

UNCTAD Trade and Development Commission  
Agenda Item 6.(a)  
22 April 2024, Geneva, Switzerland

# Trade and development implications of key aspects of the energy transition

## Critical Energy Transition Minerals

Presentation by the UNCTAD secretariat

Division on International Trade and Commodities, UNCTAD



# Critical energy transition minerals (CETMs)

	Copper	Cobalt	Nickel	Lithium	REEs	Chromium	Zinc	PGMs	Aluminium*
Solar PV	●	○	○	○	○	○	○	○	●
Wind	●	○	●	○	●	●	●	○	●
Hydro	●	○	○	○	○	●	●	○	●
CSP	●	○	●	○	○	●	●	○	●
Bioenergy	●	○	○	○	○	○	●	○	●
Geothermal	○	○	●	○	○	●	○	○	○
Nuclear	●	○	●	○	○	●	○	○	○
Electricity networks	●	○	○	○	○	○	○	○	●
EVs and battery storage	●	●	●	●	●	○	○	○	●
Hydrogen	○	○	●	○	●	○	○	●	●

Source: IEA.

Notes: Shading indicates the relative importance of minerals for a particular clean energy technology (● = high; ● = moderate; ○ = low).

CSP = concentrating solar power; PGM = platinum group metals.

\* Aluminum demand is assessed for electricity networks only and is not included in the aggregate demand projections.

# Outline

1. **Motivation:** Why is it important that we address trade and development implications of critical energy transition minerals (CETMs)?
2. **State-of-Play:** What is the market and policy dynamics related to CETMs?
3. **Policy Convergence:** In which issue areas do we need policy convergence?



# 1. CETM: Trade and Development Implications



- High demand for CETMs as an opportunity for structural transformation
- CETMs being embedded in various policy objectives (e.g., green industrialization, structural transformation, equitable benefit sharing, and minimal damages to society and environment), making the market and policy environment opaque and complex
- Need for policy coordination on CETMs not to exacerbate commodity dependence and ensure inclusive trade gains

