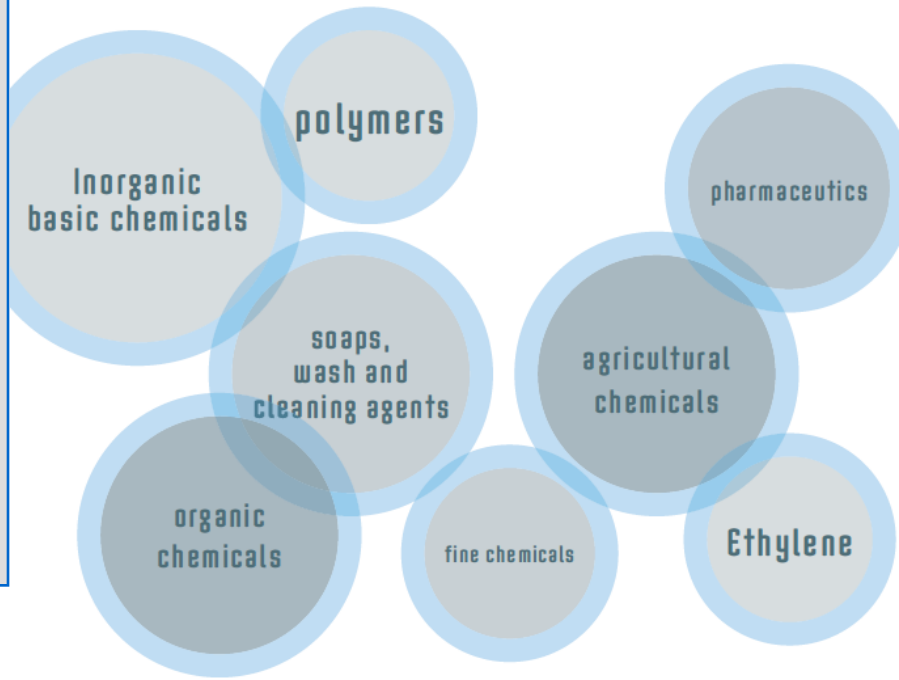
- Boeing was presented new plastics for an upgrading of certain cabin components. Boeing is not going to use these plastics on its own, but they are now presented to the Airline customers and thus enlarge the company‘s product portfolio.



Best Practice

Research and Development

- ThyssenKrupp Marine Systems has started an R&D project regarding new material components for ship construction. Another company from the building sector was working on a suitable solution. By moderation of CCB, both partners are now exchanging R&D results.



Value Creation Partnership

Wertschöpfungs-Pakt Chemie

Die Probleme von heute lösen.

