



Out of the frying plan into the fire – how the global economic transition risks moving dependencies from fossil fuels to critical minerals

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DG GROW

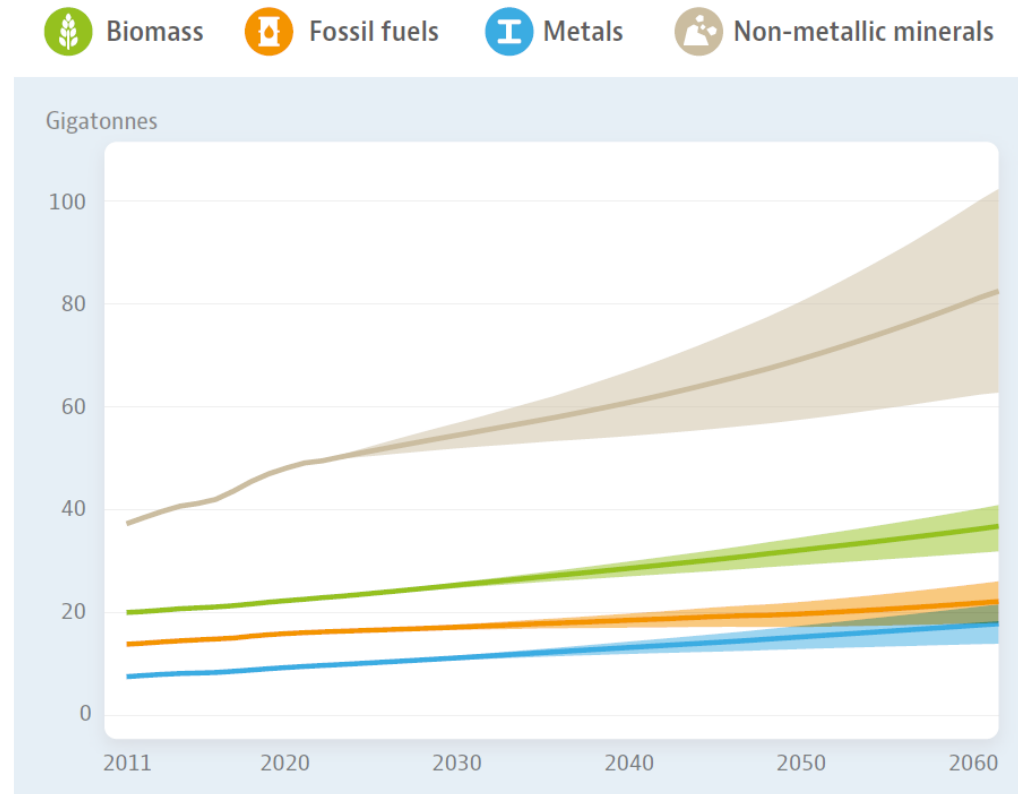
Outline

1. A perfect storm
2. Others are taking action
3. Stronger EU action is coming

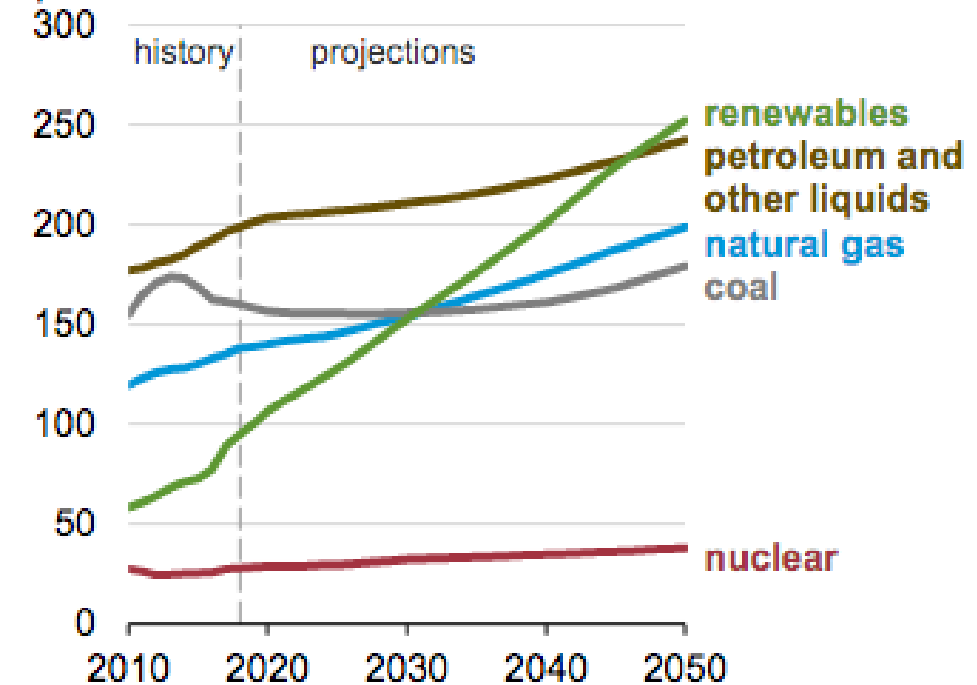
