



EU Raw Materials Policy

REMIX – Castilla y León, EU Cluster Matchmaking Event
9 April, Santa Barbara Foundation, Castilla y León, Spain

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**Raw
Materials**

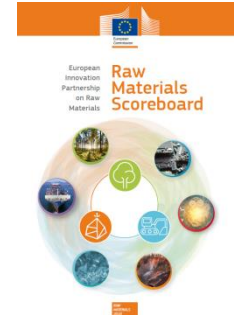
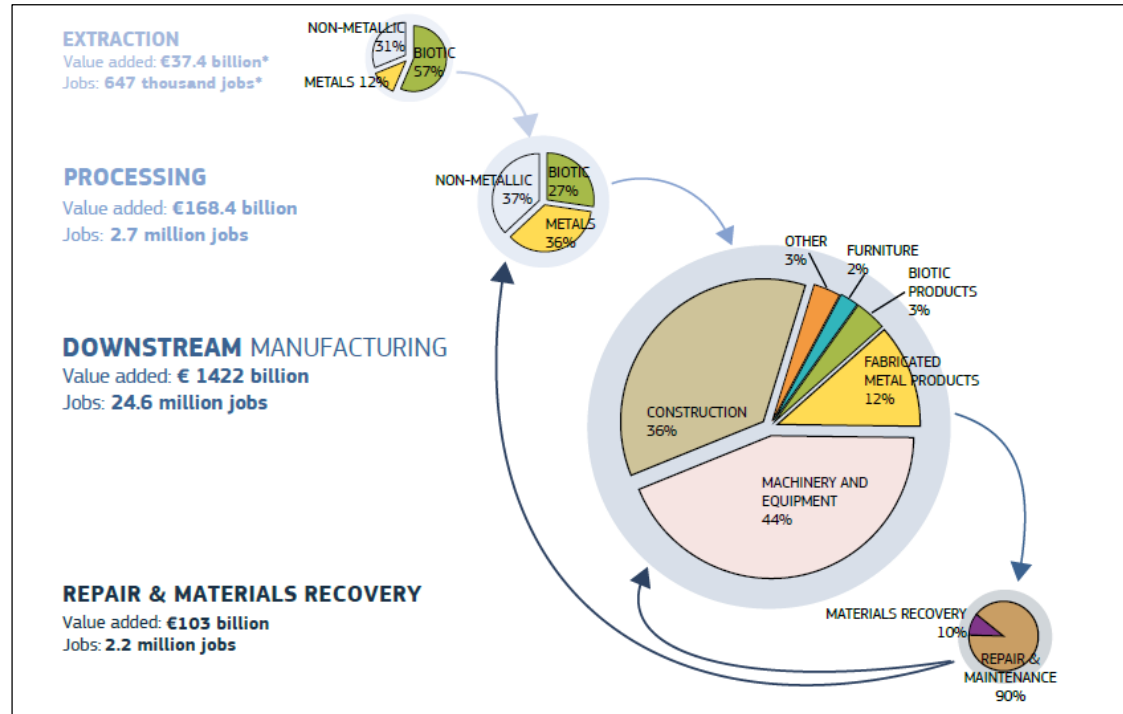


Figure 1 – Value added and jobs across the production chain (Source: RM Scoreboard 2018)

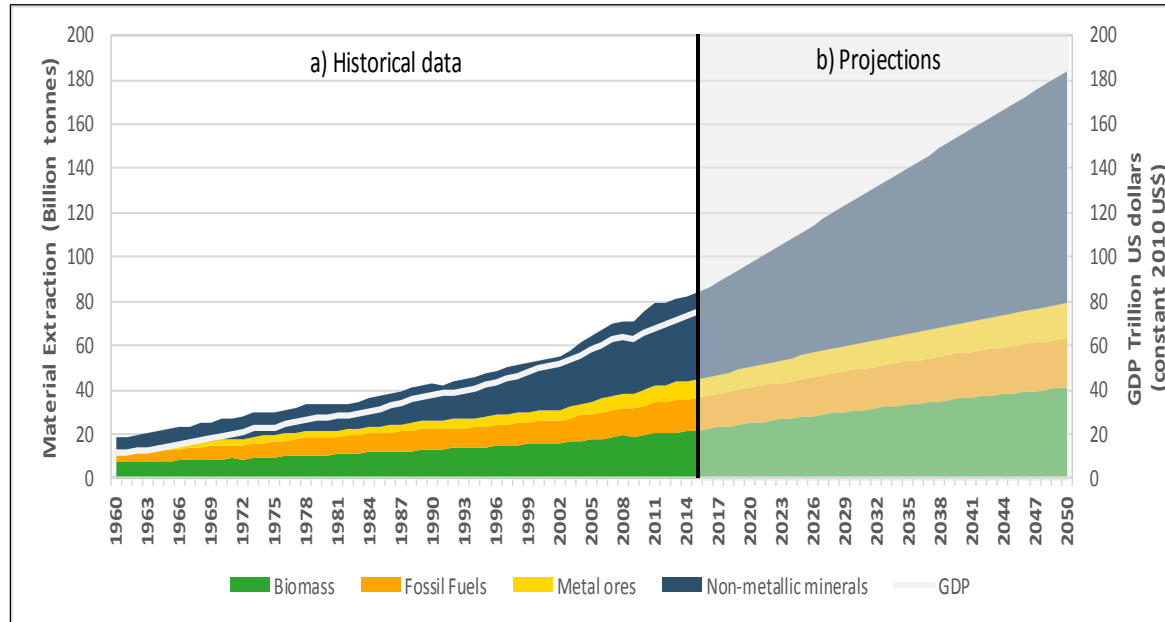
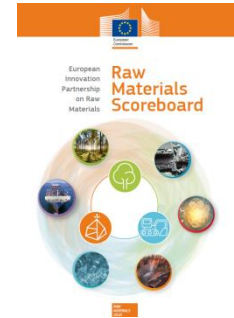


Figure 2 – Global material extraction by: a) historical (world, 1960-2014) and b) projected data (world, 2015-2050) (Source: Raw materials Scoreboard 2018, UNEP, World Bank)





European Commission



Figure 3 - Import dependence for selected raw materials (Source: RM Scoreboard 2018)
*Critical raw materials (CRM) according to the 2017 list of CRMs for the EU.

