

# PanAfGeo+

## Partnerships and Capacity Building

**The Pan-African Support to Geological Sciences and Technology**

**Slavko Solar, Geological Survey of Slovenia/ICE-SRM EU**

**National AMREC/PARC – UNFC Workshop**

**Southern Sun Hotel, Pretoria, South Africa**

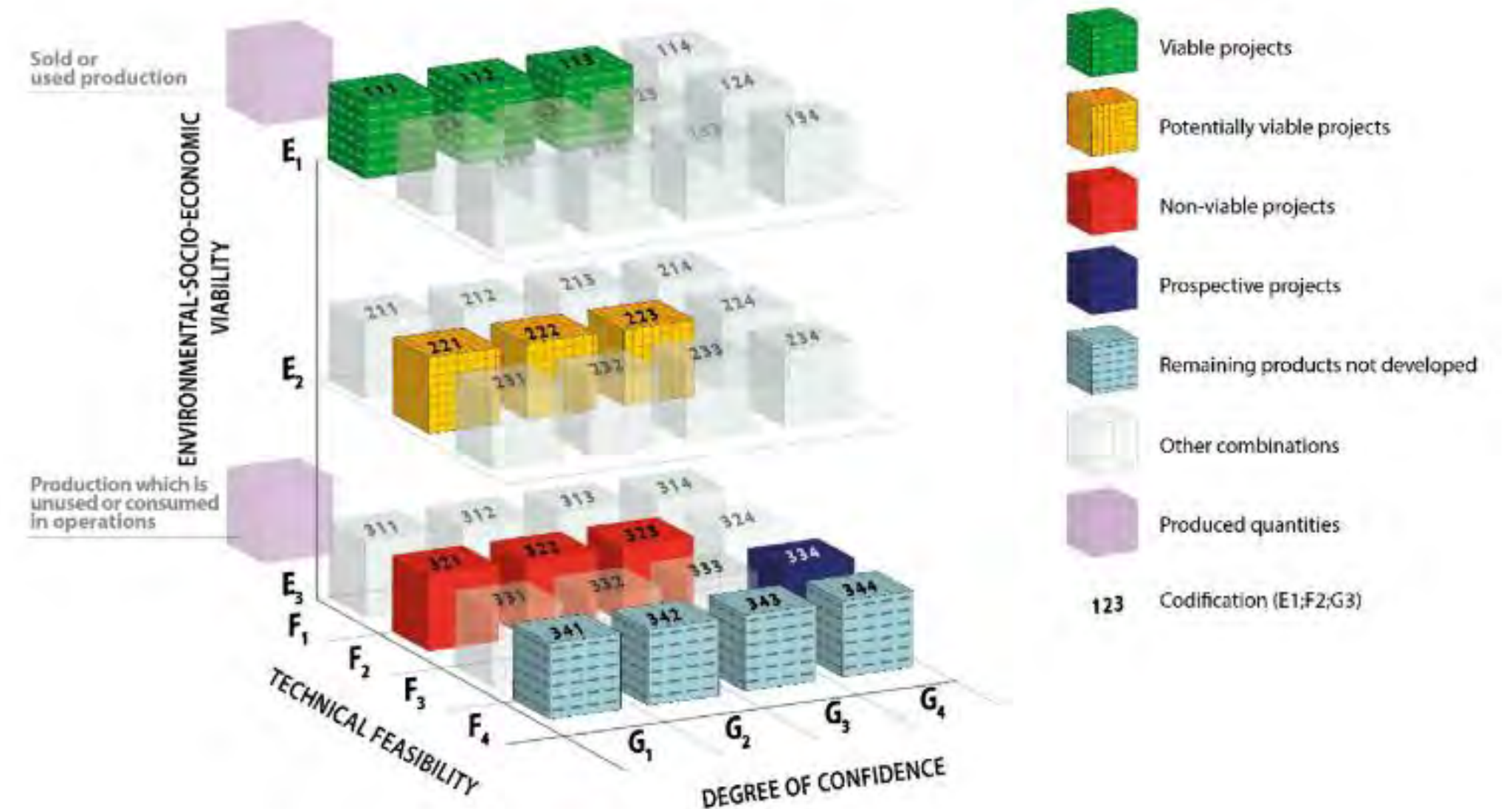
**12-13 May 2026**

## **UN Framework Classification for Resources (UNFC) and its Implementation in Europe**

- Introduction
- Reasons and roots for UNFC and its development
- UNFC in Critical Raw Materials Act
  - UNFC provisions
  - Experience
- Conclusion