I. A perfect storm

Global demand set to exceed global supply

Figure 6. **Growth in materials use depends on population and economic growth assumptions**



Global primary energy consumption by energy source
quadrillion British thermal units

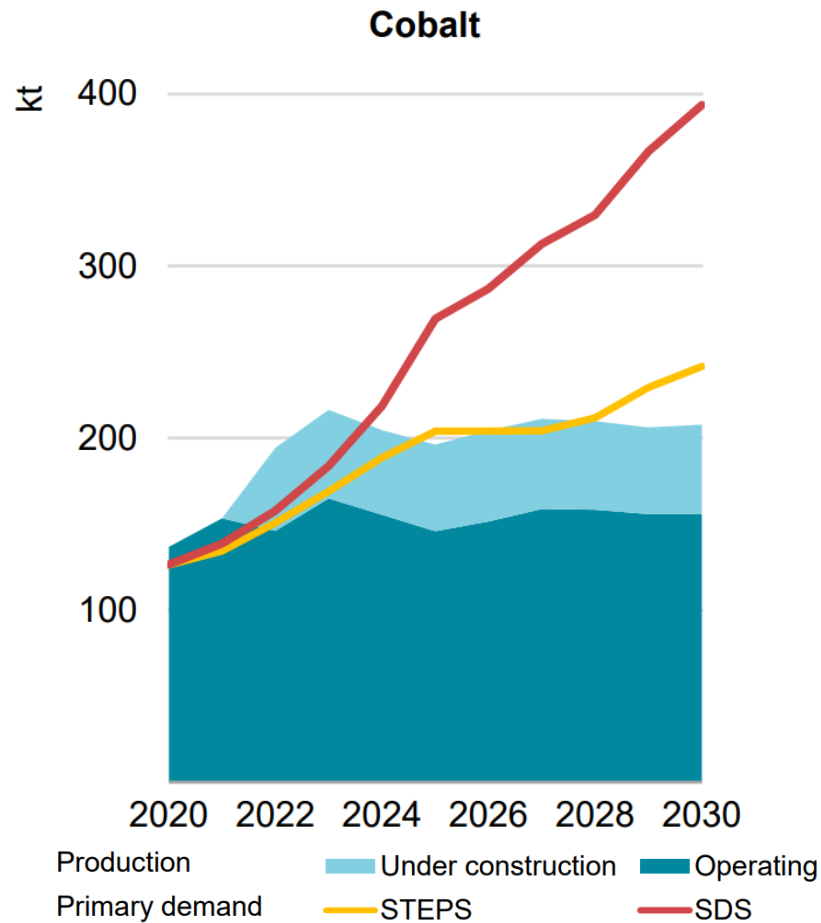


³ Source: OECD, Global Material Resources Outlook to 2060, 2019.

