



**EUROPEAN TECHNOLOGY PLATFORM  
ON SUSTAINABLE MINERAL RESOURCES**

## **ETP SMR – 5 years of activities in the EU RTD (raw materials) area.**

**Henryk Karaś**, corporate advisor, KGHM  
Chairman of HLG, European Technology Platform on Sustainable  
Mineral Resources (ETP SMR),

**Mineral workshop, Brussels, 14th January 2011**

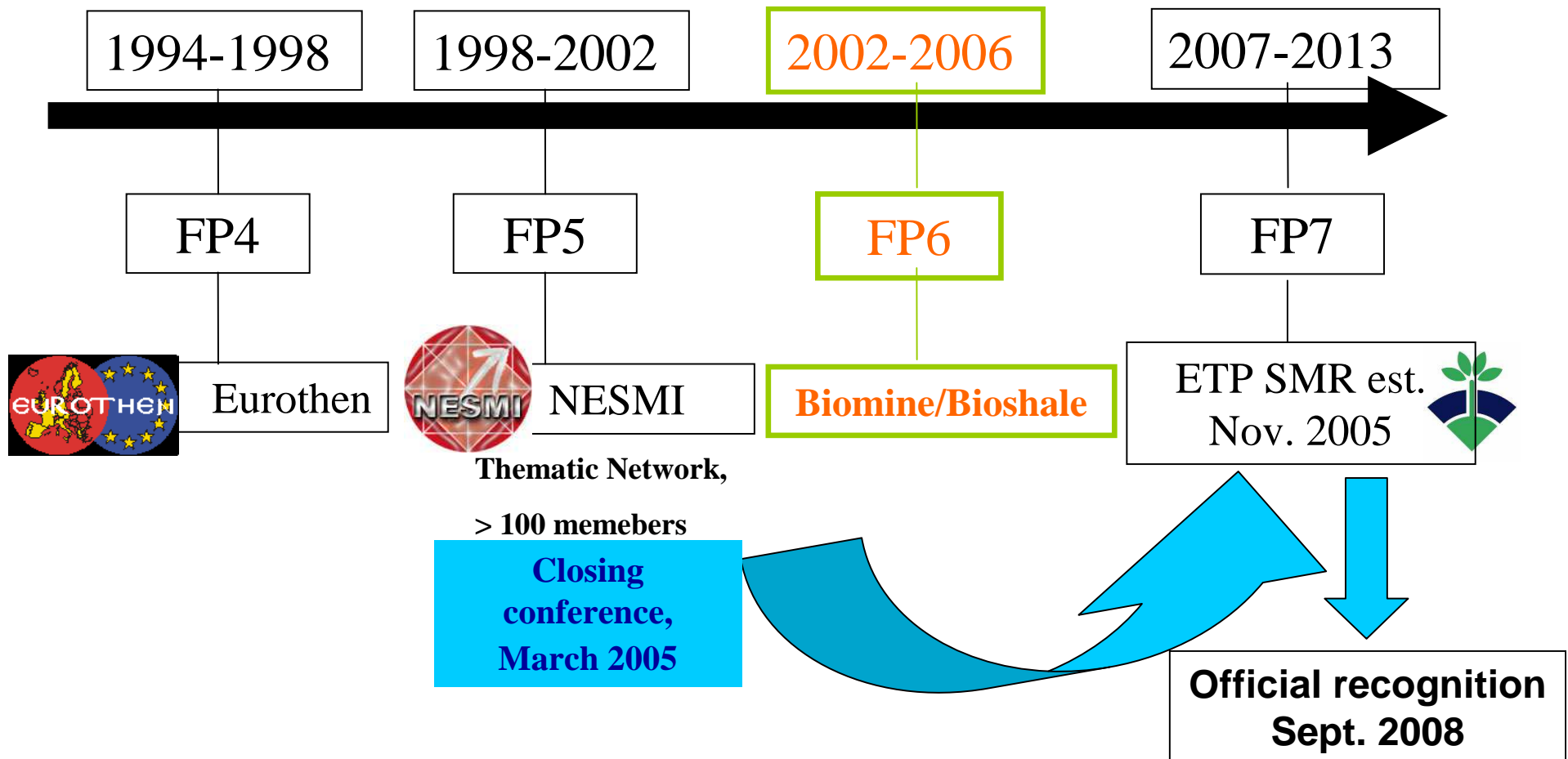


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## Content of presentation:

1. ETP SMR – short introduction.
2. Mining sector– important factor of the European economy;
3. Flagship Initiative EUROPE 2020: Resource efficient Europe;
4. EUROPE 2020 innovation programme - the growing role of ETP SMR.