Green Chemistry in Bavaria

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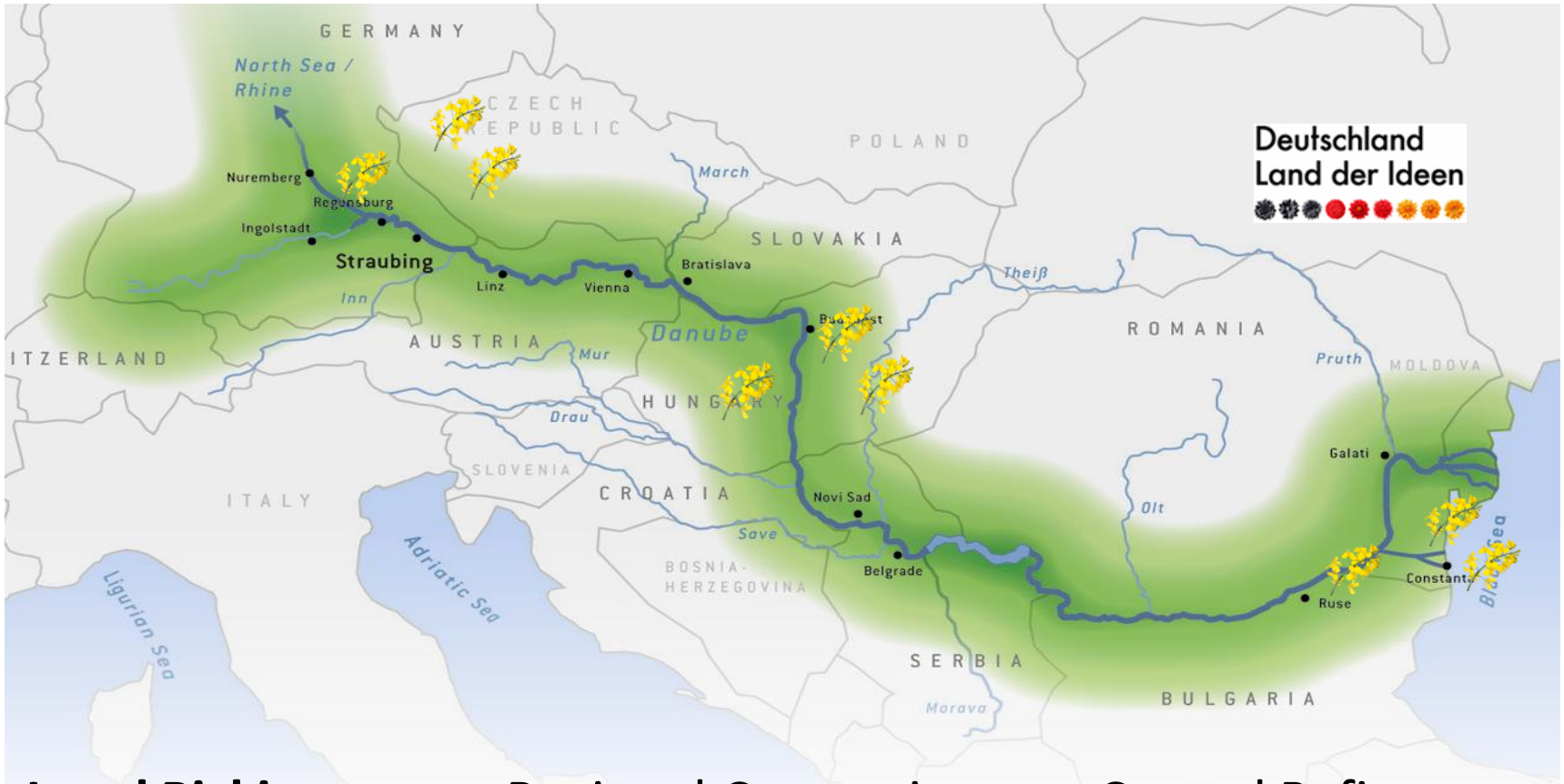
Straubing and the Green Chemistry Belt

- BioCampus Straubing
- Region of renewable raw materials
- Renewables and logistics