## 2. CETM Market and Policy Dynamics

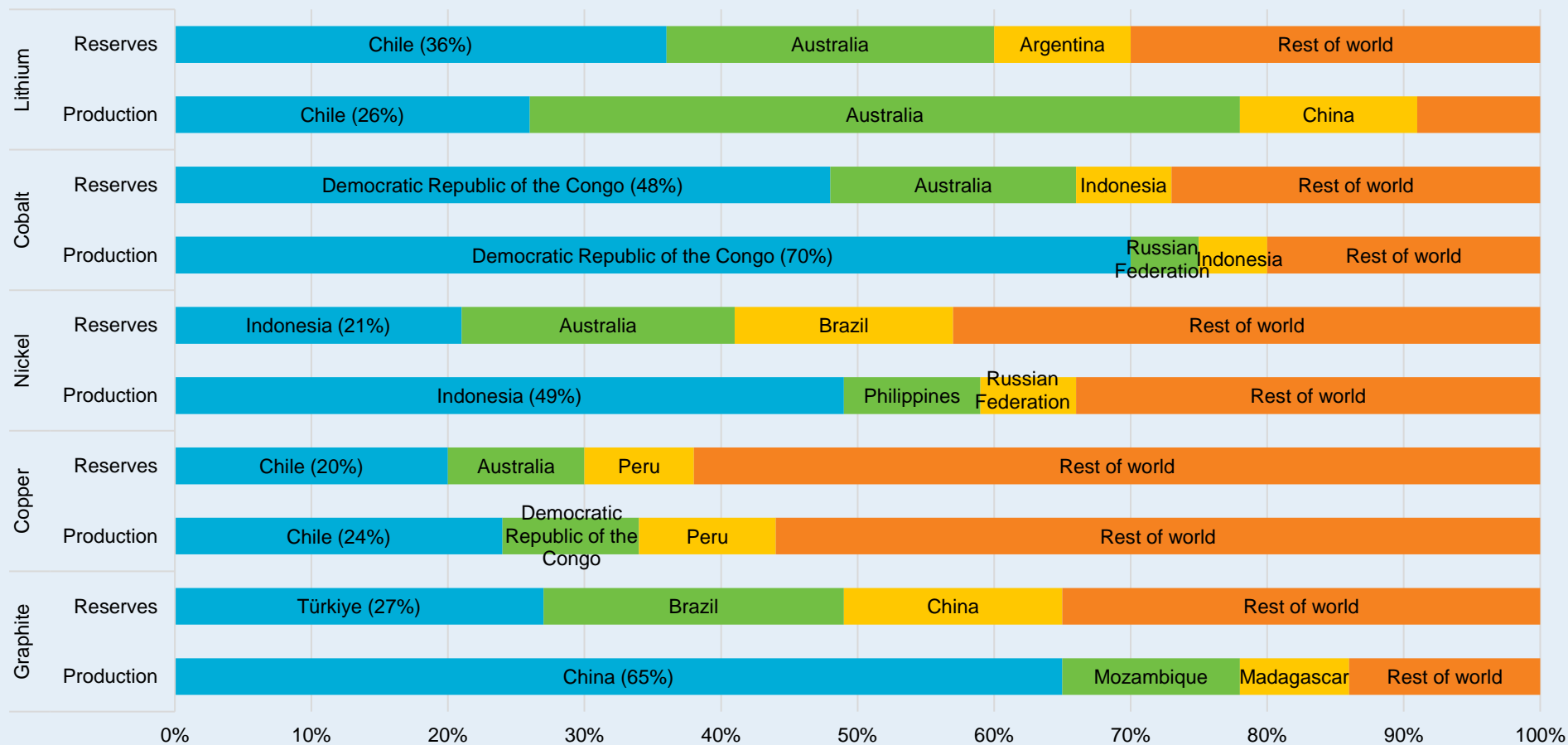


### Market dynamics

- Most dynamically growing minerals traded
- Concentration of trade flows in renewable batteries value chains
- Lack of price transparency
- Asymmetry in capacities to negotiate contracts

# Many developing countries hold large reserves of CETMs

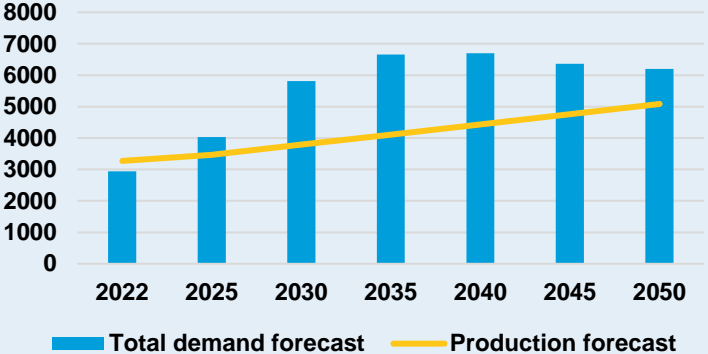
## Reserves and production of selected minerals, 2022



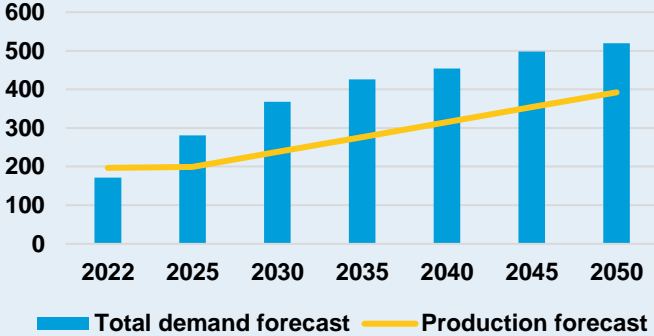
Source: UNCTAD using USGS Data.