# ETP SMR – short history.





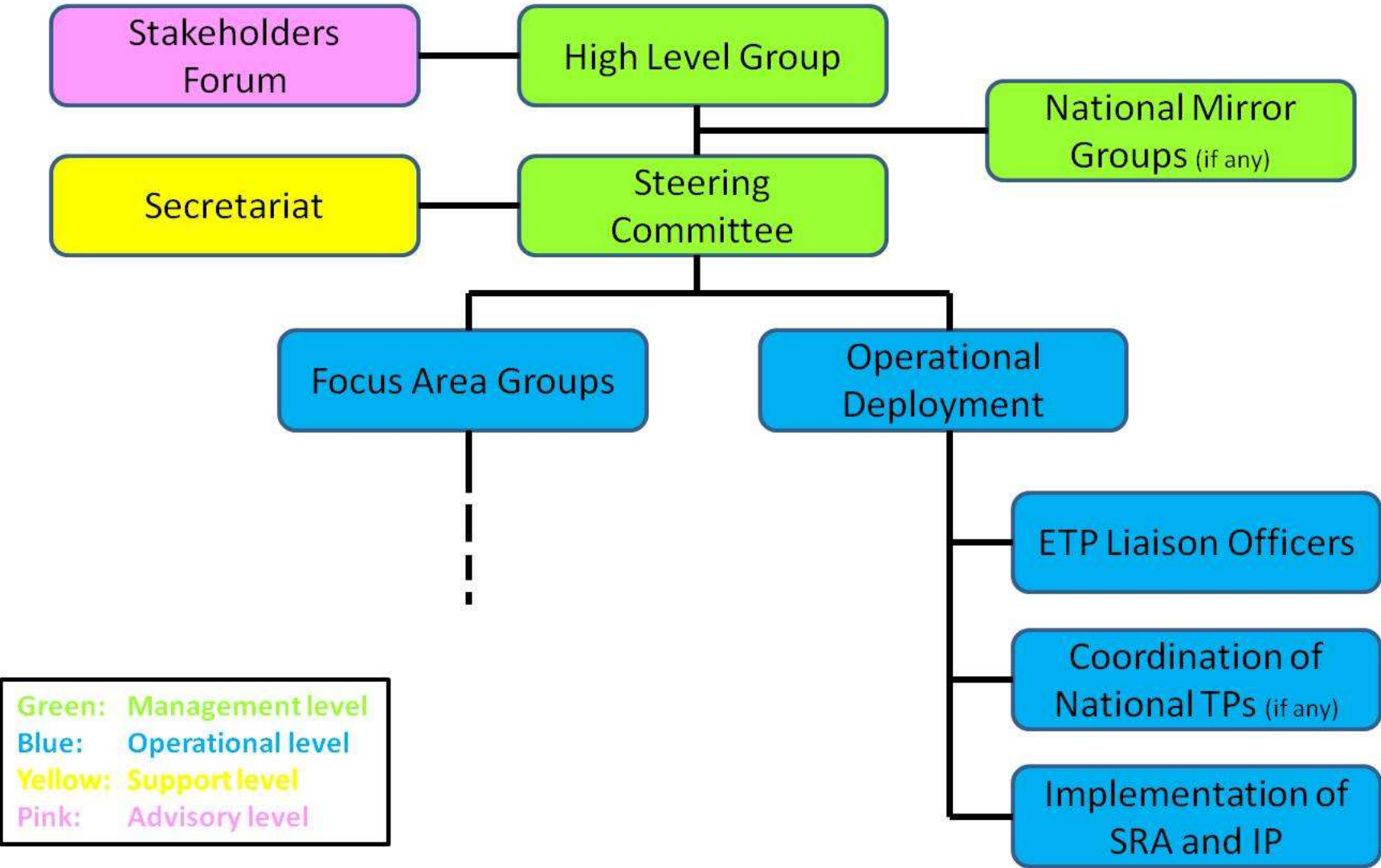
# The Raw Material Initiative - an integrated strategy to ensure access to raw materials in Europe.

