

# SEG 2023 Conference: Resourcing the Green Transition

---

## Market Drivers and Barriers for Battery Raw Material Traceability

Harri Kaikkonen, Mari Kivinen

Geological Survey of Finland, Espoo, Finland

Transport electrification and digitalization have created an increasing demand for raw materials needed for battery production. The supply chains involved are global, complex, non-transparent, and sometimes associated with unsustainable production practices. Customer awareness and regulations are pushing battery manufacturers to make their supply chains more transparent and traceable, yet the application is still lacking from this industry.

Traceability has already become an integral element for many global industries with complex supply chains. The relevant maturity of these supply chains from a logistical standpoint has enabled them to develop differential value through traceability, which cannot be said for battery raw materials. Although the need for traceability is coming from consumers and regulatory agencies, the same is not yet evident from equipment manufacturers (OEMs). Increased costs are a clear hindrance to the adoption of traceability, but there are more pressing considerations for the OEMs. If the supply gap for the battery raw materials grows too large, OEMs may have to buy their materials where they can get them and might not want to disclose their sources.

Widespread adoption of traceability is dependent on financial incentives for the manufacturers and raw material producers. Already, the producers of sustainable and low-emission raw materials have identified the commercial benefit of tracing the greenhouse gas emissions of their products along the supply chain. This may be further highlighted with future CO<sub>2</sub> pricing regulations, such as the EU Carbon Border Adjustment Mechanism.

There may be additional fracturing for the commodities market in the future with different pricing for sustainable raw materials. Still, as the price for sustainability is still revolving around the raw materials' CO<sub>2</sub> emissions, these developments may not help with the ethical considerations surrounding cobalt mining, for example. The ethical considerations of consumers are still valued by the manufacturers through their bottom line.