

Critical Minerals, Geopolitics, and the Green Transition

Discussion by Bruno Conte

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Energy & Climate Economics Conference, Toulouse
June 2026

Overview

Great paper – subtle relation between mineral needs in batteries and their adoption

- Batteries require $\neq$ minerals (complements and/or substitutes)
- Direction of cross-batteries **spillovers is ambiguous**; empirical question
- Geographical concentration of minerals $\rightarrow$ geopolitical incentives

Insightful results – mineral complementarity shapes the "effects of geopolitics"

- Unilateral shortages $\rightarrow$ subsidy to other batteries
- Mineral cartels **can accelerate the green transition** (if internalizing cross-mineral complementarities)

Comment 1/3 – short-run focus

Short- vs. long-run tension – simulations focus on the next decade

- Consistent with "time-invariant recipes", no resource discoveries, etc.

Longer-run horizon includes new techn./batteries and policy shifts

$$mr^{it} - mc^{it} = \beta E^{it} \left[mr^{it+1} - mc^{it+1} \mid \text{policy shifts, technology, ...} \right]$$

as well as costs increasing as resources deplete

Green paradox literature (van der Ploeg) – oil producers anticipate policy shifts, extracting resources at t

Comment 2/3 – atomistic demand (and no time-to-build)

Atomistic EV battery consumers – are they?

- Car industry is very large, thus having monopsony power
- Role for **lobby for (or against)** geopolitical interference in the market?

Finally, **time to build** demand for batteries contrasts with geopolitical incentives

- Mineral cartels ↑ mineral prices (producer surplus)
- Increasing short-term prices → lower future adoption (vis-à-vis other batteries)

Thank you

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I acknowledge funding from the EU's Horizon Europe research and innovation programme (Marie Skłodowska-Curie grant agreement No 101146979-SPEED), the EIEF 2023 grant "International Trade, Globalization, and the Environment", the Ramón Areces Social Sciences grant "Trade Policy and Water Scarcity Around the World", and the BSE Seed Grant SG2026-05 "Water Scarcity (and Policy) in the Globalized Economy".

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