David against Goliath: The European Union facing the issue of critical minerals and metals

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A growing EU dependency on supplies from South Africa, Russia, China and to a lesser extend on Chile, Australia, Indonesia, DRC.

For other metals, countries of importance to the EU include: Kazakhstan (15% of chromium production and the largest uranium supplier), Namibia (major uranium exporter), South Korea (1/4 of indium production), Ghana and Gabon (manganese), Mozambique (Graphite), Ukraine…
The EU imports its cobalt from all over the world, with a very diverse supply in Asia and the Pacific.

Source: UN Comtrade data

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The US will be in a better position than Europe, thanks to its resources and active domestic supply strategy.

The very comprehensive minerals strategy developed by the US is expected to revive the development of its mining industry, thanks to public subsidies – the Mountain Pass mine, with a unique concentration of rare earths, is operational again. Yet the country will also need to revive the refining segment.
The US is mainly dependent on the Asia-Pacific region, and also imports from Europe.

Source: UN Comtrade data

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European companies do not balance global leaders, even the top EU mining companies

**TOP 10 mining companies (2019) – TTM revenue ($bn)**

- Zijin Mining Group Co. Ltd.
- Aluminium Corporation of China Ltd
- Anglo American PLC
- Yanzhou Coal Mining
- China Shenhu Energy Co. Ltd.
- Vale SA
- Jiangxi Copper Co. Ltd.
- Rio Tinto PLC
- BHP Group Ltd.
- Glencore

**Major EU mining companies (2019) – Sales revenue ($bn)**

- Jastrzebska Spolka Węglowa
- Mytilineos
- LKAB
- Eramet
- Imerys
- Bolíden
- KGHM
- Outokumpu
- Aurubis

Glencore largely dominates the market while there is a very powerful Chinese presence in the world ranking.

UK companies also have a major place. Other European companies have revenues five to twenty times smaller than the smallest player in the top ten global ranking.

Some players could develop into niche markets, such as geothermal lithium extraction.

EU companies are small and very marginal players compared to Canadian, Brazilian, Australian, Swiss and Chinese companies. The high share of intra-company trade, or among state entities, reduce transparency and market liquidity. They also open the possibility, in future, for coordinated actions or cartel behaviour.

Source: Ifri, based on companies reports
Europe’s mineral extraction is burgeoning, led by Finland, but volumes will remain marginal while refining will matter.

- **Skaland Graphite Project (Mineral Commodities Ltd)**: 16 000 t/yr
- **Vittangi Graphite Project (Talga Resources)**: 19 000 t/yr, Feasibility study in 2021
- **Zero Carbon Lithium Project (Vulcan Energy Resources)**: 39 400 t/yr, Feasibility study by mid-2022
- **Montalegre Lithium Project (Savannah)**: 60 000 t/yr, Possibly operational by 2023
- **Mina do Barroso (Keliber Oy)**: 26 000 t/yr, Public consultation in early 2021
- **San Jose Lithium Project (Tecnología Extremena del Lito)**: 16 500 t/yr by the end of 2021, Feasibility study by the end of 2021
- **Hautalampi (Eurobattery Minerals)**: Cobalt - 300 t/yr, Nickel - 1400 t/yr, Possibly operational by 2022
- **Keliber Lithium Project (Keliber Oy)**: 11 000 t/yr, Construction scheduled for mid-2022
- **Cinovec Project (Cinovec Lithium)**: 1100 t/yr, Possibly operational by mid 2022
- **Wolfsberg Lithium Project (European Lithium)**: 10 000 t/yr, Possibly operational by the end of 2023

Source: Ifri, based on company/project data
Finnish soils are rich in minerals, and many exploration and mining projects are planned or already in operation.

Sweden is another mining leader in Europe, with 90% of the iron ore produced in Europe extracted in Upper Norrland, alongside new graphite and copper-cobalt projects.

Key to successful development are inclusive mining development processes, predictability and trust, alongside skilled labour force.

And a strong value chain integration and circular economy culture.
In the 2020 Fraser Institute Annual survey of mining companies, Finland ranks 10th in Investment Attractiveness Index and 3rd in Policy perception Index, thanks to a good mix of regulation & flexibility, collaboration between different public, private and institutional levels and scientific & research excellence.
The European Raw Materials Initiative needs to move up a gear

EU battery alliance and strategy to move up the raw material value chain through mining and recycling is a core element of EU’s industrial strategy and a an unprecedented success of the European Commission. Unprecedented and highly successful coordination and financial support efforts and support to innovation and scale up:

- EIT Technology, HorizonEurope
- Battery cell IPCEIs: triggered dozens of billion euros in investments
- Recycling IPCEIs
- Battery recycling directive forthcoming relating to sustainability and safety, labelling and information, end-of-life management
- Embryo of mining support: ERA-NET Cofund scheme

The challenge is now to move bigger, faster and take up the geopolitical challenges:

- More political and financial support to foreign mining projects
- Support to refining projects in Europe
- Support to recycling activities in Europe
- Need for new IPECIs and greater involvement by EBRD and EIB
- Develop skills and education