



POLITECNICO
DI TORINO

WEBINAR

Materie Prime per Piastrille Ceramiche

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“Materie prime critiche: definizione e significato”

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EU Policy and Critical Raw Materials

Definition and use

Critical Raw Materials and the EU Green Deal

The EU Green Deal recognizes **access to resources** as a strategic security question to fulfil EU's ambition towards 2050 climate neutrality



Speech by Vice-President Šefčovič at the Press Conference on critical raw materials resilience in the EU

- Raw materials will **play a hugely important part** in our future, especially **given the ongoing transition towards a green and digital economy** – a trend not only accelerated, but one, which lies at the heart of our recovery.
 - We **need to ensure a secure and sustainable supply of raw materials** to meet the needs of the clean and digital technologies – including in the health sector and the space and defence industries
- In order to succeed, **we must acknowledge some hard truths.**
 - The simple truth also is that we are largely dependent on **unsustainable raw materials from countries with much lower environmental and social standards**, less freedoms or unstable economies.
- Today's **Action Plan outlines concrete steps we are taking in response** – altogether, they will help **make Europe more resilient**

(EU) Definition of Critical Raw Material

A **Critical Raw Material** is one with high risk of a supply disruption and, at the same time, with high economic importance.

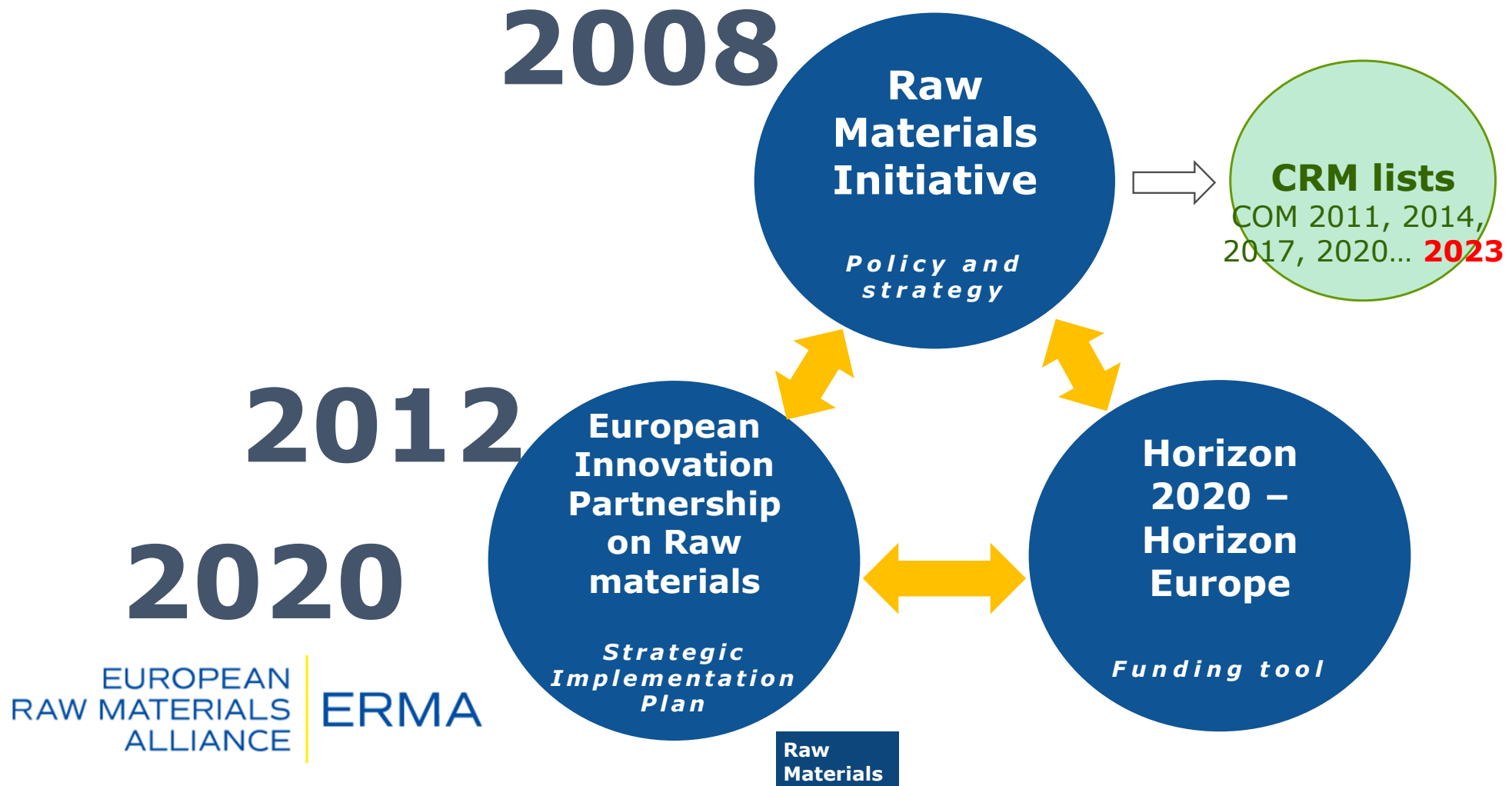
High risk of supply disruption means that supply might not be adequate to meet EU industry demand.

High economic importance means that the raw material is fundamental in industry sectors to create added value and jobs, which are lost in case the raw material is not available and adequate substitutes cannot be used instead.

