The EU non-energy extractive industry and a sustainable access to raw materials

Conference on
Non-energy mining industry in Europe
Bucharest - 15 May 2008
Structure of presentation

Non-energy extractive industry
1) Key figures
2) Competitiveness challenges

Raw materials initiative
3) Economic and political context
4) Key challenges
5) Way forward
Non-Energy Extractive Industry

1. Key figures
Non-Energy Extractive Industry in EU27 (2005)

- Turnover: 45 billion €
- Employment: 295,000
- Contribution to major downstream sectors
- 3 sub-sectors
  - Construction minerals
  - Industrial minerals
  - Metallic ores
EU production, imports and exports of aggregates

The diagram shows the EU production, imports, and exports of aggregates for various countries. The x-axis represents the countries, and the y-axis represents the million tonnes. The bars indicate the amount of production, exports, and imports for each country.
Main global producers of selected industrial minerals and % of global production (2003)

<table>
<thead>
<tr>
<th>Mineral</th>
<th>First</th>
<th>Second</th>
<th>Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bentonite</td>
<td>USA (32%)</td>
<td>EU (19%)</td>
<td>Turkey (7%)</td>
</tr>
<tr>
<td>Feldspar</td>
<td>EU (36%)</td>
<td>China (13%)</td>
<td>Turkey (12%)</td>
</tr>
<tr>
<td>Fluorspar</td>
<td>China (52%)</td>
<td>Mexico (17%)</td>
<td>EU (8%)</td>
</tr>
<tr>
<td>Fullers Earth</td>
<td>USA (72%)</td>
<td>EU (12%)</td>
<td>Senegal (4%)</td>
</tr>
<tr>
<td>Gypsum</td>
<td>EU (24%)</td>
<td>USA (16%)</td>
<td>Iran (12%)</td>
</tr>
<tr>
<td>Kaolin</td>
<td>USA (34%)</td>
<td>EU (23%)</td>
<td>Brazil (19%)</td>
</tr>
<tr>
<td>Magnesite</td>
<td>China (47%)</td>
<td>EU (17%)</td>
<td>Turkey (15%)</td>
</tr>
<tr>
<td>Perlite</td>
<td>EU (39%)</td>
<td>China (20%)</td>
<td>USA (15%)</td>
</tr>
<tr>
<td>Potash</td>
<td>Canada (32%)</td>
<td>EU (16%)</td>
<td>Russia (16%)</td>
</tr>
<tr>
<td>Talc</td>
<td>China (46%)</td>
<td>EU (20%)</td>
<td>USA (13%)</td>
</tr>
<tr>
<td>Salt</td>
<td>EU (21%)</td>
<td>USA (20%)</td>
<td>China (16%)</td>
</tr>
</tbody>
</table>

Data: British Geological Survey
### European Mine Production of Metals (2006)

<table>
<thead>
<tr>
<th>Metal</th>
<th>Annual production (tonnes)</th>
<th>EU32 production as % of global production (%)</th>
<th>European countries with &gt; 1% of global output in 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>1,932</td>
<td>8.8</td>
<td>Poland, Sweden, Turkey</td>
</tr>
<tr>
<td>Zinc</td>
<td>927,000</td>
<td>8.8</td>
<td>Ireland, Sweden, Poland</td>
</tr>
<tr>
<td>Titanium</td>
<td>425,000</td>
<td>7.3</td>
<td>Norway</td>
</tr>
<tr>
<td>Lead</td>
<td>238,200</td>
<td>6.8</td>
<td>Ireland, Sweden, Poland</td>
</tr>
<tr>
<td>Copper</td>
<td>833,000</td>
<td>5.5</td>
<td>Poland</td>
</tr>
<tr>
<td>Chromium</td>
<td>1,007,000</td>
<td>5.2</td>
<td>Finland, Turkey</td>
</tr>
<tr>
<td>Tungsten</td>
<td>1,933</td>
<td>2.6</td>
<td>Austria, Portugal</td>
</tr>
<tr>
<td>Nickel</td>
<td>33,900</td>
<td>2.2</td>
<td>Greece</td>
</tr>
<tr>
<td>Iron</td>
<td>30,158,000</td>
<td>1.7</td>
<td>Sweden</td>
</tr>
<tr>
<td>Aluminium (bauxite)</td>
<td>3,251,900</td>
<td>1.9</td>
<td>Greece</td>
</tr>
<tr>
<td>Mercury</td>
<td>23</td>
<td>1.6</td>
<td>Finland</td>
</tr>
<tr>
<td>Gold</td>
<td>18</td>
<td>0.8</td>
<td>-</td>
</tr>
<tr>
<td>Manganese</td>
<td>147,000</td>
<td>0.5</td>
<td>-</td>
</tr>
<tr>
<td>Tin</td>
<td>25</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: BGS
Non-Energy Extractive Industry

