



WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT



# **Harnessing Critical Energy Transition Minerals for Sustainable Development in LDCs and LLDCs**

## ***Just Transitions in Low Carbon Technologies***

*A Secretary-General Initiative*

---

UNECE Resource Management Week 2023  
Elisa Tonda  
Chief, Resources and Market Branch  
26 April 2023



**WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT**

## Working Group Objectives



Develop a **common narrative and framework**



Develop **policy recommendations**, tailored to national governments, non-state actors.



**Foster collaboration** to respond better to existing and emerging needs for state and non-state actors.



Frame an implementation initiative to **deploy recommendations**



**Provide a central hub of information and knowledge exchange** on global policy actions, global standards, tools and best practices.



**Align efforts with ongoing processes and events** relevant to extractive industries

# Priority Areas for the Secretary General



WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT

1

## Financing for Development

- Concessional finance to build economic diversification
- Multilateral development banks spend more on green transition
- More progressive and transparent fiscal regimes

2

## Governance and Revenue management

- Fight against illicit financial flows, corruption, governance deficits, and revenue mismanagement.
- More integrated resource management policies
- Harmonized national standards for company oversight
- Stronger governance of investment in public infrastructure

3

## The Green Economy

Ensuring a successful and inclusive transition to a green economy, aligning funds and objectives with SDGs.

# Priority Areas for the Secretary General



WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT

4

## A Just transition towards sustainable systems

- Securing a just global energy transition, by making sure that funds and policies target the most vulnerable
- Programmes of economic diversification
- Redistribution of revenue to invest in green jobs or for social protection

5

## Technology and Innovation and the Circular Economy

- Technology, Innovation, Circular Economy as driving forces to enhance sustainability and competitiveness in extractive industries.

6

## Regional and Global Collaboration

- Developing regional frameworks to align extractive industries with the SDGs
- Implementation of regional or global frameworks (e.g. African Mining Vision, Escazú Agreement, Global Industry Standard on Tailings Management in Mining)

# What are 'Critical Energy Transition Minerals'?

According to the IEA: 'a wide range of minerals and metals that are essential in clean energy technologies and other modern technologies and have supply chains that are vulnerable to disruption'

More on the nuances of the definition can be found [here](#)

Critical mineral needs for clean energy technologies

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

Notes: Shading indicates the relative importance of minerals for a particular clean energy technology (● = high; ○ = moderate; ○ = low), which are discussed in their respective sections in this chapter. CSP = concentrating solar power; PGM = platinum group metals.

Source: IEA, [The Role of Critical Minerals in Clean Energy Transitions](#) (World Energy Outlook Special Report)