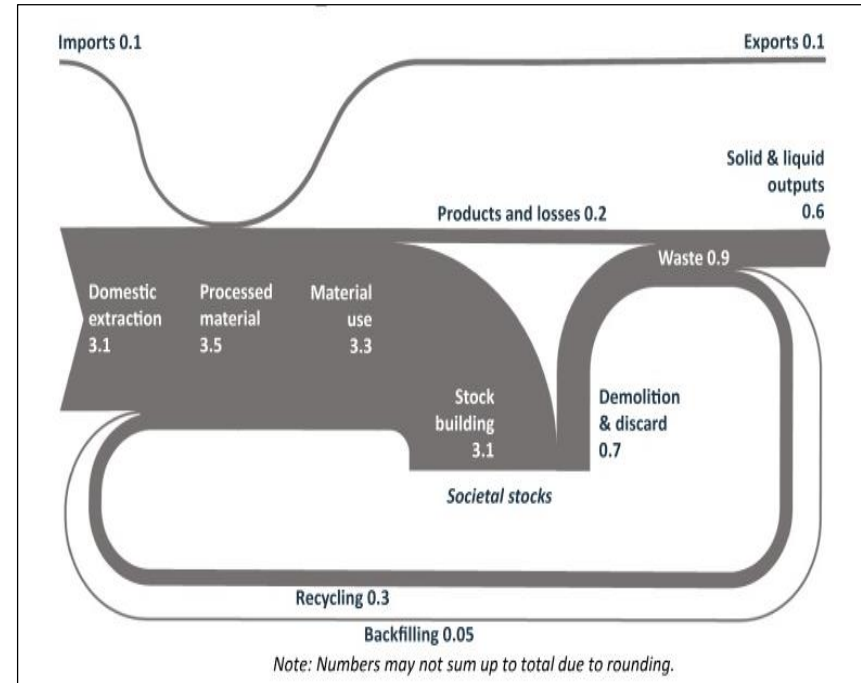
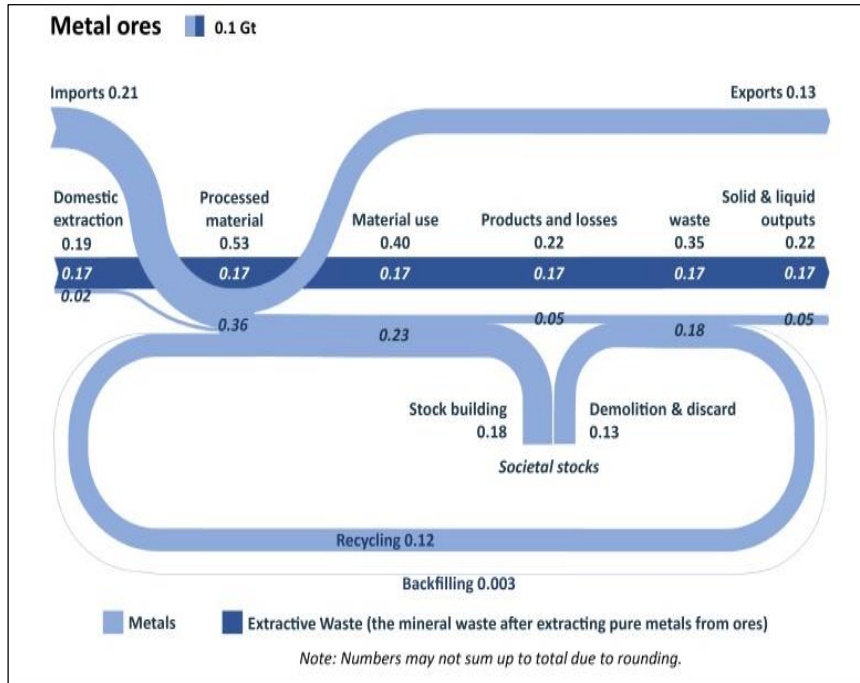
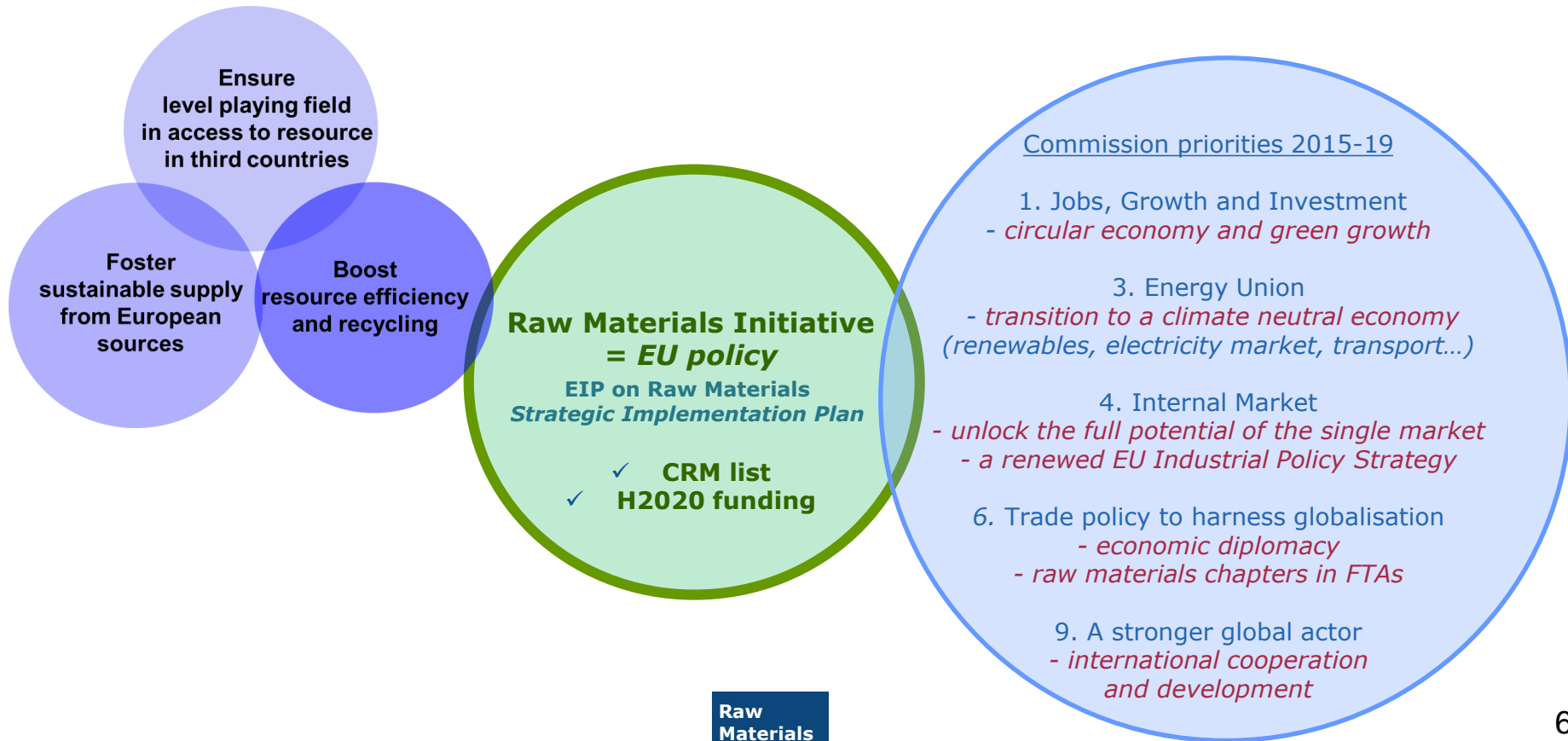


