Structural change of the Ruhr District

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Geographical position

Ruhr District

Berlin

Dortmund

Düsseldorf
Development of the Ruhr District

1840: 0.5 Mio. Inhabitants in the Ruhr District

2005: Only 7 mines left
Corporate policy decisions on goals and general principles

Employees in the mining industry
In thousand

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957</td>
<td>607</td>
</tr>
<tr>
<td>1970</td>
<td>253</td>
</tr>
<tr>
<td>1975</td>
<td>202</td>
</tr>
<tr>
<td>1980</td>
<td>187</td>
</tr>
<tr>
<td>1985</td>
<td>166</td>
</tr>
<tr>
<td>1990</td>
<td>130</td>
</tr>
<tr>
<td>1995</td>
<td>93</td>
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<td>1998</td>
<td>72</td>
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<td>1999</td>
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<td>2000</td>
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<td>2002</td>
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<td>2003</td>
<td>40</td>
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<td>2004</td>
<td>39</td>
</tr>
<tr>
<td>2005</td>
<td>35</td>
</tr>
</tbody>
</table>
The Post Mining Research Institute

- On 23\textsuperscript{rd} October 2015 the Post Mining Research Institute at THGA was officially opened.
- The Institute is sponsored by the RAG Foundation, the State of NRW and the EU.
- The research activities cover coal mining and non coal mining issues.
- The vision is to guard all post mining activities in a sustainable and responsible manner.
- Due to the history of the THGA the Ruhr Region is a specific focus of the scientific work.
Research Topic - Mine Water Flow

Coal Mine Auguste Victoria in Marl

- Coal mining ceased in 2015 and the mine will be exposed to rising mine water levels.
- Robust sensor devices, power and data infrastructure suitable for long term telemetering have been developed.
- The monitoring concept was specified.
- At four sites underground water pressure, temperature, conductivity and flow speed will be recorded; in shaft AV 3 methane %.
- The monitoring will give indication how to optimize the mine water rise in coal mines being closed in 2018. Source: RAG et Bendrat
Research Topic – Use of Remote Sensing

**EU Programme Copernicus**

- Copernicus is a European system for monitoring the Earth.
- Copernicus consists of a complex system which collect data from earth observation satellites and in situ sensors on ground.
- In Cooperation with other partners THGA aims to work on the application of satellite data for monitoring post-mining processes.
- Particular emphasis is placed on the hydrochemistry of waterbodies, the soil water content, the land use and the land coverage.  
  
  Source: ESA, Goerke-Mallet, THGA
Reconstruct a coal industry area a close cooperation is important between

- Town, local Community, (Oblast)
- Public organization, administrated by independent management
- Public Private Partnership (PPP)
- Pension Funds
Public organization at the region

• Membership of towns and regional communities is mandatory for all

• Duties and responsibilities

  – Spatial planning (surveying and mapping)
  – Regional traffic planning, Infrastructure
  – Landscape and environmental affairs
  – Hospital, School and Cultural institutions
  – Waste management
  – Tourism and Leisure activities
  – Definition of competence projects
  – Coordination of government aid and promotions of EU, IFO
Competence projects

• Reclamation of areas affected by mine-related activities
• Water supply
• Waste management treatment plants
• National Development Strategy
Competence projects

• Reclamation of areas affected by mine-related activities;
• **Water supply**;
• Waste management treatment plants.
• National Development Strategy
Drainage Area Emschergenossenschaft/Lippeverband

<table>
<thead>
<tr>
<th>Cooperative Area (km²)</th>
<th>Population (Mio.)</th>
<th>Inhabitant/ km²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lippeverband</td>
<td>3.280</td>
<td>1.4</td>
</tr>
<tr>
<td>Emschergenossenschaft</td>
<td>865</td>
<td>2.4</td>
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</table>
## Water Management Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water course</td>
<td>742</td>
<td>km</td>
</tr>
<tr>
<td>Sewer conduit</td>
<td>1,189</td>
<td>km</td>
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<tr>
<td>Pumping station</td>
<td>303</td>
<td></td>
</tr>
<tr>
<td>Polder</td>
<td>842</td>
<td>km²</td>
</tr>
<tr>
<td>Sewage plant</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Completed size</td>
<td>7,4</td>
<td>Mio. EW</td>
</tr>
<tr>
<td>Wastewater disposal</td>
<td>0,9</td>
<td>bn. m³/a</td>
</tr>
<tr>
<td>Rainwater treatment plant</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Flood control basin</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Total volume</td>
<td>4,9</td>
<td>Mio. m³</td>
</tr>
<tr>
<td>Dyke</td>
<td>193</td>
<td>km</td>
</tr>
</tbody>
</table>
Sewage Plant „Emscher Mitte“ in Bottrop
Sewage Plant „Emschermündung“ in Dinslaken
Competence projects

- Reclamation of areas affected by mine-related activities;
- Water supply;
- Waste management treatment plants.
- National Development Strategy
Competence projects

- Reclamation of areas affected by mine-related activities;
- Water supply;
- Waste management treatment plants;
- National Development Strategy
Science and research

- Ruhr University
- Built 1964-70
- 380 Professors and 6,000 members of the staff
- 32,000 Students

- 6 Universities
- 8 Polytechnics
- 171,000 Students
- 30 Technology centers
Challenge for the regional policy

• Centro Oberhausen
• Built 1994-96
• 4,000 employees
• 143 ha of a steelmill
GVZ Ellinghausen IKEA, Dortmund
Technology and Startup of park Eurotec
Business center of an ex-steel factory area
Structure of the initiative committee of the Ruhr District

Established in 1989 Engagement for the Ruhr district

Ideal and financial assistance for the Ruhr district

Only commercial Engagement

Personal membership and the members represent the IR

Established until 2020

Model of a Public-Private-Partnership
PPP: Duties, responsibilities and targets

• Impulse of innovation

• Promotion of investments

• Sponsorship of projects in sport, culture, arts and sciences

• Establish clusters of knowledge (Education, Financing, Management, Public Relation)

• Sanitize the public image of the region.
Business plan contest

**Target**

- Inward movement of companies in the branch of material technology
- Promotion of job creation

Therefore: Business plan contest „Material“
First Conference on the Villa Hügel, Essen 2005

Topic: Materials for Energy Technology in the 21-st Century“
   – The Challenge: Global Concept for Cutting CO₂ Emissions
   – The Innovation: Optimization of Existing Power Plants
   – The Novel Solutions: Material and Technology Aspects for Future Energy Supply

130 top representatives from economy, sciences and politics worldwide were invited
Rhein-Ruhr International Materials Conference

**Topics**

- Medical Engineering (2006)
- Traffic Engineering (2007)
- Information Engineering (2008)
- Construction Engineering (2009)
DIE WERKSTOFFREGION RHEIN-RUHR VERFÜGT ÜBER HOHE WERKSTOFFKOMPETENZ Zahlreiche Institute und Firmen aktiv

Quellen: Strukturdaten und Branchenbild in NRW 2001; BCG-Research
Tourism in the Ruhr area

„Not a phantopm, it is a reality“

- ca. 4.5 Mio. Visitors/Year
- Ruhr Triennial: 80,000 Visitors
- Extra shift: 100,000 Visitors
We believe in the potential of the Ruhr District and we want not more but also nevertheless that other people have the same spirit

Dr. Alfred Herrhausen, former CEO of Deutsche Bank AG and founding moderator of Initiativkreis Ruhrgebiet

Februar 1989