

Webinar: 10 New Insights in Climate Science (10NICS)

Just and Responsible Energy Transition Minerals Value Chain



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Closing governance gaps in the energy transition minerals global value chain is crucial for a just and equitable energy transition.

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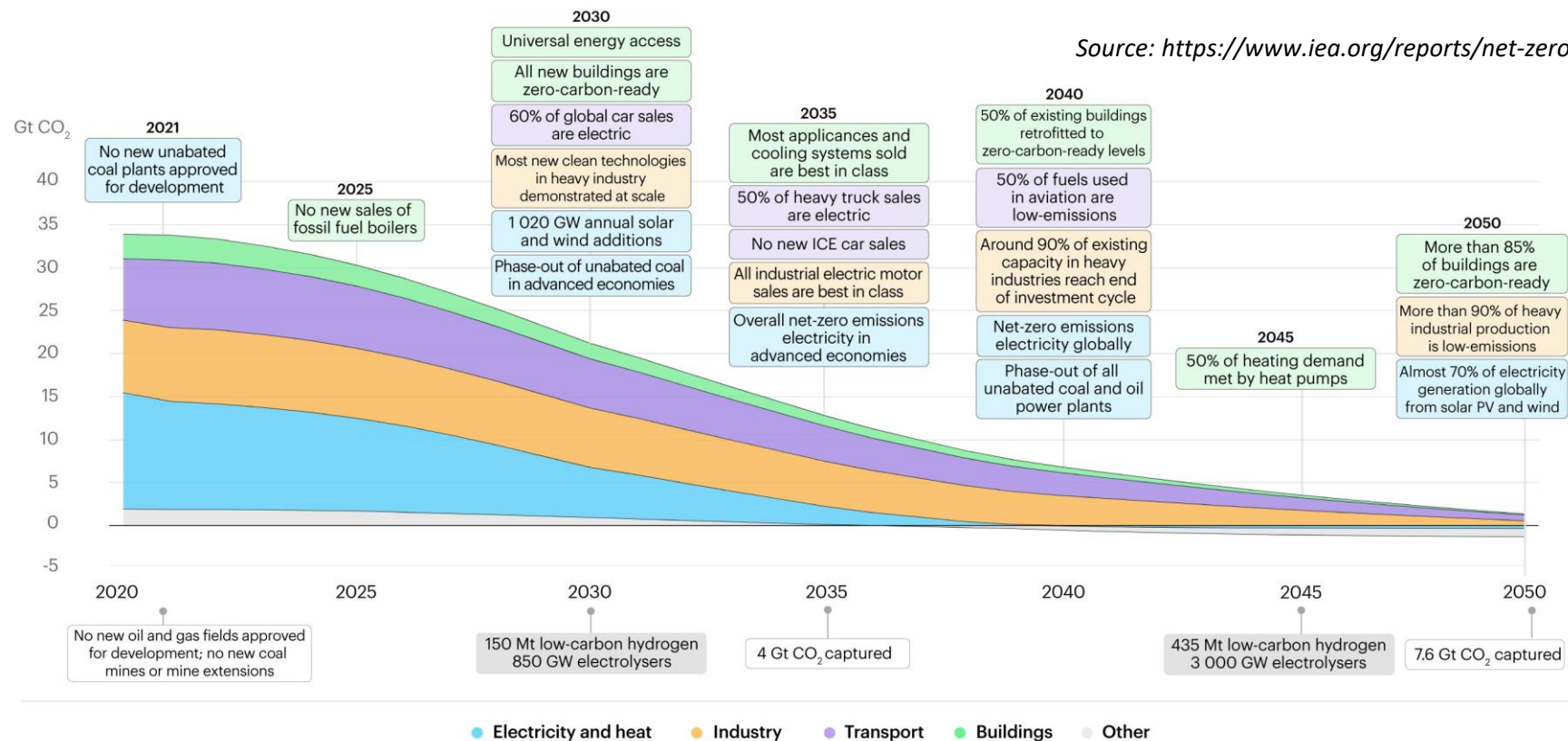
Agenda