Figure 4 – Material flows for non-metallic minerals and metal ores (Source: RM Scoreboard 2018)





2050-strategy for climate neutral Europe



Brussels, 28.11.2018
COM(2018) 773 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN INVESTMENT BANK

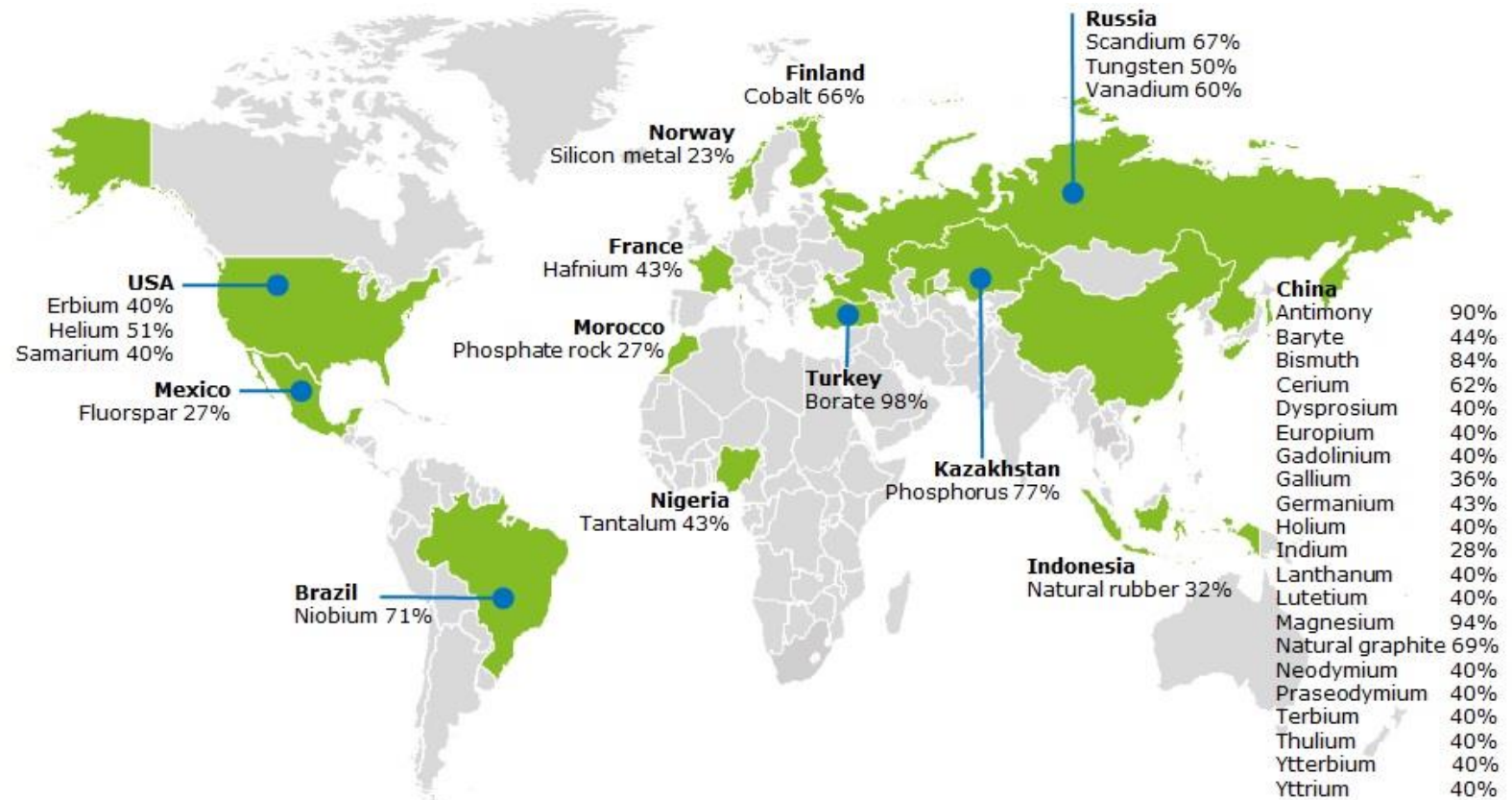
A Clean Planet for all
A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy

- **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

Biggest suppliers of CRM to the EU



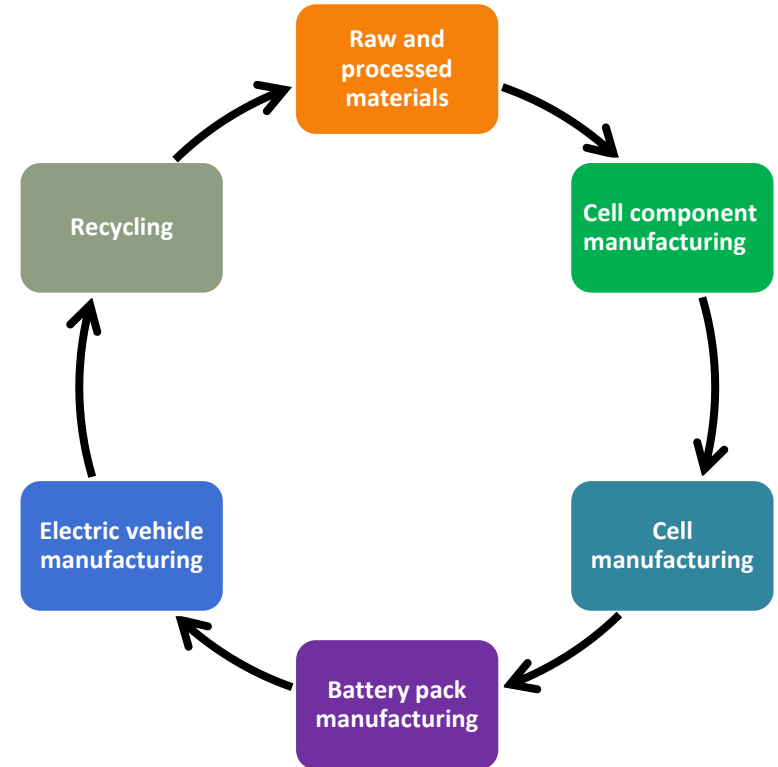
Raw Materials Initiative EU Critical Raw Materials



Batteries – example of the strategic EU industrial value chains

The objective is:

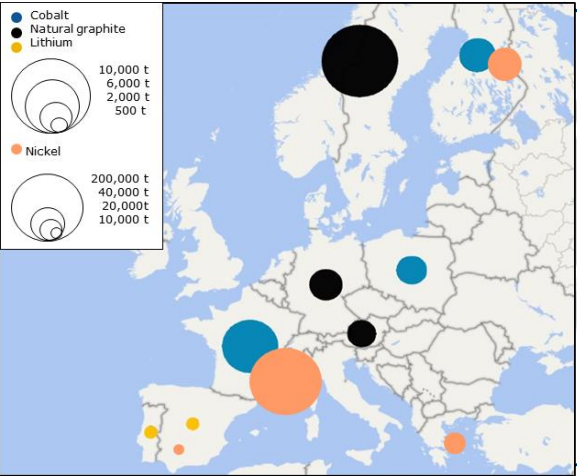
- To create a competitive manufacturing value chain in Europe with sustainable battery cells at its core .
 - To capture a battery market of up to €250 billion a year from 2025 onwards. Covering the EU demand alone requires at least 10 to 20 'gigafactories' (large-scale battery cell production facilities).
- Raw and processed materials:
- cobalt, lithium, natural graphite, nickel; but also manganese, silicon metal,



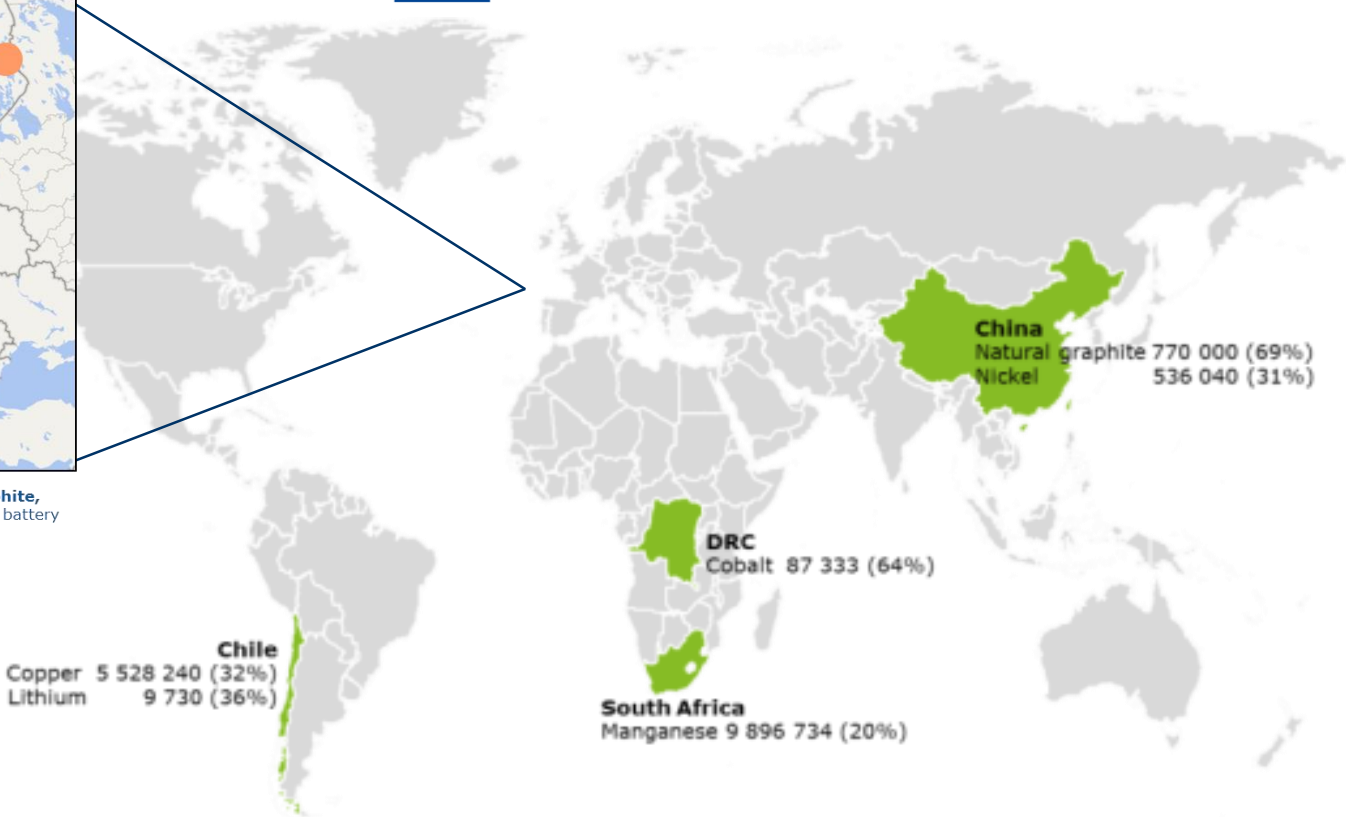
Global and EU production of battery materials



