Industrial Perspectives of Green Chemistry in Bavaria

CHEMIE-CLUSTER BAYERN
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

<table>
<thead>
<tr>
<th></th>
<th>3,6 Mio. € public funding</th>
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<tbody>
<tr>
<td></td>
<td>Joint working structures</td>
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<tr>
<td></td>
<td>Supporting management structures</td>
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</table>

- **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.
The Cluster-Network (Examples of Companies)
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
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

- Technology-Push
- Market-Pull
- Companies
- Universities
Market Segmentation

Agenda 2013-2017:
- Exploring hidden markets
- Creating new business cases of at least 1 bn. €
## Agenda 2013-2017

<table>
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<th>&quot;Hidden Markets&quot;</th>
<th>System integrators discuss solutions only with tier 1</th>
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<td>→ Lack of innovation capability!</td>
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### 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“

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<tr>
<th>Segment</th>
<th>Market</th>
<th>Partners</th>
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<tbody>
<tr>
<td></td>
<td>• Safety systems from new materials</td>
<td>• Leading producers of sports equipment</td>
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<tr>
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<td>• Reduction of operating costs by eco-efficient chemistry</td>
<td>• Leading providers of exploration engineering; mining companies</td>
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<tr>
<td>Market</td>
<td>• Top Performance Materials for outstanding customer needs</td>
<td>• Steel producers</td>
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<td>• High-tech materials for classical toys with new functions</td>
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# Chemie-Cluster Bayern | Introduction

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<td><img src="image" alt="Leight Weight" /></td>
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<td><img src="image" alt="Metall-Processing" /></td>
<td><img src="image" alt="Recycling" /></td>
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<tr>
<td><img src="image" alt="Furnitures" /></td>
<td><img src="image" alt="Engineering" /></td>
<td><img src="image" alt="Joining Technology" /></td>
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<td><img src="image" alt="Wood" /></td>
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Dr. Jörg Klein
Brussels 10.10.2013

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- Plastics-Processing
- Metall-Processing
- Coatings, Paint
- Construction
- Wood
- Nanotechnology
- New packaging
- Intelligent coatings
- Functional surfaces
- Anti-corrosion technologies
Value Creation Partnership

Cooperation Database:
- International cooperation requests

Technology-Evaluation-Sheets
- "Chemistry meets..."

Tech-Database

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
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

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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)

bio-based chemicals in the **Danube Region**
Biorefineries in the alluvium area and near forest regions
Straubing and Bio-based companies

Source: BioCampus Straubing GmbH
Straubing – Research and science

Straubing Center of Science

Technology and Support Center

Fraunhofer Project Group BioCAT

Source: BioCampus Straubing GmbH
Bio-economy: Franco-Allemand Workshop

- Bilingual Workshop DE-FR
- Synergy between Moselle – Bayern
- Wissenschaftszentrum Straubing, 20.6.13
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 standards 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!
One of the top 14 cluster organizations in Europe