

## EIT RawMaterials supports the world after COVID-19 in securing a sustainable supply of raw materials and advanced materials – for Europe’s green future and competitiveness

The current **COVID-19 pandemic** has already by now caused **profound effects** at global **macroeconomic** scale. In the **automotive sector**, for example, car manufacturers have announced a **stop of production** during the last weeks and just now start to gradually ramp up again. **Tier 1** and **Tier 2 suppliers** and other market actors **further upstream** are similarly affected by this demand side shock and have consequently ramped down their production as well. In addition to these **demand side shocks**, supply chain steps located in countries strongly affected by the virus are hampered, too, leading to the **breaking of entire international supply chains**. This makes more clear than ever before that the **security of the supply of strategic raw materials** needed for the long-term **competitiveness** and **job security** of key industries is of **prime importance for the European Union**.

The **European Green Deal** targets **2050 climate neutrality** and recognizes **access to resources as a strategic security question** to fulfil its ambition. The new **Industrial Strategy for Europe** sees raw materials as **key enablers** for a globally competitive, green and digital Europe. It envisions European competitiveness based on a new **Alliance on Raw Materials** and highlights the **importance of industrial ecosystems** for accelerating innovation and growth in Europe. A more resilient, more protective, more sovereign and more inclusive economic model that aligns with the Green Deal has also been prioritized by the recently launched **Green Recovery Alliance**.

**EIT RawMaterials**, funded by the European Institute of Innovation and Technology (EIT), has the vision to **develop raw materials into a major strength for Europe**. It is the **world’s largest network** in the **raw materials** sector connecting industry, research and education. This makes EIT RawMaterials a key contributor to secure sustainable access and supply of raw materials – for a **green, digital and competitive Europe** after COVID-19.

### Case Study: The vulnerability of European industries to the supply of Rare Earth Elements

Among their various industrial uses, **rare earth elements (REEs)** are essential for manufacturing **permanent magnets**. Permanent magnets are critical components in **most decarbonisation technologies** underpinning the Green Deal such as **electric vehicles, vehicles based on fuel cells** and **wind turbines**. Recent studies have demonstrated that reaching the goals of the ‘2-degree scenario’ and the Green Deal is **highly vulnerable** to disruptions in the REEs supply chain (Ballinger et al., 2020, <https://doi.org/10.1016/j.spc.2020.02.005>).

**Reliable and sustainable sources of REEs** do exist within Europe and elsewhere, yet the supply chain of REEs for permanent magnets as well as the magnet production itself is almost exclusively **controlled by China** (see Figure 1). Under current market conditions, it could take **up to 15 years** to establish a supply chain elsewhere.

Considering a **continued growing demand** after the COVID-19 crisis for REEs and other critical raw materials, Europe will also continue to compete with China on the sourcing of REEs – already today, China is **increasingly importing** Rare Earth Element Oxides (REO, see Figure 2), which are the necessary input to produce the metal and finally the permanent magnet.

EIT RawMaterials is using its **extensive partner network** consisting of major European industries in sectors of high relevance for a green, digital and competitive Europe to evaluate **strategic opportunities** ranging from **risk sharing activities** along the supply chain to **collaborative R&D** and **large investments** as well as the **relocation of crucial supply chain steps**, which can be considered as bottlenecks, into Europe.

Figure 1: China's dominance of the supply chain for gearless wind turbines (Source: JRC 2017)