Raw Materials Initiative EU Critical Raw Materials



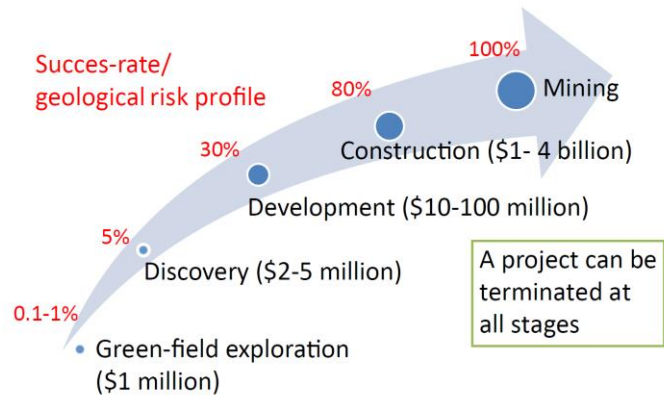
Mining production in Europe: cobalt, lithium, natural graphite, nickel; metallic content, tonnes (2016) (Source: Survey on battery raw materials RMSG, 2018)



Framework conditions for primary raw materials

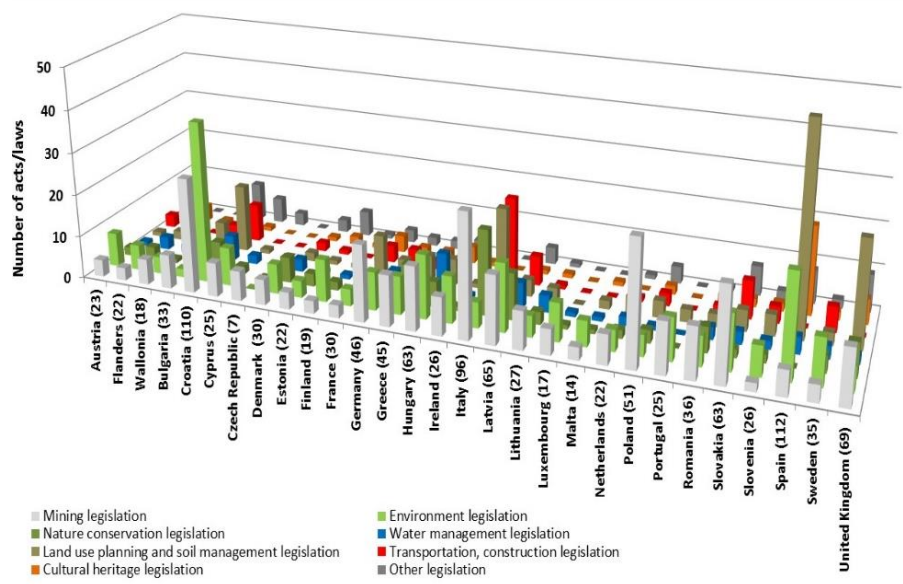


**Time to market?
Permitting time costs a lot!**

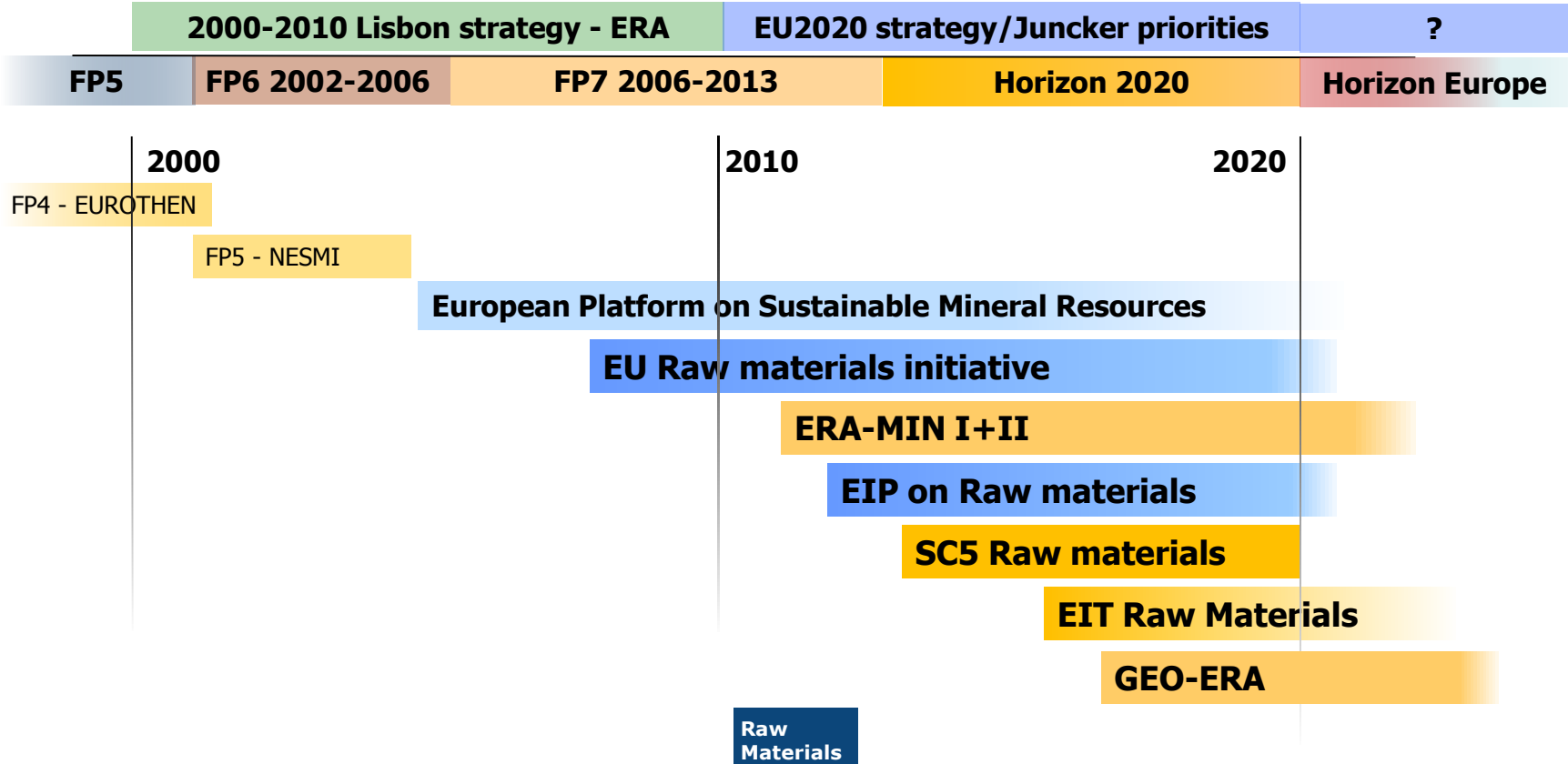


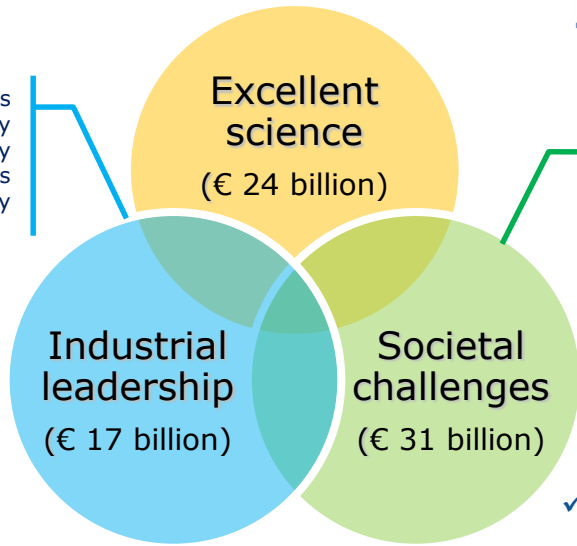
Source: MINLEX study
 Note: Germany has a decentralised system, and total number of laws only represents the example of Mecklenburg-Western Pomerania. The UK includes laws for England, Wales and Northern Ireland.

Total number of laws per MS relevant for mining permitting procedures



R&D





