



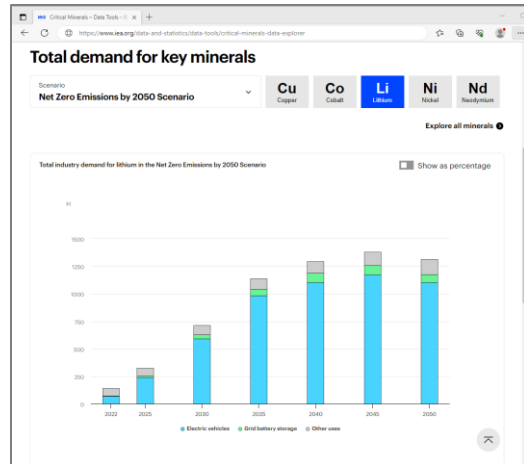
Critical Minerals Market Review 2023

Launch presentation

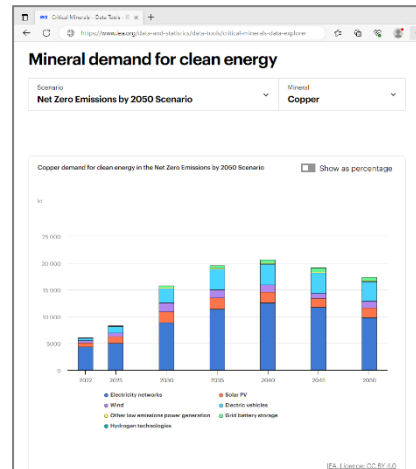
Tim Gould, Chief Energy Economist
11 July 2023

- Alongside today's new market report, the IEA is releasing an interactive online tool that allows users to easily access the IEA's scenario data for critical minerals
- This provides full access to the demand projections under various energy scenarios and technology evolution trends