- Net-zero and material needs
- Geopolitics
- Responsible sourcing and closing the loop
- Issues and Policy Challenges



Uninterrupted supply of 'critical minerals' is important for transition

Source: <https://www.iea.org/reports/net-zero-by-2050>



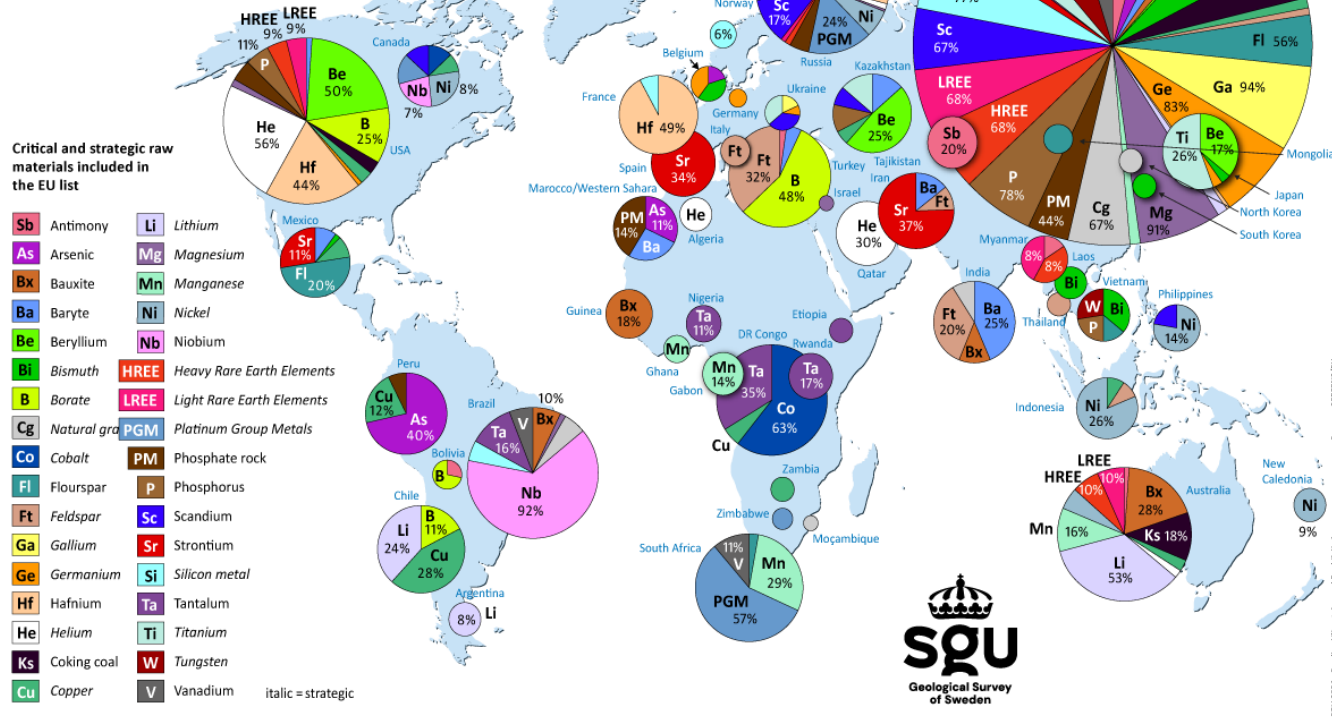


are metals and non-metals that are vital for enabling low-carbon energy transition, yet their value chain may encounter supply risks and could pose challenges to environment.

■ Critical in the United States (only)
 ■ Critical elsewhere (not critical in the United States)
 ■ Critical in the United States and elsewhere

- Energy Transition
- Economic & National Security
- Geopolitical Vulnerability
- Environmental Challenges

Global production of critical and strategic raw materials (CRM/SRM)



Circle = estimates of each country's average production between the years 2016 and 2020, calculated on a percentage by weight basis.