2. Competitiveness challenges
Analysis of competitiveness of the non-energy extractive industry in the EU
Commission Staff Working Document
SEC(2007) 771

- Exploration
- Access to land
- Regulatory framework
- Investment and operating costs
- Availability of skilled workforce
- Research and innovation
- Health and safety
Exploration

- Industry seeks to explore where there is geological potential
- Industry seeks to operate wherever suitable geological resources have been identified and can be worked profitably and securely
- Importance of basic geological surveying and mapping

Some observations
- Tendency towards lower grades, below surface, remote areas,...
- EU’s exploration expenditure low compared with others despite potential
- Different approaches to encourage exploration
Access to land
(conclusions study Leoben University)

- **Limited knowledge** of importance of NEEI in Europe
- **Lack of appreciation** of strategic importance of non-energy minerals (in part. aggregates)
- In most Member States non-energy minerals are allocated a **low priority**
- In most Member States **access to mineral deposits is becoming more difficult** (in practice)
- **Time** required for authorisation of mineral extraction tends to be very long and outcome is often uncertain
Access to land - reported challenges

- Developing a policy framework which would make:
  - existing operations more competitive and sustainable;
  - extending existing operations more straightforward;
  - investments in smaller deposits in the EU viable;
  - the administrative burden lighter; and
  - access to new resources simpler and more attractive to investors
    - providing a reliable and cost- and time-efficient permitting procedure which enhances environmental protection and social acceptability
**Regulatory Framework**

- NEEI regulated at European and National level
- European legislation affecting NEEI is mostly horizontal

- Legislation affecting access to land:
  - Birds (79/409/EEC) and Habitat (92/43/EEC) Directives (Natura 2000 network)
  - EIA (85/337/EEC & 97/11/EC) and SEA (2001/42/EC)

- Legislation affecting operating costs:
  - Management of waste from the extractive industries (2006/21/EC)
  - Seveso II (2003/105/EC)
  - IPPC directive (96/61/EC & current revision)
### Investment and operating costs

- Huge differences between sub-sectors
  - Transport (construction minerals 50-70% costs)
  - Energy (notably sub-surface metal mining, beneficiation)

<table>
<thead>
<tr>
<th>Sub-sector</th>
<th>Estimated energy costs in the EU as proportion of overall site operating costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction minerals (aggregates)</td>
<td>3%</td>
</tr>
<tr>
<td>Industrial minerals</td>
<td>11%-19%</td>
</tr>
<tr>
<td>Metallic minerals (copper and zinc)</td>
<td>15%-17%</td>
</tr>
</tbody>
</table>
Availability of skilled workforce

Number of graduates from mining engineering programmes in Europe 1990-2007

Source: Commission Staff Working Document
SEC(2007) 771
Research and innovation

- Develop a common European platform for coordinating and disseminating results, and for identifying areas for future research
Health and safety

- Incidence rate of fatal accidents of NEEI is about 7 times higher than average rate of other sectors
- Non-fatal accidents (more than 3 days absence)
  - Rate within NEEI about twice industries average
  - Rate is similar to e.g. construction industry
- Mining and quarrying also shows the highest incidence rate for many occupational diseases
- Lack of harmonisation of statistics
3. Economic and political context

Raw materials initiative
Chinese demand as % of global demand

Chinese consumption growth as a % of world growth (2003-2005)

Source for charts: IISI, WBMS, AME, Brook Hunt, Johnson Matthey, CRU
Global exploration expenditures

Projected

billion USD

1995 1997 1999 2001 2003 2005 2007

Source: RMG, MEG
New mining investments announced globally

Net trade in non-energy minerals 1999-2004 (EU)