Source: BioCampus Straubing GmbH

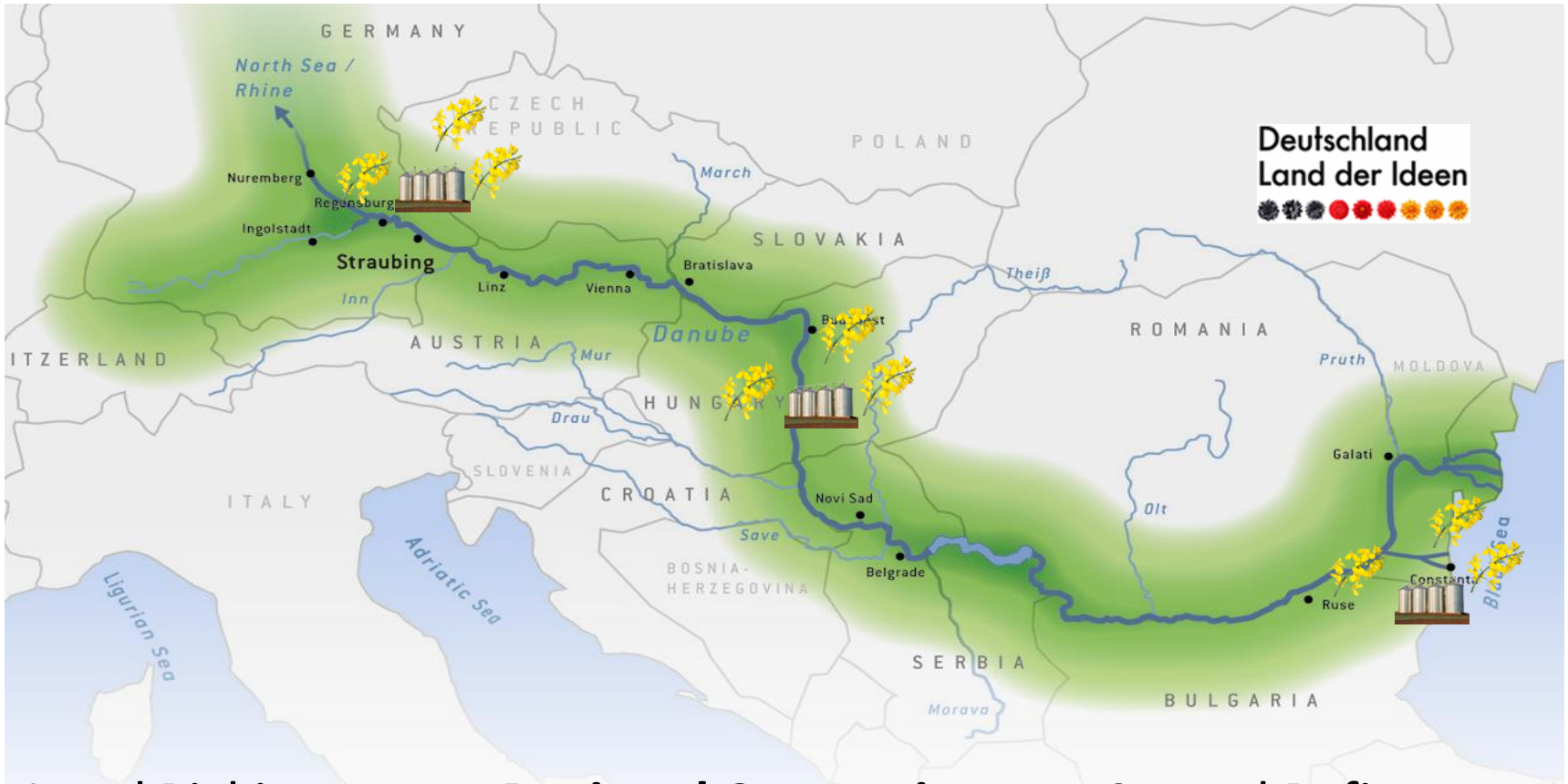
Straubing and the Green Chemistry Belt



Local Picking Regional Conversion Central Refinement

Source: BioCampus Straubing GmbH

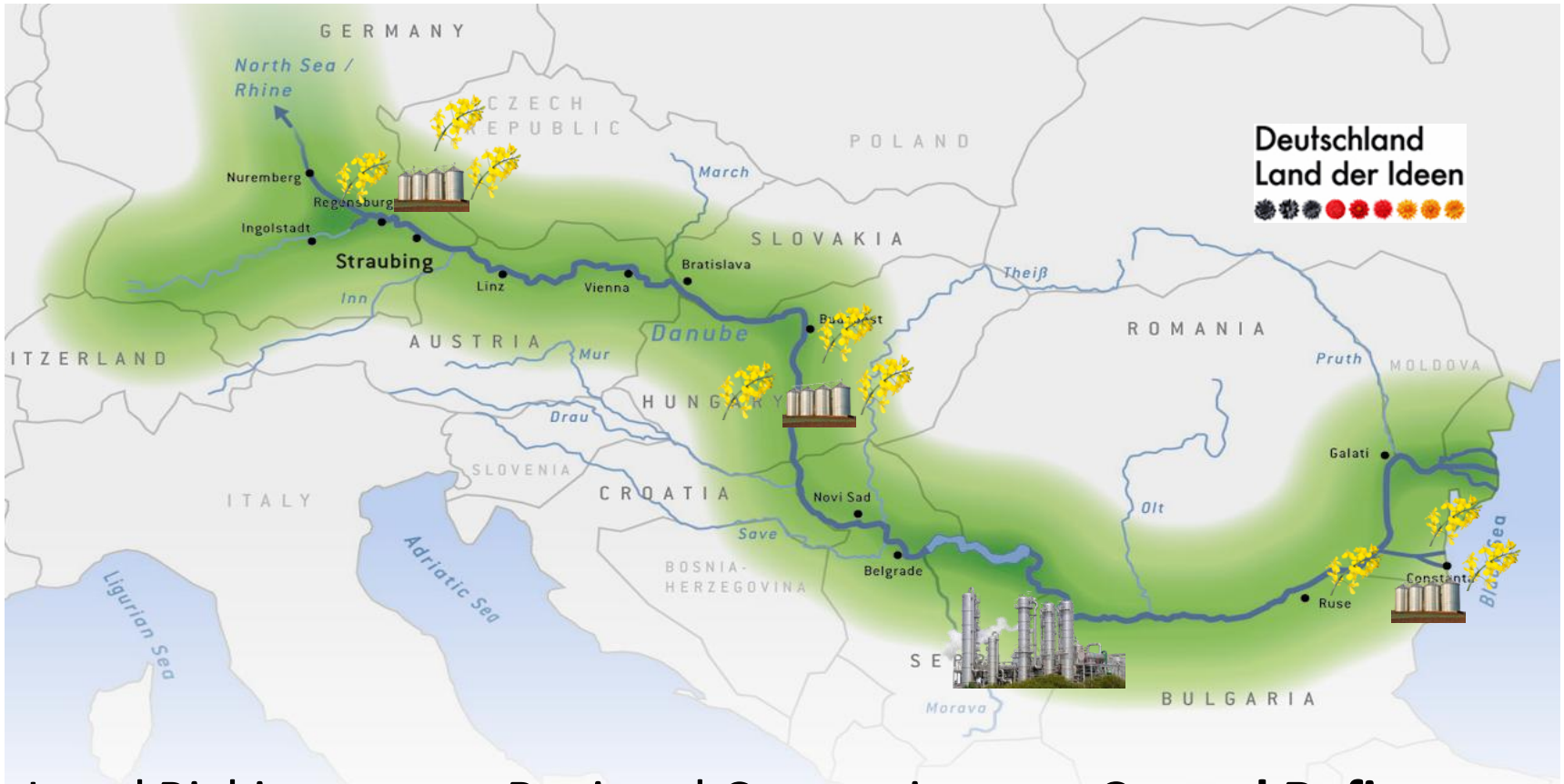
Straubing and the Green Chemistry Belt