- “We must act, to ensure that access to raw materials for enterprises will not be hampered”.
- „We need fair play rules on external markets, a good framework to foster sustainable raw materials supply from EU sources as well as improved efficiency in resource use and recycling”.
- „It is our aim to make sure that European industry will be able to continue to play a leading role in new technologies and innovation.”



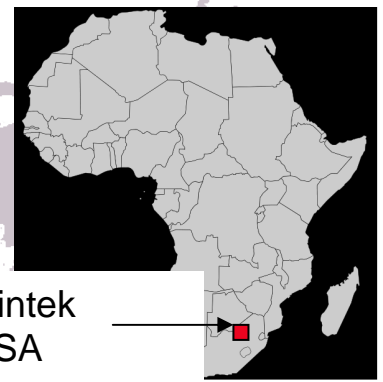
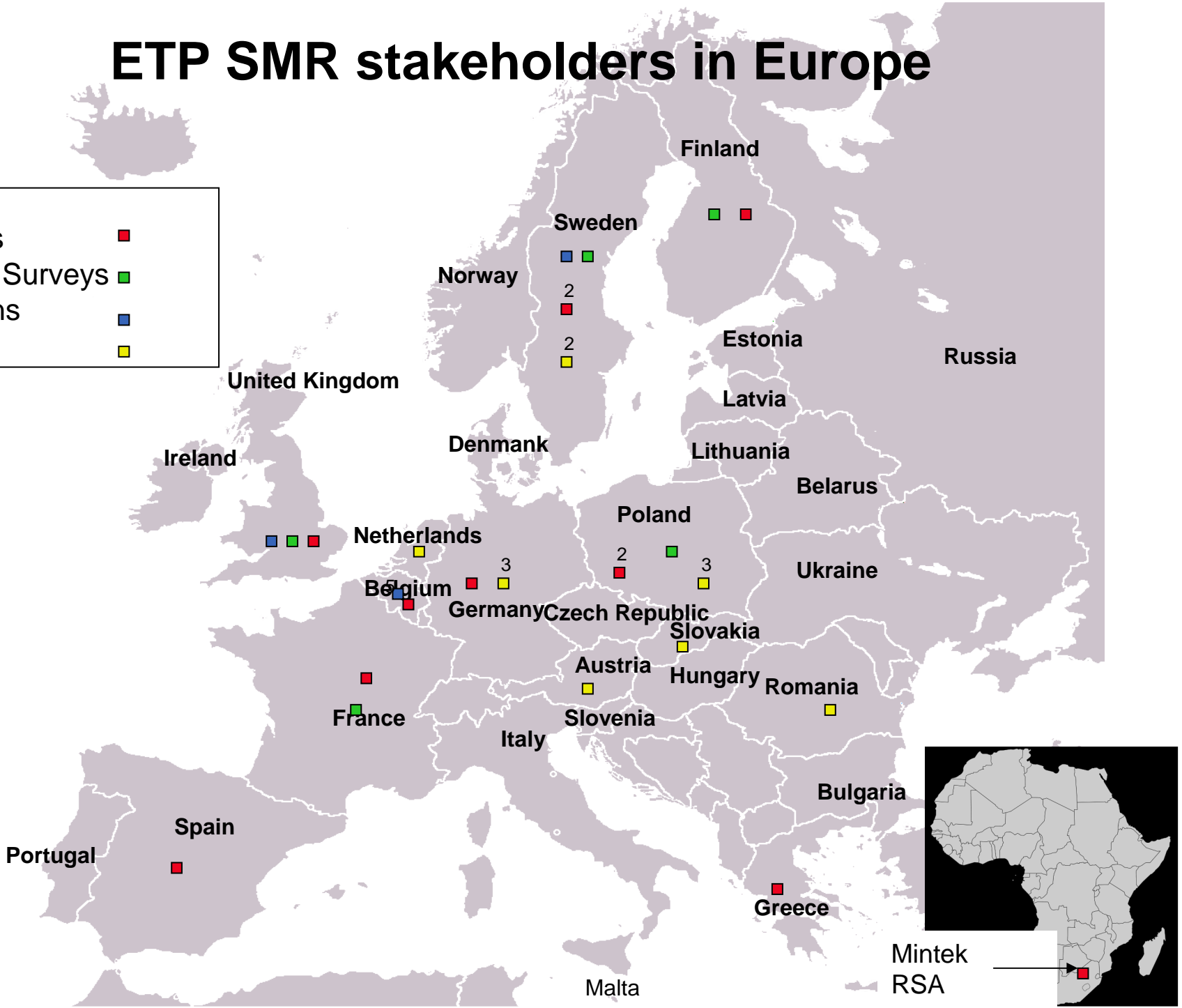
source: citations from press conference of Guenter Verheugen, Brussels, Nov. 2008