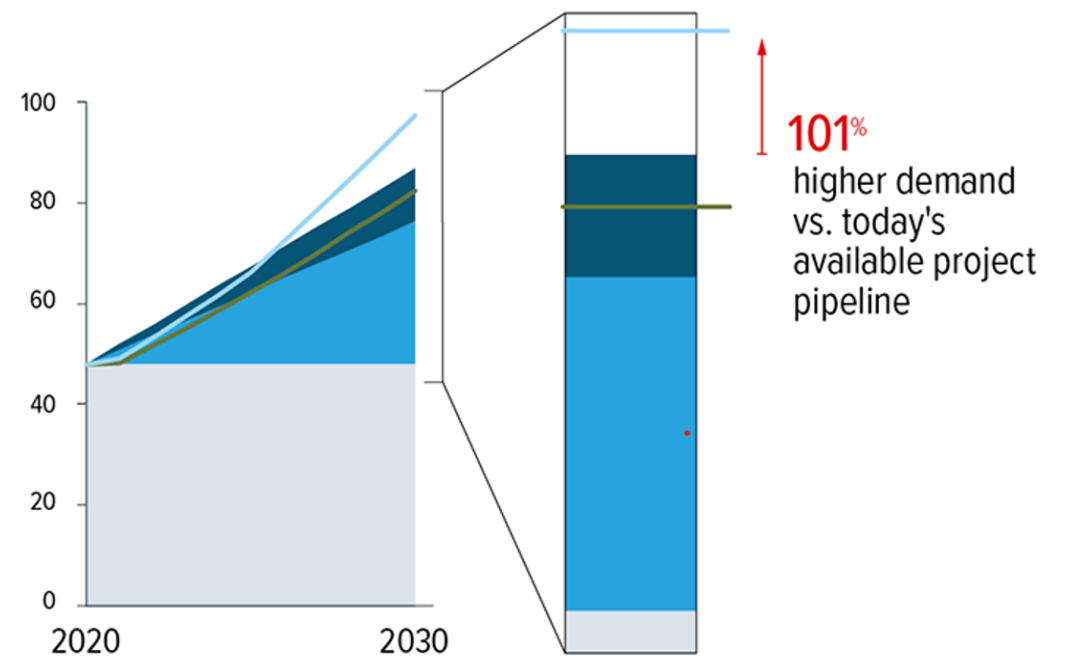
Source: Energy Information Administration, International Energy Outlook 2019.

For **key green technologies**, there will soon be **insufficient supply of raw materials to cover global demand** (e.g. cobalt for batteries and rare earths for wind turbines)

Committed mine production and primary global demand for cobalt (*IEA study*)