EU Raw Materials Framework



Building blocks





Brussels, 19.10.2020
COM(2020) 474 final

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

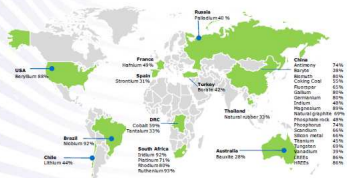
Critical Raw Materials Resilience: Charting a Path towards greater Security and
Sustainability

COM(2020) 474 final

Critical Raw Materials 2020

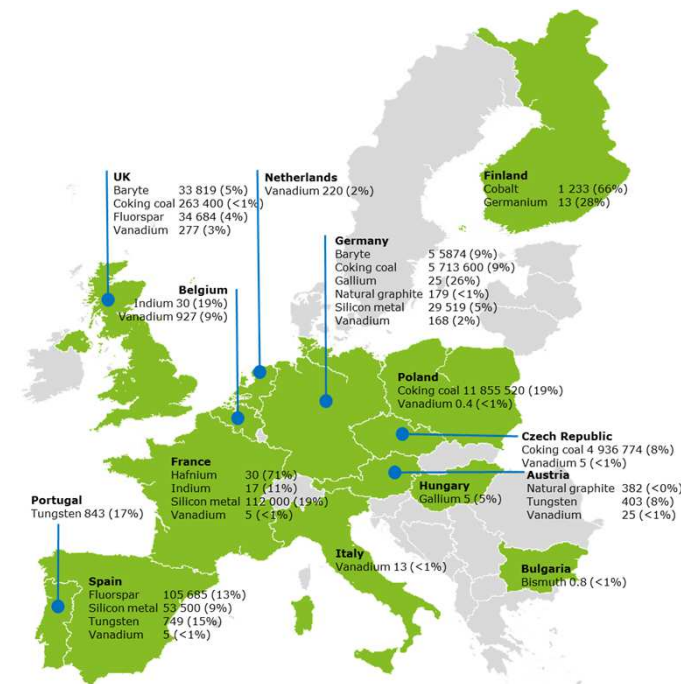
2020 Critical Raw Materials (30)			
Antimony	Fluorspar	Magnesium	Silicon Metal
Baryte	Gallium	Natural Graphite	Tantalum
Bauxite	Germanium	Natural Rubber	Titanium
Beryllium	Hafnium	Niobium	Vanadium
Bismuth	HREEs	PGMs	Tungsten
Borates	Indium	Phosphate rock	Strontium
Cobalt	Lithium	Phosphorus	
Coking Coal	LREEs	Scandium	

Study on the EU's list of Critical Raw Materials (2020) Final Report



The List of CRMs is valuable for:

- ✓ Implementing the EU policies and incentivising the EU production of CRMs
- ✓ Prioritising needs and actions (R&D, investment, circular economy)
- ✓ Negotiating trade agreements, drafting legislation, challenging trade distortion measures
- ✓ National policy making
- ✓ Building the EU Knowledge base



Which materials we assess
for criticality and How?

List of materials/groupings covered in the 2020 assessment

Critical Raw Materials 2020

Individual materials		
Aggregates	Germanium	Phosphate rock
Aluminium	Hafnium	Rhenium
Antimony	Helium	Scandium
Arsenic	Hydrogen	Selenium
Baryte	Indium	Sulphur
Bauxite	Iron Ore	Potash
Bentonite	Lead	Silica Sand
Beryllium	Limestone	Silicon Metal
Bismuth	Gold	Silver
Boron (Borates)	Gypsum	Strontium
Cadmium	Lithium	Talc
Chromium	Magnesite	Tantalum
Kaolin clay	Magnesium	Tellurium
Cobalt	Manganese	Tin
Coking coal	Molybdenum	Titanium
Copper	Natural Graphite	Tungsten
Diatomite	Nickel	Vanadium
Feldspar	Niobium	Zinc
Fluorspar	Perlite	Zirconium
Gallium	Phosphorus	
Platinum group metals (PGMs)		
Iridium	Platinum	Ruthenium
Palladium	Rhodium	
Rare earth elements (REEs)		
LREEs	HREEs	
Cerium	Dysprosium	Lutetium
Lanthanum	Erbium	Terbium
Neodymium	Europium	Thulium
Praseodymium	Gadolinium	Ytterbium
Samarium	Holmium	Yttrium
Biotic materials		
Natural Rubber	Natural cork	
Sapele wood	Natural Teak wood	

Legend:

Green boxes	Materials covered in 2014 but not in the 2011 assessments
Orange boxes	Materials covered in 2017 but not in the 2014 assessments
Light blue boxes	New materials covered in the 2020 assessment

European Commission methodology to define the List of CRMs for the EU

→2010 first release

→2013 update

→2015 revision (*DG JRC*)