# Critical Energy Transition Minerals (CETMs) Markets: Projected demand to outstrip supply

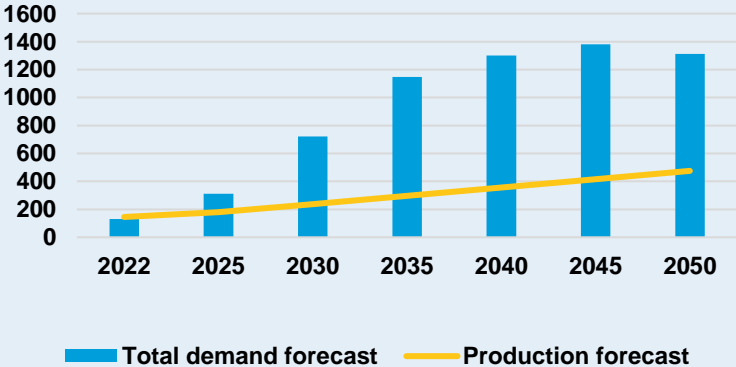
**Nickel, kt**



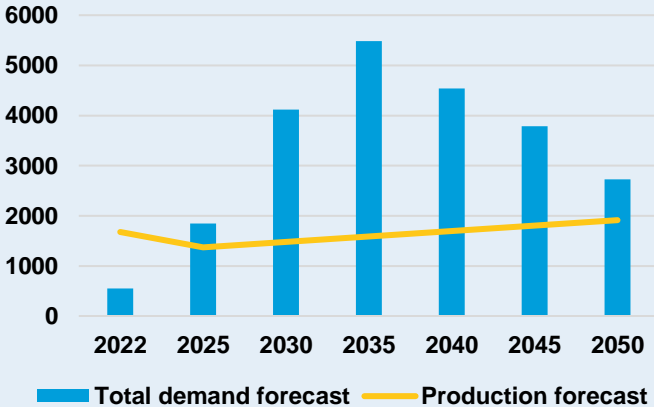
**Cobalt, kt**



**Lithium, kt**



**Graphite, kt**



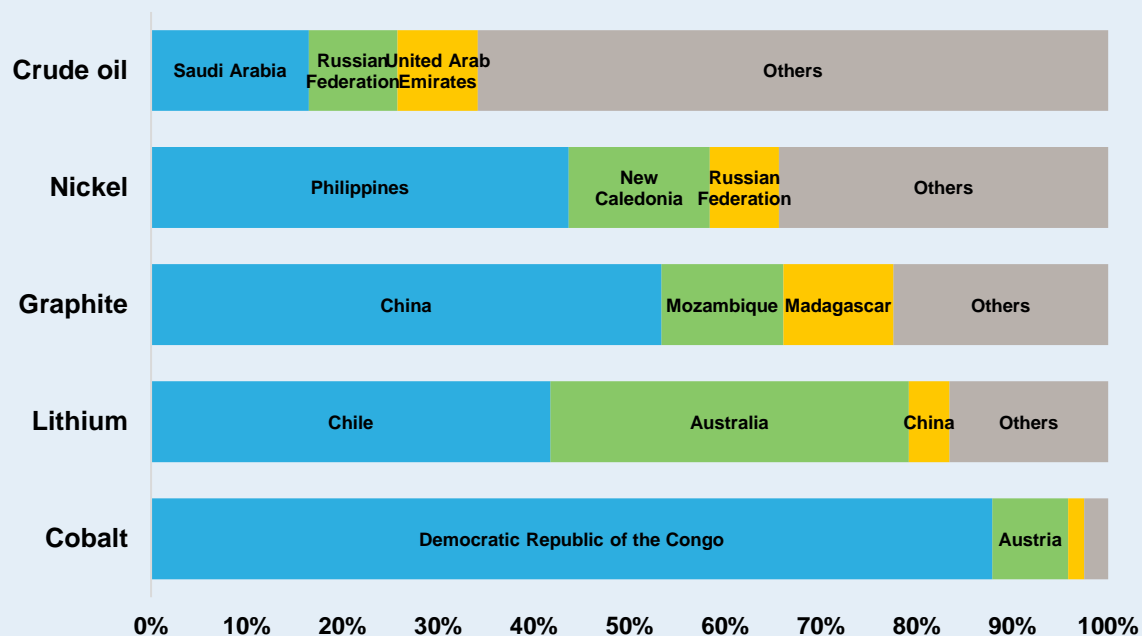
Source: IEA, UNCTAD.