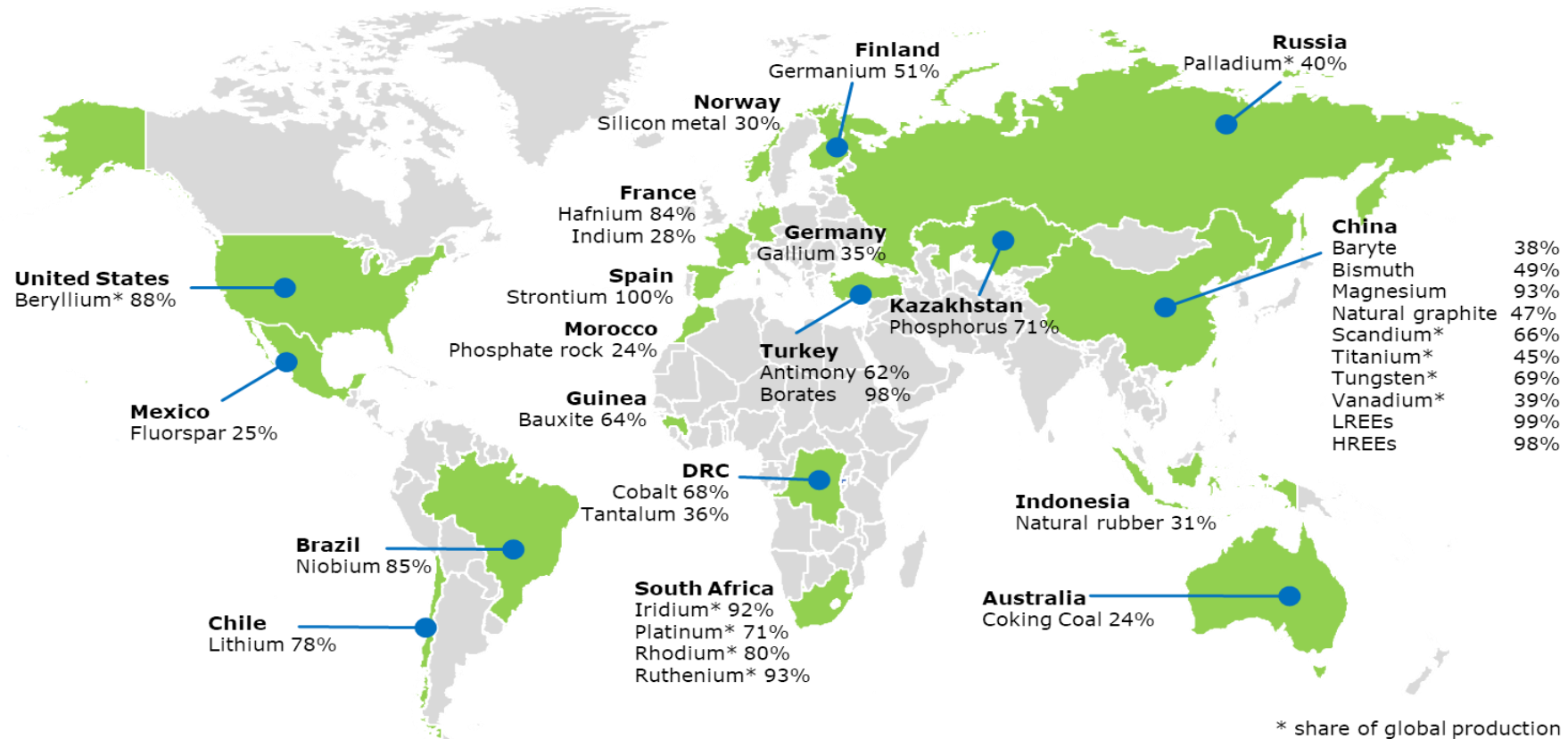


Global rare earth elements demand-supply outlook (kt)



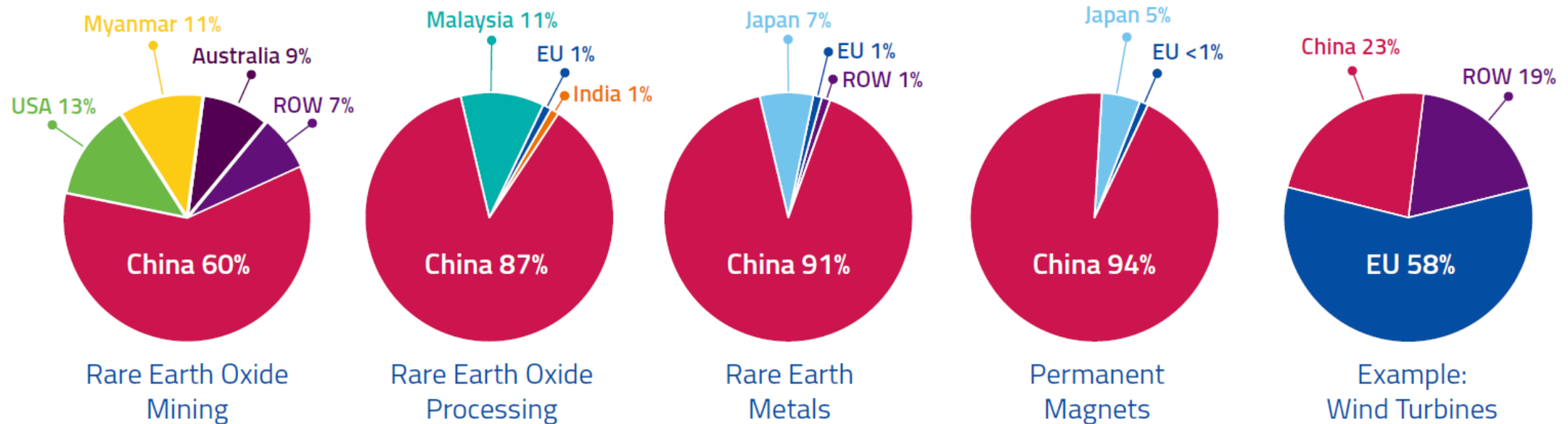
Supply-Demand forecast for REEs, source KU Leuven