# Introduction

The United Nations Framework Classification for Resources (UNFC) is a resource project-based and principles-based classification system for defining the environmental-socio-economic viability and technical feasibility of projects to develop resources.



# Reasons and roots for UNFC and its development

- Fragmented resource classifications (pre-2000)
- UNECE Initiative due to recognized gap, driven by:
  - Transition economies in Eastern Europe and Central Asia
  - Need to modernize state mineral and energy inventories
  - Demand for internationally comparable statistics
- UNECE recognized that governments needed a neutral, noncommercial, UN endorsed framework, usable across:
  - All resource types
  - All levels of project maturity
  - Different national legal systems

# Reasons and roots for UNFC and its development

- Creation of UNFC and adopted by the UN Economic and Social Council (ECOSOC) in 2004.
- Key design principles established at creation:
  - Generic framework, not a commodity code
  - Applicability to minerals, petroleum, uranium, coal, renewables, and later other resources
  - Explicit separation of:
    - Geology / G – Geological knowledge
    - Project feasibility / F – Field project feasibility
    - Socio economic and regulatory viability / E – Socio economic viability

# Reasons and roots for UNFC and its development

- **Expansion beyond minerals and oil & gas (2005–2010s)**
  - . Extended to **all energy resources** (fossil and renewable)
  - . Applied to **uranium, geothermal, CCS, storage projects**
  - . Adopted or referenced by **national geological surveys**
- **UNFC 2009**

Crucially, UNECE positioned UNFC as a “**bridging framework**”, that besides avoiding competition and encouraged uptake, also allow:

- . Mapping from CRIRSCO, PRMS, and other systems into UNFC
- . Preservation of sectoral codes while enabling harmonization

# Reasons and roots for UNFC and its development

- **UNFC as a policy and governance instrument (2010s)**, UNFC role shifted decisively toward:
  - Resource governance
  - Transparency
  - Sustainable development

## Key developments:

- Alignment with **UN Sustainable Development Goals (SDGs)**
- Recognition that “resources” are conditional on:
  - Social acceptance
  - Environmental constraints
  - Regulatory approval

# Reasons and roots for UNFC and its development

- **From UNFC to UNRMS (late 2010s–present)**

UNFC became the **technical foundation** for the broader **UN Resource Management System (UNRMS)**, which:

- Integrates UNFC with ESG, circular economy, and policy tools
- Targets **strategic resource planning**, not just inventory reporting
- Strengthens relevance for climate transition and critical raw materials

## Today, UNFC is:

- **UNFC 2019**
- Referenced in **EU policy (e.g. CRMA)**
- Used by **African geological surveys** for capacity building
- Central to UN thinking on **responsible resource development**

# UNFC in Critical Raw Materials Act



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2024/1252

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REGULATION (EU) 2024/1252 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 11 April 2024

establishing a framework for ensuring a secure and sustainable supply of critical raw materials and  
amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee <sup>(1)</sup>,

Acting in accordance with the ordinary legislative procedure <sup>(2)</sup>,

Whereas:

(1)

Access to raw materials is essential for the Union economy and the functioning of the internal market. There is a set of non-energy, non-agricultural raw materials that are considered to be critical due to their high economic importance and their exposure to high supply risk, often caused by a high concentration of supply from a few third countries. Given the key role of many such critical raw materials in realising the green and digital transitions and in light of their use for defence and aerospace applications demand is likely to increase exponentially in the coming decades. At the same time, the risk of supply disruptions is increasing against the background of rising geopolitical tensions and resource competition. Furthermore, if not managed properly, increased demand for critical raw materials could lead to negative environmental and social impacts.