# ETP SMR – structure.



# ETP SMR stakeholders in Europe

Companies	■
Geological Surveys	■
Associations	■
Academia	■





# ETP SMR stakeholders representing the mineral industry sector in Europe

## Companies:

**BHP Billiton**; UK  
**Boliden**; Sweden  
**Kali & Salz AG**; Germany  
**KGHM**; Poland  
**LKAB**; Sweden  
**LW (h.coal) „Bogdanka”**, Poland  
**MEED**; France  
**Outotec**; Finland  
**S&B Industrial Minerals**;  
**SGL Carbon**; Germany  
**Technip**; France  
**Tecnicas Reunidas**; Spain  
**UMICORE**; Belgium

## Geological Surveys:

**BRGM, France**;  
**British Geological Survey**;  
Geol. Survey of **Sweden**;  
**GTK, Finland**;  
**Polish Geological Survey**;

## Associations:

**EuroGeoSurveys**, the Association of the European Geological Surveys;  
**EUROGIF**, the European Oil and Gas Innovation Forum;  
**Euromines**, the European Association of Mining Industries;  
**INCDMNR IMNR**,  
**IMA-Europe**, the European Industrial Minerals Association;  
**MINFO**, the Swedish Mineral Processing Research Organization;  
**MIRO**, Mineral Industry Research Organization;UK  
**MITU**, the Swedish Mineral Industry Research Organization;  
**PNFMP**, Polish Non Ferrous Metal Platform;  
**UEPG**, the European Union Association of Aggregate Producers;

## Academia:

**IMBIGS**, Institute of Mechanized Construction and Rock Mining, Poland;  
**LTU**, Lulea University of Technology, Sweden;  
**Mineral and Energy Economy Research Institute of Polish Academy of Sciences**, Poland;  
**TUKE**, Technical University of Košice; Slovak Republic  
**TNO**, The Netherlands;  
**University of Leoben**, Austria;  
**RWTH University of Aachen**, Germany;  
**National R&D Institute for Non-ferrous and Rare Metals**, Romania;  
**IMN**, Non-Ferrous Metals Institute, Poland;  
**MINTEK** (RSA)



## Innovation - activity of the ETP SMR in the EU NMP FP7 research fund between 2007 - 2009.

- **Priority A:** Innovative concepts and processes for new high added value mineral products (**ProMine, Experl**)
- **Priority B:** Technologies for a sustainable increased self-sufficiency in resources (**One Geology, Eurogeosource**)
- **Priority C:** New strategies and technologies for mineral resources extraction, processing and recovery (2011).
- **Priority D:** Reducing environmental footprint (**EO-MINERS, Impactmine**)





# Example of a FP7 running project.

**ProMine:** Nano-particle products from new mineral resources in Europe

**Research area:** NMP-2008-4.0-5 Innovative concepts and processes for strategic mineral supply and for new high added value mineral-based products

**Project website;** <http://promine.gtk.fi>

**ProMine** research focuses on five nano-products:

- Conductive metal (Cu, Ag, Au) fibres,
- Rhenium and rhenium alloy powders,
- Nano-silica,
- Iron oxyhydroxysulphate and
- New nano-particle based coatings for printing paper.

**Renzo Tomellini, European Commission  
Head of Unit “Value-Added Materials”**

# Innovation - EU FP 7 NMP Research Funds, 2010-11.

*Theme 4 - NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES.*

Call for proposals open on e.g.:

- i. networking at MS level (research on materials science and engineering, including international cooperation, **ERA-NET in minerals**)
- ii. **developing new technologies for eco-efficient intelligent mining activities** (advanced underground technologies for intelligent mining and for inspection, maintenance and excavation),
- iii. eco-design for new products - and eco-efficient and cost-effective method of production, (**management of industrial water**),
- iv. finding substitutions (Novel materials for replacement of critical materials, Platinum GE and Rare Earth )

