

Rare earths, source of progress and conflicts

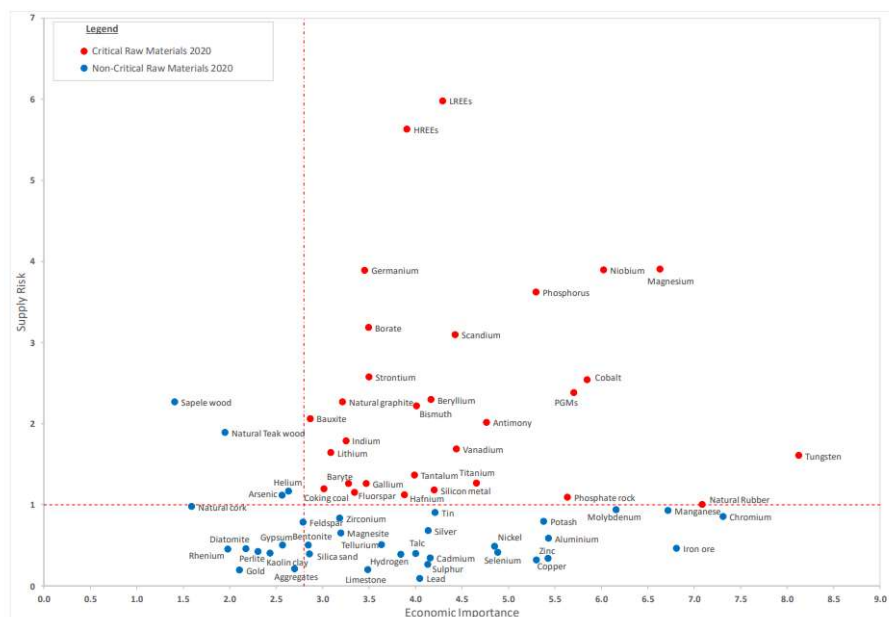
Part 7 – Europe and the e-waste opportunity



Europe imports most of the rare earth elements in form of manufactured electric and electronic devices, which are produced in other countries. Consequently, Europe generates huge amounts of e-waste – for example, in 2019 it was around twelve million tonnes [1]. That presents Europe's waste as a noticeable potential source of rare earth elements.

Rare earth elements are present in e-waste in vanishingly small quantities only. This makes recovery difficult and energy intensive. However, the main issue regarding the obtention of rare earth elements from e-waste recycling is not the lack of developed technologies. Much more important are the deficits of infrastructure and a waste management plan that could enable a wide and economically viable recovery of rare earth elements. Furthermore, there are few recycling companies in Europe only, which are involved actively in rare earth elements recovery. [2]

As a result, Europe is still depending on Chinese exports – which will not dramatically change in foreseeable future. Rare earth elements are therefore categorized as the raw materials with the highest supply risk by the European Commission. [3]



Criticality assessment of raw material, 2020 [2]

[1] Forti V., Baldé C.P., Kuehr R., Bel G. The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential. United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR) – co-hosted SCYCLE Programme, International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam

[2] European Commission, Recovery of Rare Earths from electronic wastes: An opportunity for High-tech SMEs (2013)

[3] European Commission, Study on the EU's list of Critical Raw Materials – Final Report (2020)