(2)

Given the complexity and the transnational character of critical raw material value chains, uncoordinated national measures to ensure a secure and sustainable supply of critical raw materials risk undermining the functioning of the internal market. Critical raw materials are often extracted in specific countries or regions, depending on the geographical distribution of relevant reserves, transported for further processing elsewhere and then sold across the internal market for use in relevant products. At the processing stage, critical raw materials are often imported and exported several times within the internal market before use in a final application. Similarly, the end-of-life recycling of relevant products with a view to the recovery of critical raw materials can take place in a country or a region different from that where the waste is collected, and the resulting secondary raw materials are likely to be re-exported for further processing and use. Moreover, critical raw materials are needed at the beginning of many industrial value chains and are often indispensable inputs for a wide set of strategic sectors including renewable energy, the digital industry, and the aerospace and defence sectors. They therefore play an essential role in underpinning economic activities in the internal market, and supply disruptions could have a significant cross-border impact between Member States.

(3)

Against this background, uncoordinated actions by Member States risk distorting competition and fragmenting the internal market, for example by imposing diverging regulation on market operators, providing different levels of access to supply risk monitoring, providing different levels of support for national projects, or creating obstacles to cross-border trade between Member States in critical raw materials or related goods thus creating obstacles to the

<sup>(1)</sup> OJ C 349, 29.9.2023, p. 142.

<sup>(2)</sup> Position of the European Parliament of 12 December 2023 (not yet published in the Official Journal) and decision of the Council of 18 March 2024.

ELI: <http://data.europa.eu/eli/reg/2024/1252/oj>

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# UNFC in Critical Raw Materials Act



## WHY?



Critical raw materials are needed for the **green and digital transitions** as well as for defence and space



To enhance our **long-term competitiveness**



To maintain our **open strategic autonomy** in a fast-changing and increasingly challenging geopolitical environment

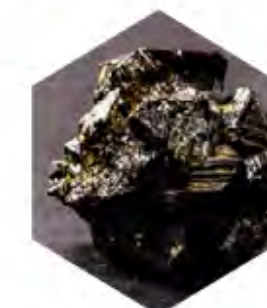
## HOW?

Through concerted internal and external action: strengthening domestic supply chains as well as reinforcing international engagement to develop win-win partnerships with third countries.

## CRITICAL RAW MATERIALS

Critical Raw Materials are at the beginning of many industrial supply chains and their global demand is increasing:

The demand of critical raw materials will increase in the next years:



**Rare earths** are key components of **permanent magnets** used in wind turbines motors



**Lithium, cobalt and nickel** are used in battery manufacturing



**Silicon** is used for semi-conductors



EU demand for lithium batteries powering our electric vehicles and energy storage set to increase 12 times by 2030 (21 times by 2050)