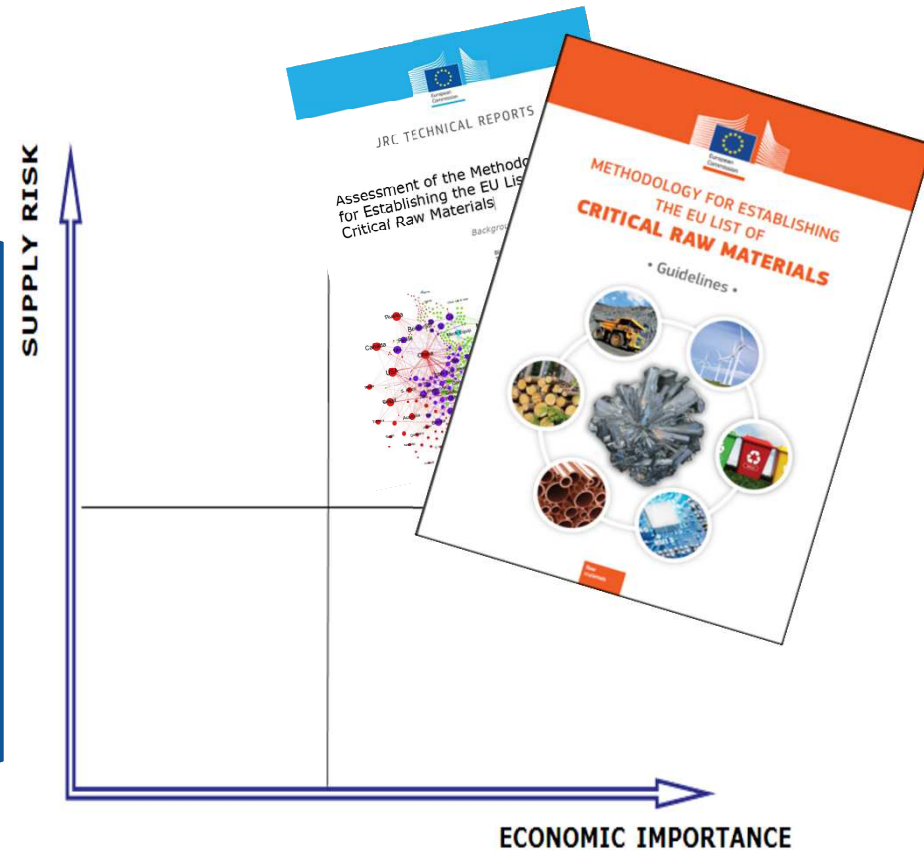
CRM methodology

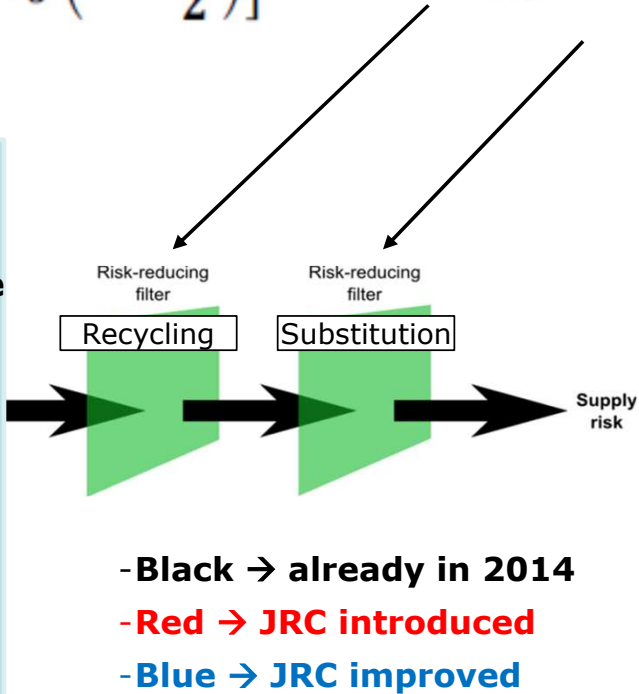
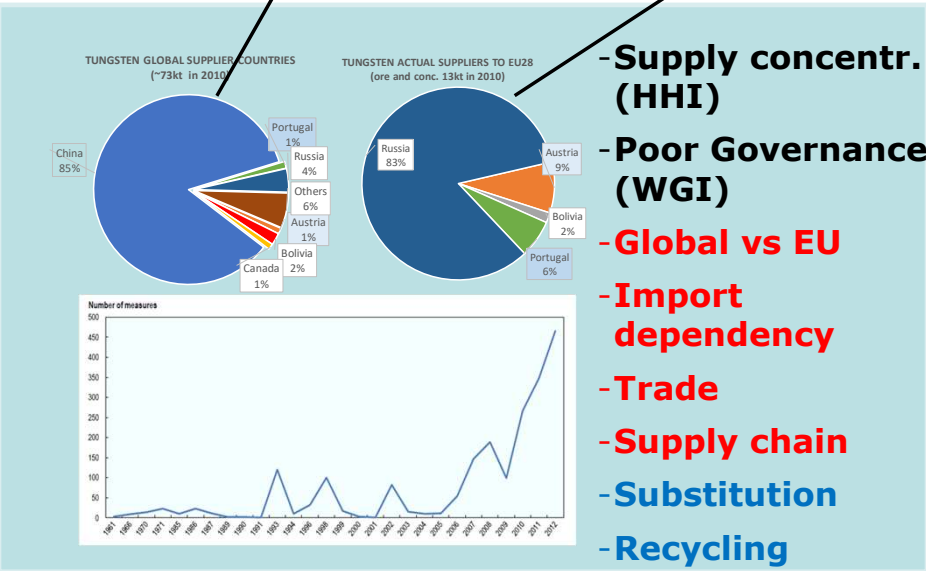
Economic importance

