

# EIP on Raw Materials

## Opportunities for engagement

**CRM\_InnoNET - 3<sup>rd</sup> Strategic Workshop Event**

Brussels – 11 February 2015

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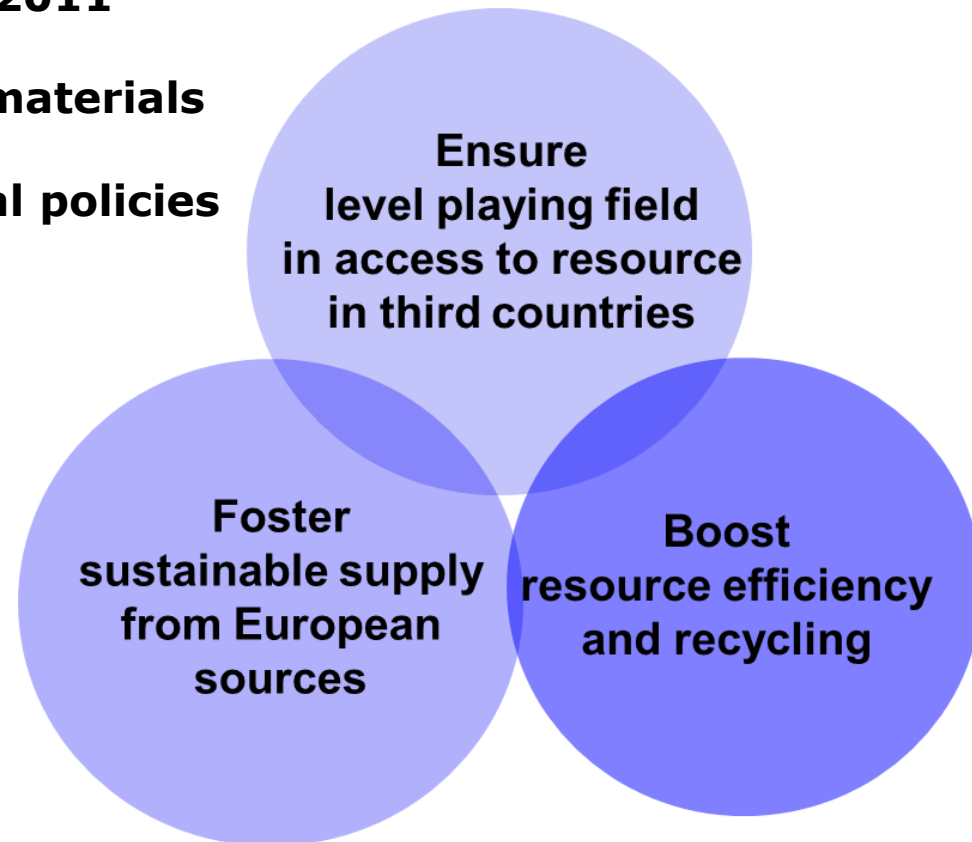
*Head of Unit G4 - « Raw Materials, Metals, Minerals,  
and Forest-based industries »*



# Building blocks of the EU RMI



- **Aim:** securing sustainable supplies of raw materials
- **Launched in 2008, consolidated in 2011**
- **Non-energy, non-agricultural raw materials**
- **Connecting EU external and internal policies**
- **Integrated strategy (3 pillars)**
- **Introduced list of Critical Raw Materials (CRM) in 2011 and 2014**