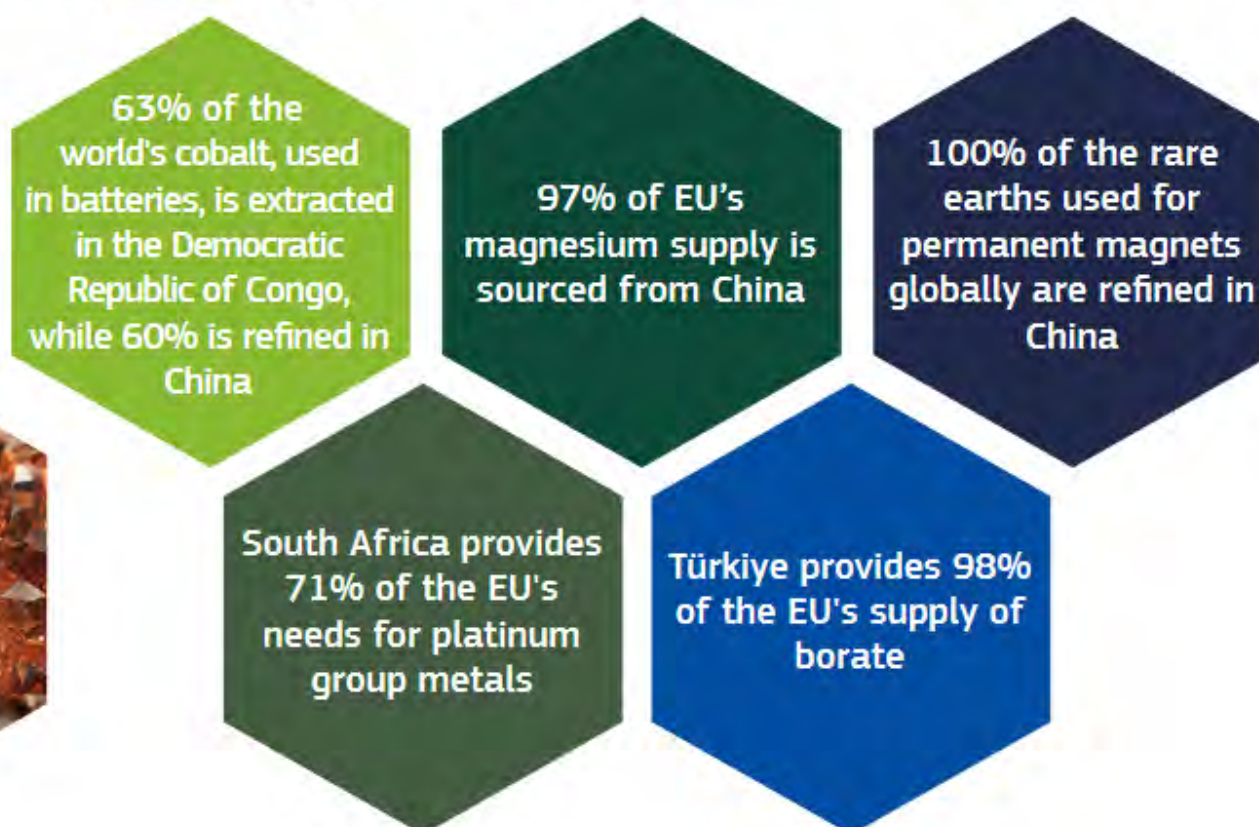


EU demand for rare earth metals, used in wind turbines and electric vehicles set to rise 5 to 6 times by 2030 (6 to 7 times by 2050)

# UNFC in Critical Raw Materials Act

## EUROPE FACES DEPENDENCIES ON KEY CRITICAL RAW MATERIALS

The EU is heavily dependent on critical raw materials from a number of third countries. Our dependency, combined with the growing global demand due to the shift towards a digital and green economy makes supply chains vulnerable.



## WHAT ARE WE DOING?

The European Critical Raw Materials Act aims to strengthen EU's critical raw materials capacities **along all stages of the value chain**. It aims to increase our resilience by reducing dependencies, increasing preparedness and promoting supply chain sustainability and circularity.

## SETTING PRIORITIES

### List of **Critical Raw Materials**

It identifies raw materials which are important for the whole European economy and face a high risk of supply disruption

### List of **Strategic Raw Materials**

It identifies a list of raw materials characterised by high strategic importance and projected global supply/demand imbalances

## SETTING 2030 BENCHMARKS FOR STRATEGIC RAW MATERIALS



### EU EXTRACTION

At least **10%** of the EU's annual consumption for extraction



### EU PROCESSING

At least **40%** of the EU's annual consumption for processing



### EU RECYCLING

At least **15%** of the EU's annual consumption for recycling



### EXTERNAL SOURCES

Not more than **65%** of the EU's annual consumption of **each strategic raw material at any relevant stage of processing** from a single third country