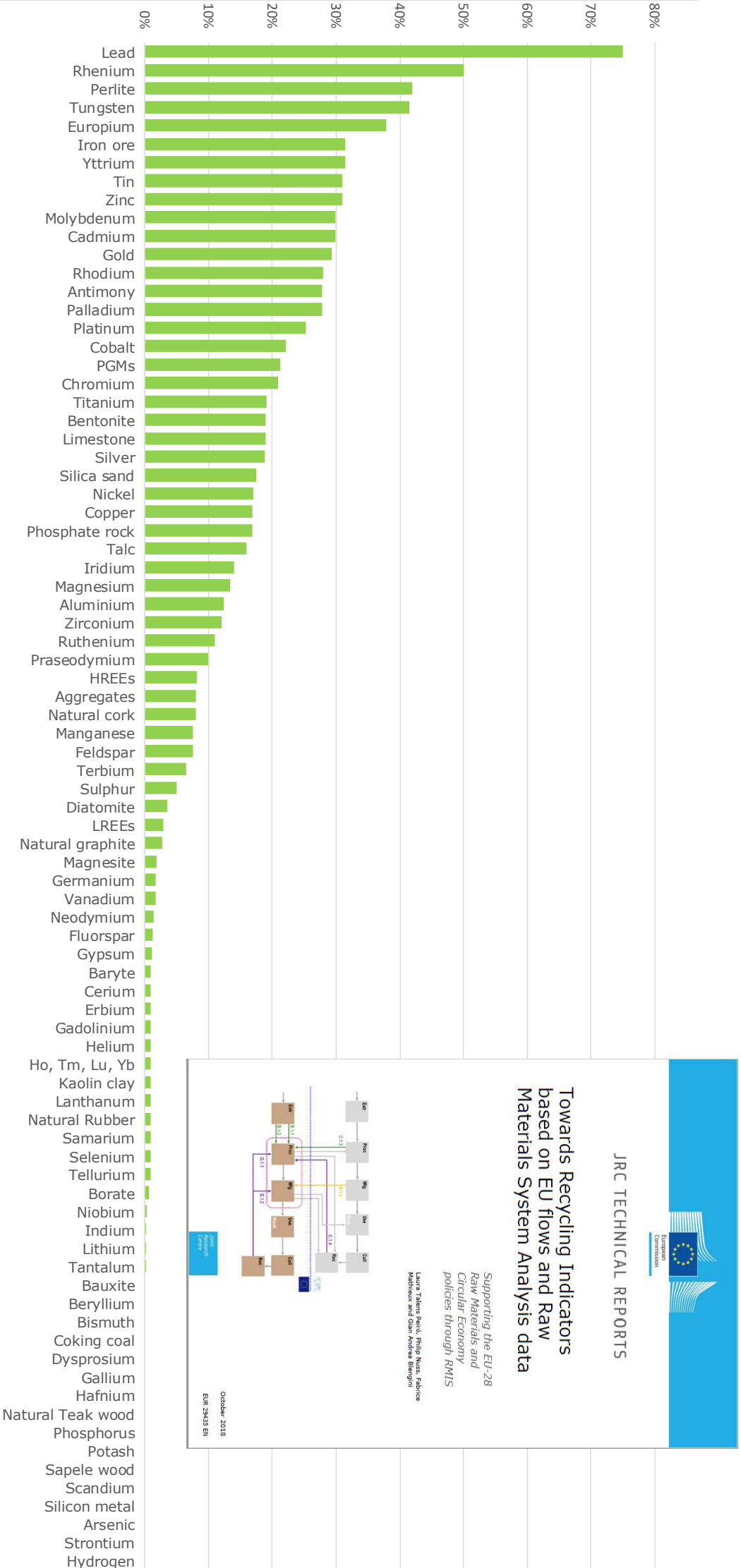
- Importance of a raw material per economic sector & importance of the sector in the EU economy (value added)
- Substitution (technical and cost performance)

Supply risk

Global supply and EU sourcing (ores/refined materials)
Market concentration (HHI)
Governance performance (WGI)
Import reliance
Trade agreements and restrictions
End-of-Life Recycling
Input Rate
Substitution (production, criticality, co/by-production)







