The Federal Institute for Geosciences and Natural Resources – Research and Advisory for the Mineral Industry

Germany’s Role in Mineral Resources Markets, PDAC, Toronto, 6th March 2013

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Federal Institute for Geosciences and Natural Resources (BGR), Germany
## DERA in the Federal Institute for Geosciences and Natural Resources

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Staff</td>
<td>▪ German Mineral Resources Agency (DERA)</td>
<td>▪ Geophysical Exploration Technical Mineralogy</td>
<td>▪ Geological-geotechnical Exploration</td>
<td>▪ International Cooperation</td>
</tr>
<tr>
<td></td>
<td>▪ Geology of Mineral Resources</td>
<td>▪ Spatial Data on Groundwater and Soils</td>
<td>▪ Geological-geotechnical Site Assessment</td>
<td>▪ Geodata, Geological Information, Stratigraphy</td>
</tr>
<tr>
<td></td>
<td>▪ Geology of Energy Resources, Polar Geology</td>
<td>▪ Groundwater Resources</td>
<td>▪ Subsurface Use, Geological CO2 Storage</td>
<td>▪ CTBT, Central Seismological Observatory</td>
</tr>
<tr>
<td></td>
<td>▪ Resource Geochemistry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>President</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Z. Central Affairs</strong></td>
</tr>
<tr>
<td><strong>1. Energy Resources, Mineral Resources</strong></td>
</tr>
<tr>
<td><strong>2. Groundwater and Soil Science</strong></td>
</tr>
<tr>
<td><strong>3. Underground Space for Storage an Economic Use</strong></td>
</tr>
<tr>
<td><strong>4. Geoscientific Information, International Cooperation</strong></td>
</tr>
</tbody>
</table>

### Staff
- Technical Equipment, Internal Services
- Organisation
- Budget and Financial Management
- Procurement, Materials Management
- Central Information Technology
- Library, Archive
- Public Relations, Publications

### **German Mineral Resources Agency (DERA)**
- Geology of Mineral Resources
- Geology of Energy Resources, Polar Geology
- Marine Resource Exploration
- Resource Geochemistry

### Geophysical Exploration
- Technical Mineralogy
- Spatial Data on Groundwater and Soils
- Groundwater Resources
- Properties and Dynamics of Soils

### Geological-geotechnical Exploration
- Geological-geotechnical Site Assessment
- Subsurface Use, Geological CO2 Storage
- Geological-geotechnical Safety Analyses

### International Cooperation
- Geodata, Geological Information, Stratigraphy
- CTBT, Central Seismological Observatory
- Geo-Hazard Assessment, Remote Sensing

**Z. Central Affairs**

- **President**

**BGR** Bundesanstalt für Geowissenschaften und Rohstoffe

**GEOZENTRUM HANNOVER**
Germany: mineral and energy raw materials balance 2011

Imports: 137.6 bn. €
Domestic Production: 20.8 bn. €
Total: 158.4 bn. €
+ Recycling: > 10 bn. €

+ other energy raw materials: 0.5%
+ other metals: 0.3%
Germany: imports of mineral and energy raw materials

- **1990**
  - Non metals: 20
  - Metals: 30
  - Energy raw materials: 50

- **1995**
  - Non metals: 30
  - Metals: 40
  - Energy raw materials: 70

- **2000**
  - Non metals: 50
  - Metals: 60
  - Energy raw materials: 90

- **2005**
  - Non metals: 70
  - Metals: 80
  - Energy raw materials: 120

- **2010**
  - Non metals: 80
  - Metals: 90
  - Energy raw materials: 140
Germany: imports of mineral and energy raw materials from Canada

Imports:
2000: 9.2 mill t
2011: 8.8 mill t
Services provided by the German Mineral Resources Agency

Securing raw material supply for Germany

Aim

A  Improve market transparency in the mineral resources sector by providing minerals information and analysis and advise companies about price and supply risks
B  Professional backing of measures taken by the German government and companies to secure raw materials supply

Services

Raw Materials Information and Analyses

1. Raw Material Information System
2. Risk Assessment
3. Raw Material Potentials

Contributions for securing raw material supply

4. Strategies for Security of Supply
5. Diversifying Supply

Network Building, Raw Material Dialogues, Industry Workshops, Conferences
DERA provides minerals information by country, current activities

- AHK-DERA study on investment conditions Canada & Chile, 2011
- AHK-DERA-GTAI study on investment conditions, Russia „Rohstoffgigant Russland“, 2012
- AHK-DERA-GTAI study on investment conditions, Australia & South Africa, 2013
- DERA/BGR study on mineral potential in Mongolia (2011), Kazakhstan and South Africa, 2013
- DERA/BGR studies on the Arctic Region (North America, Greenland, North Scandinavia, Russia)
Federal Government Exploration Support Programme

- BMWi-Program to foster exploration
- to improve the supply for Germany and the EU with critical non-energetic mineral commodities:
  Antimony, Beryllium, Cobalt, Fluorspar, Gallium, Germanium, Graphite, Indium, Magnesium, Niobium, PGMs (Platinum Group Metals), Rare Earths, Tantalum and Tungsten

Effective since: January 1st, 2013
Term: 3 years for the time being

- Contribution to secure critical Raw Materials (Volume 27.5 mill. € over 3 Years)
- disbursed as a conditionally repayable loan
- Instrument to animate German Enterprises, to invest in the national and international mining sector on a long-term basis (Reducing Risks of Project Start-up)
Ore deposits of strategic metals - new potentials

**Focus:**
- Diversification of the sources of high-tech metals for the German industry

**Tools**
- Identification of new and unconventional ore deposit types
- Development of new technologies for metal extraction

- PGE
- Ge
- In
- Ta
- Nb
- Y
- REE

**Examples:**
- PGE deposits in South Africa
- Ge-bearing sulfides (Namibia, DRC)
- Germanite
- Potential of Ta-Nb in Africa
- Y-REE-Nb(-Ta) in South Africa and Mongolia
Location of the German License Area

- **56,000 km²**
- **19,000 km²**

Exploration license from 2006 to 2021
Four expeditions 2008-2012, next in April/May 2013

Prospective areas with 110 mt nodules (mill. tons: 1.2 Cu, 1.5 Ni, 0.2 Co): 40 yrs of mining
Marine Sulfides – Germany’s Exploration Program in the Indian Ocean
Thank you very much

“Glück Auf”

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Biomining

BMBF- project: “Chemical and biotechnological recovery of valuable elements from lignite ash”
(Innovative Technologies for Resource Efficiency - Strategic Metals and Minerals (r³))

**Aims of the project**

→ Harness the resource potential of lignite ash

• chemical and mechanical concentration of valuable elements
  (transition metals, rare earth elements, Al, Mg)

• extraction via chemical and biological leaching
  (focus of BGR work)

• recovery of valuable elements as concentrates

• economic evaluation, recycle strategy, sustainability assessment

Project partners:
Applicant / Beneficiary

Approval and Disbursement of the Conditionally Repayable Loan

DERA: Assessment and Valuation of the Applications, Assessment of Status Reports and Audits for Use of Funds

Statement

BMWi: Due Diligence and Decision

Conditional Repayment of the Allowances

First Closing Date: March 31st, 2013