Challenges and perspectives of innovation development of the Cluster Chemistry/Plastics Central Germany

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6th European Congress of Chemical Regions
27.10.2008, Brussels
1. Development of the Cluster Chemistry Plastics in Central Germany
2. Current Situation of Chemical Industry
3. Innovation development
Development of Cluster Process Chemistry / Plastics in Central Germany
Development of Cluster Process

- Cooperation started within the Regional Innovation Strategy Halle-Leipzig-Dessau (RIS) / Network of Central German Plastic Technology

- Initiation of Cluster Chemistry / Plastics Central Germany during future conference of the economic initiative Central Germany 2004 in Halle

- Strategic concentration on strengths in innovation and alongside value added chain

- Open Process:
  - Geographically Saxony, Saxony-Anhalt, Thuringia, Brandenburg
  - for interested and active enterprises, research institutes and networks
Cluster Chemistry / Plastics Central Germany

Structure of the cluster

**Economic Initiative Central Germany**
Cross-regional cluster process

**Strategy Dialogue**
Chemical Industry – Politics

**Economic Promotion, Regional Marketing**

**Industry**
- Central German Chemical Triangle CeChemNet
- Central German Plastics Networks AMZK POLYKUM e.V. PolymerMat e.V. KuBra e.V.
- Ohter Networks
  - Innovativer Regionaler Wachstumskern „ReactiveWetCoating“ Kompetenzzentrum
  - Polysaccharide Jena Netzwerk Pipeline- und Anlagenbau Mitteldeutschland Netzwerk 4chirl Material innovativ Thüringen Fraunhofer Innovationscluster „Polymertechnologie“ FASA e.V. ...
- Enterprises
  - Global Players SME
  - (approx. 400 enterprises are integrated via networks)

**Academia**
- >20 universities and research institutes
- Six competence centres

**Politics**
- Ministry for Economy and Labour
  - Associations
    - Association of Chemical Industry Landesverband Nordost
    - Association of Plastic processing industry

**Branches Conferences Chemistry Plastics**
Pilot project for the development of cluster chemistry plastics

Mentioned in coalition agreement between CDU and SPD

High Level Meeting on 15th June 2007 chaired by Minister President oof Saxony-Anhalt Prof. Dr. Wolfgang Böhmer

Development of Strategy Paper
Preparation of Strategy Dialogue 2008
Cluster Chemistry / Plastics Central Germany

Integration of Cluster process – regional, national, international

Internationale Activities of Cluster
Participation in European Chemical Regions Network (ECRN) (Stakeholder function in High Level Group Chemistry)

Cooperation with other Chemical Clusters
First national meeting of German cluster initiatives on invitation of cluster Chemistry / Plastics Central Germany in September 2007 in Schkopau

Cooperation with other central German Cluster and network initiatives
Biotechnology - Life Sciences, Automotive, Photovoltaic
Summary of specific characteristics

- Approach across the branches chemical industry and plastic processing industry (reflecting the value added chain)
- Cross regional approach with enterprises and networks from Saxony, Saxony-Anhalt, Thuringia and Brandenburg
- International Dimension with active participation in European Chemical Regions Network (ECRN)
- Integration of existing and functioning networks of chemical industry and plastic processing
- Integration of industrial associations VCI und GKV
- Involvement of Politics via Strategy Dialogue
- Pilot Project according to coalition agreement Saxony-Anhalt
Current Situation of Chemical and Plastics Industry in Central Germany
Development of Turnover in Billion Euro

Quelle: Statistisches Bundesamt; Berechnungen und Darstellung isw GmbH
Anmerkungen: Mitteldeutschland: Sachsen-Anhalt, Sachsen, Thüringen und Brandenburg, Betriebe mit 20 und mehr Beschäftigten
Development of Turnover (Index 2002 = 100)

Chemical Industry

Production of Rubber and plastics

Quelle: Statistisches Bundesamt; Berechnungen und Darstellung isw GmbH
Anmerkungen: Mitteldeutschland: Sachsen-Anhalt, Sachsen, Thüringen und Brandenburg, Betriebe mit 20 und mehr Beschäftigten

Quelle: Statistisches Bundesamt, Verband der Chemischen Industrie, Deutsche Bank Research; Berechnungen und Darstellung isw GmbH
Anmerkungen: Mitteldeutschland: Sachsen-Anhalt, Sachsen, Thüringen und Brandenburg, Betriebe mit 20 und mehr Beschäftigten
Development of employment (thousand)

Quelle: Statistisches Bundesamt; Berechnungen und Darstellung isw GmbH
Anmerkungen: Mitteldeutschland: Sachsen-Anhalt, Sachsen, Thüringen und Brandenburg, Betriebe mit 20 und mehr Beschäftigten
### Share of internal R&D expenses and turnover in Central Germany related to total Germany