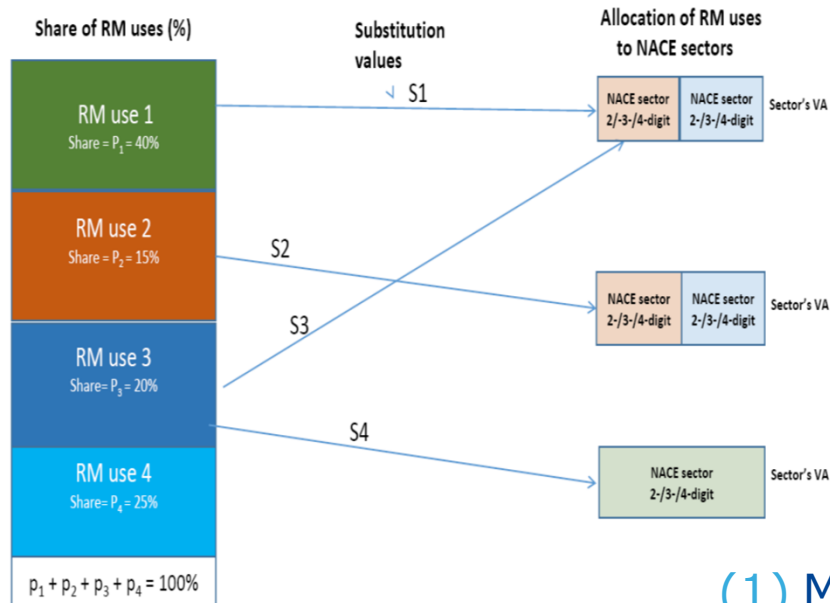
SUPPLY-DRIVEN VS DEMAND-DRIVEN SUPPLY DISRUPTIONS

**SUPPLY-
DRIVEN**

**DEMAND
-DRIVEN**



ECONOMIC IMPORTANCE

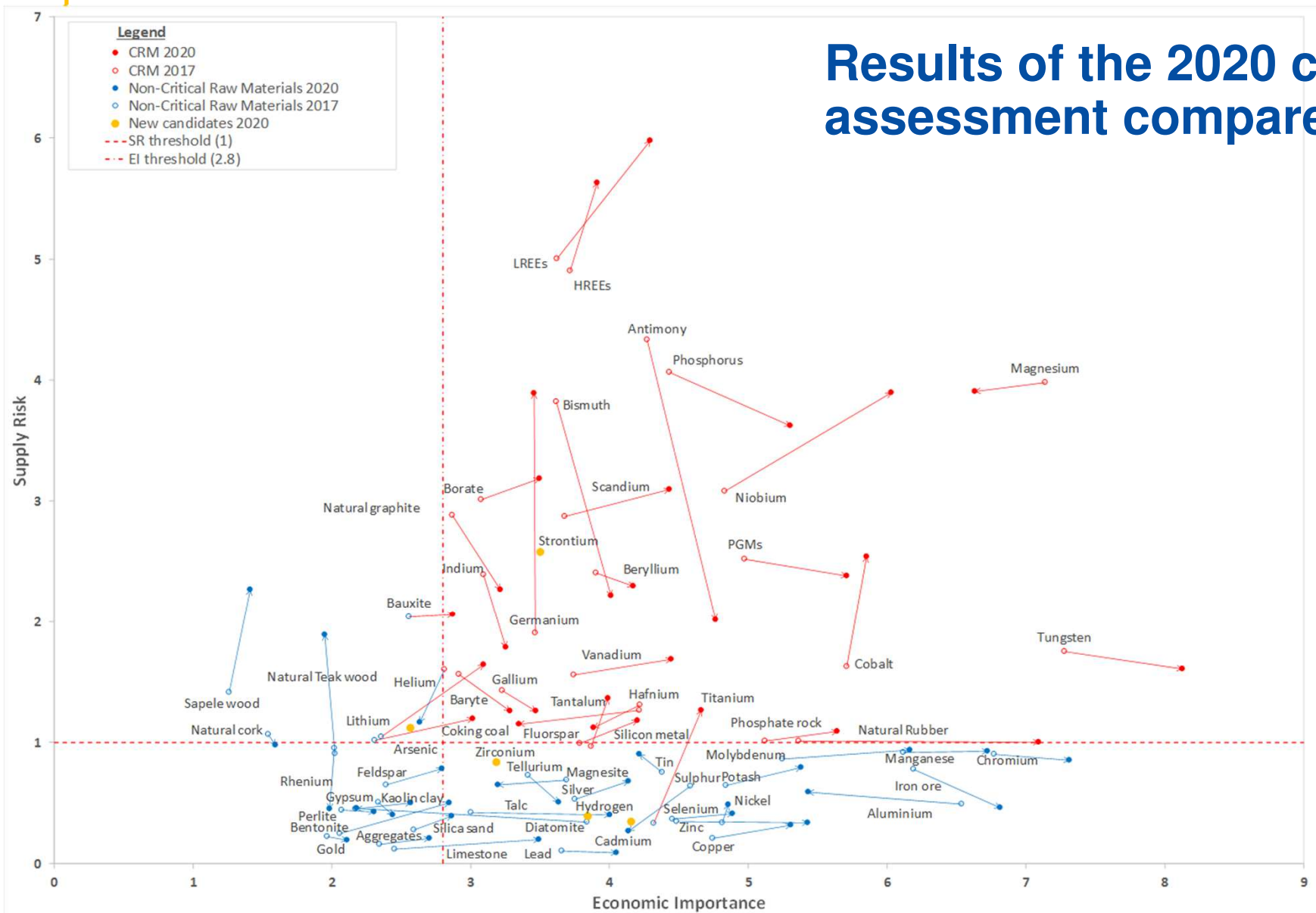


$$EI = \sum_s (A_s * Q_s) * SI$$

- (1) MEGASECTORS → NACE-2
- (2) allocation of RM uses (NACE-6)
- (3) RM-specific substitution index

Results of criticality assessment

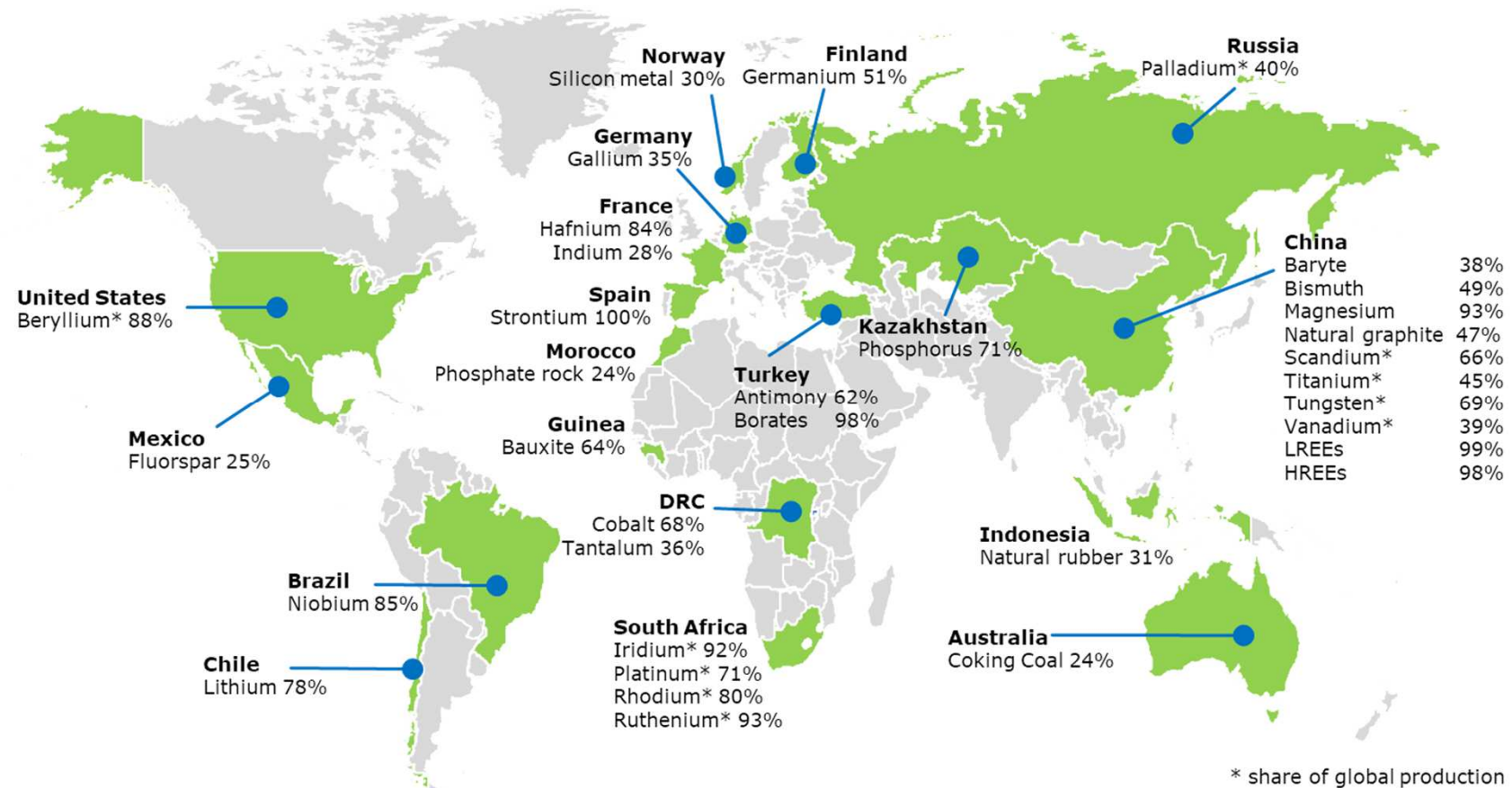
Results of the 2020 criticality assessment compared to 2017



