Update on EU Raw Materials and Minerals Policy
The relation to the Circular Economy Package

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The EU Raw Materials Strategy and Commission priorities

Commission priorities 2015-19

1. Jobs, Growth and Investment
   - circular economy and green growth

3. Energy Union
   - transition to a low-carbon economy
     (renewables, electricity market, transport...)

4. Internal Market
   - unlock the full potential of the single market
     - a renewed EU Industrial Policy Strategy

6. Trade policy to harness globalisation
   - economic diplomacy
     - raw materials chapters in FTAs

9. A stronger global actor
   - international cooperation and development

- keep the EU industry competitive on the way to a low-carbon and circular economy;
- help the EU industry to master: digitalisation, sustainability and innovation;
- strengthen domestic production and EU industrial value chains, all starting with raw materials, particularly critical raw materials (e.g. EU Battery Alliance);
- strengthen partnerships between the EU, Member States and regions;
- attract young generation and develop relevant skills, build knowledge and engage society

Raw Materials Initiative = EU policy
EIP on Raw Materials Strategic Implementation Plan

- CRM list
- H2020 funding
Raw materials in EU policy

- Critical Raw Materials
- Framework conditions for primary raw materials
- Raw Materials Scoreboard 2020
- Batteries action plan
- Trade
- European Battery Alliance
- Circular Economy Action Plan
- Low carbon 2050 roadmap
- Horizon 2020/Europe
EU summit conclusions adopted on 22 March 2018 in Brussels: The European Council invites the Commission to present by the first quarter of 2019, in accordance with the Paris Agreement and taking into account the national plans, a proposal for

a **Strategy for long-term EU greenhouse gas emissions reduction**

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**Global material extraction by resource type**
Source: Raw materials Scoreboard 2018, UNEP, World Bank

**Total renewable power generation by region**
Source: OECD, IEA
Raw materials indispensable enablers for carbon-neutral solutions across sectors

- Primary raw materials will continue to provide large part of the demand
- More and better re-use and recycling will improve competitiveness
- Recovery and recycling particularly important in sectors/technologies depending on critical materials like cobalt, rare earths and graphite
- **78 raw materials** evaluated with fact sheets available, revised methodology

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<th>2017 CRMs (27)</th>
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<tr>
<td>Antimony</td>
<td>Fluorspar</td>
<td>*LREEs</td>
<td>Phosphorus</td>
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<td>Baryte</td>
<td>Gallium</td>
<td>Magnesium</td>
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<td>Beryllium</td>
<td>Germanium</td>
<td>Natural graphite</td>
<td>Silicon metal</td>
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<td><strong>Bismuth</strong></td>
<td>Hafnium</td>
<td>Natural Rubber</td>
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<td>Borate</td>
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<tr>
<td>Cobalt</td>
<td>*HREEs</td>
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<td>Vanadium</td>
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<td>Coking coal</td>
<td>Indium</td>
<td>Phosphate rock</td>
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*HREEs=heavy rare earth elements, LREEs=light rare earth elements, PGMs=platinum group metals
Framework conditions for primary raw materials

Time to market?
Permitting time costs a lot!

- Discovery ($2-5 million)
- Development ($10-100 million)
- Construction ($1-4 billion)
- Green-field exploration ($1 million)

Succes-rate/geological risk profile

80%
30%
5%
0.1-1%
100%

Mining

A project can be terminated at all stages

Source: MINLEX study

Note: Germany has a decentralised system, and total number of laws only represents the example of Mecklenburg-Western Pomerania. The UK includes laws for England, Wales and Northern Ireland.
Knowledge needs

- Harmonised resources and reserves
- Primary production
- Secondary production
- Substitution
- EU sourcing
- Market
- Future demand vs. supply
- Materials flows analysis

- Raw materials potential
- Framework conditions (EU Member States)
- Access to finance
- Agreements/restrictions
- Raw materials and products trade and flows (CN/HS)

- Semi-products to end-use products – PRODCOM
- Strategic technologies

- Value added in industrial chains until end-use sectors – NACE
- Strategic sectors
European Battery Alliance

Batteries – example of the strategic EU industrial value chains

EBA is a cooperative platform: EC, interested EU countries, European Investment Bank, key industrial stakeholders and innovation actors.