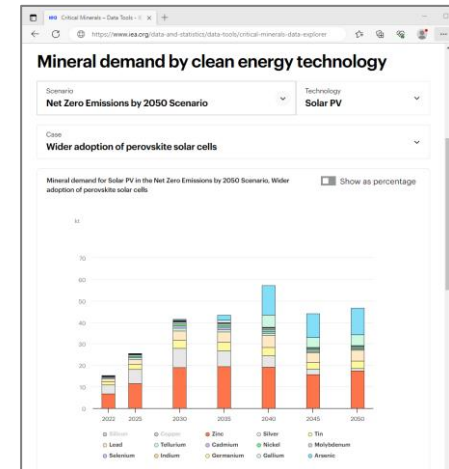
Total demand for focus minerals



Demand by mineral

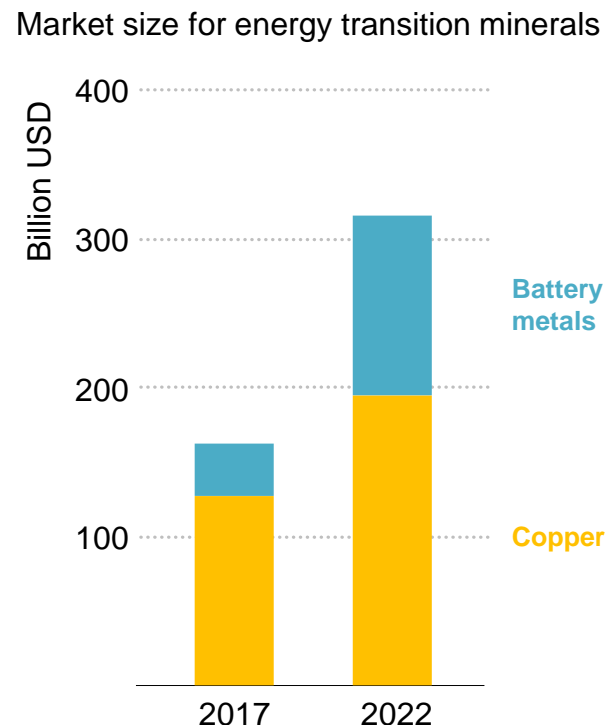
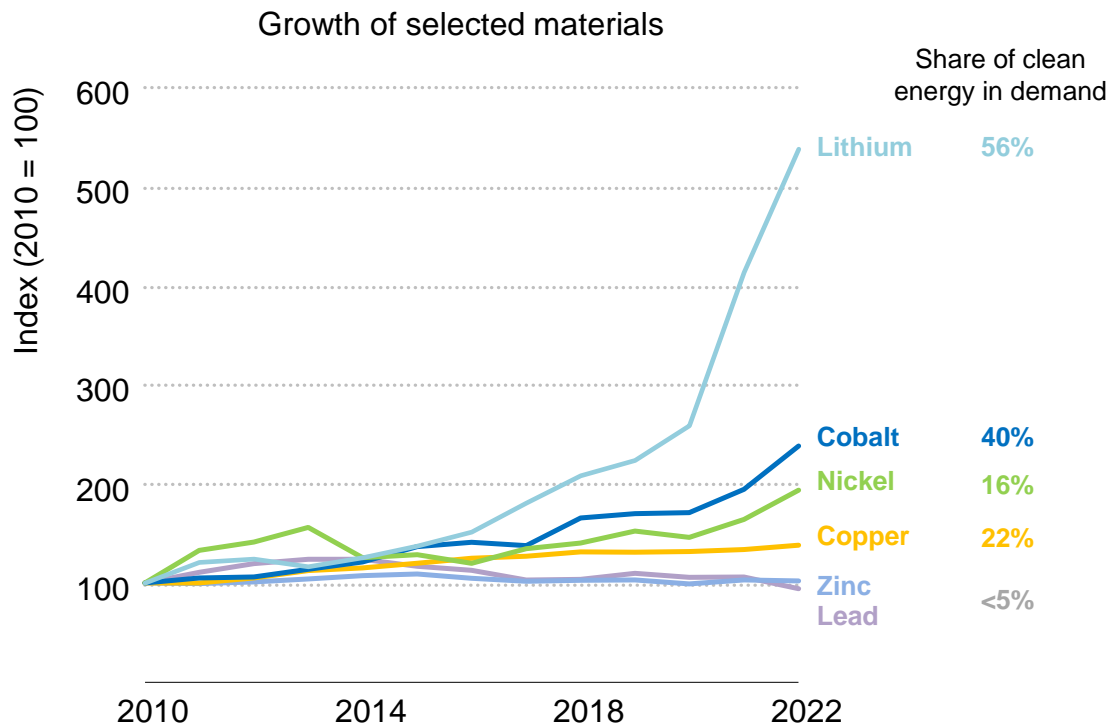


Demand by technology



<https://www.iea.org/data-and-statistics/data-tools/critical-minerals-data-explorer>