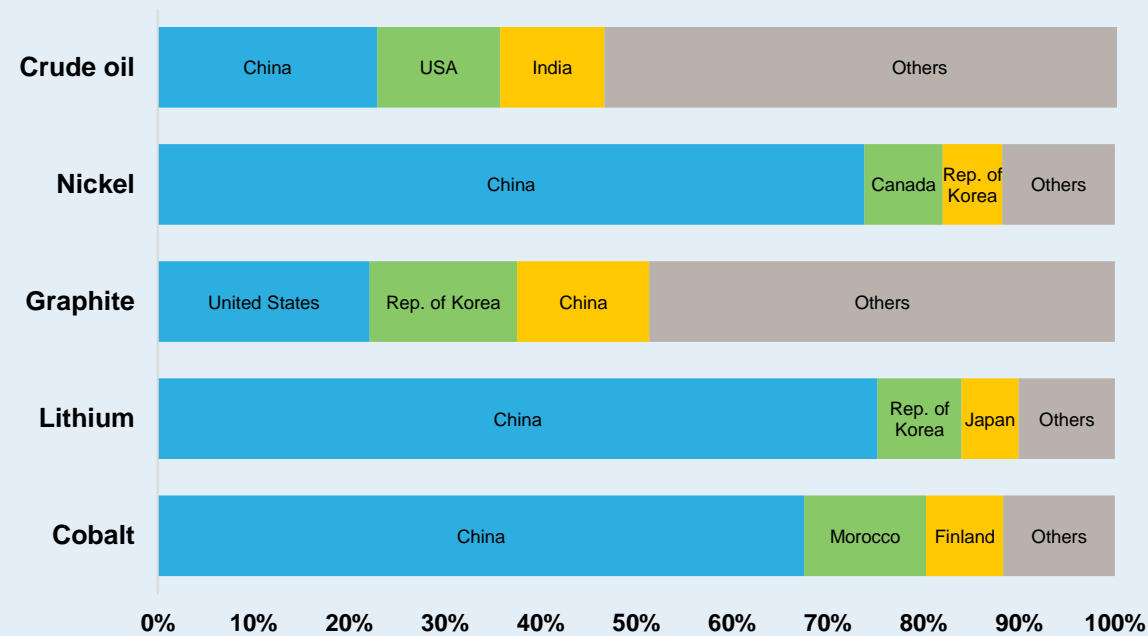


# Trade in CETMs is more concentrated than of crude

**Top three exporters, 2022**  
(share of world exports, percentage)



**Top three importers, 2022**  
(share of world imports, percentage)



Source: UNCTAD based on COMTRADE data.

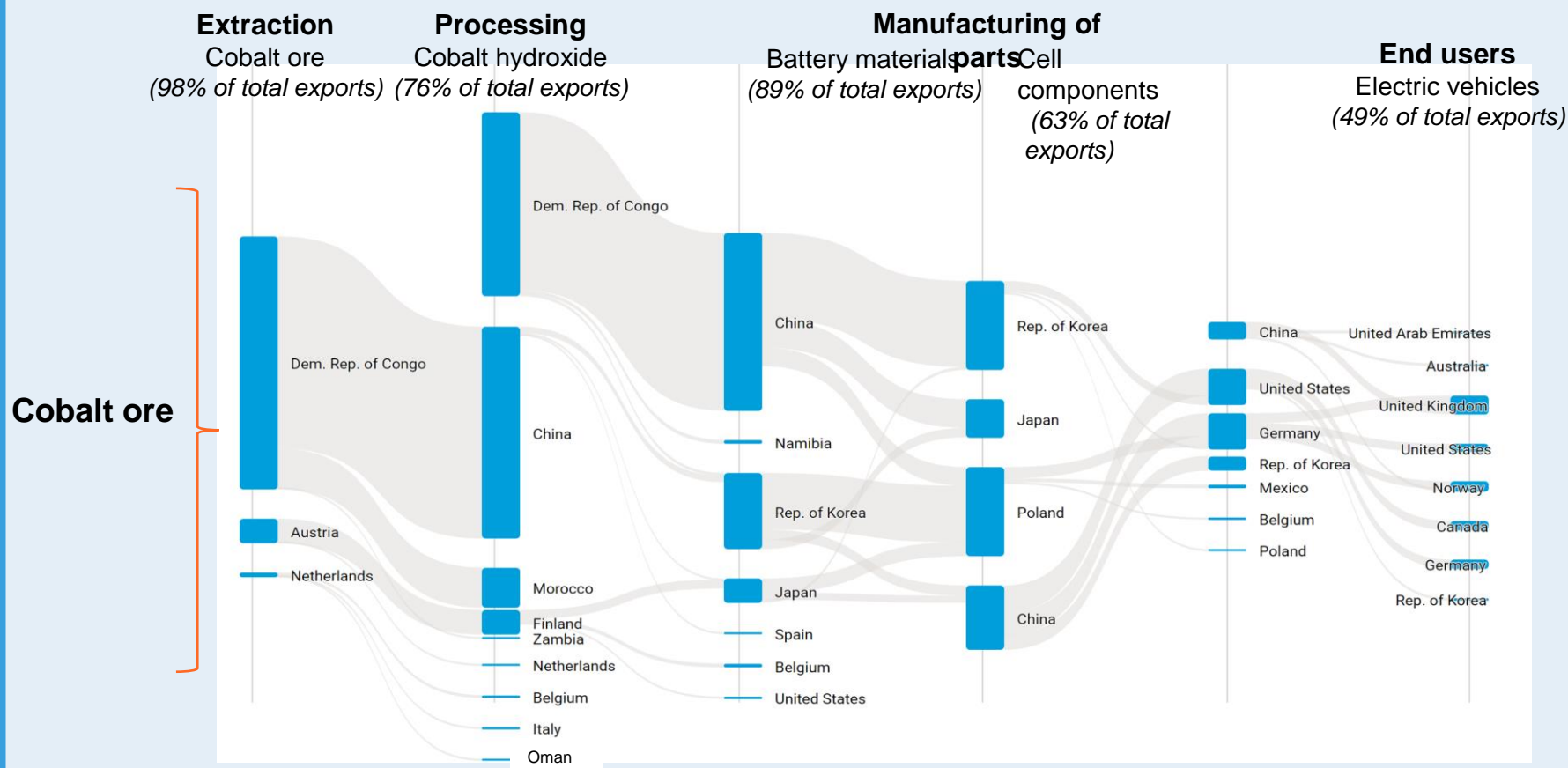
Note: The figure on the left shows the share of trade to total export value for each commodity. The figure on the right shows the share of trade to total import value for each commodity.