Structural dependencies in the EU supply of CRMs



Source: "European Commission, Study on the EU's list of Critical Raw Materials – Final Report (2020)"

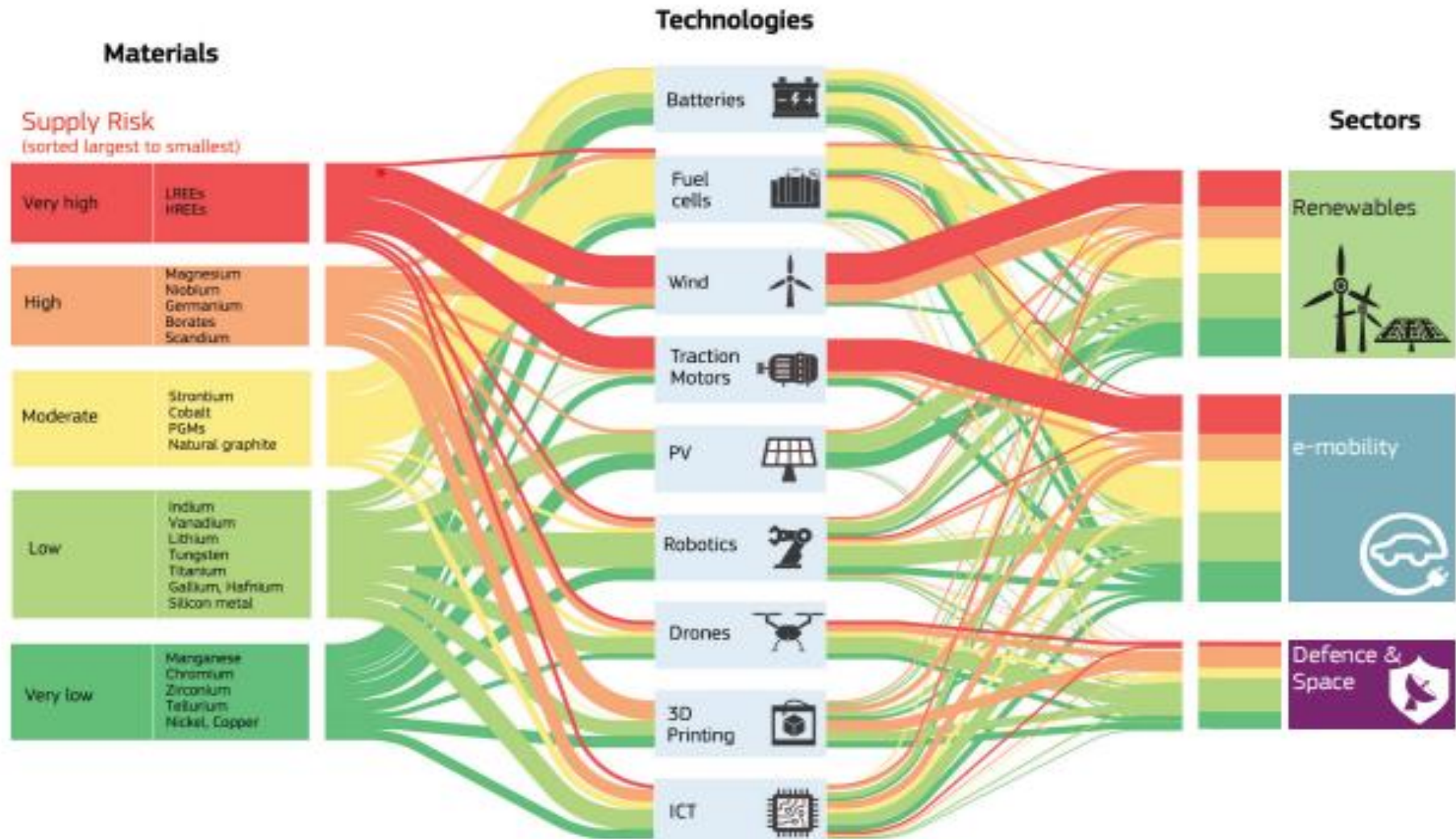
EU dependence ranges across the value chain



