Regulating Mine Closure: New Approaches

The European Innovation Partnership on Raw Materials

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14-22 September 2013
Outline

≡ Who we are and what we do?

≡ The European Innovation Partnership on Raw Materials

≡ Tapping EU’s secondary mineral potential and know-how

≡ Addressing regulatory issues in closure planning and asset retirement in Europe

≡ Innovation – Challenges and New Approaches
Euromines – who we are

≡ Recognized representative of the European mining industry;

≡ Service provider to its members with regard to EU policy;

≡ Network for cooperation and for the exchange of information throughout the sector within Europe;

≡ Link to contacts with the mining community throughout the world.
Euromines – what we do

≡ Define common industry positions and actions.

≡ Establish constructive dialogue with governmental institutions to ensure early consultation on areas of EU policy affecting the industry, and assert the industry's views and positions.

≡ Advocate for the extractive industry by promoting the benefit and societal value of both its activities and its products.
Our Key Messages

RESOURCES
≡ We strongly believe that Europe has a viable resource base

DEMAND
≡ The demand for raw materials is continuously increasing

STANDARDS
≡ The EU should maintain an enabling environment that provides for achievement of the highest standards in the extractive industries
Variation within the Industry

• ~40 minerals
• Small → Big
• Ancient → Modern
• “inert” → ARD
• Arctic → Mediterranean
• Populated → Isolated
• Urban → Wilderness
• 1000s of legacy sites
• 100-200 studies
• 10s of clean-up priorities
No single European mining legislation, but EU environmental legislation impacting
The European Innovation Partnership on Raw Materials
The EU’s Raw Materials Initiative and the EIP on Raw Materials

≡ European Raw Materials Strategy

≡ Europe 2020
   4 Flagships Initiatives out of 7 → raw material strategy synergies
      = An industrial policy for the globalisation era
      = An agenda for new skills and jobs
      = Resource Efficient Europe
      = Innovation Union
EIP on Raw Materials: Key components

- **Technology-focused policy areas**
  - Exploration, extraction, processing, recycling
  - Substitution

- **Non Technology policy areas**
  - Improving Europe’s raw materials regulatory framework, knowledge and infrastructure base, e.g. access to land.
  - Promotion of excellence in resource efficiency

- **International cooperation**
  - Promoting appropriate international cooperation

[Images of mining equipment, circuit boards, and industrial minerals]

ETP SMR, Research projects, ERA-MIN
Implementation of the RMI ➔ EIP
Level playing field ➔ WTO, Trade agreements
Resource Efficiency

Resource Efficiency should yield optimum solutions to the trade-offs that exist between different environmental objectives and the environmental, social and economic imperatives of Sustainable Development.

The result should be an economy that optimises its use of resources and, therefore, results in improved living conditions and reduced waste globally.

Rehabilitation of old tailings is such a win-win situation if the economics and legal framework conditions are right.
Tapping EU’s secondary mineral potential and know-how

Turning waste into resources
BOOK - 101 Things to Do with a Hole in the Ground

Euromines as a partner in the project

Making use of the land as a resource
Mining Heritage implications

≡ Showing, presenting and demonstrating the mining culture and history of Europe;
≡ Contributing to geo-tourism and economic potential;
≡ Unlocking and exposing the hidden mineral wealth;
≡ Outlining potential metallogenetetic districts;
≡ Guiding ore exploration and prospecting activities;
≡ Securing economic mineral resources and sustainable raw materials supply;
≡ Mining awareness raising the importance of raw materials.
Bergslagen – Sweden's oldest mining region... - want’s more mining!

Principal objective: Sustainable Mining-related growth in Bergslagen in cooperation with mining industry and mining related environmental technologies.

≡ New jobs created and old preserved. Two more new mines by 2016.
≡ New jobs in mining related environmental R&D and technological solutions for ongoing and historic mining waste.
≡ A strategy and action plan for sustainable societal growth in cooperation between the society and the mining industry:
   = Infrastructure
   = Competent personnel for the mining industry
   = Plans for societal development
Sustainable Bergslagen
Building a partnership for sustainable development

Säfsenskogarna (Tourism)
Bålby gård (Farming)
Lekeberg (Municipality)
Swedish Church (Ethics and forest)
Teatermaskinen (Culture-theater)
Swedish Society For Nature Conservation
Örebro university
Skogsmästarskolan (Forest education)
Bergskraft (Mining)
Säfsen resort (Tourism)
VBU (Education for adults)
Sveaskog (State forest owner)
LRF – Skogs-Ägarna (Private forest owner)
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Milos Island: Wealth due to mining in prehistoric era

- Phlakopi: A prehistoric settlement on Milos, trading obsidian.
- Milos obsidian has been identified in mainland Greece & other SE Mediterranean prehistoric settlements

- Traded Rocks & Minerals of Milos:
  - Bentonite
  - Sulfur
  - Perlite
  - Siliceous Stone
  - Baryte
  - Kaolin
  - Obsidian
  - Manganese
Milos recent mining history

Sulfur Mines – last year of operations 1960

Manganese Mining & Processing, early 19th c
Milos sustainability should be based on two pillars

- There are substantial synergies in developing both pillars together
- Social partners should be committed
S&B’s rehabilitation activities started decades ago

**Chivadolimni,**


**Gerakopetra,**

Rosia Montana: Mining, Tourism and Regional Development

Current Status

≡ Previous mining activity has left Rosia Montana with a legacy of severe environmental damage, including hazardous, abandoned open pits and severely polluted rivers that greatly exceed Romanian and EU legal limits in terms of permitted contaminants.