Local Picking **Regional Conversion** Central Refinement

Source: BioCampus Straubing GmbH

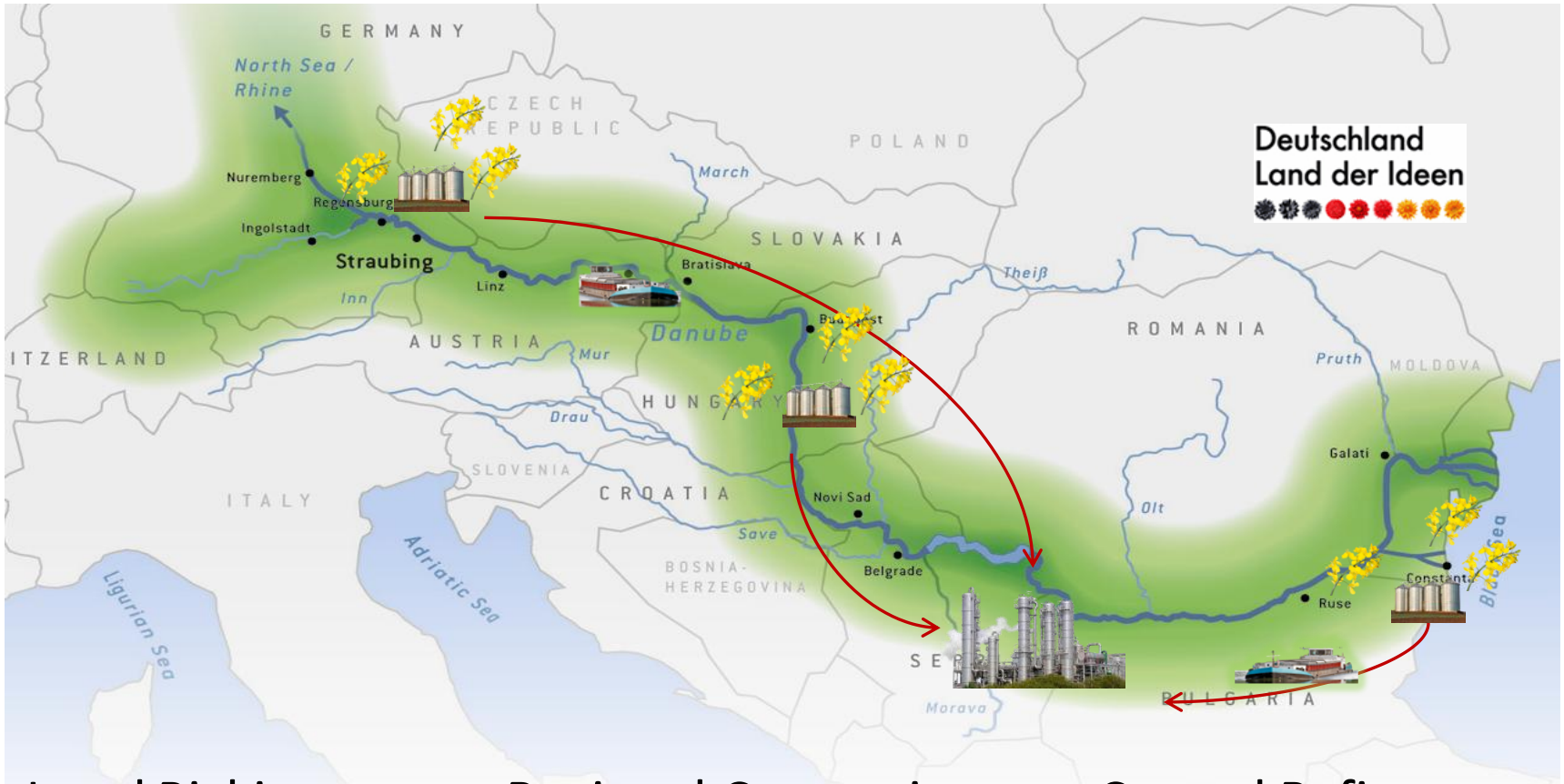
Straubing and the Green Chemistry Belt



Local Picking | Regional Conversion | **Central Refinement**

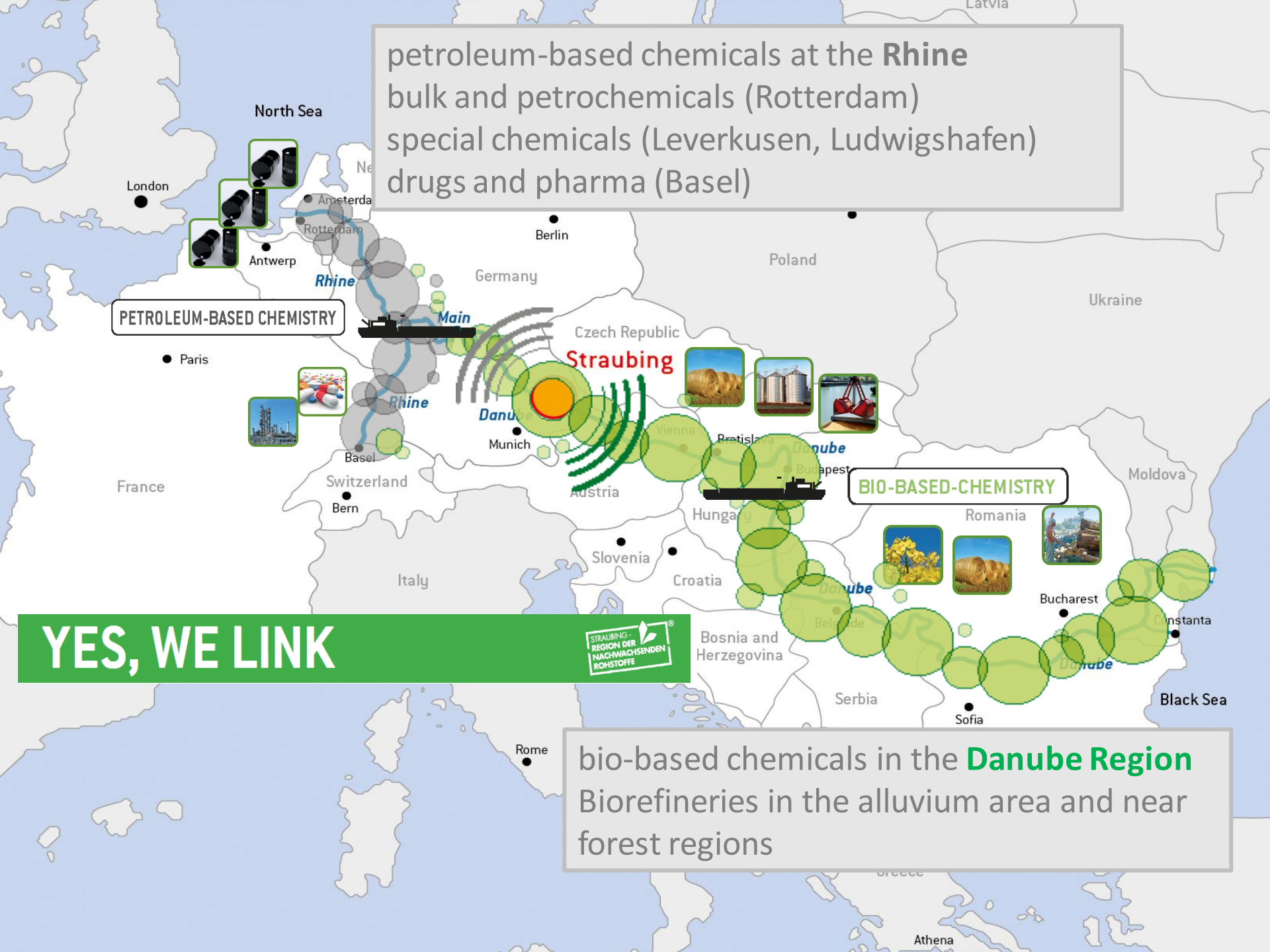
