A possible European Innovation Partnership on Raw Materials

Meeting of the representative of European affairs in the French universities

25 May 2011

BRUSSELS

Disclaimer:

This working document does not reflect the position of the Commission in advance of any decision on the Innovation Partnership.

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THE CONTEXT - EUROPE 2020

- **4 Flagships out of 7**
  - An industrial policy for the globalisation era
  - Resource efficient Europe
  - An agenda for new skills and jobs
  - Innovation Union

What is Innovation Union?

Strategic approach

- Involving **all actors** (**Partnership** with Member States)
- From **idea to market**
- Tackle **Fragmentation**
- Address **Framework conditions**
- Focus on **societal challenges**
- **Broad concept** of innovation

Key elements

- European Innovation Partnerships
- European Research Area framework
- Streamlined EU programmes
- New financial instruments
- Reform of standardisation system
- Public procurement of innovation
- Social innovation pilot
- Stronger monitoring
- Innovation Convention

European Innovation Partnerships

- **Key issues**
  - Major **societal challenges** require **joint responses** across policies and across EU
  - Numerous **sub-critical, uncoordinated initiatives:**
    - between EU / Member States / Regions
    - R&D / Market-side actions (public procurement, standards, regulation)

- **European Innovation Partnerships** are:
  - Frameworks bringing together main actors and actions
    - At EU and national levels
    - From research to market
    - Around common objectives and targets

European Innovation Partnerships

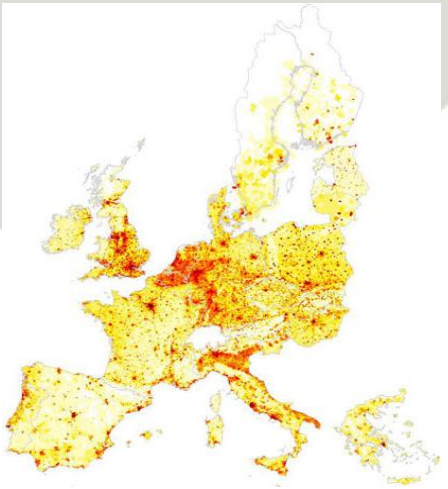
- **2010**
- Pilot on active and healthy ageing
  Aim: two additional healthy life years by 2020
- Council, Parliament discussed the concept
- Member States and stakeholders invited to join

- **2011**
- Others to follow pending discussions and building on pilot experience
- Topics considered: agriculture, smart cities, raw materials, mobility,water.

Raw Materials - Main challenges

- EU highly dependent on imports of important raw materials (metals and industrial minerals) which are increasingly affected by **market distortions / commodity market speculations**

- Still potential in Europe (self-sufficient supply for construction materials, potential for other raw materials), but exploration and extraction face ongoing **increasing competition** for different land uses and a highly regulated environment



Economic importance

Importance for economic value chain and emerging (key) technologies

- **Renewable energy**
  solar cells, photovoltaic's, wind turbines
- **Energy efficiency**
  hybrid and electric cars, LED lighting, batteries, buildings and infrastructure
- **Electronics**
  flat screens, mobile phones
- **Aerospace**
  light weight alloys

Emerging technologies

Raw material	Emerging technologies
Antimony	Antimony-Tin-Oxide (~ In-Sn-O), micro capacitors
Cobalt	Li-ion batteries, synthetic fuels
Gallium	Semi-conductors, thin layer photovoltaic's, IC, WLED
Germanium	Fibre optic cable, IR optical technology
Indium	Displays, thin layer photovoltaic's
Platinum (PGM)	Fuel cells, catalysts
Palladium (PGM)	Catalysts, seawater desalination
Niobium	Micro capacitors, ferroalloys
Neodymium (REE)	Permanent magnets, laser technology
Tantalum	Micro capacitors, medical technology