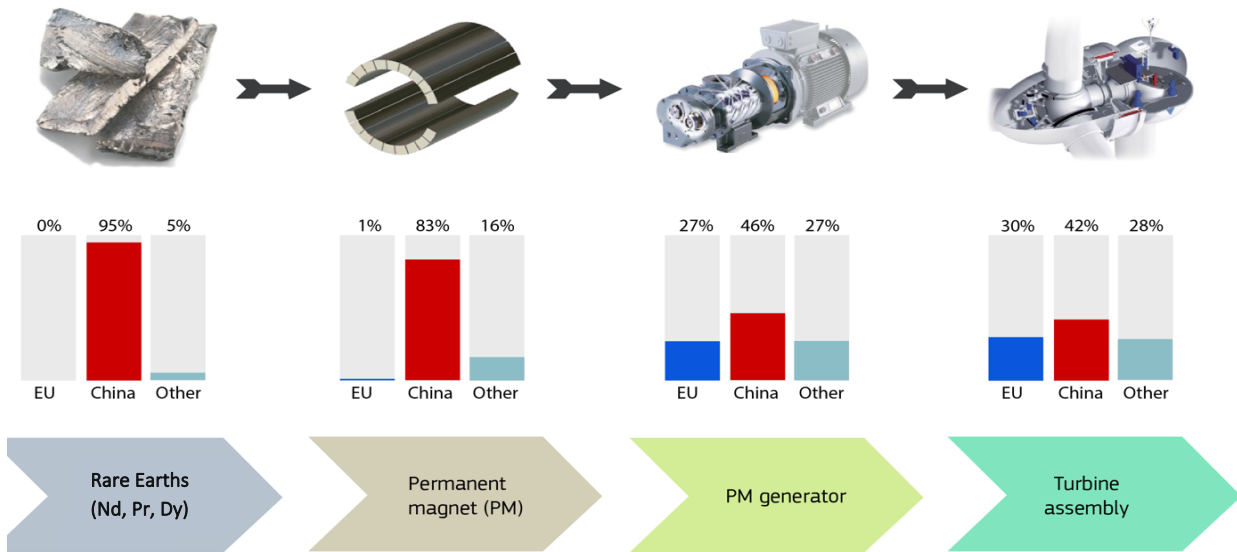
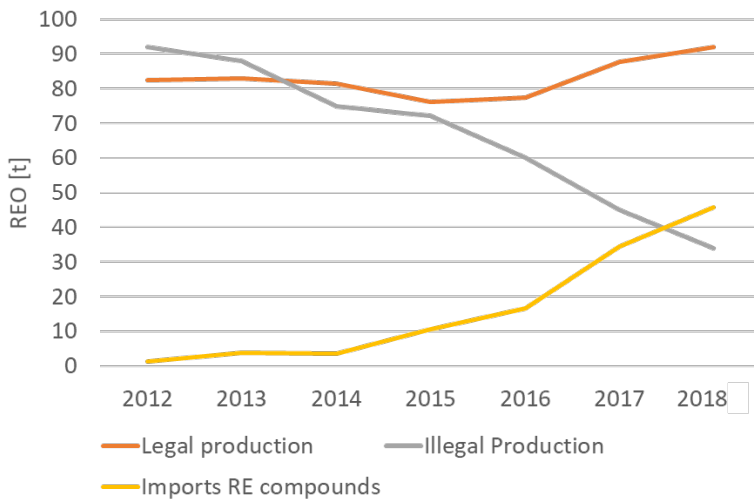


Figure 2: REO production in China (Source: R. Gauß based on Roskill 2019)



### European strategies to exit the COVID-19 crisis

To exit the COVID-19 crisis into an **economically sound scenario**, Europe not only has to tackle the supply side challenges as shown for the example of REEs, but also **demand** for sustainable end and intermediate products. National governments and the European Commission are taking **serious measures** to fuel the European economy again and restart the power engine of our welfare.

Europe is home to **world-market leaders** in the metals and minerals sector and **leaders of excellence** in innovation and education. **EIT RawMaterials** was established to address this type of challenges and has the credentials, drive and expertise to **lead the establishment of new, post-COVID-19 supply chains**. Solutions include, for example, **R&D** to make available both **primary** and **secondary sources**, **circularity** through **industrial symbiosis** and **closing material loops** as well as **access to financing** for critical value chain steps.

### RAW MATERIALS ARE VITAL FOR THE EU ECONOMY, THE GREEN TRANSITION AND A SUCCESSFUL EXIT FROM COVID-19 – EIT RAW MATERIALS WILL FULLY SUPPORT THIS

For additional information about EIT RawMaterials and our position on COVID-19 please contact:

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