The objective is:
- To create a competitive manufacturing value chain in Europe with sustainable battery cells at its core.
- To capture a battery market of up to €250 billion a year from 2025 onwards. Covering the EU demand alone requires at least 10 to 20 ‘gigafactories’ (large-scale battery cell production facilities).
1. Keliber – Li production - Finland
2. Savannah – Li production - Portugal
3. Umicore – Cathode materials - Nysa, Poland
4. BASF + Nornickel – Cathodes materials - Harjavalta, Finland
5. Northvolt – Cells manufacturing - Skellefteå, Sweden
6. Saft + Umicore + Siemens + Manz – Advanced Li-ion and Li-ion solid state
7. Northvolt + South Bay Solutions – Battery modules - Gdansk, Poland
8. BMW + Northvolt + Umicore – Sustainable life cycle loop for batteries
Survey Battery Raw Materials

- Acquire first class knowledge on raw materials
- Build raw materials refining capacity in the EU
- Develop attractive European framework conditions for exploration, extraction and recycling of battery raw materials

Extend the analysis to other strategic raw materials for future mobility (REEs, Mn, Mg, etc...)
"Closing the loop. An EU action plan for the Circular Economy"
Commission's Communication COM(2015) 614 final

The transition towards a Circular Economy:
- The value of products, materials and resources is maintained in the economy for as long as possible
- Waste generation is minimised
- Brings economic, social and environmental gains
Circular Economy

Report on Critical Raw Materials and the Circular Economy

Objectives:

➢ To help Member States implement the new provisions on critical raw materials in the Waste Framework Directive – i.e. in relation to waste prevention and waste management

➢ To ensure a coherent and effective EU approach to critical raw materials in the transition to a circular and low-carbon economy

➢ Provide information to stakeholders

➢ Provide key data sources and identify best practices and possible further actions
To conclude
Thank you!

**EU Raw materials, metals, minerals and forest-based industries:**

**Critical raw materials for the EU:**

**Commission Staff Working Document “Report on Raw Materials for Battery Applications”:**

**EIP on Raw Materials:**

**Horizon 2020 - raw materials and calls:**

**Horizon 2020 – experts:**

**Raw Materials Week 2018**
eurawmaterialsweek.eu

**Raw Materials Information System:**
http://rmis.jrc.ec.europa.eu/

**EIT Raw materials:** www.eitrawmaterials.eu
EIIs are the lifeblood of key value chains in EU but also their supply chains are linked to other EIIs.

EIIs products are and will be needed more to enable the energy transition and will be at the forefront of low-carbon solutions.

Most EIIs already see recycled materials, waste and by-products of other industries as important raw material inputs.

Source: Industrial Value Chain a Bridge Towards a Carbon Neutral Europe, VUB IES, 2018
Report on CRM and the Circular Economy

Issued in January 2018, taking into account the list of 27 critical raw materials (Sep 2017)

Objectives:

- To help Member States implement the new provisions on critical raw materials in the Waste Framework Directive – i.e. in relation to waste prevention and waste management.
- To ensure a coherent and effective EU approach to critical raw materials in the transition to a circular and low-carbon economy.
- Provide information to stakeholders.
- Provide key data sources and identify best practices and possible further actions.

End-of-life recycling input rates (EOL-RR) in the EU-28

*F = Fluoroprop; P = Phosphated/pickled; R = Rinsed; S = Silicon; B = Boundaries

From European Commission, EIP on Raw Materials, Raw Materials Scoreboard 2018
Guidance on Non-Energy Minerals Extraction in Natura 2000

Triggered by 2008 COM Communication on RMI

Key issues addressed:

- Importance of non-energy extractive industry in the EU
- Value of Strategic planning
- Appropriate assessment of plans/projects according to the Habitats Directive; mitigation; alternatives; compensation
- Positive contribution of NEEI to biodiversity
- Marine extraction

Nature action plan (Action 8)

Identify with MS/stakeholders best practices on investment for extractive operators & for land rehabilitation & restoration by NEEI
Raw materials actions

- Map the current and future primary RM for batteries.
- Assess the potential within the EU for sourcing battery RM materials Cobalt, Lithium, Natural Graphite, and Nickel
- Use all appropriate trade policy instruments
- Dialogue with Member States to determine the fitness of their raw materials policies, mining codes and incentives for exploration to address the strategic needs of materials for batteries.
- Promote ethical sourcing of battery raw materials
- Put forward recommendations aimed at optimising the sourcing of batteries raw materials within the EU.
- Support R&I aimed at cost-effective production, substitution and more efficient use of critical raw materials for batteries, with a view to develop standards.