Emerging technologies

Raw material	Production 2006 [t]	Demand emerging tech. 2006 [t]	Demand emerging tech. 2030 [t]	Demand/ prod. 2006	Demand/ prod. 2030	Factor
Gallium	152	28	603	0.18	3.97	22
Indium	581	234	1.911	0.40	3.29	8.2
Germanium	100	28	220	0.28	2.20	7.9
Neodymium	16.800	4.000	27.900	0.23	1.66	7.2
Platinum	255	very small	345	0	1.35	
Tantalum	1.384	551	1.410	0.40	1.02	2.5
Silver	19.051	5.342	15.823	0.28	0.83	2.9
Cobalt	62.279	12.820	26.860	0.21	0.43	2.1
Palladium	267	23	77	0.09	0.29	3.2
Titanium	7.211.000	15.397	58.148	0.08	0.29	3.6
Copper	15.093.000	1.410.000	3.696.070	0.09	0.24	2.7

The Raw Materials Initiative

COM(2011)25 final

Highlights

- Importance of **increased access** to raw materials after the financial and economic crisis
- **Progress** made in the implementation of the RMI
- **Remaining challenges** to be overcome to ensure sustainable development of the EU economy in the long term
- Its contribution to the European Strategy 2020

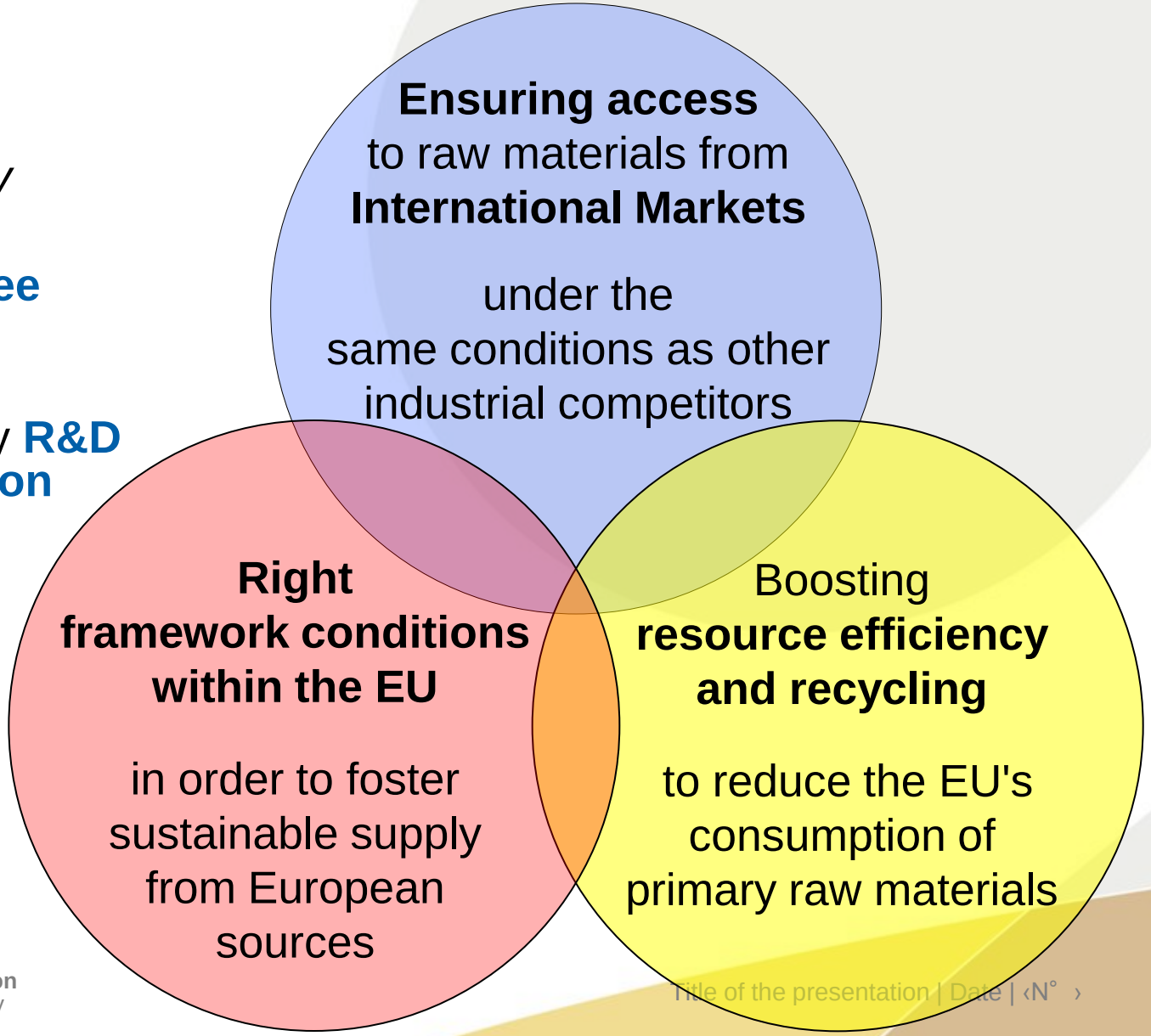
*Announces **new actions** in the field of*