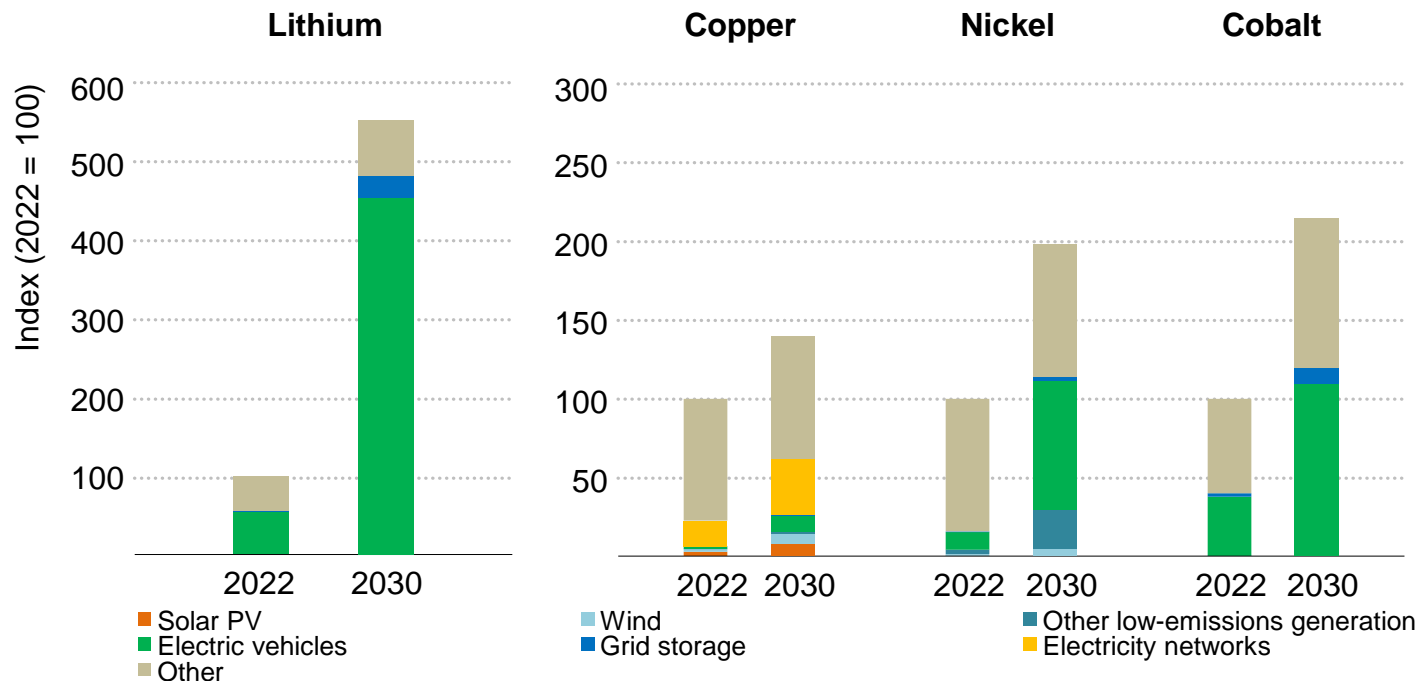
Clean energy is driving unprecedented growth for critical minerals



Rising deployment of EVs and renewables has underpinned major growth in mineral demand, leading to a doubling of market size for key energy transition minerals over the past five years

Meeting climate goals means further rapid growth this decade

Total demand for key critical minerals in the Net Zero Emissions by 2050 (NZE) Scenario

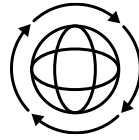


Getting on track to limit global warming to 1.5°C would mean a further rise in mineral demand for clean energy by three and a half times to 2030

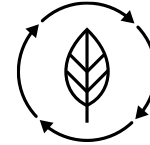
Three supply-side challenges



Can future supplies keep up with the rapid pace of demand growth in climate-driven scenarios?