# UNFC in Critical Raw Materials Act

## BUILDING EUROPEAN CAPACITIES



Identifying **Strategic Projects** in the Union and third countries that intend to become active in the extraction, processing or recycling of strategic raw materials. They would benefit from streamlined and predictable permitting procedures in the Union and coordination of support to improve access to finance



**Speeding up permitting** for all critical raw material projects with a one-stop-shop contact



Developing national exploration programmes to **boost knowledge on European critical raw materials resources**

## IMPROVING RESILIENCE



**Monitoring critical raw materials and stress testing** strategic raw materials supply chains by pooling EU and Member State expertise



Mitigating the risk of strategic raw materials supply disruptions by coordinating the development of national **strategic stocks**, requiring audits of large companies' supply chains and facilitating the joint purchasing



Expanding the **network** of strategic raw materials partnerships **with third countries**



Creating a **Critical Raw Materials Club** with interested countries globally to strengthen supply chains and foster sustainable investment and trade



Strengthening the WTO and enhancing the network of Free Trade Agreements and Sustainable Investment Facilitation Agreements

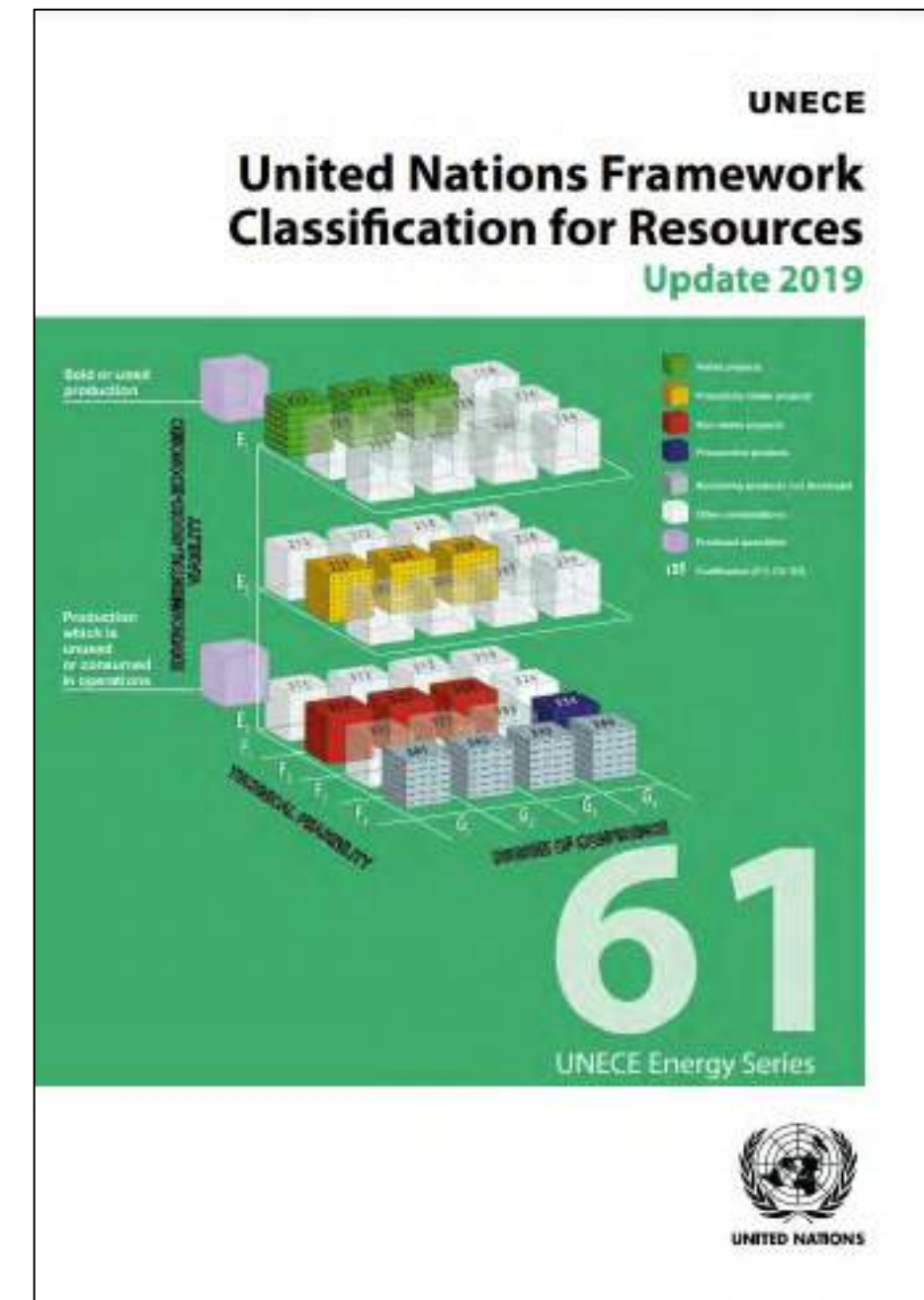


Using the Global Gateway for soft and hard infrastructure for projects along the raw materials value chain, support connectivity to lower the risk of investment abroad and combatting unfair trade practices related to raw materials