**ETP Sustainable Minerals Resources a Platform of dialogue.**



## One of the ETP SMR initiatives in the FP7 NMP **Intelligent Deep Mine (IDM), 2010-2011.**

**NMP.2011.4.0-2.** *Advanced underground technologies for intelligent mining and for inspection, maintenance and excavation.*

### **IDM work packages.**

- **WP1: Mine-wide information and control systems, logistic and mass flow management;**
- **WP2: Novel mining and underground processing methods;**
- **WP3: Rock mechanics and ground control;**
- **WP4: Innovative machinery for deep underground operations;**
- **WP5: Application, demonstration, validation;**
- **WP6: Working environment, health and safety;**
- **WP7: Communication, dissemination and societal issues.**

# NMP.2011.4.0-6 ERA-NET on the Industrial Handling of Raw Materials for European industries

- **Technical content/scope:** The objective of the ERA-NET is to step up coordination of research programmes in the field of industrial production and supply of raw materials.
- The ERA-NET should create an efficient long-lasting working platform to benchmark national programmes and establish eventually joint RTD programme between the involved partners, resulting in joint/coordinated calls within the project. That will be facilitated by quick and effective transfer of good practice from other ERA-NETs.
- The ERA-NET is expected to establish an efficient collaboration with industry, in particular with the European Technology Platform on Sustainable Mineral Resources, in road mapping and networking activities.

# NMP.2011.4.0-6 ERA-NET on the Industrial Handling of Raw Materials for European industries (2)

## Potential EU Country Partners, ERA-MIN

- **UK** – Defra/MIRO
- **Denmark** - Danish Agency for Science, Technology and Innovation
- **Sweden** – Swedish Mineral Processing Research Association
- **Italy** – APRE
- **Greece** – Institute of Geology and Mineral Exploration
- **Austria** – University of Leoben/Austrian Research Promotion Agency
- **France** – CNRS, National Centre for Scientific Research/Regional Council for Midi-Pyrenees
- **Finland** – Tekes/Geological Survey of Finland
- **Czech Republic** – Technology Centre ASCR/Czech Society for New Materials & Technologies/Mining Association of Czech Republic
- **Germany** – Helmholtz Centre for Environmental Research/DFG – German Research Foundation
- **Poland** – National Centre for Research and Development
- **Republic of Serbia** – Ministry of Energy and Mining
- **Romania** – EcoMining
- **Hungary** – Hungarian Office for Mining and Geology/Geophysical Institute/Geological Institute



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**industrial technologies** 2010  
integrating nano, materials and production



# Flagship Initiative EUROPE 2020: „Resource efficient Europe,,

**The aim is to support the shift towards a resource-efficient and low-carbon economy that is efficient in the way it uses all resources.**

*from EUROPE 2020 Executive Summary*

# ETP SMR and Europe 2020 partnership programme (1).

## I. Supply of raw materials for Europe by developing new innovative technologies and solutions in:

- new extraction/mining technologies
- recycling;
- secondary extraction of mining, mineral processing and metallurgical wastes;
- substitution of critical raw materials;
- better recovery of raw materials and eco-efficient innovative technologies in mining, mineral processing and metallurgy.

# ETP SMR and Europe 2020 partnership programme (2).

II. Better knowledge on Raw Materials (One Geology in Europe);

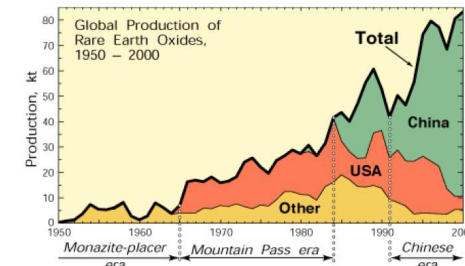
III. International cooperation in mineral sector between the EU and:

- USA (Atlantic Partnership);
- Canada (access to raw materials, RTD);
- RSA and other African countries – RTD area in mineral sector.



# International dialogue

1. **Bilateral and trilateral dialogue has been initiated with USA and Japan.**  
(U.S.- Japan REE Roundtable, October 2010).