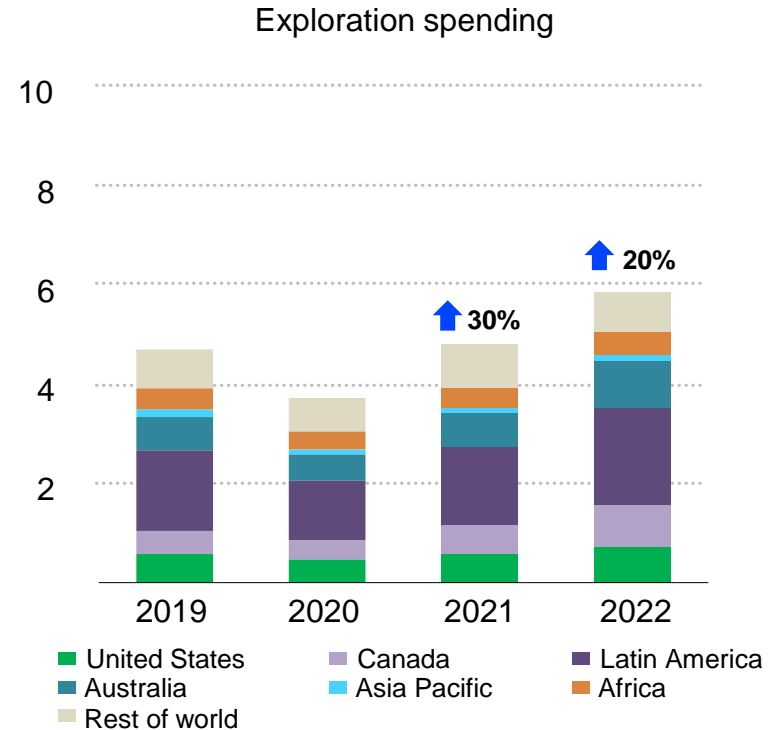
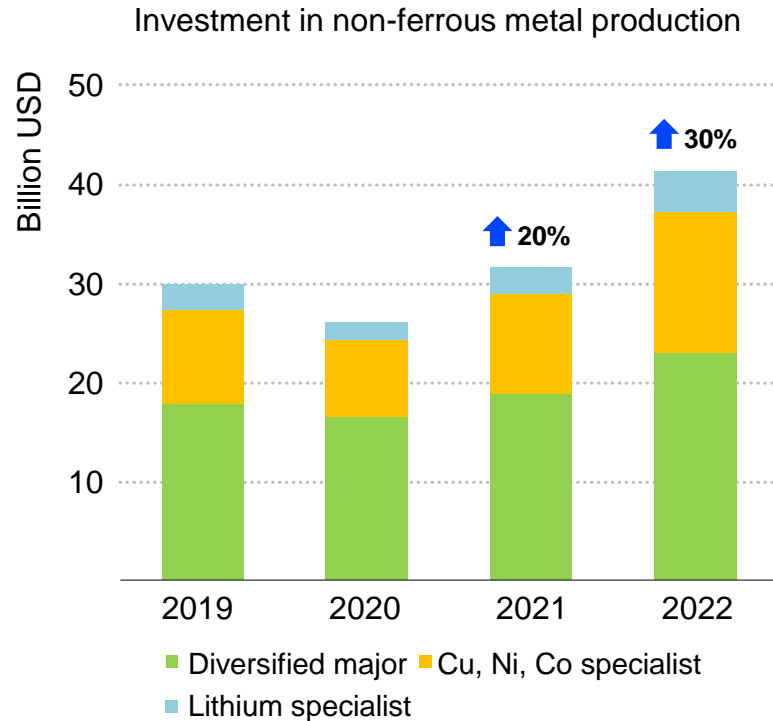


Can those supplies can come from diversified sources?



Can those volumes be supplied from clean and responsible sources?

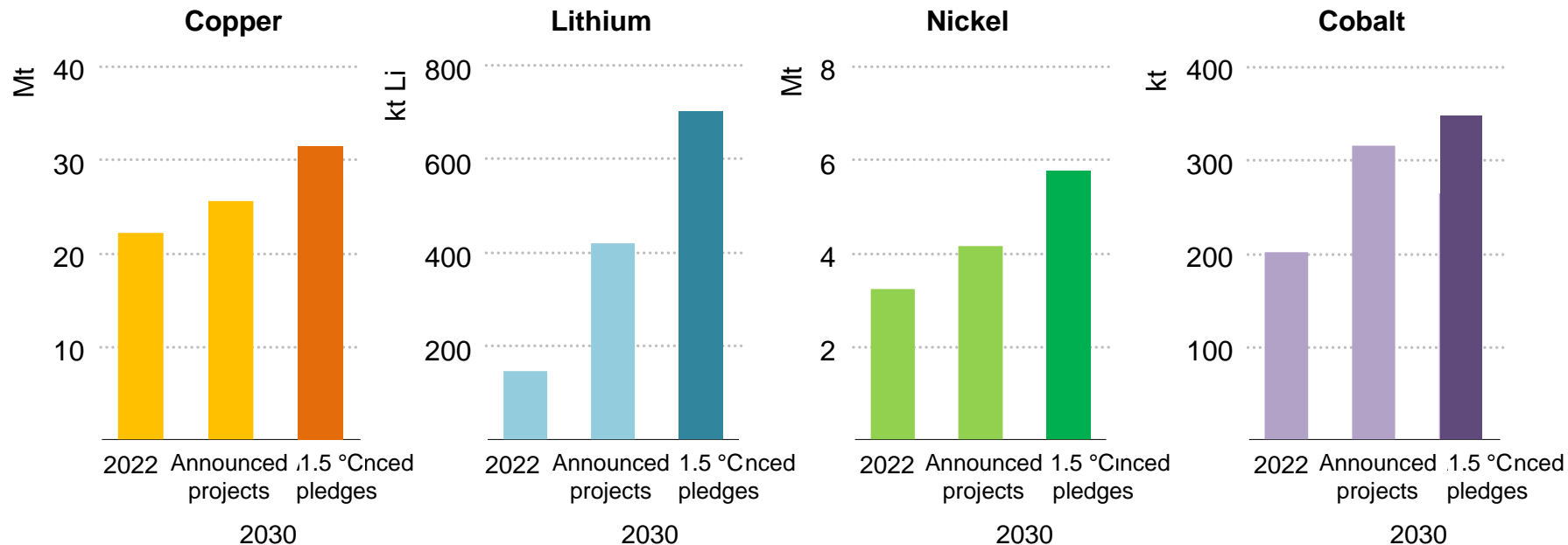
Investment in critical mineral supplies on the rise