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>1999</th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
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<tbody>
<tr>
<td><strong>Chemical Industry</strong></td>
<td></td>
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</tr>
<tr>
<td>Internal R&amp;D Expenses</td>
<td>2.1 %</td>
<td>1.9 %</td>
<td>1.9 %</td>
<td>1.5 %</td>
<td>1.2 %</td>
</tr>
<tr>
<td>Turnover</td>
<td>3.3 %</td>
<td>3.6 %</td>
<td>4.5 %</td>
<td>4.9 %</td>
<td>5.4 %</td>
</tr>
<tr>
<td><strong>Production of Rubber and Plastics</strong></td>
<td></td>
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</tr>
<tr>
<td>Internal R&amp;D Expenses</td>
<td>5.6 %</td>
<td>4.2 %</td>
<td>4.2 %</td>
<td>2.9 %</td>
<td>3.9 %</td>
</tr>
<tr>
<td>Turnover</td>
<td>4.8 %</td>
<td>5.3 %</td>
<td>6.5 %</td>
<td>7.4 %</td>
<td>8.1 %</td>
</tr>
</tbody>
</table>

*Quelle: Statistisches Bundesamt; Stifterverband Wissenschaftsstatistik, FuE-Datenreport; Berechnungen und Darstellung isw GmbH*

*Anmerkungen: interne FuE-Aufwendungen: für eigene und im Auftrag für andere in Ihrem Unternehmen durchgeführte FuE*

*Mitteldeutschland: Sachsen-Anhalt, Sachsen, Thüringen ohne Brandenburg*
Summary

- positive Turnover and Employment Development
- Competitive production facilities
- Chemical locations with modern and capable infrastructure
- Research Centre for materials development and plastics processing

but:
- Further investments are necessary for the better use of infrastructure
- Export rate is too low
- Insufficient applied industrial research
- Insufficient innovation capacity of SME
- Too little networking alongside the value added chain

Conclusions:
Strengthening of Innovation and Development Value Added Chains
Innovation Landscape of Cluster Chemistry / Plastics Central Germany
Network of Chemical Sites in Central German Chemistry Triangle CeChemNet

Attractive **Chemical Park Network** in the centre of enlarged European Union

Proximity to Central and Eastern European Growth Markets

6 Chemical Sites with specific Profile

5,500 ha Chemical Park surface
500 ha available for industrial settlements

17 Billion Euro investments since 1990

Modern, capable chemical park infrastructure and production facilities

**Synergies with Central German Feedstock Network**

**Profiling of CeChemNet as Innovation location network**
### „Chemical Parks in the knowledge society - Chemical Parks as Knowledge Sites“

#### Selected Innovation Potential on the locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Chemiestandort Leuna</td>
<td>• Creation of chemical biotechnology process centre Leuna</td>
</tr>
<tr>
<td>ChemiePark Bitterfeld Wolfen</td>
<td>• ChemiePark-Institut (CPI): Industrial research for development of ingredients and high-tech special chemistry</td>
</tr>
<tr>
<td>ChemiePark Bitterfeld Wolfen</td>
<td>• Functional Coating</td>
</tr>
<tr>
<td>Chemie- und Industriepark Zeitz</td>
<td>Competence Centre for industrial use of biomass for production of chemical products and for energy production</td>
</tr>
<tr>
<td>Dow ValuePark® Schkopau</td>
<td>• Competence Centre for Synthetic rubber and PET</td>
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<tr>
<td>BASF Schwarzheide GmbH</td>
<td>• Fraunhofer Pilot plant for polymer synthesis and processing</td>
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<td></td>
<td>European Development Centre Polyurethan-products with modern technology</td>
</tr>
</tbody>
</table>
Cross Cluster Developments as Growth Engine

- **Solar Economy**
  Third Generation Photovoltaic using plastic competence

- **Logistics**
  Development of Central and Eastern European Chemical logistics
  Network, export of know-how

- **Biotechnology**
  Chemical use of biomass

- **Opto electronics**
  Organic light emitting diode OLEDs

- **Mining / Energy**
  Coal refining

- **Automotive**
  Light Construction

- **Mechanical and Plant Engineering**
  Network Pipeline and plant engineering
**Productive Innovation Landscape**

Plant Centre for Polymer Synthesis and processing Innovation Cluster „Polymer Technology“

Chemical Engineering Chemistry and Physics and Martin-Luther-University Halle-Wittenberg

Foundation of Plastics Competence Centre Halle-Merseburg

Foundation Fraunhofer-Centrum für Silizium-Photovoltaik (CSP)

“Solarvalley Central Germany“ as Primary Cluster of the German High-Tech Strategy

Germany Chemistry and Plastics Competence
Challenges

- Strengthen Strengths – Concentration of decreasing funding
- Demands towards Politics: Development of cross-regional process
- Clusters can give impetus to prioritisation of economic policy and especially innovation support
- Increase of efficiency of funding, development of innovation location network of chemical parks in central Germany
- Development of chemical logistics in Central and Eastern Europe
- Coping with the challenge of demographic change
Perspectives for Cooperation

- The role of innovation in clusters is getting more important (See Commission Paper 2008 – 2637)

- Several clusters develop new solutions and activities to promote innovation capacities (e.g. Chemical Sites as Knowledge Sites)

- International cooperation and exchange of experience can contribute to improved cluster strategy and innovation capacity (e.g. ECRN, ChemSME)

- Currently several opportunities of new EU Programmes on interregional cooperation (2nd Interreg IVC call 30.01.08, IVB Central Europe March 2009 )

- Cluster Chemistry / Plastics is open for cooperation project on this topic and looking for other interested European Clusters and Partners
Thanks a lot for your attention!

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