2. **A dedicated EU-US workshop on 3 December 2010 also with Japanese invited guests, MIT, Boston, USA (EU-USA (workshop)).**



3. **Agreement African Union Commission / European Commission in Addis Ababa, June 2010, to launch a bilateral co-operation in three areas:**
  - **Governance**
  - **Infrastructure/investment**
  - **Geological knowledge / skills**

**Based on African Mining Vision and EU Raw Materials Initiative**





## **Cross cutting initiatives between other ETPs – next opportunity for mining sector in RTD.**

- **Sustainable Chemistry;**
- **Space Technology Platform (ESTP);**
- **European Steel Technology Platform;**
- **MANUFUTURE - Platform on Future Manufacturing Technologies**
- **The European Construction Technology Platform (ECTP);**
- **EuMaT - European Technology Platform for Advanced Engineering Materials and Technologies;**
- **The European Technology Platform on Industrial Safety;**
- **Zero Emission Platform (ZEP);**
- **Water Supply and Sanitation Platform;**
- **Advanced Research and Technology for Embedded Intelligence and Systems (ARTEMIS).**



## AGENDA of the ETPs internal meeting, 12th January 2011, 10.00h-16.00h

1. Short presentation of the EIP/RMI – ETP SMR.
2. ETP presentations (the scope of the programme should fulfill the expectations of EC stated in EIP and RMI documents):
  - ETP Construction (ECTP)
  - ETP EuMat
  - ETP ManuFuture
  - ETP Steel (ESTEP)
  - ETP SusChem
  - ETP SMR
  - other entities including R&D institutions, companies, associations,
3. Discussion on EIP WPs and establishing Ad Hoc Working Groups which will elaborate the innovation programme for Europe based on EIP and RM Initiative.

# **EIP (2010-2020) building-blocks/work packets.**

Programme announced by DG Ent., Brussels, 9th Dec.2010

**WP1 – Developing new innovative technologies and solutions for sustainable raw materials supply;**

**WP2 – Developing new innovative technologies and solutions for the substitution of critical materials;**

**WP3 – Improving Europe's raw materials knowledge and infrastructure base ;**

**WP4 – Improving the regulatory framework via promotion of excellence and promoting recycling through public procurement and private initiatives;**

**WP5 – International cooperation;**

# Building-blocks for implementing the EIP(1).

## **WP1 – Developing new innovative technologies and solutions for sustainable raw materials supply.**

- Innovative approaches shall address **all aspects of the value chain** including efficient resource processing. It addresses economic, safe and environmentally friendly **extraction and processing of primary raw materials as well as the safe and environmental friendly extraction of mining waste heaps and recycling of secondary raw materials.**
- **This shall be demonstrated on 10 new pilot plants** along the value chain reflecting extraction of different types of raw materials, and processing and collection and recycling processes, **in different regions** and three demonstration biorefinery plants.

# EIP - Roadmap

- **January/February 2011**
    - update of EIP proposal – feed back by stakeholders needed by January
    - Preparation of a first workshop, Indication of experts and rapporteur (incl. expertise and field of interest) aim to form a „expert task force“
  - Early February, Meeting with „expert task force“
  - **28 Feb. 2011**
    - 1. Workshop to discuss a possible EIP – agreement on experts supporting fine tuning the EIP and WP proposal
  - **March 2011 Competitiveness Council/ Parliament, Rapport**
  - **April 2010 Expert WP-group workshops** - feed back by May
  - End of May 2010
    - Expert group rapporteur meeting - Post Consultation – feedback – fine tuning of the partnership proposal
  - **June 2011 COM:**
    - *formalising the proposals for partnerships and setting out in detail the governance, financing and implementation arrangements*
  - **Autumn 2011:**
    - Full consultation to develop theme and build roadmap
    - Continuous discussions with Member States
  - **September/October 2011**
    - 2. workshop - providing findings of the specific EIP workshops, fine tuning of the partnership proposal;
    - achieve agreement on the proposal
- Polish presidency conference at 26 Oct. 2011**
- **Launch possibly late 2011**



## Conclusions.

- **The extractive industry can be one of the main pillars of the European economy (security of supply has become an important issue in Europe).**
- **There is great potential for sustainable supply of raw materials from the EU resources (primary and secondary).**
- **Recycling and re-use can be a strong alternatives for increasing demand for strategic raw materials.**
- **Expanded RTD in FP7 and FP8 programme – a place for implementation of many of the EU RMI activities.**
- **ETP SMR is becoming important player in fostering the RTD in mineral sector in Europe.**



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[www.etpsmr.org](http://www.etpsmr.org)



**Thank you for your attention.**