- SPIRE -Sustainable Process Industries Resource & Energy Efficiency
- ✓ Energy intensive industries
- ✓ link to Circular Economy

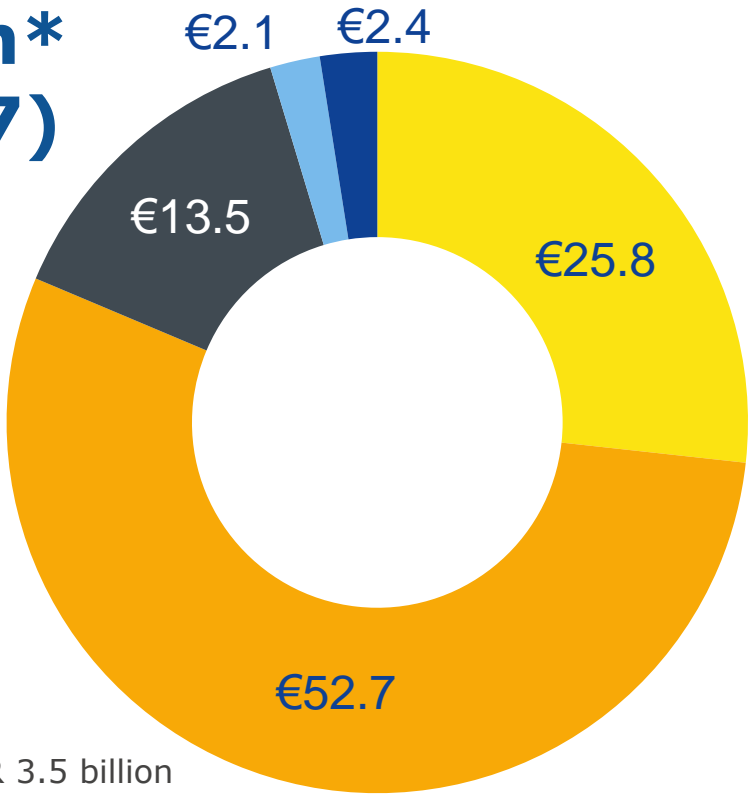
- SC5. Climate action, environment, resource efficiency and **raw materials**
- ✓ period 2014-2020
- ✓ ~€600 million for 7 years
- ✓ raw materials value chain
- ✓ link to Circular Economy
- ✓ involving all relevant actors in EU
- ✓ open to international partners

- + ERA-MIN 2
- + EIT Raw Materials

- ✓ WP 2020 to be published in June 2019
- ✓ ~ 90 MEUR for Raw materials mostly demonstrations in Innovation Actions (TRL 6-7)
- ✓ Specific attention to CRMs, low carbon and circular industries



€100 billion* (2021-2027)



€ billion
In current prices

- Open Science
- Global Challenges & Ind. Competitiveness
- Open Innovation
- Strengthening ERA
- Euratom

* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

Raw Materials



Pillar 1 Open Science

European Research Council

Marie Skłodowska-Curie Actions

Research Infrastructures



Pillar 2 Global Challenges and Industrial competitiveness

Clusters

- Health
- Inclusive and Secure Society
- **Digital and Industry**
- Climate, Energy and Mobility
- Food and natural resources

Joint Research Centre



Pillar 3 Open Innovation

European Innovation Council

European innovation ecosystems

European Institute of Innovation
and Technology

Strengthening the European Research Area

Sharing excellence

Reforming and Enhancing the European R&I system



18-22 November 2019 in Brussels, Belgium
eurawmaterialsweek.eu

- ❖ **7th annual High Level Conference of EIP on raw materials** "
- ❖ Horizon 2020
- ❖ Critical Raw Materials
- ❖ The EU Raw Materials Knowledge Base
- ❖ UN Framework Classification for Resources Management in Europe
- ❖ Responsible sourcing and supply of raw materials
- ❖ Forests for the future



Raw Materials Week

European Innovation
Partnership on Raw Materials



Thank you!



Critical raw materials for the EU:

http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en

Methodology for establishing the EU list of critical raw materials:

<https://publications.europa.eu/en/publication-detail/-/publication/2d43b7e2-66ac-11e7-b2f2-01aa75ed71a1/language-en/format-PDF/source-32064602>

Report on critical raw materials and the circular economy :

<https://publications.europa.eu/en/publication-detail/-/publication/d1be1b43-e18f-11e8-b690-01aa75ed71a1>

Raw Materials Information System:

<http://rmis.jrc.ec.europa.eu/>

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

https://ec.europa.eu/growth/sectors/raw-materials_en

EIP on Raw Materials:

<https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en>

Horizon 2020 - raw materials and calls:

<https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html>



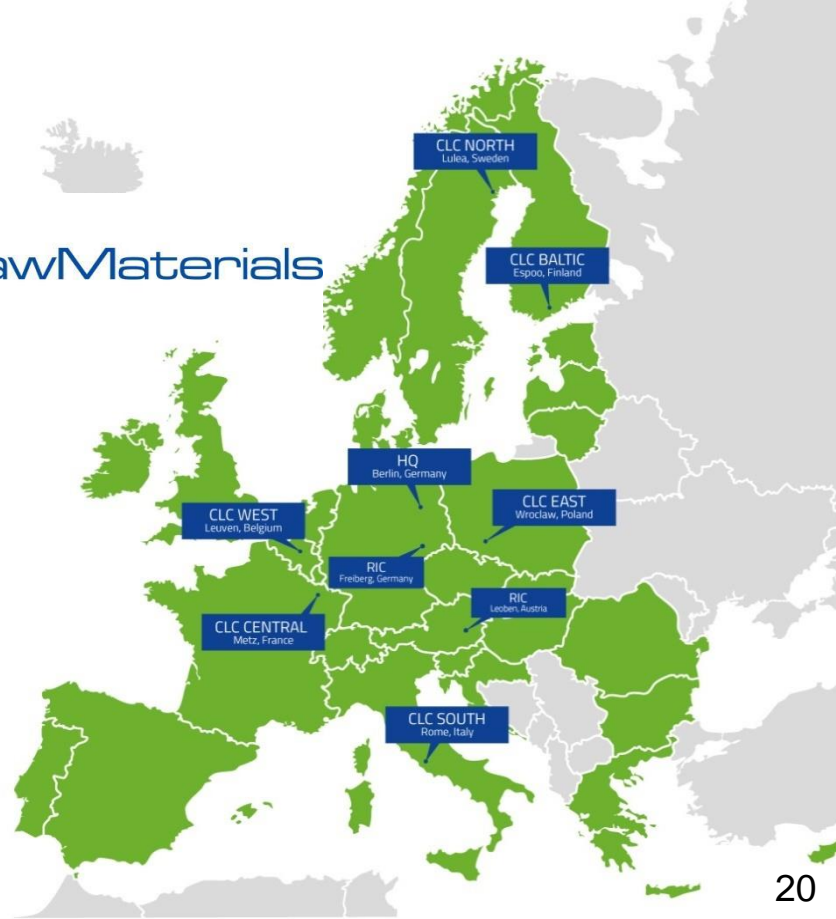
>120 partners, 23 countries
€400 million (2015-2021)

- HQ: Berlin, Germany
- Northern CLC: Luleå, Sweden:
- Eastern CLC: Wroclaw, Poland
- Southern CLC: Rome, Italy
- Western CLC: Metz, France
- Central CLC: Leuven, Belgium
- Baltic Sea CLC: Espoo, Finland

Regular calls every year



RawMaterials



Strategic importance of raw materials on economy



End-Of-Life recycling Input Rate (EOL-RIR)

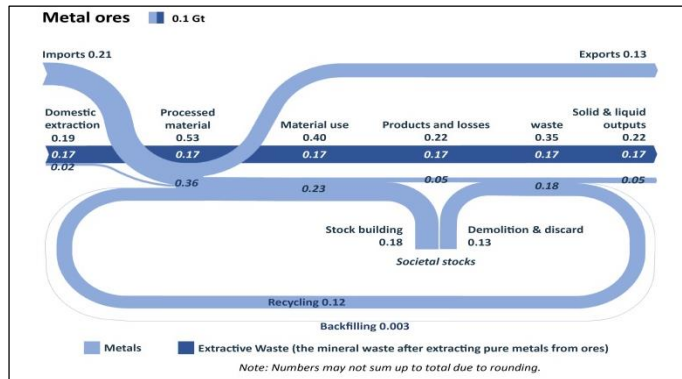
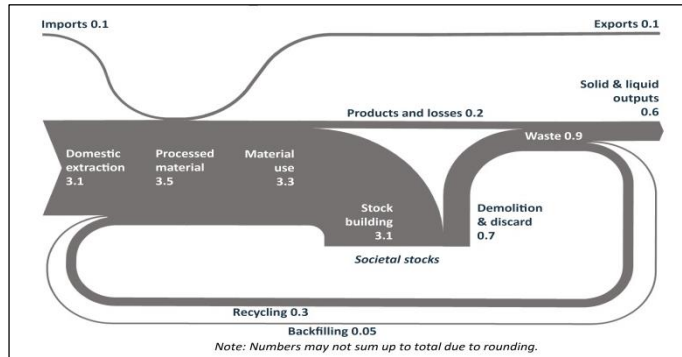