- **Industrial policy**
- **Trade policy**
- **Development**
- **Recycling**
- **Innovation**

The Raw Materials Initiative

Integrated strategy

- based on **three pillars**
- Underlined by **R&D and Innovation**



Innovation in Raw materials

- A matter of survival in a globalised world
- **It is not** only about technology (even though technology is crucial)
- **It is** also about:
  - Processes
  - Best practices
  - Standards
  - Public procurement
  - Regulations
- Concept of Innovation Partnership applied to Raw Materials

CREATIVITY IN RAW MATERIALS

INNOVATION PARTNERSHIP - RAW M
Preparatory work

- Expert workshop, 28 Feb. 2011
  => Initial overview of:
  - possible concrete objectives/targets by 2020
  - possible Work Packages

- Online public consultation - Open until 20 June
  http://ec.europa.eu/enterprise/policies/raw-materials/public-consultation-ip/index_en.htm

INNOVATION PARTNERSHIP - RAW M
Possible concrete objectives/targets by 2020

- Europe should have **standardised statistical instruments** for resource and reserves (land and marine) and a **3-D geological map**
- a **dynamic modelling system** relating trends in supply and demand with economical exploitable reserves and a full lifecycle analysis
- **Ten innovative pilot actions** (e.g. **demonstration plants)** for extraction and processing, collection and recycling
- **substitutes for at least three key applications** of critical materials
- a **European virtual Education and Training Institute on Sustainable Mining and Materials Management (M^3)**
- a **raw materials dialogue at international level up and running**

Possible Work Packages

- Technology-focused policy areas
  - WP 1 Extraction, processing, recycling
  - WP 2 Substitution
- Non Technology policy areas
  - WP 3 Access to land; geological knowledge….
  - WP 4 Resource efficiency and recycling
- International cooperation
  - WP 5 International cooperation

Technology-focused policy areas

- Possible WP1 – Exploration, extraction, processing, recycling
  - Innovative technologies
  - Along the entire value chain
  - For cost effective, safe, environmentally and socially sound raw materials production
    - e.g. advanced exploration technologies, technologies to reduce the use of hazardous substances in mining processes or to improve recovery and treatment from mining waste, …
- Possible WP2 – Substitution
  - Reduce the use of critical, scarce or hazardous materials
  - Finding sustainable substitutes/alternatives
    - e.g. rare earths in permanent or heat resistant magnets, LEDs and displays, or electrical drives and regenerative braking; precious metals in catalysers, indium and gallium compounds in semi-conductors, telecommunication or lighting.

Non Technology policy areas

- Possible WP3 – Access to land, geological knowledge
  - Improving regulatory framework, knowledge and infrastructure base,
  - Finding sustainable alternative solutions
    - e.g. innovative knowledge base of European resources (incl. urban mines), use satellite based information systems, best practices in terms of land-use planning for minerals…
- Possible WP4 – Resource efficiency and recycling
  - Improving regulatory framework via promotion of excellence and promoting recycling through public procurement and private initiatives
    - e.g. Best Available Technique (BAT) for the extractive industry, enhanced efficiency of collection, sorting and recycling, track major flows of waste inside and outside the EU…

Possible WP 5
International cooperation

Promoting appropriate international cooperation, including with exporting or recycling developing countries.

This cooperation may deal with different policy issues such as:

- geology and improving the geological knowledge base
- research and innovation
- trade and investment conditions
- policy dialogue/co-operation with international organisations such as EITI, World Bank and African Union.

Next Steps…

1. Assess **consultation** results (deadline: 20 June)

2. Launch of **Innovation Partnership on Raw Materials**