Both figures are based on trade data as reported in the following 6-digit level HS Codes: Cobalt (260500), Crude oil (270900); Graphite (250410); Nickel (260400), and Lithium (253090 and 283691).



# Trade is concentrated upstream in the value chain

*Cobalt trade flows along the EV value chain, 2022 (percentage of total exports)*



Source: UNCTAD secretariat calculations, based on data from the United Nations Comtrade database

## 2. CETM Market and Policy Dynamics



### Policy dynamics

- Burgeoning CETM policy actions with different policy objectives
  - CETM-importing countries: Securing access to CETMs for pursuing “green” industrial policies
  - CETM-producing countries: Enhancing local value addition and extension to downstream activities in the renewable energy value chains
- Systematic assessment of “CETM access agreements”

# UNCTAD Database on CETM Agreements

An ongoing work to systematically assess the proliferating state-to-state agreements on CETMs in recent years.

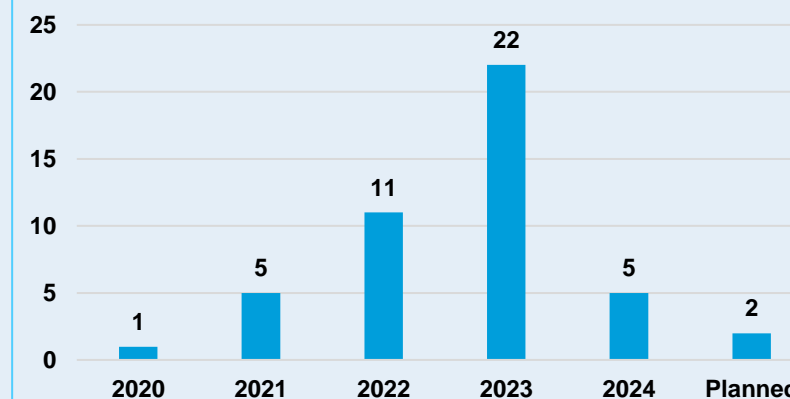
## UNCTAD Database on CETM Agreements

Typology of agreements (2020-present) in Database	Count
Memorandum of Understanding	18
Partnership Agreement	14
Joint Statement	9
Dialogue or Working Group	6
<b>TOTAL</b>	<b>47</b>

Issues covered by agreements	Count
Research cooperation	31
Investment and finance	26
Environment and social impact	22
Extraction	18
Exploration	17
Recycling	17
Trade cooperation	15

States with agreements
Australia
Canada
Chile
China
Democratic Republic of Congo
European Union / France, Germany, Italy
India
Japan
Kazakhstan
Namibia
Republic of Korea
United Kingdom
United States
Vietnam
Zambia

Number of Agreements on CETMs, 2020-present



# 3. How can we achieve policy convergence?

- Existing framework at the international level?
  - UN General Assembly Resolution on Commodities (A/RES/78/138)
  - UN Environment Assembly 2022 Resolution (UNEP/EA.5/Res.12)
  - Coherence with the multilateral trade rules?
- The UN Secretary-General's initiative on critical energy transition minerals
  - **UN Interagency Working Group on Extractive Industries** is currently developing a module to help countries harness CETMs for sustainable development.
  - **UN Secretary-General's Panel on CETM** will be launched on 26 April 2024 to identify common and voluntary principles that help developing countries benefit from fair, just, and sustainable management of CETMs.





# Thank you

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