Figure 6 – Material flows for non-metallic minerals and metal ores (Source: RM Scoreboard 2018 in preparation)

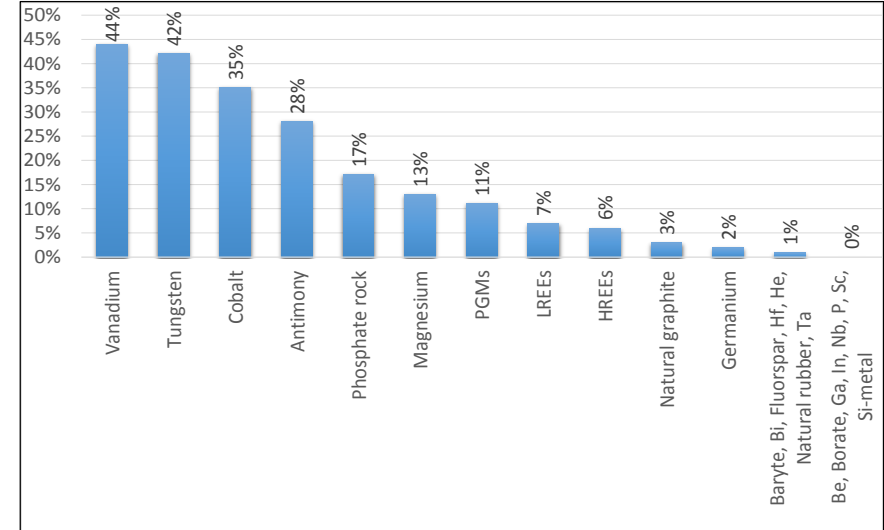


Figure 7 - End-Of-Life recycling Input Rate (EOL-RIR) (JRC elaboration. EOL-RIR measures recycling's contribution to meeting materials demand, i.e. how much of the total material input into the production system comes from recycling)

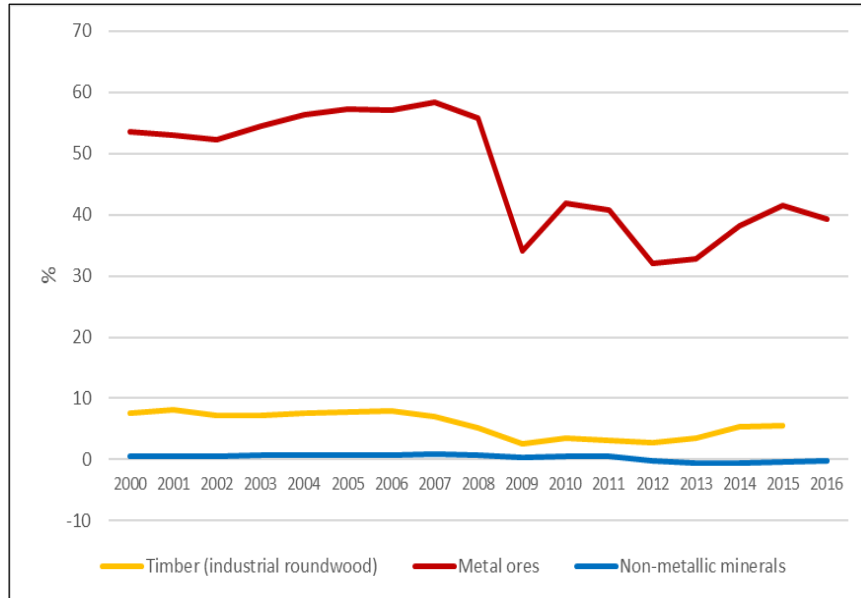


Figure 2 - Import reliance in the EU-28 for raw materials in the initial stage of supply chain (2015)
 (Source: RM Scoreboard 2018 in preparation)

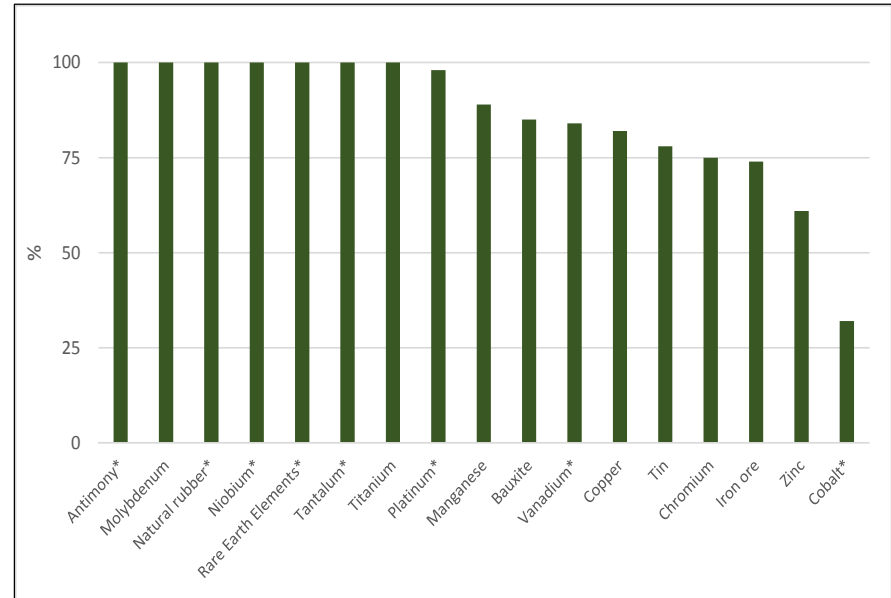


Figure 3 - Import dependence for selected raw materials
 (Source: RM Scoreboard 2018 in preparation)