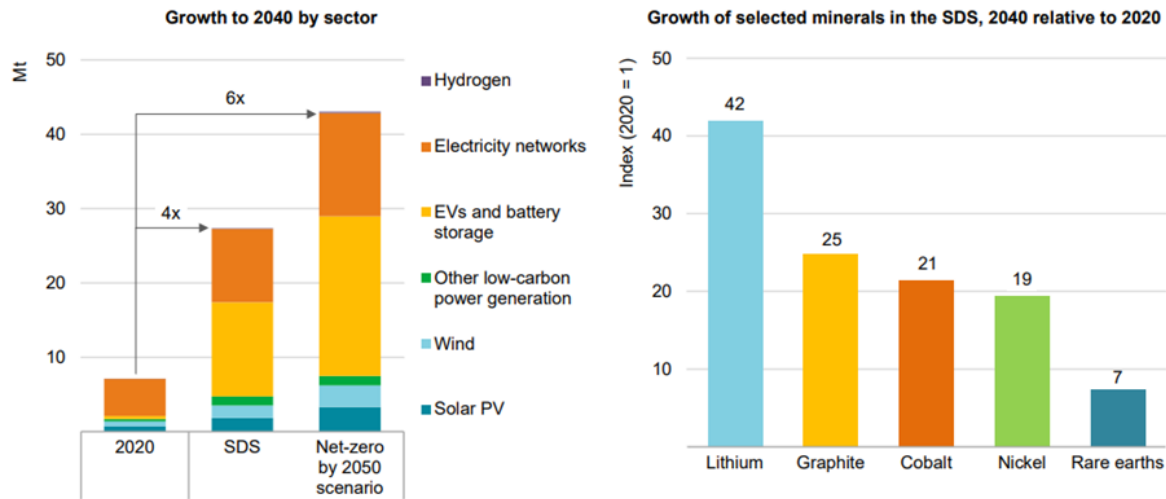


WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT



# Critical Energy Minerals for Sustainable Development in LDCs/LLDCs and beyond

Mineral demand for clean energy technologies by scenario










IEA. All rights reserved.

Notes: Mt = million tonnes. Includes all minerals in the scope of this report, but does not include steel and aluminium. See Annex for a full list of minerals.

Source: The Role of Critical Minerals in Clean Energy Transitions (World Energy Outlook Special Report)

Mapping of strategic minerals for the low-carbon transition and respective main producers

Critical raw materials	Main uses	World production (tons), 2021	Main producers (tons), 2021
Rare earths		280 000	Australia, Brazil, <b>Burundi (100)</b> , China, India, <b>Madagascar (3 200)</b> , Myanmar (26,000), Russian Federation, Thailand, United States, Vietnam; South Africa* and the United Republic of Tanzania*
Magnesium		950 000	Brazil, China, Israel, Kazakhstan, Russian Federation, Türkiye, Ukraine, United States
Niobium		67 700	Brazil, <b>Burundi (23)</b> , Canada, China, <b>Democratic Republic of the Congo (560)</b> , Ethiopia (6.9), <b>Mozambique (9.1)</b> , Nigeria, Russian Federation, <b>Rwanda (156)</b> <b>Uganda (6.6)</b>
Cobalt		170 000	Australia, Canada, China, <b>Democratic Republic of the Congo (120 000)</b> , Cuba, Indonesia, <b>Madagascar (2 500)</b> , Morocco, Papua New Guinea, Philippines, Russian Federation, United States, <b>Zambia (367)**</b>
Platinum group metals		200 (Palladium) 180 (platinum)	Canada, <b>Ethiopia (only platinum)</b> , Russian Federation, South Africa, United States, Zimbabwe
Natural graphite		1 000 000	Austria, Brazil, Canada, China, Democratic People's Republic of Korea, Germany, India, <b>Madagascar (22 000)</b> , Mexico, <b>Mozambique (30 000)</b> , Norway, Russian Federation, Sri Lanka, Türkiye, Ukraine, <b>United Republic of Tanzania (150)</b> , Uzbekistan, Vietnam; United States*
Indium		920	Belgium, Canada, China, France, Japan, Peru, Republic of Korea, Russian Federation



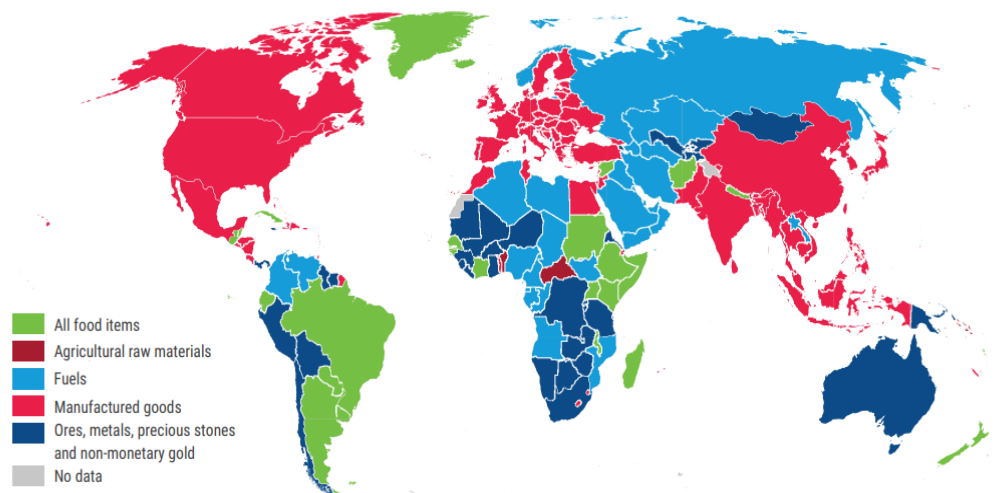
WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT

# LDCs and LLDCs: with many sustainable development needs and commodity-dependent

## LDCs:

- 14% of the world population,
- 10% of world average GHG emissions per capita
- 69% of global deaths caused by climate-related disasters occurred in LDCs in the last 50 years
- In 2020, of the 1.1 billion people living in LDCs, 244 million were undernourished, 466 million had no access to electricity, 665 million lacked access to drinking water, and 874 million had no access to clean fuels and cooking technologies

Map 1.3 Main export products, 2021



Between 2018 and 2020, 78% of LDCs were classified as '**commodity dependent**'. In 2021, most of the exports from LDCs were of **ores, metals, and fuels**

Source: The UNCTAD Handbook of Statistics 2022



WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT

# Critical Energy Transition Minerals in LDCs and LLDCs

LDCs and LLDCs have important concentrations of these critical minerals and could harness the energy transition for sustainable development

Mapping of strategic minerals for the low-carbon transition and respective main producers

Critical raw materials	Main uses	World production (tons), 2021	Main producers (tons), 2021
Rare earths		280 000	Australia, Brazil, <b>Burundi (100)</b> , China, India, <b>Madagascar (3 200)</b> , Myanmar (26,000), Russian Federation, Thailand, United States, Vietnam; South Africa* and the United Republic of Tanzania*
Magnesium		950 000	Brazil, China, Israel, Kazakhstan, Russian Federation, Türkiye, Ukraine, United States
Niobium		67 700	Brazil, <b>Burundi (23)</b> , Canada, China, <b>Democratic Republic of the Congo (560)</b> , <b>Ethiopia (6.9)</b> , <b>Mozambique (9.1)</b> , Nigeria, Russian Federation, <b>Rwanda (156)</b> , <b>Uganda (6.6)</b>

Cobalt		170 000	Australia, Canada, China, <b>Democratic Republic of the Congo (120 000)</b> , Cuba, Indonesia, <b>Madagascar (2 500)</b> , Morocco, Papua New Guinea, Philippines, Russian Federation, United States, <b>Zambia (367)**</b>
Platinum group metals		200 (Palladium) 180 (platinum)	Canada, <b>Ethiopia (only platinum)</b> , Russian Federation, South Africa, United States, Zimbabwe
Natural graphite		1 000 000	Austria, Brazil, Canada, China, Democratic People's Republic of Korea, Germany, India, <b>Madagascar (22 000)</b> , Mexico, <b>Mozambique (30 000)</b> , Norway, Russian Federation, Sri Lanka, Türkiye, Ukraine, <b>United Republic of Tanzania (150)</b> , Uzbekistan, Vietnam; United States*
Indium		920	Belgium, Canada, China, France, Japan, Peru, Republic of Korea, Russian Federation
Vanadium		110 000	Brazil, China, Russian Federation, South Africa; United States*
Lithium		100 000 <sup>a</sup>	Argentina, Australia, Brazil, Chile, China, Portugal, United States, Zimbabwe; <b>Democratic Republic of the Congo*, Mali*</b>
Tungsten		79 000	Austria, Bolivia, <b>Burundi (165)**</b> , China, Democratic People's Republic of Korea, <b>Democratic Republic of the Congo (128)**</b> , Portugal, Russian Federation, <b>Rwanda (950)**</b> , Spain, <b>Uganda (9)**</b> , Vietnam
Titanium		9 000 000	Australia, Brazil, Canada, China, India, Kenya, <b>Madagascar (320 000)</b> , <b>Mozambique (979 000)</b> , Norway, <b>Senegal (370 000)</b> , <b>Sierra Leone (120 000)</b> , South Africa, Ukraine, United States, Vietnam