≡ Lack of alternative sustainable economic activity in the area has left the town dilapidated and heavily polluted from past environmental legacies.

≡ Local unemployment runs above 80% excluding those employed by Gabriel’s local company, Rosia Montana Gold Corporation (RMGC).

≡ Romanian government classified Rosia Montana a ‘Disadvantaged Zone’ due to high unemployment and low income levels in the area.

≡ Ongoing debate on listing Rosia Montana as a UNESCO World Heritage Site before or after mining operations.

≡ Although Alba County (where Rosia Montana is situated) has 5.6% of the region’s accommodation capacity, it only attracts 3.7% of overnight stays to the county.
Rosia Montana: Challenges Ahead

- Preservation of the local heritage for Rosia Montana requires large capital investment.

- Costs incurred for Rosia Montana to become a tourist destination (clean-up, infrastructure, facilities, restoration of heritage, viable community) are estimated at US$300 million.

- Significant ongoing rate of deterioration to cultural heritage resulting in permanent loss if something is not done now to preserve and restore it.
Rosia Montana: Tourist Attractions

The mine in Rosia Montana should become a tourist attraction as the largest operation of its type in the EU and one of the largest worldwide.

The main project contributor:
Rosia Montana Gold Corporation RMGC

Gabriel Resources
Boliden Project – Biodiversity and rehabilitation of old mine sites / 1

≡ Develop a method for ecological rehabilitation of old minesites

≡ Inventory of the sites regarding biodiversity

≡ Identify targets for actions at each site
  = Restore it the way it was
  = Create specific habitats
  = Create high value habitats for specific species

≡ Proposals of actions to reach targets
≡ Perform actions
≡ Evaluate actions
Identified 8 old minesites in 2010 that were rehabilitated but with an option to improve rehabilitation regarding biodiversity

Through high competence consultants – Enetjärn Natur AB

- 2 sites were inventoried 2011 (Långsele and Långdal)
- Baseline, action plans and targets were decided
- Actions for improved biodiversity started at one object 2012 (Långsele)
- 2 additional sites inventoried 2012
- Further inventories and actions ....

A lot of interest from media ....
Addressing regulatory issues in closure planning and asset retirement in Europe or the need to enable by a revised EU legal framework

MWD Technical Challenges to Implementation

Setting & Enforcing Permit Conditions:

≡ Correct interpretation of Best Available Techniques (BAT)

≡ Correct use of the BAT Document

≡ Untangling from former Waste/Landfill Directives

≡ Complementary (not separate) requirements of the Water Framework Directive
How to implement the Mine Waste Directive

≡ Allow site-specific variations that achieve the right level of control

≡ Do not try to apply generic waste or landfill conditions, because material & processes are fundamentally different

≡ Link different planning measures to avoid double regulation

≡ Provide a variety of mechanisms for the Financial Guarantee or equivalent assurance of closure in case of bankruptcy

≡ Comply with EU Liability Directive separately (e.g., insurance)

≡ Arrange for after-care costs separately (e.g., trust fund)
Modern mining explained

Planning for Integrated Mine Closure: Toolkit

Mining in Tanzania – What future can we expect? The Challenge of Mineral Wealth: using resource endowments to foster sustainable development

Implementing a global solution to managing a low-emissions economy: Policy on climate change

Health Impact Assessment: summary of the good practice guidance

Mining: Partnerships for Development Toolkit

Human rights in the mining and metals industry: Integrating human rights due diligence into corporate risk management processes

Ores and Concentrates: An industry approach to EHS Hazard Classification

Good Practice Guidance for Mining and Biodiversity

GUIDANCE DOCUMENT: Non-energy mineral extraction and Natura 2000


Mineral Resources in Land Use Planning

European Association of Mining Industries, Metal Ores & Industrial Minerals
Framework conditions for investment?

≡ The legacy site inventories could be complimented with mineralogical information

≡ The EU could establish a chapter on reworking of mine waste disposal sites in future revisions of the BAT document

≡ National and regional regulations could provide sufficient provisions with regard to
  = Historic, cultural heritage and archaeological findings
  = Liability issues linked to old mine workings
  = Overcoming distance to market
  = Protecting the investment (risk-sharing)
  = Allowing for efficient and timely permitting since in most cases the relatively low grades will make the investment otherwise unattractive
Vision for 2020 and beyond

By 2020

- Complete modern database and economic assessment of EU primary and secondary resources
- Revised regulatory framework facilitating sustainable management of resources and uptake of innovation
- EU Leadership in technology for all aspects of resource management (exploration, extraction, processing, re-processing, reuse, recycling, recovery, design, ...)
- EU resource diversification
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Call for expression of interest

European Association of Mining Industries