EU sourcing of CRMs

Critical Raw Materials 2020

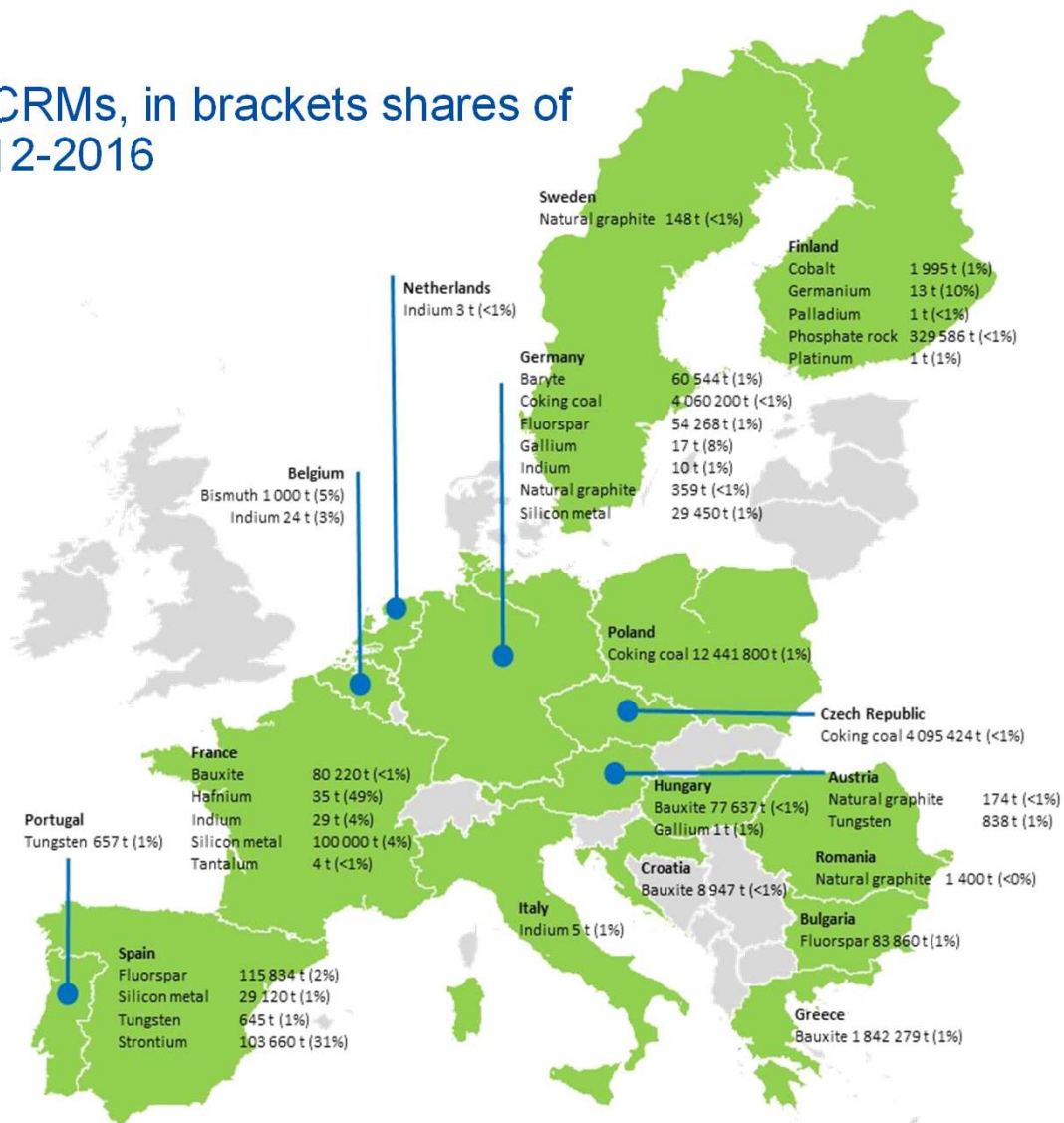
Countries accounting for largest share of EU sourcing of CRMs