# An SG initiative co-led by UNEP, UNDP and UN Economic Commissions

## Objectives

Provide technical guidance to LDCs/LLDCs and developing countries with critical energy transition minerals in identifying and applying measures that can enable structural economic transformation; promote sustainable development, maximize benefits for local communities along the supply chain, while minimizing negative environmental and social impacts. This guidance will be in line with the priorities outlined by the UN Secretary General to Transform the Extractives Sector for Sustainable Development.

**Target Countries: LDCs, LLDCs and developing countries with critical energy transition minerals.**

Especially:

**Latin America:** Bolivia Plurinational State

**Africa:** Burundi, DRC, Ethiopia, Guinea, Madagascar, Malawi, Mali, Mauritania, Mozambique, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Zambia, South Sudan, and the Sudan.

**Central Asia:** Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.

**Southeast and East Asia:** Lao People's Democratic Republic, Mongolia

## Potential Partners

**UN:** UNCTAD, IRENA, IEA, ILO, OHCHR, UNIDO, UNICEF, UN Women, the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, UN Country Teams, Resident Coordinators, DCO);

**International financial institutions:** IFC, World Bank, regional development banks

**Regional groups** like the African Union's African Minerals Development Centre;

**Producer and consumer countries** and their emerging groups (like the 'Sustainable Critical Minerals Alliance')

**Private sector:** WEF 'Securing Minerals for the Energy Transition Working Group'; ICMM, IGF, the Principles for Responsible Investment



WORKING GROUP  
ON TRANSFORMING THE EXTRACTIVE INDUSTRIES  
FOR SUSTAINABLE DEVELOPMENT



# UN Framework on Just Transitions for Critical Energy Transition Minerals

## Module 1: Building trust in the critical minerals supply chain



Actions that can help build trust along the supply chain between producers and consumers of critical minerals for the energy transition (supply chain stability, security, sustainability, benefit-sharing, transparency, and value-added activities).

In coordination with EOSG Climate Action Team.

## Module 2: Enhancing producer capacities to overcome asymmetries of power



Best practices to assess resources; boost value added and transformation rate of raw materials by enhancing contractual and negotiation skills; attract investment, financing, and developing effective partnerships.

Enhance jobs opportunities and manage social trade-offs of the transition.

## Module 3: Strengthening trade potential and benefits of traceability



Understand the nature of trade agreements (e.g., are these beneficial to both parties?);

Increase the transparency of/access to global commodities markets;

Use of technology and innovation (artificial intelligence, big data, enabling blockchain) to enhance transparency, sustainability, and competitiveness.

## Module 4: Protecting people and planet



Assess and manage nature and social related risks of mining and adequately plan activities and human settlements for mining ensuring the well-being of local communities (e.g. decision-supporting tools that assess exposure to risks at the site/assets level).

Assess and decarbonize mining activities; to mitigate negative environmental and social impacts; enhance circularity in the critical minerals value chain;

Protect community and human rights, particularly vulnerable groups like women and children.

## Module 5: Creating a strong regulatory environment for just critical mineral transitions



Progressive and transparent fiscal and regulatory measures that can strengthen the governance and management of mineral revenue; diversify economies; re-distribute financial flows for investment in social and economic development needs

Increase support from MDBs

Strengthen safeguards against illicit financial flows, corruption, governance deficits, and revenue mismanagement.

*A Just Transition towards Sustainable Systems*

*A Just Transition towards Sustainable Systems*

*Technology and Innovation and the Circular Economy*

*Green Economy*

*Financing for Development; Governance and Revenue management*