Higher prices & strong expectations for demand have produced new strategies and investments from resource-rich countries – spending on critical minerals exploration and development is up sharply since 2020

Announced projects are matching announced climate ambitions

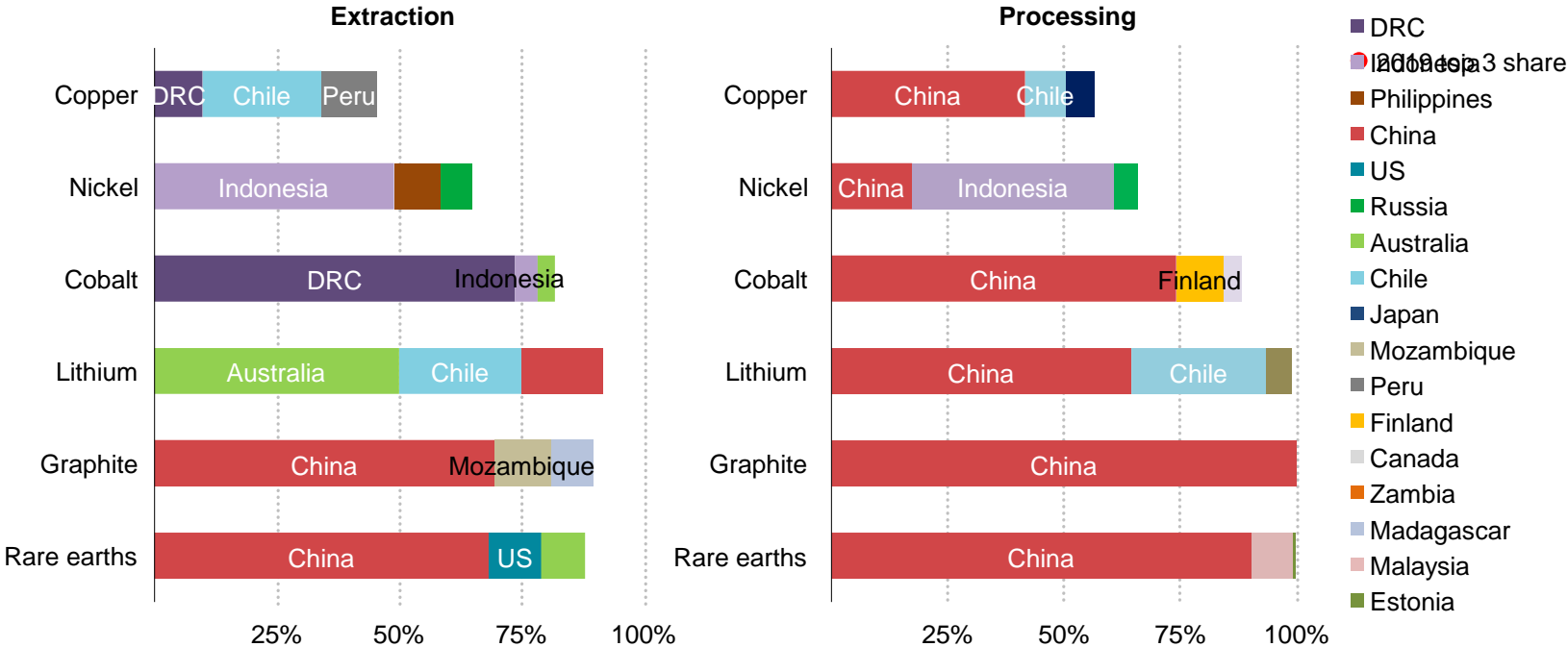
Anticipated supply from announced projects and primary supply requirements in different scenarios