# UNFC in Critical Raw Materials Act



1. STRATEGIC PROJECTS
2. EXPLORATION
3. MONITORING
4. EXTRACTIVE WASTE



## STRATEGIC PROJECTS

Chapter 3: Strengthening the Union raw materials value chain

SECTION 2: STRATEGIC PROJECTS

Article 7: Application and Recognition

“Applications for recognition of a raw material project as a **Strategic Project** shall be submitted by the project promoter to the Commission. The **application** shall include: a classification of the project according to the **United Nations Framework Classification for Resources**, supported by appropriate evidence”

## EXPLORATION

Chapter 3: Strengthening the Union raw materials value chain

SECTION 5: EXPLORATION

Article 19: National exploration programmes

**“Member States** shall make the information on their **mineral occurrences** containing **critical raw materials** gathered through the measures set out in the national programmes referred to in paragraph 1 publicly available on a free access website. This information shall, where applicable, include the classification of the identified occurrences using the **United Nations Framework Classification for Resources**”

## MONITORING

Chapter 4: Risk monitoring and mitigation

Article 21: Information obligations for monitoring

“**Member States** shall, as part of the report referred to in Article 43, provide information to the Commission on any new or existing **raw material project** on their territory that is relevant regarding to Article 19(1), point (d), including a **classification of new projects** according to the **United Nations Framework Classification of Resources**”