Source: BioCampus Straubing GmbH

Straubing and the Green Chemistry Belt

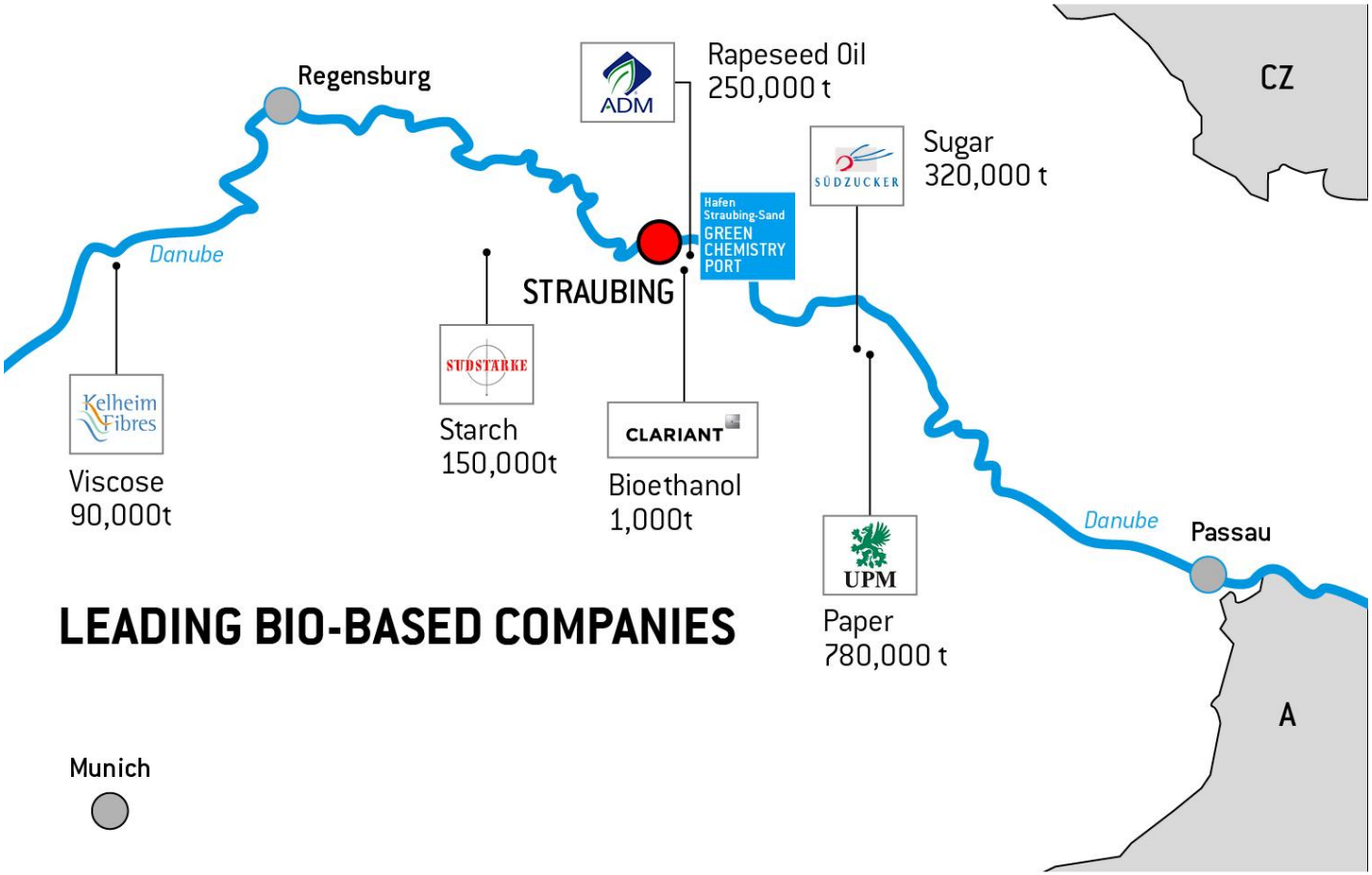


Local Picking | Regional Conversion | Central Refinement

Source: BioCampus Straubing GmbH


petroleum-based chemicals at the **Rhine**
bulk and petrochemicals (Rotterdam)
special chemicals (Leverkusen, Ludwigshafen)
drugs and pharma (Basel)
North Sea
London
Antwerp
Rotterdam
Rhine
Main
Berlin
Germany
Poland
Ukraine
PETROLEUM-BASED CHEMISTRY
Paris
Czech Republic
Straubing
Rhine
Danube
Munich
Basel
Switzerland
Bern
France
Austria
Vienna
Hungary
Danube
Budapest
BIO-BASED-CHEMISTRY
Moldova
Romania
Slovenia
Croatia
Italy
Bucharest
Constanta
YES, WE LINK
STRAUBING - REGION DER NACHWACHSENDEN ROHSTOFFE
Bosnia and Herzegovina
Serbia
Sofia
Black Sea
Rome
bio-based chemicals in the **Danube Region**
Biorefineries in the alluvium area and near forest regions
Athena