A host of newly announced projects, if implemented as planned, would be sufficient to meet countries' clean energy ambitions for some minerals, but the adequacy of future supply is far from assured

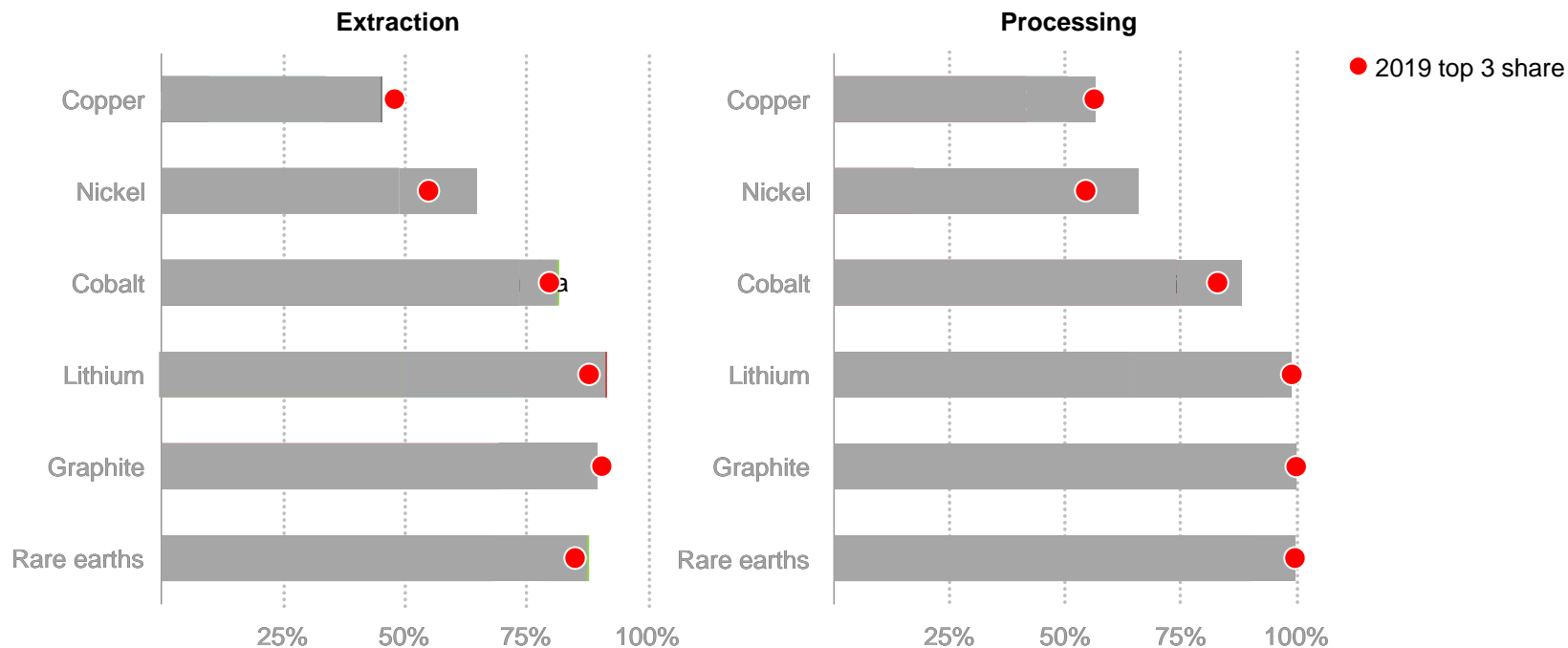
But concentration of supply remains high

Share of top 3 producing countries in total production for selected resources and minerals, 2022



