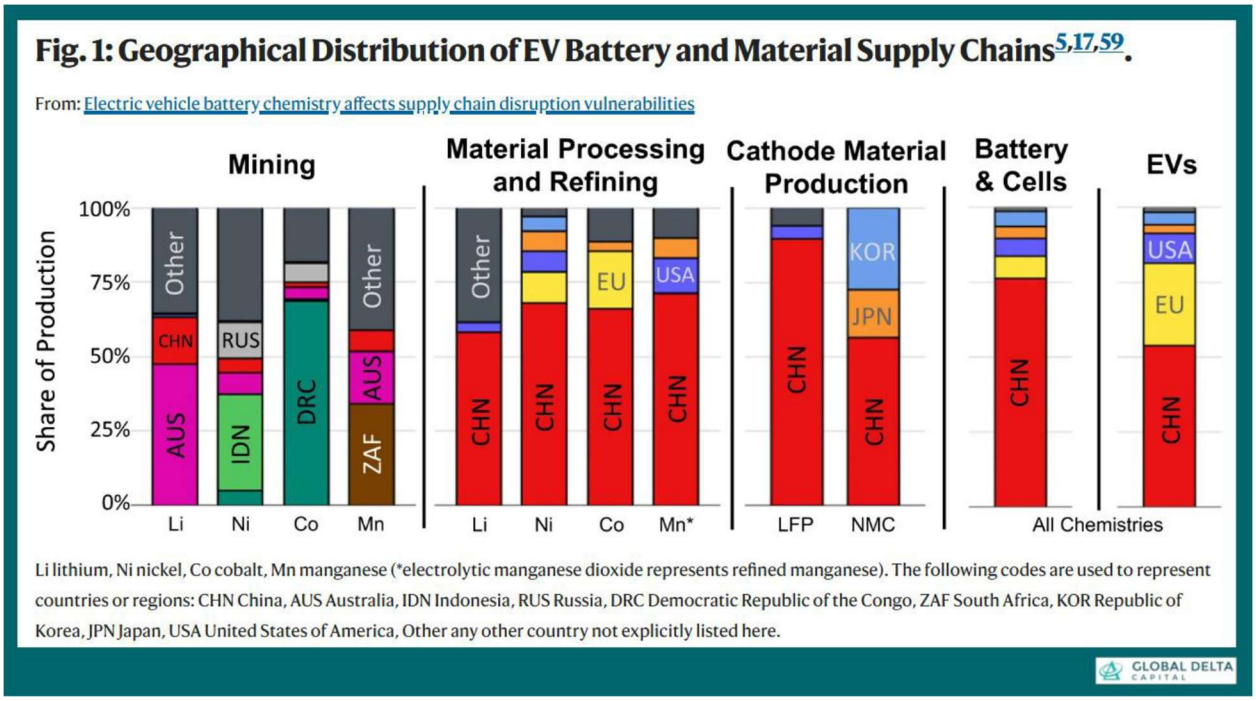
Battery Production

Increasing demand for portable electronic devices, electric vehicles, and renewable energy storage systems are making batteries a critical resource. They require lithium, nickel, cobalt, and manganese in vast quantities.

Much attention has focused on how China dominates battery production. It has a strong position in most parts of the battery manufacturing process, including in material processing and refining, cathode material production, battery and cell production, and EVs. Upstream, in materials mining, however, sources are more dispersed.

Australia has led lithium production since the early 2000s, making up for almost half of global lithium production, followed by Chile and China. Nickel production is dominated by Indonesia (with investments from China), with the Philippines, Russia, New Caledonia, and Australia trailing behind. The Democratic Republic of Congo (DRC) is the largest producer of Cobalt, followed by Australia, Philippines, Cuba, and Indonesia. Manganese is primarily produced by South Africa, China, Australia, Gabon, and Brazil.

As technology evolves, alternative battery types may emerge, with the potential to shake up the market and reducing reliance on traditional lithium-ion batteries.



Sources: Cheng, A.L., Fuchs, E.R.H., Karplus, V.J. et al. Electric vehicle battery chemistry affects supply chain disruption vulnerabilities. Nat Commun 15, 2143 (2024). https://doi.org/10.1038/s41467-024-46418-1 https://www.nature.com/articles/s41467-024-46418-1

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