EU Policy and Strategy on secure supply of mineral resources

Workshop on Waste Valorisation and CRM
24 April, EGRC Week, Geneva

Rodrigo CHANES
Unit C2 - «Resource Efficiency and Raw Materials»
Raw materials policy framework

Non-energy raw materials
EU Raw Materials Strategy and Juncker 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
Raw Materials Initiative = EU raw materials policy

- Aim: securing sustainable supplies of raw materials
- Non-energy, non-agricultural raw materials
- Integrated strategy (3 pillars)
- Introduced a list of Critical Raw Materials in 2011 and updated lists in 2014 and 2017
EU Critical Raw Materials
Study on the review of the list of critical raw materials 2017

Biggest suppliers of CRM to the EU

- **Russia**
  - Scandium 67%
  - Tungsten 50%
  - Vanadium 60%
- **Finland**
  - Cobalt 66%
- **Norway**
  - Silicon metal 23%
- **France**
  - Hafnium 43%
- **Morocco**
  - Phosphate rock 27%
- **Turkey**
  - Borate 98%
- **Kazakhstan**
  - Phosphorus 77%
- **Indonesia**
  - Natural rubber 32%

**Raw Materials Initiative EU Critical Raw Materials**

- **Economic importance**
  - Importance of a raw material per economic sector & importance of the sector in the EU economy (value added)
  - Substitution (technical and cost performance)

- **Supply risk**
  - Global supply and EU sourcing
  - Market concentration (HHI)
  - Governance performance (WGI)
  - Import reliance
  - Trade agreements and restrictions
  - Substitution (production, criticality, co-by-production)
  - End-of-Life Recycling Input Rate
EU Critical Raw Materials assessment 2017

- **78 raw materials** evaluated with **fact sheets available, revised methodology** published – CRM website

<table>
<thead>
<tr>
<th>2017 CRMs (27)</th>
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<tbody>
<tr>
<td>Antimony</td>
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<tr>
<td>Fluorspar</td>
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<tr>
<td>*LREEs</td>
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<tr>
<td>Phosphorus</td>
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<tr>
<td>Baryte</td>
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<tr>
<td>Gallium</td>
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<tr>
<td>Magnesium</td>
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<tr>
<td>Scandium</td>
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<tr>
<td>Beryllium</td>
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<tr>
<td>Germanium</td>
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<tr>
<td>Natural graphite</td>
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<tr>
<td>Silicon metal</td>
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<tr>
<td>Bismuth</td>
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<tr>
<td>Hafnium</td>
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<tr>
<td>Natural Rubber</td>
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<tr>
<td>Tantalum</td>
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<tr>
<td>Borate</td>
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<tr>
<td>Helium</td>
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<tr>
<td>Niobium</td>
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<tr>
<td>Tungsten</td>
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<tr>
<td>Cobalt</td>
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<tr>
<td>*HREEs</td>
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<tr>
<td>*PGMs</td>
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<tr>
<td>Vanadium</td>
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<tr>
<td>Coking coal</td>
</tr>
<tr>
<td>Indium</td>
</tr>
<tr>
<td>Phosphate rock</td>
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</tbody>
</table>

*HREEs=heavy rare earth elements, LREEs=light rare earth elements, PGMs=platinum group metals
EIP Raw Materials
EIP on Raw Materials

**When:** launched in 2013, based on Raw Materials Initiative, Industrial Policy, Innovation Union

**Who:** Industry, public sector, academia and NGOs in HLSG + Sherpa, Operational Groups
Groups renewed in 2017

123 Raw Materials Commitments: 980 partners, indicative budget ± EUR 2 billion

**Why:** ...to ensure the sustainable supply of raw materials to the European economy...

**What:** Strategic Implementation Plan adopted in 2013 Achieving targets

Position paper on future orientations of the High-Level Steering Group of the EIP. 20 December 2017
Overall objective:
Contribute to the 2020 objectives of the EU Industrial Policy (to increase the share of industry in GDP to 20%), the Innovation Union and the Resource Efficiency 'flagships'

EIP targets:
- Up to 10 innovative pilot actions
- Substitutes for at least 3 applications of CRMs
- Improve framework conditions for primary and secondary RM
- EU RM Knowledge base with RM flows and trends
- International cooperation strategy
I. Technology Pillar
   o I.A Raw materials research and innovation coordination
   o I.B Technologies for primary and secondary raw materials' production
   o I.C Substitution of raw materials

II. Non-Technology Policy Pillar
   o II.A Improving Europe's raw materials framework conditions
   o II.B Improving Europe's waste management framework conditions and excellence
   o II.C Knowledge, skills and raw materials flows

III. International Cooperation Pillar
   o III.1 Technology
   o III.2 Global Raw Materials Governance and Dialogues
   o III.3 Health, Safety and Environment
   o III.4 Skills, Education and Knowledge
   o III.5 Investment activities
# EIP-RM SIP - Implementation Document