CRMs in the EU

Critical Raw Materials 2020

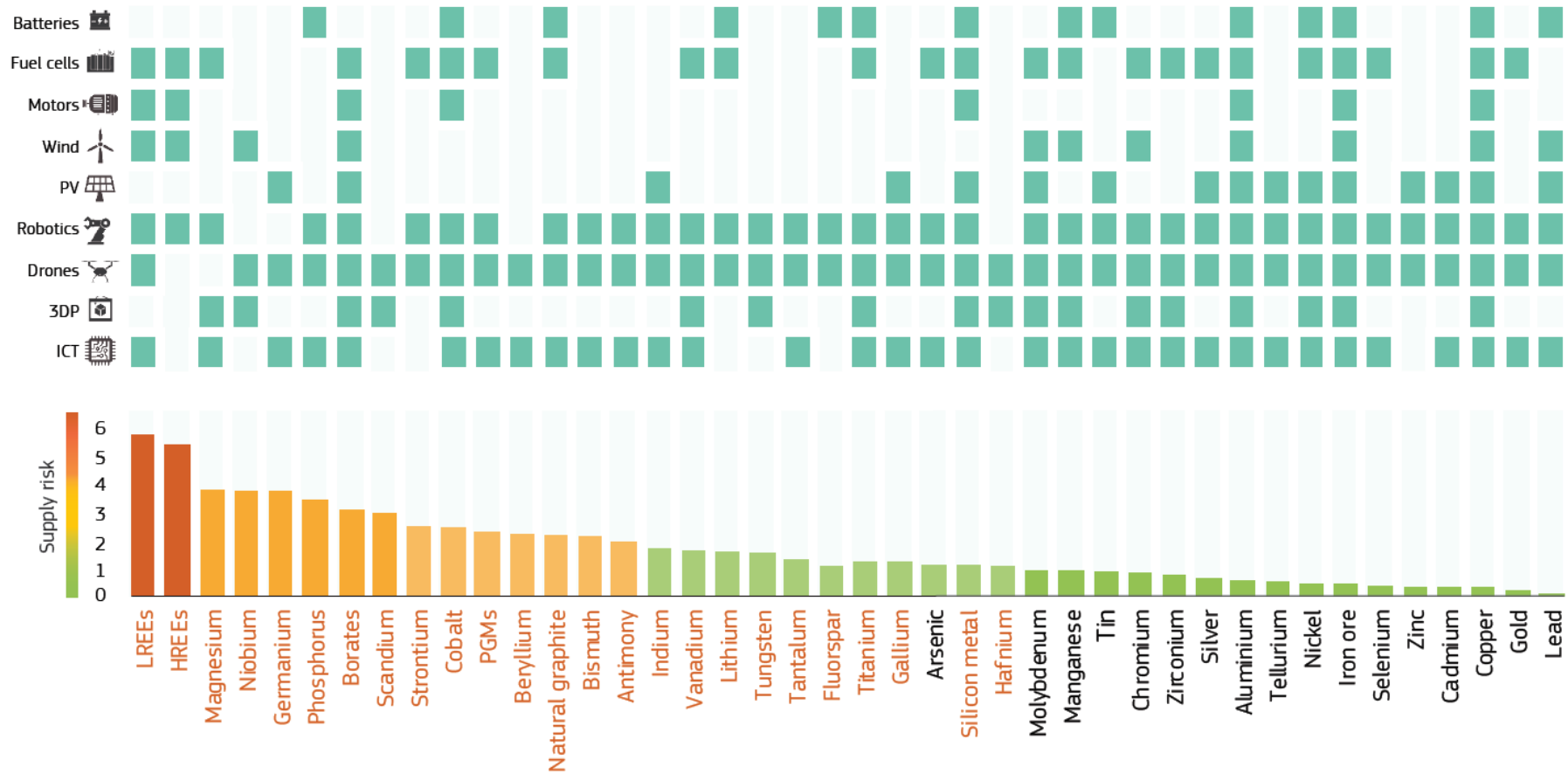
EU producers of CRMs, in brackets shares of global supply, 2012-2016



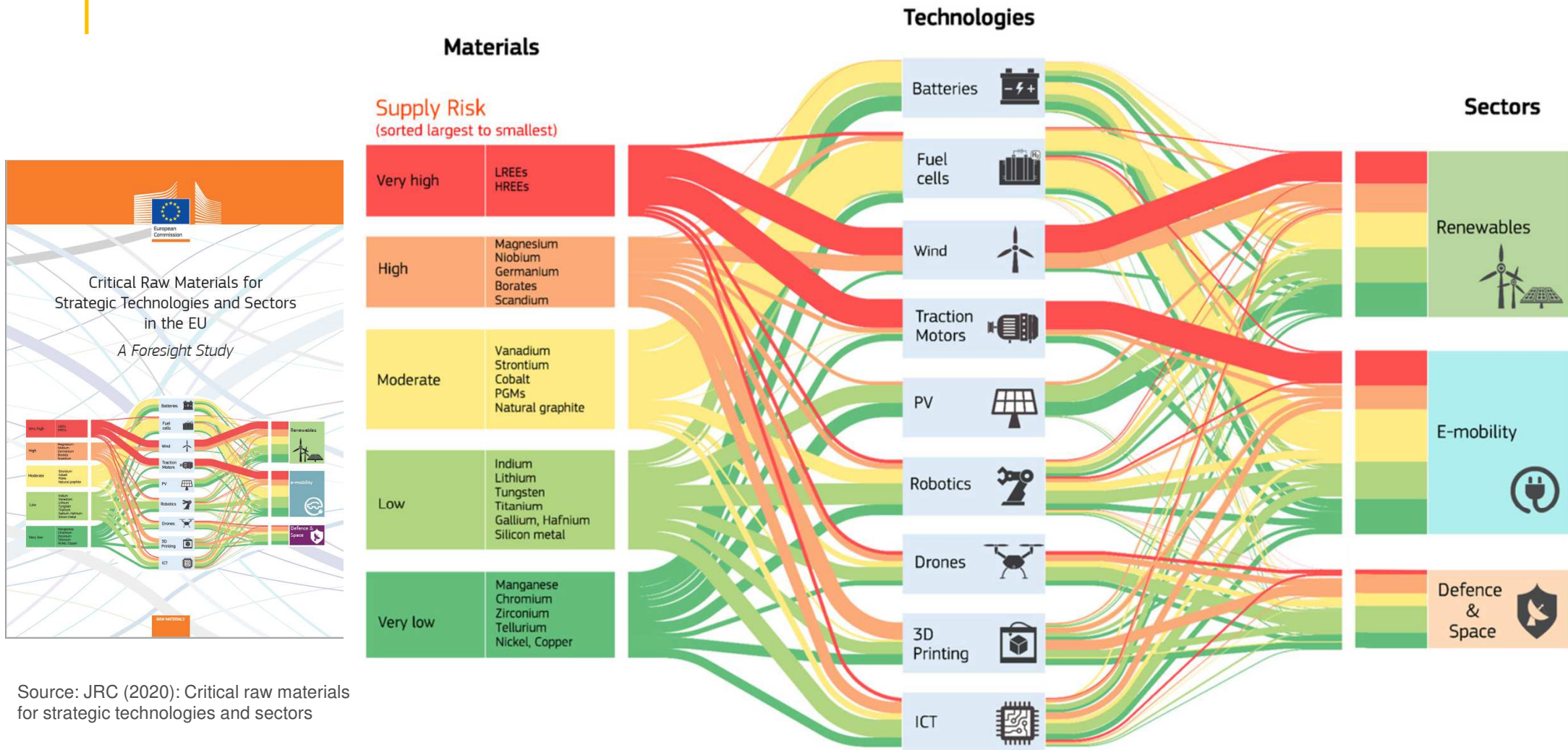
Understanding criticality and setting an Action Plan

Critical raw materials are used throughout Europe's ecosystems ...