### EU dependency on the import of metal ores (2003)

<table>
<thead>
<tr>
<th>Metal Ores</th>
<th>EU Dependency</th>
<th>Importing Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony ore</td>
<td>100%</td>
<td>Rutile</td>
</tr>
<tr>
<td>Beryllium ore</td>
<td>100%</td>
<td>Vanadium ore</td>
</tr>
<tr>
<td>Boron</td>
<td>100%</td>
<td>Phosphate rock</td>
</tr>
<tr>
<td>Cobalt</td>
<td>100%</td>
<td>Nickel</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>100%</td>
<td>Iron ore</td>
</tr>
<tr>
<td>Niobium ore</td>
<td>100%</td>
<td>Bauxite</td>
</tr>
<tr>
<td>PGM ores</td>
<td>100%</td>
<td>Zinc ore</td>
</tr>
<tr>
<td>Rare Earth ores</td>
<td>100%</td>
<td>Tungsten ore</td>
</tr>
<tr>
<td>Rhenium ore</td>
<td>100%</td>
<td>Lead Ore</td>
</tr>
<tr>
<td>Tantalum ore</td>
<td>100%</td>
<td>Copper Ore</td>
</tr>
<tr>
<td>Ilmenite</td>
<td>100%</td>
<td>Chromium ore</td>
</tr>
</tbody>
</table>

Source: based on BGS Data (2005)
“to develop a coherent political approach with regard to raw materials supplies for industry, including all relevant areas of policy (foreign affairs, trade, environmental, development and research and innovation policy) and

to identify appropriate measures for cost-effective, reliable and environmentally friendly access to and exploitation of natural resources, secondary raw materials and recyclable waste, especially concerning third-country markets”
“Raw materials are a key factor for sustainable growth in industrialised, emerging and developing countries.”

“Free, transparent and open markets are fundamental to global growth, stability and sustainable development.”

“Increased transparency in the extractive sector is of crucial importance for achieving accountability, good governance and sustainable economic growth worldwide.”
“EU and Member States to support the development of a raw materials policy, built on a well operating free and fair global market for raw materials…”

“using trade policy in particular international multilateral and bilateral agreements to ensure that EU and third countries support open and undistorted markets…”

“simplifying and streamlining access to domestic raw materials…”
Commission initiative

- Commission Staff Working Document
  “Analysis of competitiveness of the non-energy extractive industry in the EU” (June 2007)

- Press conference Vice-President Verheugen, 5 June: announcement of a Commission raw materials initiative
Raw materials initiative

4. Key challenges
5 main challenges

Increase the sustainable supply of raw materials from European sources

Encourage more open and competitive global markets and removing distortions in trade in raw materials

Ensure more transparency throughout the production chain of raw materials and encourage capacity building in developing countries

Encourage greater efficiency in the use of resources

Establish an adequate EU knowledge base on raw materials
1. Increase the sustainable supply of materials from European sources

- Exploration
- Access to land
- Regulatory framework
- Costs
- Availability of skilled workforce
- Research and innovation
- Health and safety
2. Encourage more open and competitive global markets and removing distortions in trade in raw materials

- Proliferation of measures by 3rd countries which cause trade distortions
- Inclusion of reduction and abolition of relevant trade restrictions in EU bilateral agenda
- Addressing the challenge at the level of the WTO
3. Ensure more transparency throughout the production chain of raw materials and encourage capacity building in developing countries

- Addressing the lack of transparency in relation to the production chain of raw materials

- Building capacity for good governance of mineral resources
4. Encourage greater efficiency in the use of resources

- Need to further reduce the raw materials content in final products, stimulate the application of recycled products, make better use of resources embedded in waste.

- Need for a mix of different policies that support technological improvements.
5. Establish an adequate knowledge base on raw materials

- Lack of integrated geological knowledge on mineral deposits in the EU
- Need to improve the availability of relevant data at the level of policy - and decision makers (planning)
Raw materials initiative

5. Way forward
Way forward

- **Final objective:** a Communication on raw materials in 2\textsuperscript{nd} half of 2008

- **Intermediate steps:**
  - Consultations with different DGs
  - Intensive stakeholder consultations (e.g. Raw Materials Supply Group etc)
  - Public consultation
Further info

- Results of the public consultation:
  
  http://ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?item_id=1249

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