Monitors the level of implementation of the EIP-RM SIP

<table>
<thead>
<tr>
<th>Target</th>
<th>Outlook (2016)</th>
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<tbody>
<tr>
<td>1 - Up to 10 innovative pilot actions</td>
<td>☺☺☺</td>
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<tr>
<td>2 - Substitutes for at least 3 applications of critical and scarce raw materials</td>
<td>☺☺</td>
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<tr>
<td>3 - Framework conditions for primary raw materials</td>
<td>☺</td>
</tr>
<tr>
<td>4 - Framework conditions for material efficiency and waste management</td>
<td>☺☺</td>
</tr>
<tr>
<td>5 - European raw materials knowledge base</td>
<td>☺☺</td>
</tr>
<tr>
<td>6 - Launch of a Knowledge and Innovation Community</td>
<td>☺☺☺☺</td>
</tr>
<tr>
<td>7 - Pro-active international co-operation strategy</td>
<td>☺☺</td>
</tr>
</tbody>
</table>
Circular economy – Action Plan
"Closing the loop. An EU action plan for the Circular Economy"
Commission's Communication COM(2015) 614 final

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
Innovation, Investment & Monitoring
Production
- Material-efficiency aspects of Ecodesign of energy-related products

Markets for secondary raw materials
- Development of quality standards
- Facilitate waste shipment across the EU
- Further develop the EU raw materials information system

Critical raw materials
- Information exchange between manufacturers and recyclers of electronics (https://i4r-platform.eu/)
- European standards for material-efficient recycling of electronic waste and batteries
- Voluntary certification of treatment facilities for certain key types of waste, e.g. electronic waste
- Best practices for the recovery of critical raw materials from mining waste and landfills
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
How much is viable to recover?

**Figure 9** - Amounts of some critical raw materials in EU-28 as “Extraction waste disposed in situ/tailings” and “Stock in tailings” (JRC elaboration based on MSA study (2015))

**Figure 11** - Amounts of CRMs as “Annual addition to stock in landfills in EU” and “Stock in landfill in EU” (JRC elaboration based on MSA study (2015))

* *Rhodium annual addition to landfill = 0.7 tonnes*
Tools
Horizon 2020, studies
Horizon 2020
Context and overview
Topics relevant to raw materials

NMPB - Materials
SPIRE PPP
EEB PPP

SME Instrument
FTI-pilot

Excellent science
(€ 24 billion)

Industrial leadership
(€ 17 billion)

Societal challenges
(€ 31 billion)

+ ERA-MIN 2
+ EIT Raw Materials

SC5. Climate action, environment, resource efficiency and raw materials

SC5 - Raw materials (~€600 million for 7 years)

Circular Economy
SC2 - Bioeconomy
SC3 - Energy
### I. - Technology Pillar
1. A - Raw materials research and innovation coordination
2. B - Technologies for primary and secondary raw materials' production
3. C - Substitution of raw materials

### II. - Non-Technology Policy Pillar
1. A - Improving Europe's raw materials framework conditions
2. B - Improving Europe's waste management framework conditions and excellence
3. C - Knowledge, skills and raw materials flows

### III. - International Cooperation Pillar

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#### EU Contribution per EIP Priority Area, €

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Amount (€)</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>I.A</td>
<td>6,431,389</td>
<td>2%</td>
</tr>
<tr>
<td>I.B</td>
<td>231,212,826</td>
<td>81%</td>
</tr>
<tr>
<td>II.A</td>
<td>5,591,004</td>
<td>2%</td>
</tr>
<tr>
<td>II.B</td>
<td>1,498,400</td>
<td>5%</td>
</tr>
<tr>
<td>II.C</td>
<td>15,264,605</td>
<td>5%</td>
</tr>
<tr>
<td>III</td>
<td>7,484,853</td>
<td>3%</td>
</tr>
<tr>
<td>I.C</td>
<td>18,677,201</td>
<td>7%</td>
</tr>
</tbody>
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#### Horizon 2020 coverage

**Horizon 2020 projects - Raw materials**

Knowledge sources

Studies and projects

- **ORAMA** (H2020, 2017-2019)
- **SCRREEN expert network** (H2020, 2016-2019)
- **CRM study** (DG GROW, 2017)
- **Materials Systems Analysis** (DG GROW study, 2014-2015) + **JRC**
- **Minfuture** (H2020, 2016-2018)
- **MICA** (H2020, 2015-2018)
- **ProSUM** (H2020, 2015-2017)
- **SmartGround** (H2020, 2015-2018)
- **Minventory** (DG GROW study, 2013-2015)
- **MINEA** (COST action, ongoing)

Collaboration with key data providers

- Eurostat
- EuroGeoSurveys
- National data providers
Societal Challenge 5 call - "Greening the economy in line with the Sustainable Development Goals (SDGs)"

- €240 million available under SC5 (plus FTI, SME Instrument)
- 2/3 of the budget for Innovation Actions (TRL 6-7)
- Specific attention to CRMs, Circular economy, Production...
- Feed into EU Raw Materials Information System – RMIS
- "Bridge" to Post-2020 "FP9".
RMIS

- Scoreboard
- Raw Materials Profiles and flows
- CRM
- Country profiles
- Trade flows

http://rmis.jrc.ec.europa.eu/
Next events

3rd Raw Materials Week
(Brussels, 12 - 16 November 2018)

Presentations of RM Week 2017 available on:
Thank you!!


EIT Raw materials: www.eitrawmaterials.eu