SUPPLY RISK OF RAW MATERIALS FOR KEY TECHNOLOGIES



... and particularly in strategic sectors



10 actions to ensure Europe's access to raw materials (1/4)

Resilient value chains for EU industrial ecosystems

1. Launch an industry-driven **European Raw Materials Alliance**, initially to build resilience and open strategic autonomy for the rare earths and magnets value chain, before extending to other raw material areas
 - Bring together industrial actors along the value chain, Member States, regions and civil society
 - To be launched on 29 September 2020
2. Develop **sustainable financing criteria** for the mining extractive and processing sectors in Delegated Acts
3. Actions from 3 to 10: https://ec.europa.eu/growth/sectors/raw-materials/areas-specific-interest/critical-raw-materials_en

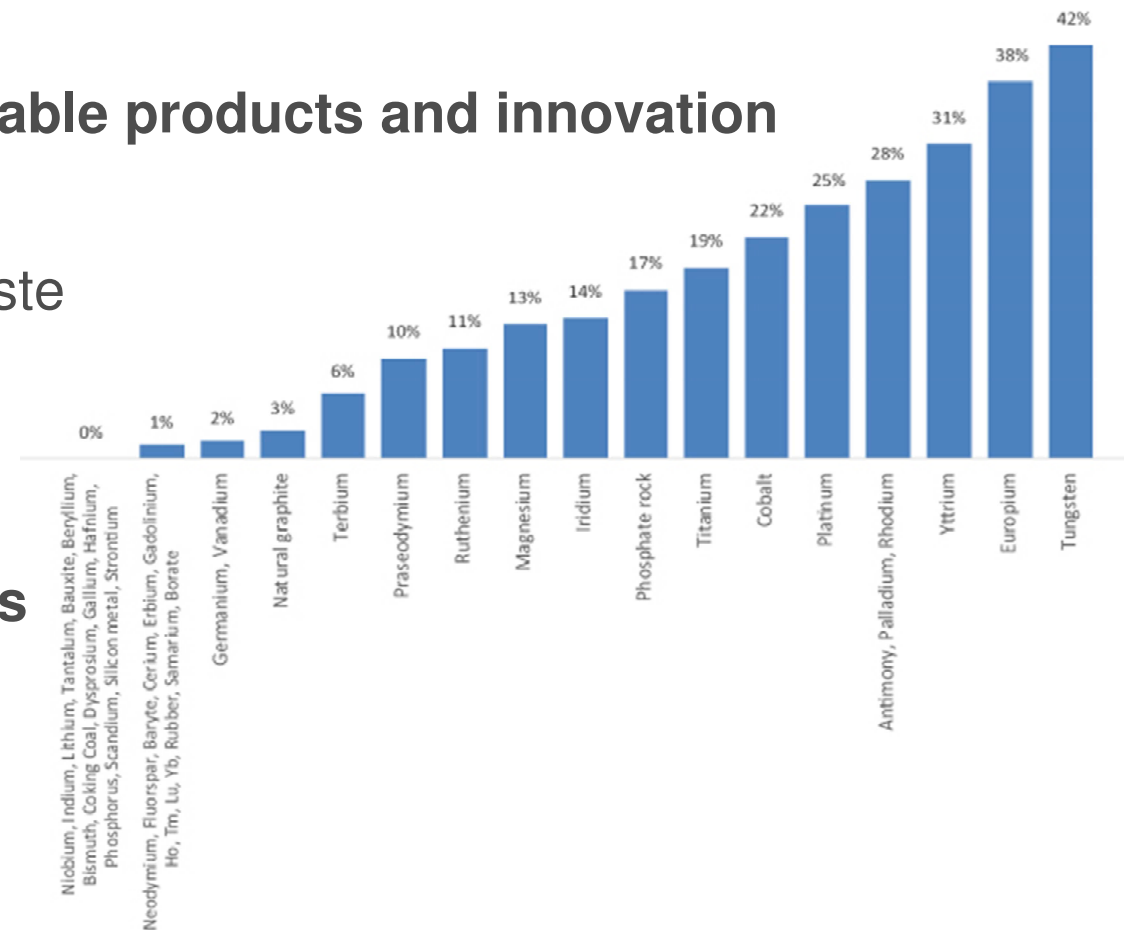


Thankyou!

10 actions to ensure Europe's access to raw materials (2/4)

Circular use of resources, sustainable products and innovation

3. Launch critical raw materials **research and innovation** on waste processing, advanced materials and substitution
4. Map the potential supply of **secondary critical raw materials** from EU stocks and waste and identify viable recovery projects



10 actions to ensure Europe's access to raw materials (3/4)

Sourcing from the European Union

5. Identify **mining and processing projects that can be operational by 2025**, as well as investment needs and related financing opportunities for critical raw materials in the EU, with priority for coal-mining regions
6. Develop expertise and skills in mining, extraction and processing technologies, as part of a balanced transition strategy in **regions in transition**
7. Deploy **Earth-observation** programmes and remote sensing for resource exploration, operations and post-closure environmental management
8. Develop **Horizon Europe** R&I projects on processes for exploitation and processing of critical raw materials to reduce environmental impacts

10 actions to ensure Europe's access to raw materials (4/4)

Diversified sourcing from third countries

9. Develop strategic **international partnerships** and associated funding to secure a diversified supply of sustainable critical raw materials, including through undistorted trade and investment conditions
 - Pilot partnerships with **Canada**, interested countries in **Africa** and the EU's **neighbourhood** planned for 2021
10. Promote **responsible mining practices** for critical raw materials through the EU regulatory framework and relevant international cooperation