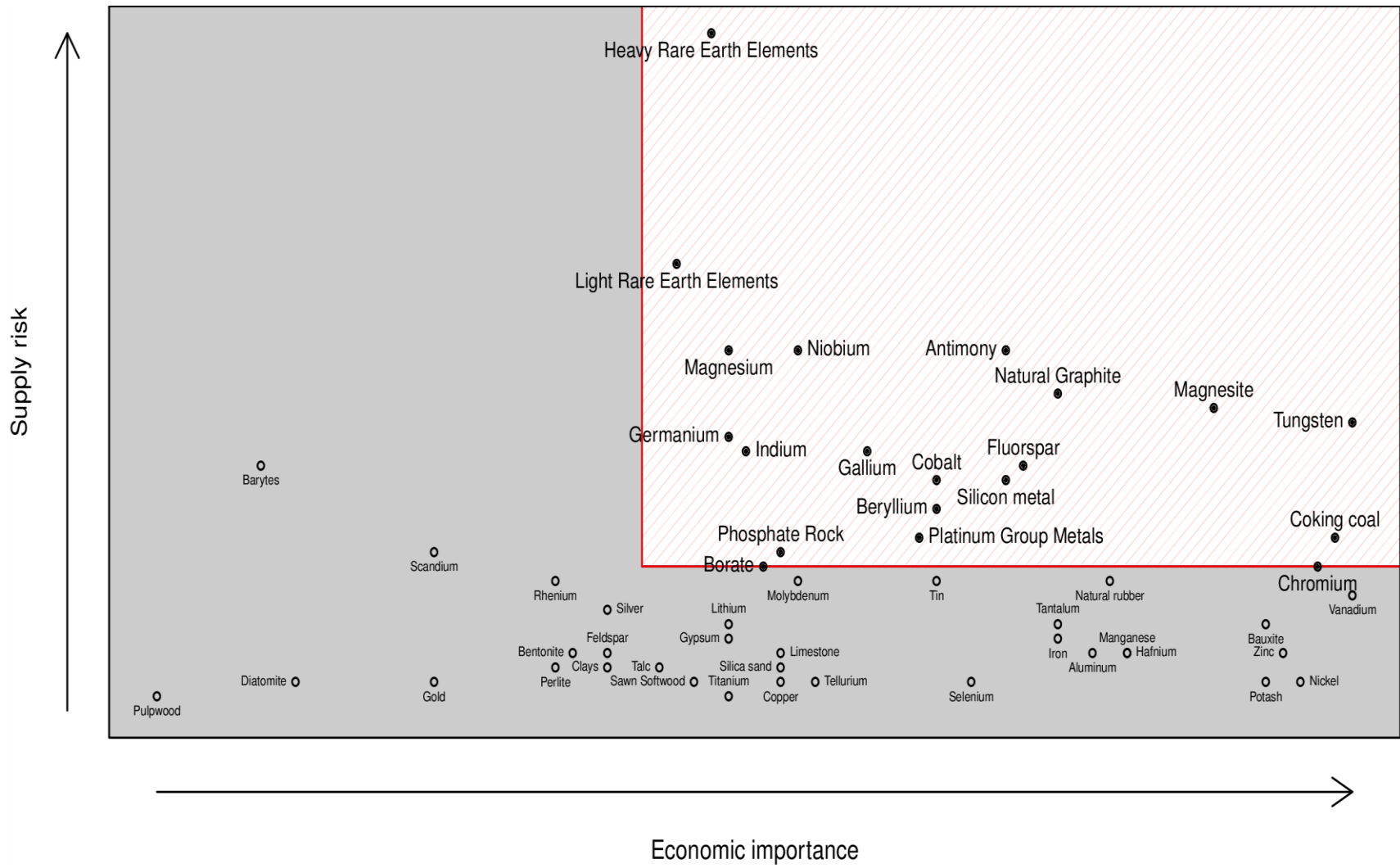
# Study 2013 on list of CRMs



## 54 raw materials analysed:

<b>Aluminium</b>	<b>Antimony</b>	<b>Barytes</b>	<b>Bauxite</b>	<b>Bentonite</b>	<b>Beryllium</b>
<b>Borates</b>	<b>Coking Coal</b>	<b>Chromium</b>	<b>Clays (and kaolin)</b>	<b>Cobalt</b>	<b>Copper</b>
<b>Diatomite</b>	<b>Feldspar</b>	<b>Fluorspar</b>	<b>Gallium</b>	<b>Germanium</b>	<b>Gold</b>
<b>Gypsum</b>	<b>Hafnium</b>	<b>Indium</b>	<b>Iron ore</b>	<b>Limestone (high grade)</b>	<b>Lithium</b>
<b>Magnesite</b>	<b>Magnesium</b>	<b>Manganese</b>	<b>Molybdenum</b>	<b>Natural Graphite</b>	<b>Natural Rubber</b>
<b>Nickel</b>	<b>Niobium</b>	<b>Perlite</b>	<b>Phosphate Rock</b>	<b>Platinum Group Metals</b>	<b>Potash</b>
<b>Pulpwood</b>	<b>Rare Earth Elements - Heavy</b>	<b>Rare Earth Elements - Light</b>	<b>Rhenium</b>	<b>Sawn Softwood</b>	<b>Scandium</b>
<b>Selenium</b>	<b>Silica Sand</b>	<b>Silicon Metal</b>	<b>Silver</b>	<b>Talc</b>	<b>Tantalum</b>
<b>Tellurium</b>	<b>Tin</b>	<b>Titanium</b>	<b>Tungsten</b>	<b>Vanadium</b>	<b>Zinc</b>

# List of CRMs





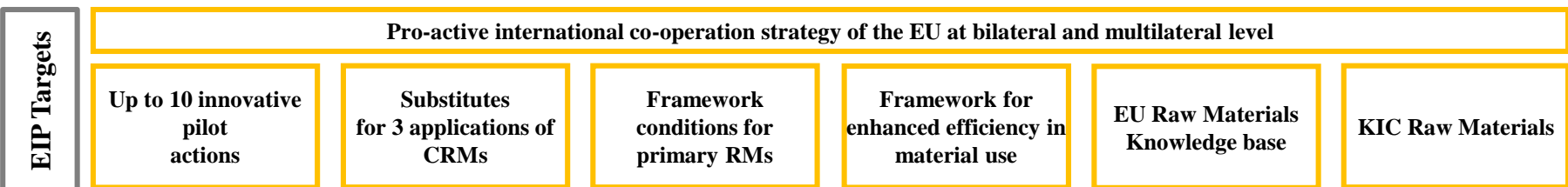
## Overall objective:

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'

## Specific objectives:

- Reduce import dependency
- Improve supply conditions from European and other sources
- Push Europe to the forefront in raw materials sectors
- Provide alternatives in supply
- Mitigate negative environmental and social impacts

Objectives	To reduce dependency on imports To promote the production and exports				To put Europe at the forefront in RM sectors	
	To improve supply conditions from EU	To diversify raw materials sourcing	To improve resource efficiency (including recycling)	To find alternative raw materials	To make Europe a leader in the RM capabilities	To mitigate environmental, social and health impacts



**Strategic Implementation Plan (adopted on 25 September 2013)**



- **EIP Target: Substitutes for at least three applications of critical and scarce raw materials**
  
- **Substitution in the SIP**
  - I.C Priority Area: Substitution of raw materials
    - ✓ Action area: n° I.6: Materials for green energy technologies
    - ✓ Action area: n° I.7: Materials for electronic devices
    - ✓ Action area: n° I.8: Materials under extreme conditions
    - ✓ Action area: n° I.9: Applications using materials in large quantities