Production = primary production

The percentages = share of world production

The map shows, among other things, that China completely dominates the total production, even if they do not produce all critical raw materials.

Source: <https://www.sgu.se/en/mineral-resources/critical-raw-materials/>

Geopolitics

Supply Restrictions

- 2010: Rare earth exports to Japan from China.
- 2023: Export bans on gallium and germanium to the US.
- Nickel Ban (2020): Indonesia Banned raw nickel ore exports to attract domestic processing, securing Chinese investments in refining.
- Russia-Ukraine: Disrupted palladium and titanium supply chains, affecting Western industries.

Strategies

- Mineral Security Partnership
- EU's Critical Raw Materials Act (CRMA): Aims to boost domestic mining, processing, and recycling while securing deals with Chile, Namibia, and Indonesia.
- U.S. Inflation Reduction Act (IRA, 2022): Incentivizes domestic mineral sourcing and partnerships with Australia, Canada, and Japan.
- U.S.-Japan Critical Minerals Agreement (2023): Grants Japan access to IRA incentives for EV battery production.
- Japan's Diversification Efforts: Invested in rare earth recycling and alternative sourcing



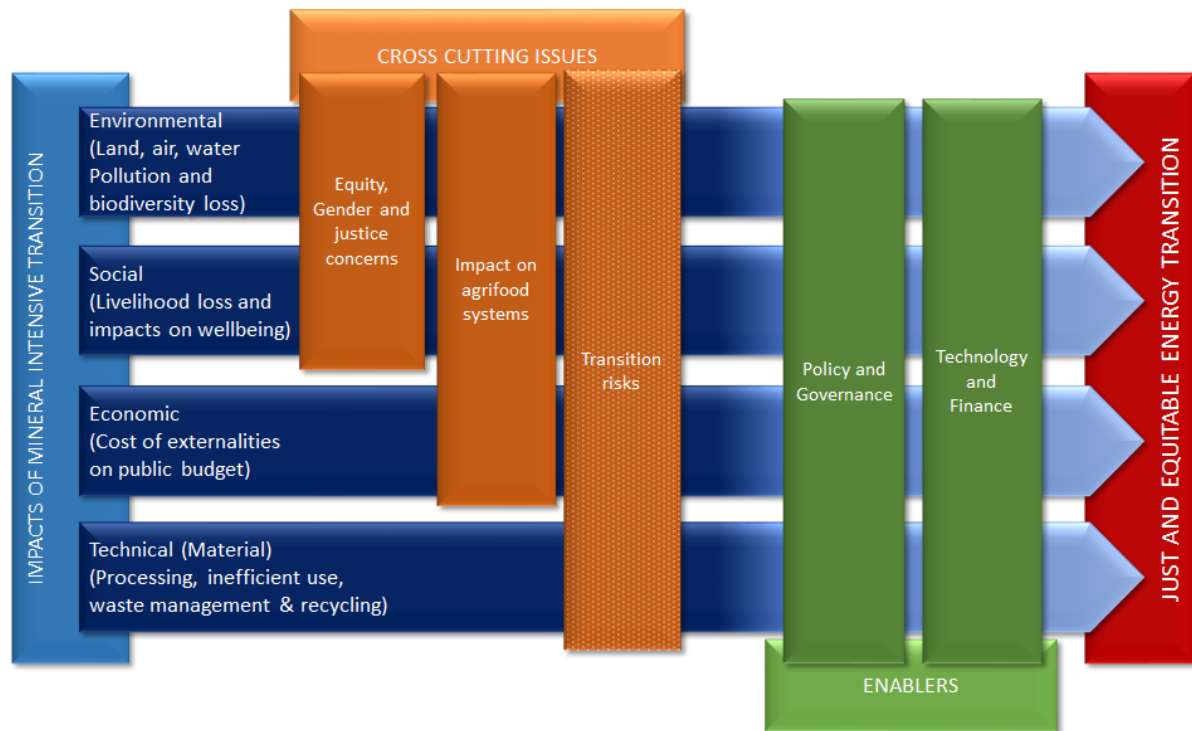
Unequal Benefits & Global Disparities

Resource-rich but faces environmental & social burdens.
Dominates high-value processing & consumption.