Straubing and Bio-based companies



Source: BioCampus Straubing GmbH

Straubing – Research and science

Straubing Center of Science

Wissenschafts Zentrum STRAUBING

Technology and Support Center

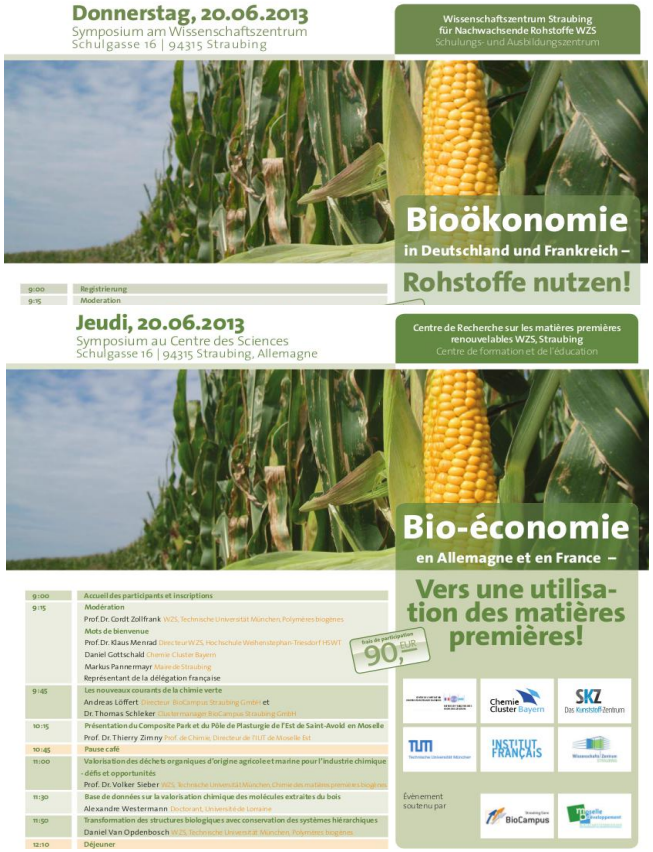
Technologie- und Förderzentrum

Fraunhofer Project Group BioCAT

Fraunhofer IGB

Source: BioCampus Straubing GmbH

Bio-economy: Franco-Allemand Workshop

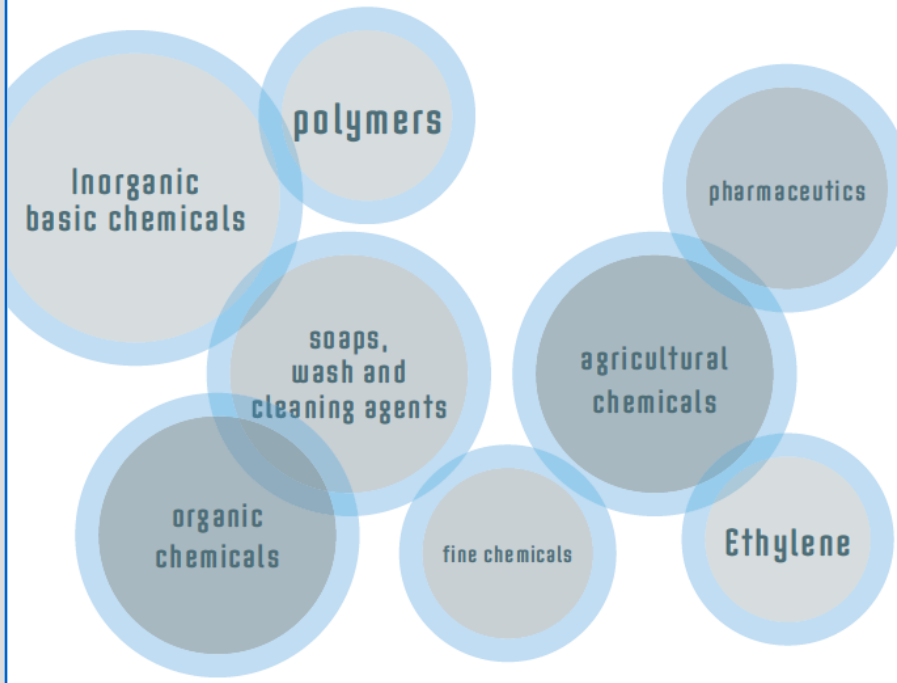


- Bilingual Workshop DE-FR
- Synergy between Moselle – Bayern
- Wissenschaftszentrum Straubing, 20.6.13

Summary

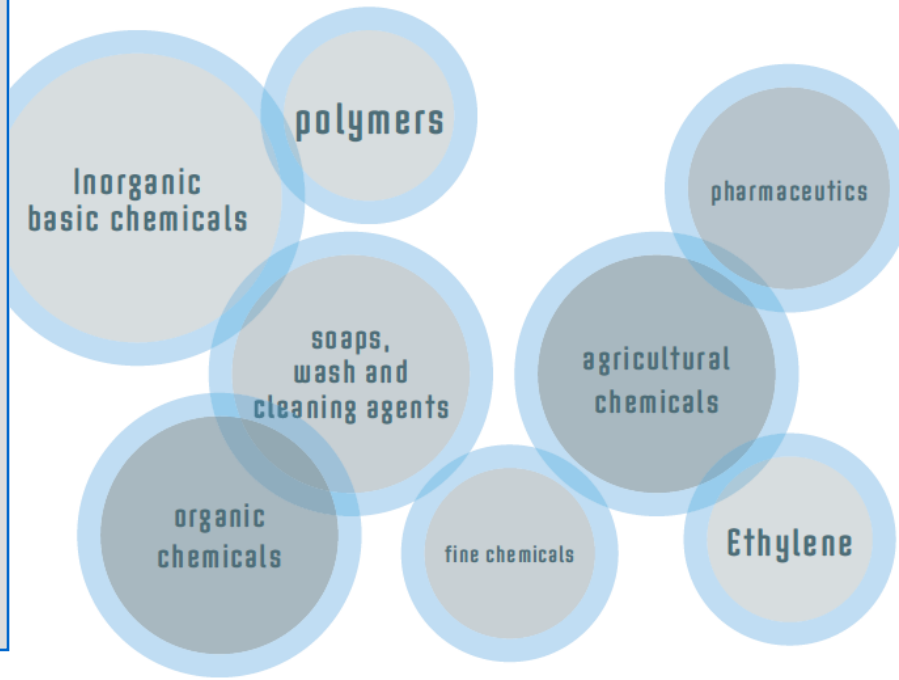
Our Targets

- Reshaping industrial value chains by creating new innovation partnerships
- Creating new business cases on upcoming markets
- Creating an industrial „think tank“ with cost-free innovation services for leading industry companies worldwide
- Setting new standarts of efficiency in supply chain management



You and CCB

- Sharing of Challenge Statements
  - Send your industrial needs to CCB
    → promote your network
  - CCB shares their industrial needs with you
    → promote your network
- Joint grant proposals



Thank you for your attention!

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GOLD

Cluster Management Excellence

PROVEN FOR CLUSTER EXCELLENCE