But concentration of supply remains high

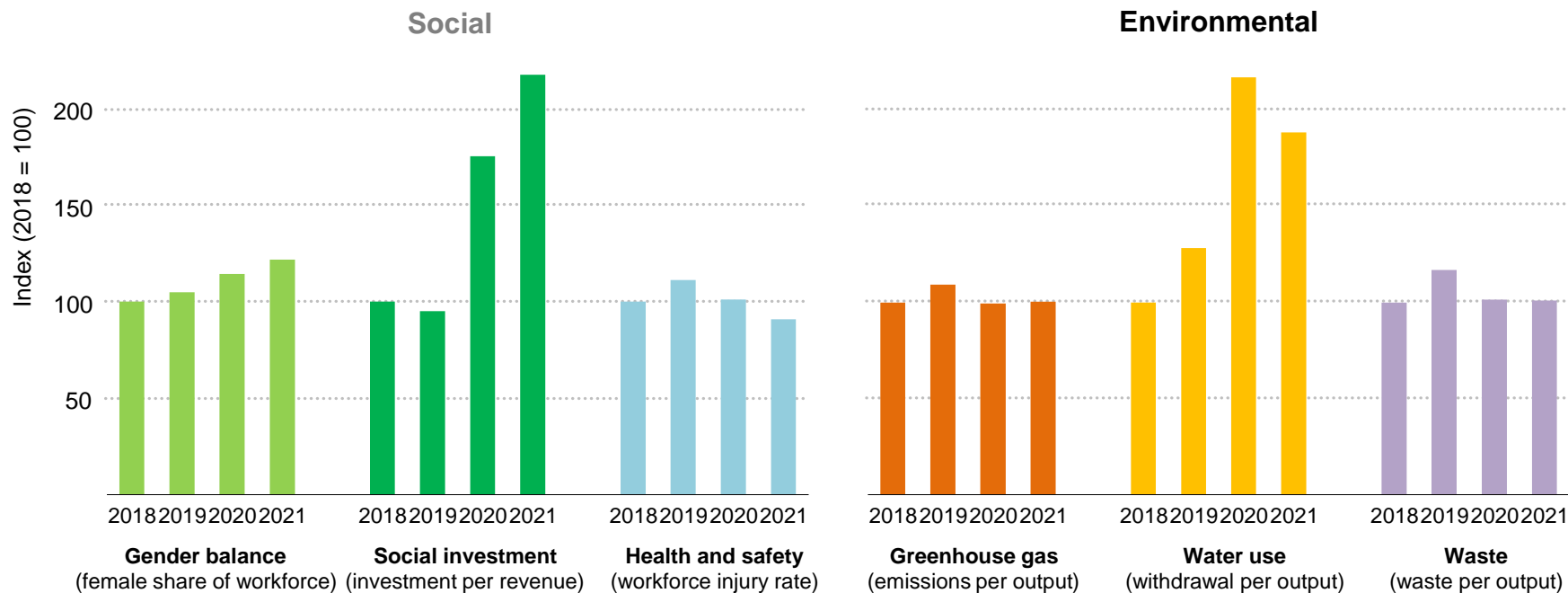
Share of top 3 producing countries in total production for selected resources and minerals, 2022



Limited progress has been made to diversify supply sources in recent years and, in some cases, the level of concentration has risen – announced projects would not change this picture dramatically

Mixed progress towards sustainable and responsible mining

Aggregate social and environmental indicators for major mining companies



There are some signs that responsible social practices are taking hold across the mining industry, but industry-wide progress is still missing in key areas, especially on environmental sustainability

- The market for minerals that are vital to a range of clean energy technologies has more than doubled in size over the past five years, with prospects for further strong growth
- Investment in new critical minerals supply is rising in response, by 30% in 2022 following a 20% increase in 2021. Lithium investment is growing most rapidly, followed by copper & nickel
- If all projects come through on time, then supply would be sufficient to meet national climate ambitions, but risks remain and further actions on both supply & demand-sides are needed
- There has been limited change in the diversity of supply and progress on a range of social and environmental indicators has been mixed
- The IEA's regular market monitoring efforts and the Critical Minerals Data Explorer aim to provide essential data and analysis to enhance market transparency
- The IEA will host a major international summit on critical minerals on 28 September 2023, bringing together ministers, CEOs, investors and civil society

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