*'Lithium Fields'
in the Salar de
Atacama salt
flats in northern
Chile.*

Image source:
<https://www.euronews.com/green/2022/02/01/south-america-s-lithium-fields-reveal-the-dark-side-of-our-electric-future>

Energy Transition Minerals: Need for a Just and Equitable Transition



- Prioritise environmental protection, social justice, and fair trade.
- Uphold labour rights & governance to prevent inequalities.
- Align with planetary justice perspectives.

Image source: Janardhanan & Tamura (2024)
<https://tinyurl.com/4chutd7f>

Strengthening Governance for ETMs

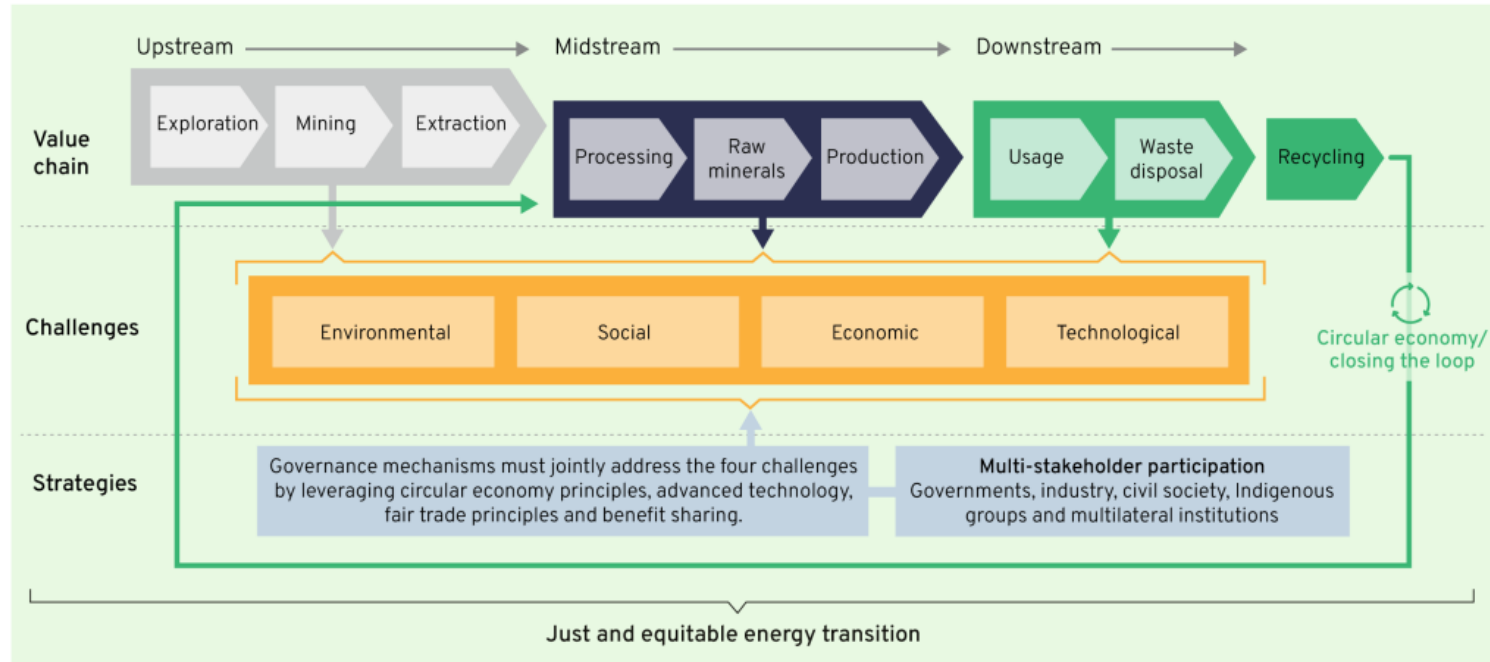
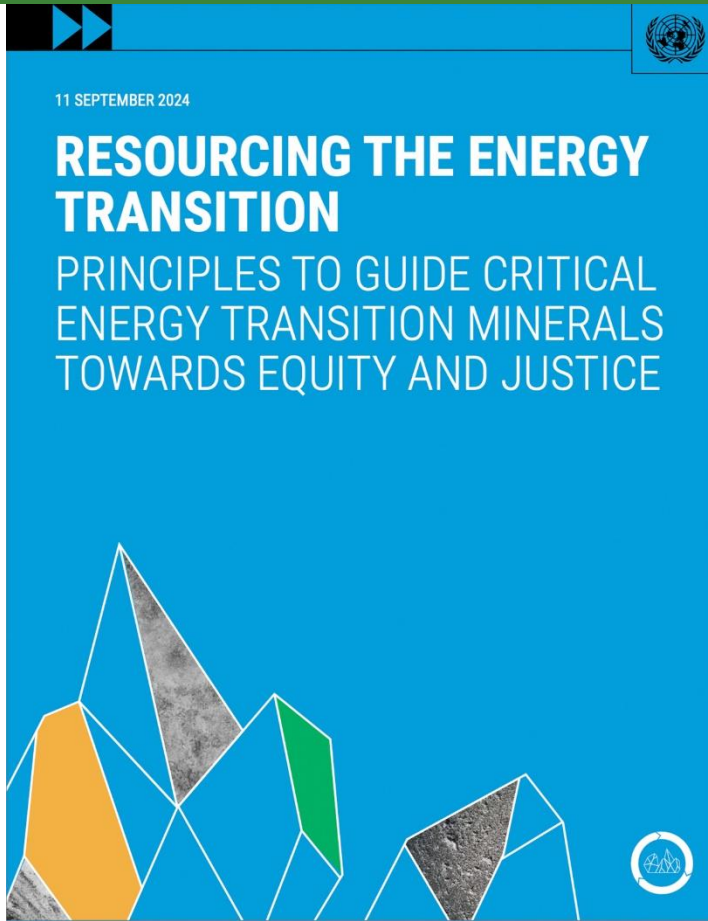