Chinese dominance along the Rare-Earths supply chain

Source: ERMA, 2021 - Rare Earth Magnets and Motors: A European Call for Action

Result: supply risk for the twin transitions



II. Others are taking actions

Expanding its monopoly:

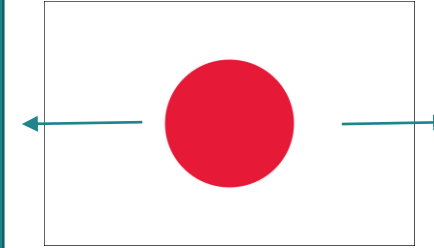
- controls 70% of Congo's cobalt;
- acquires stakes in AUS or USA companies

Developing refining capacity:

- controls 73% of global lithium cell manufacturing

JOGMEC:

- monitoring
- stockpiling
- investing (Lynas rare earths refinery)
- supply contracts



Economic Security Promotion Act

- Ensuring Stable Supply of critical items



National Defence Stockpile

Section 232 investigations

- neodymium magnets, vanadium, titanium



Defence Production Act

- 120 million USD to build rare earths refinery by Lynas

Critical minerals-related funding

- (Infrastructure Investment and Jobs Act)

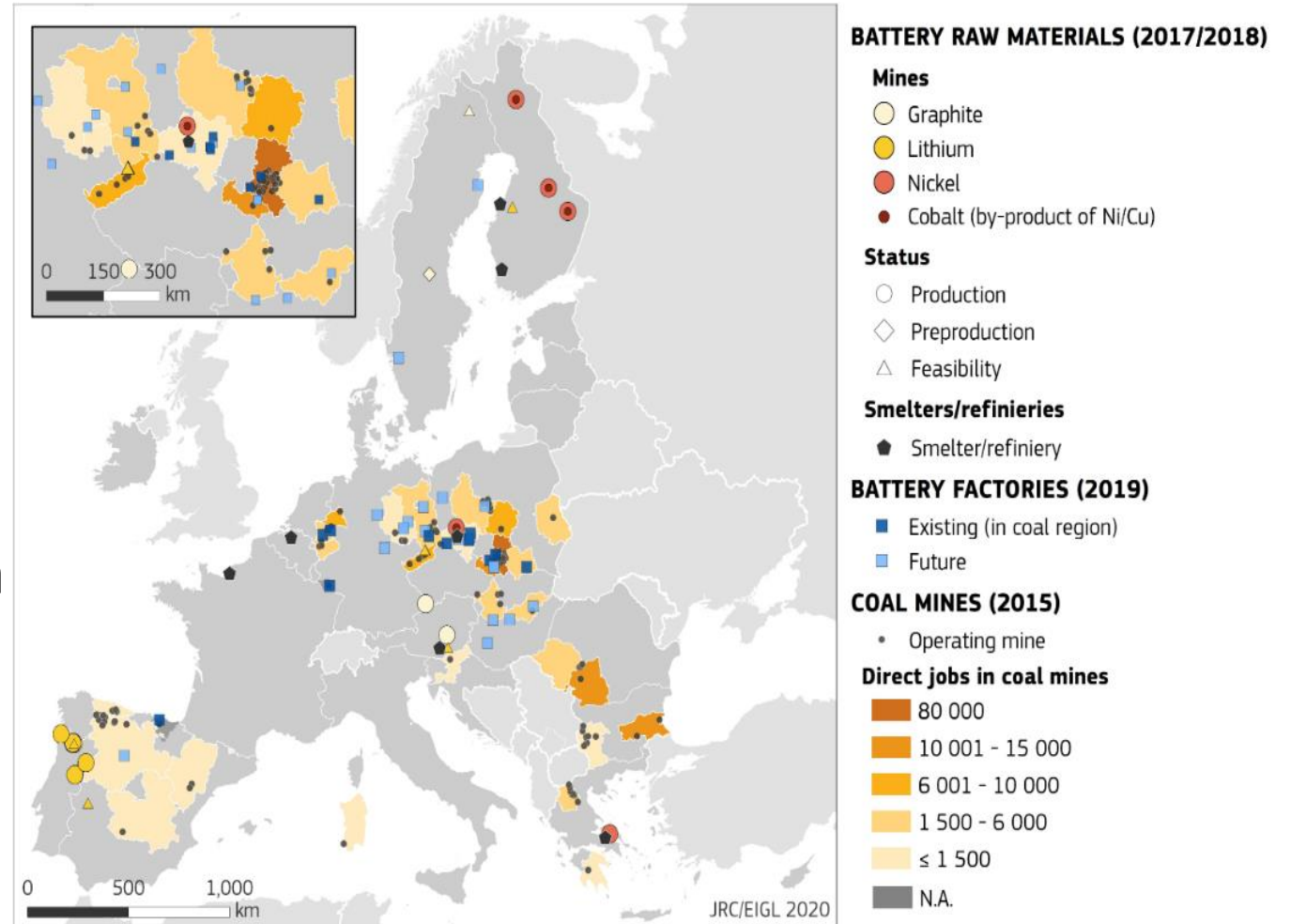
Inflation Reduction Act



III. EU actions are coming

There is sustainable CRM potential in the EU

- There are **meaningful deposits** of relevant raw materials
- E.g.: potential EU projects for lithium could satisfy **38% of annual EU demand** for EV battery production in 2030 (15% by 2050)
- Just transition: CRM production can offer opportunities for **regional development and a new application for existing skills**



Time for action – the political mandate

Heads of State/Government Versailles Declaration in March

Reducing our strategic dependencies - secure EU supply of Critical raw materials by means of

- strategic partnerships,
- exploring strategic stockpiling and
- promoting a circular economy and resource efficiency;

REPowerEU Plan and Conference on the Future of Europe in May/June

- Intensify the work on the supply of critical raw materials and prepare a legislative proposal.

Time for Action – CRM Act

Commission President's State of the Union Speech on 14/9/2022

- The Commission will table proposal on Critical Raw Materials Act
- We will identify strategic projects all along the supply chain, from extraction to refining, from processing to recycling.
- We will build up strategic reserves where supply is at risk.

➤ Timeline

- Foreseen for adoption by Commission in Q1 2023
- Call for Evidence and Open Public Consultation launched 30/9 (DL 25/11)!

Key objective: secure EU supply of CRM

Signalling priority needs

**Strengthening
governance and
monitoring**

**Strengthening
EU value chain
(from extraction to
refining and recycling)**

**Ensuring a Sustainable
level playing field**

**Pursuing supply
diversification, research
and innovation, skills**