# Call for Commitments



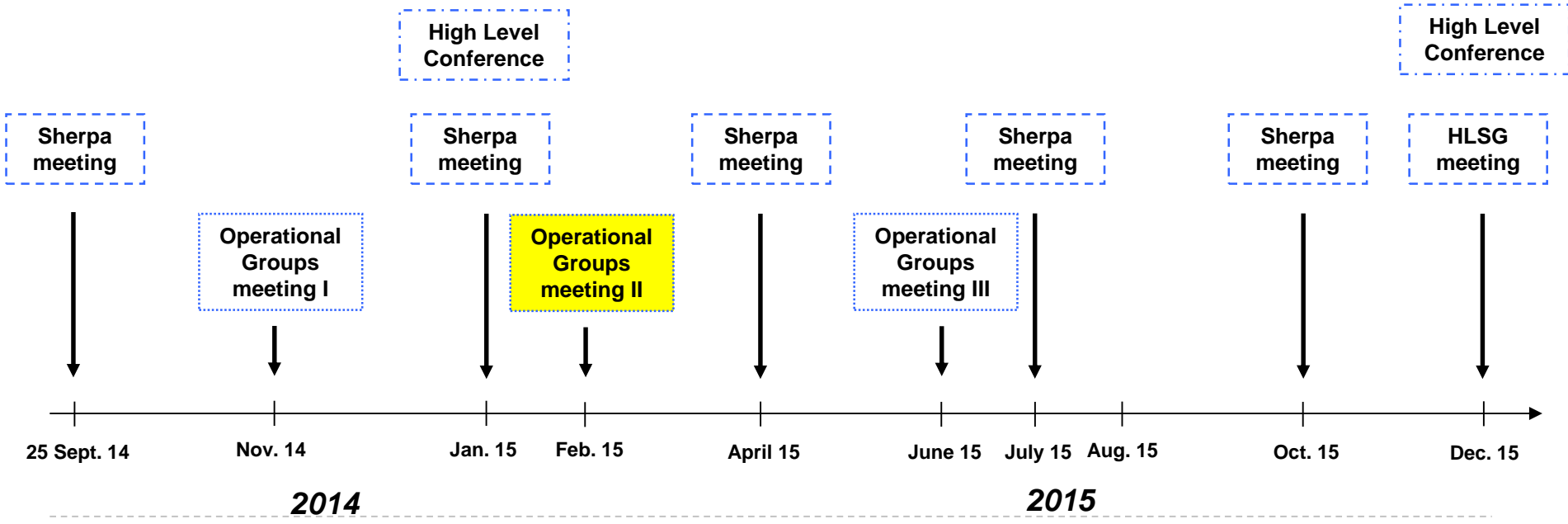
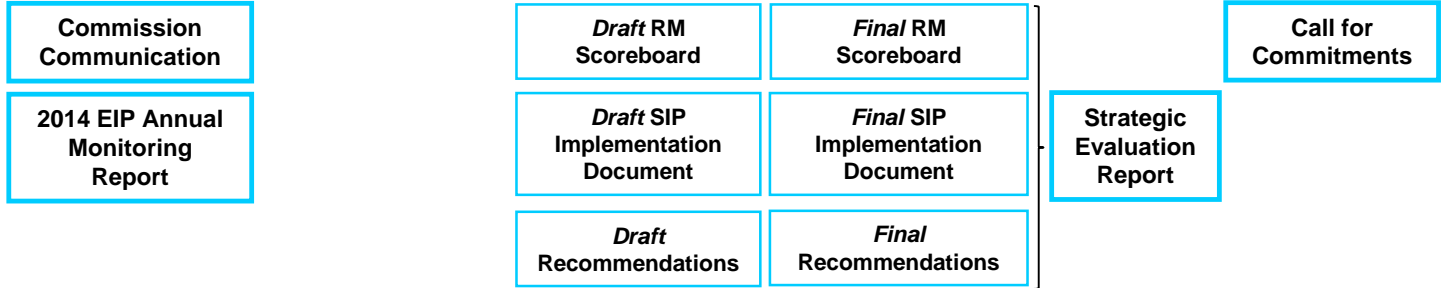
- First **Call for Commitments** launched on 31 October 2013 (closed on 7 February 2014)
- **80** Raw Materials Commitments endorsed
- Approx. **800** partners
- Relative deficit from EU-13 group
- Higher number of **technology** commitments
- Higher number of technology commitments for **primary production** than secondary
- **Scope** of raw materials covered representative (i.e. metals, industrial, forest-based materials)