Image Source: 10NICS, (2024)

Seven Principles: UN Secretary-General's Panel on Critical Energy Transition Minerals

- **Human rights** must be at the core of all mineral value chains.
- The **integrity** of the planet, its environment and biodiversity must be safeguarded.
- **Justice and equity** must underpin mineral value chains.
- Development must be fostered through **benefit sharing**, value addition and economic diversification.
- Investments, finance and trade must be **responsible and fair**.
- Transparency, accountability and anti-corruption measures are necessary to ensure **good governance**.
- Multilateral and international **cooperation** must underpin global action and promote peace and security.

Source: <https://www.un.org/en/climatechange/critical-minerals>



Policy Challenges

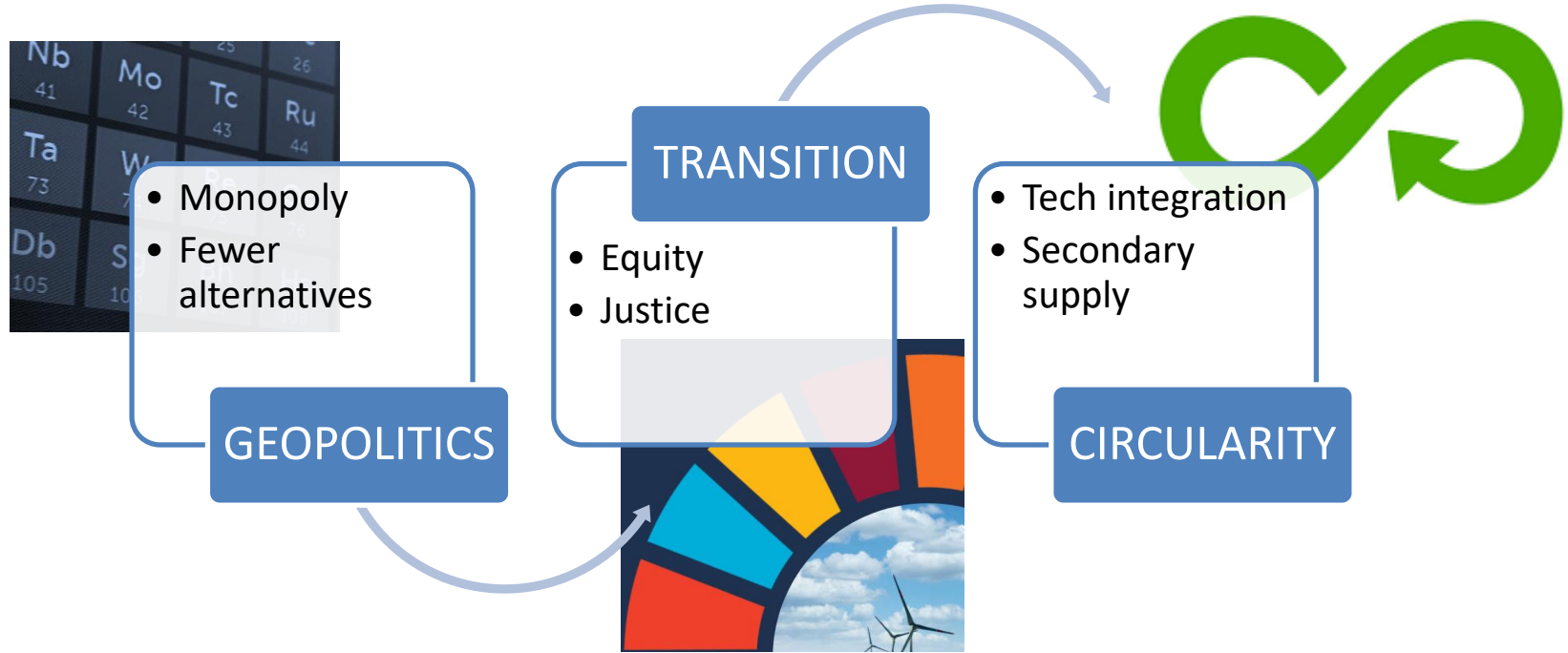
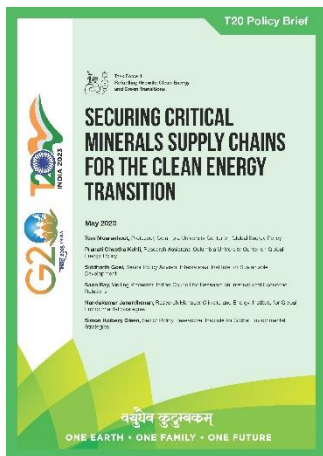


Image source: Microsoft online images

Way forward

- Governance towards ‘accessibility and availability’
- Finance mechanisms towards just and equitable transition
- Accelerating technology integration towards circularity

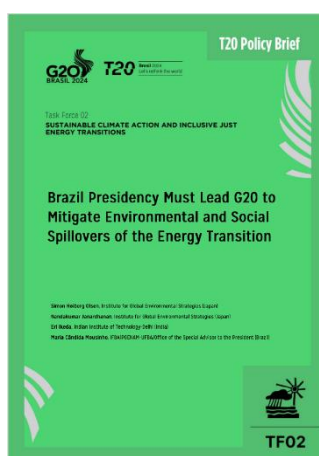
Research on Critical Minerals



Policy Brief
G20 2023



Policy Brief
G7 2023



Policy Brief
G20 2024



Report
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Thank
You

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