## CIRCULARITY

### Chapter 5 Sustainability

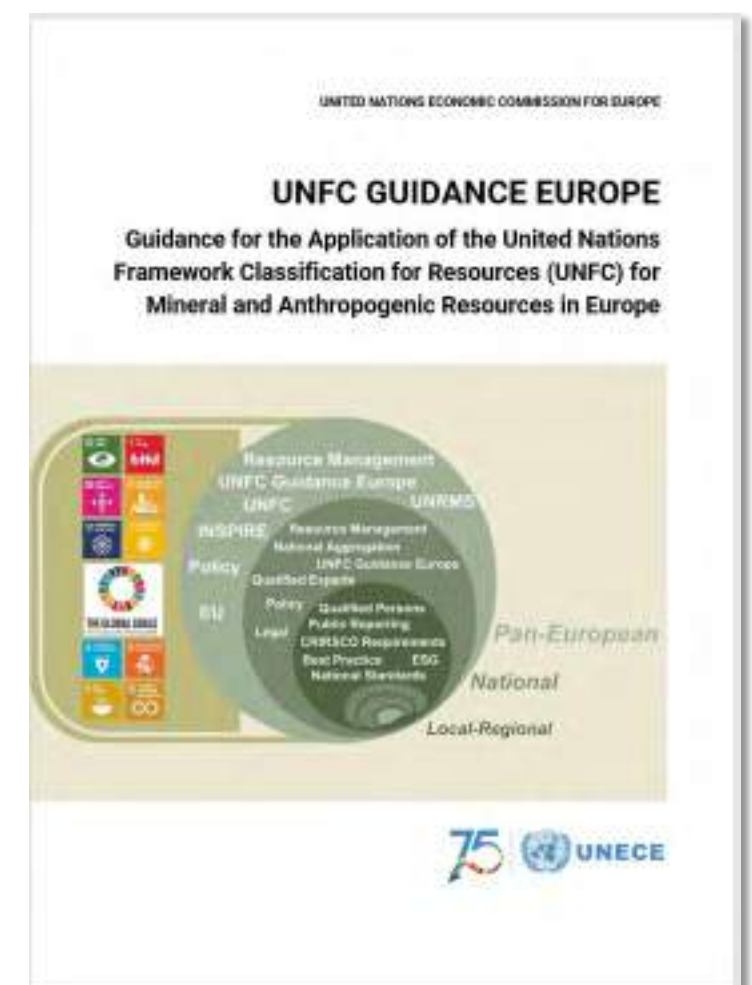
#### SECTION 1: CIRCULARITY

#### Article 27: Recovery of critical raw materials from extractive waste

“... Where possible, the **Member States** shall include in the database a classification of the closed **extractive waste facilities** according to the **United Nations Framework Classification for Resources.**”

## Deploying UNFC in the EU

- UNECE project to support development and implementation of UNFC and UNRMS in the EU and beyond 2020-2024 / 2024-2027
- Network of practitioners
- UNFC Guidance Europe 2022
- EU database of CRM projects (CRM Action Plan 2020)
- Geological Service for EU (GSEU) 2022-2027
- Future Availability of Secondary Raw Materials (FutuRaM) 2022-2026
- Critical Raw Materials Act



## Useful links

[CRM Act Press Release](#)

[CRM Act \(Draft Regulation\)](#)

[CRM Act \(Communication\)](#)

[2023 Study on CRMs for the EU](#)

[2023 JRC Foresight Study](#)