1. **CARBOCYCLE.** " Recycled Carbon Fibres Substitute for Natural Graphite & Industrial Applications"
2. **CRM InnoNet.** " Critical Raw Materials Innovation Network"
3. **EQUATOR.** " Employ of Waste instead of Quarry for sUBstitution of AnTimOny as fire Retardant additive"
4. **EU-NARS-G.** " EUropean NATural Rubber Substitute from Guayule"
5. **NASSCO.** " New Affordable Stainless Steel for extreme Conditions"
6. **RESET.** " Raw Elements Substitution in Electronic and optoelectronic Technologies"
7. **SUBGraph.** " Substitution of CRM – place for graphene in EIP on RM"
8. **SUBST-EXTREME.** " Sustainable substitution in extreme conditions"

# EIP on Raw Materials

# 2014-2015 Work Plan



- **European Rare-Earth Competency Network**

**Recommendation:**

- **Need to maintain and strengthen the European skills and knowledge base through research funding, S&T education and International cooperation**

- **substitution of REEs was discussed**

# Substitution in H2020

**SC5 12 - Innovative and sustainable solutions leading to substitution of raw materials – RIA - €10 million**

- **Materials for electronic devices (2014)**

**INREP: Towards Indium free TCOs**

**INFINITY: Indium-Free Transparent Conductive Oxides for Glass and Plastic Substrates**



## **SC5 11 - New solutions for sustainable production of raw materials – RIA - €48 million**

- New exploration technologies and geomodels (2015)
- Deep mining on continent and/or in sea-bed (2015)
- New metallurgical systems (2015)

## **SC5 12 - Innovative and sustainable solutions leading to substitution of raw materials – RIA - €10 million**

- **Materials under extreme conditions (2015)**

## **Waste 4 - Towards near-zero waste at European and global level – CSA - €4 million**

- **Raw materials partnerships (2015)**

\* Work programme 2015 updated on 22 July 2014.

## SC5-12 b) Materials under extreme conditions [2015]

- innovative and sustainable solutions for the appropriate **substitution of critical and scarce raw materials in applications under extreme conditions**, such as substitution of CRM in heat resistant super alloys, in hard materials, critical alloying elements in bulk metals or in corrosion resistant materials,
- targeting appropriately **materials and applications that are difficult to recycle** and where there are **limited prospects to increase primary supply within the EU**.
- Proposals should actively **involve end users from a variety of concerned sectors**, such as energy, transport, tooling or the process industry, and ensure synergies with existing relevant initiatives.
- Indicative size of proposals: EUR 2 to 5 million
- Expected TRL: 3-5

## Waste 4d) Raw materials partnerships [2015]

- Creation of a **common multi-stakeholder platform**
- focused on a **limited number of key raw materials across their whole value chain.**
- This should **involve partners from across the value chain**, including mining, processing, recycling, application, public sectors (national/regional/local) and civil society, while respecting the conditions of each value chain.
- Indicative size of proposals: up to EUR 2.5 million



## **SC5 13 - Coordinating and supporting raw materials research and innovation - CSA - €8 million**

- Raw materials intelligence capacity (2015)
- Innovation friendly minerals policy framework (2015)
- Raw materials research and innovation coordination (2015)
- Strategic international dialogues and cooperation with raw materials producing countries and industry (2015)

## **Cross-challenge topics (specific deadlines)**

- SME Instrument - Boosting the potential of small businesses for eco-innovation and a sustainable supply of raw materials (€260 million, of which €19 million from SC5)
- Fast track to innovation pilot - Part 18 of this Work Programme (€100 million)



## Call NMP-23-2015:

- **Novel materials by design for substituting critical materials"**

**(cooperation with US and Japan welcome)**



## **Programming of Work Programme 2016-17 just started:**

- **Intention to continue to support activities on substitution (policy actions – CSAs)**
- **Continue good collaboration with RTD-D3 (Materials Unit)**