[CRM Factsheets](#) by SCRREEN

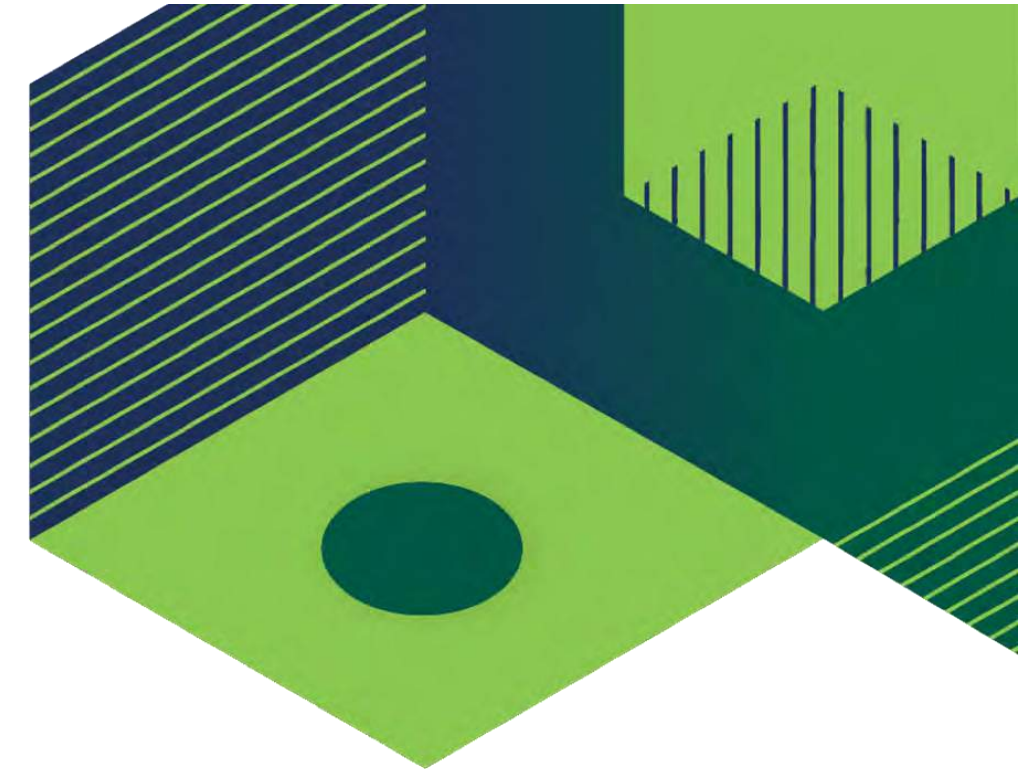


# UNFC in Critical Raw Materials Act

## Why UNFC in CRMA?

UNFC allows us to

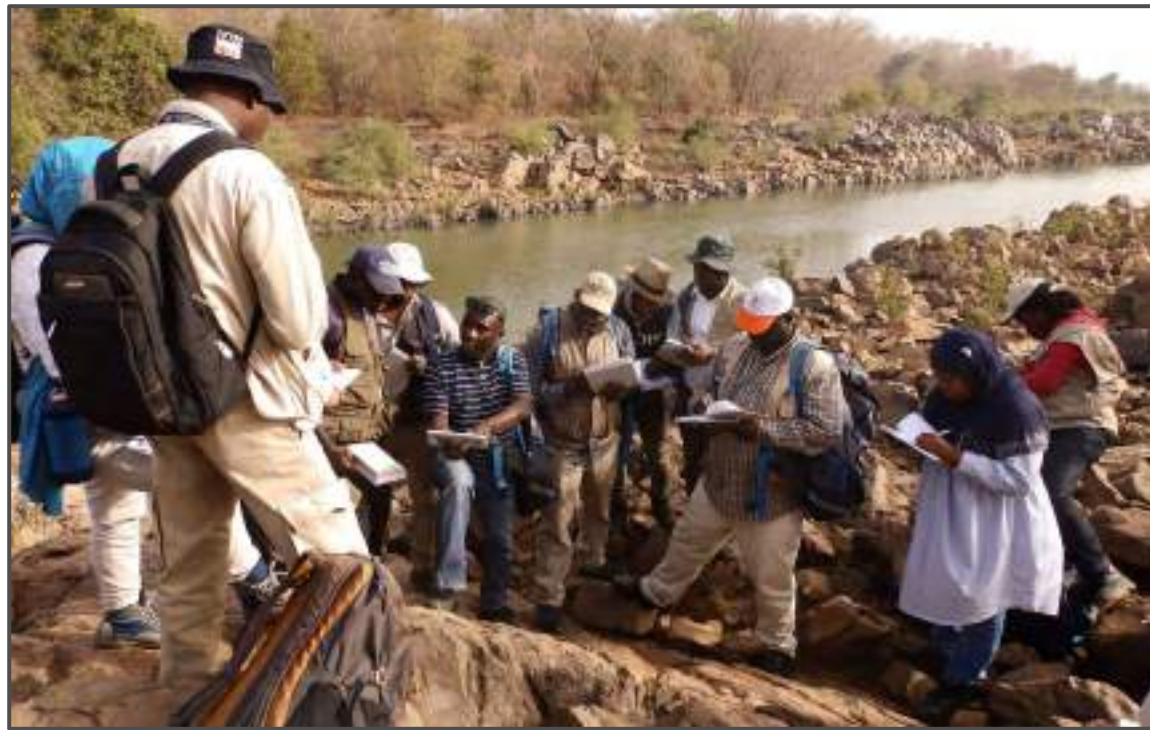
- **Simple to use**
- Compare different resource projects (minerals, **secondary raw materials including EoL, hydrogen, renewable energy ...**)
- Classify the projects along value chain from exploration, mining, processing and recycling
- Assess environmental and social performance of the projects
- Monitor development of projects over time
- Transpose information from a wide range of reporting systems
- **No extra burden for users**



# Questions? Comments ?

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**Thank you  
Merci  
Obrigado**