

Factsheet: UN tools for sustainable resource management



Critical Raw Materials are essential for decarbonization

Minerals play a significant role in the economies of 81 countries that account for **25% of global GDP**, **50% of the world's population** and nearly 70% of those living in extreme poverty.

Critical Raw Materials (CRMs) - such as copper, lithium, nickel, cobalt, manganese, graphite and rare earth elements - **are essential to the green transition** necessary to deliver on the Paris Agreement and the Sustainable Development Goals (SDGs).

CRMs will underpin increased **renewable energy use, battery production** and the mass shift to **electrification**. They are also vital for digitalization. Demand is already surging, with expected increases of over 40% for copper and rare earth elements over the next two decades, 60-70 % for nickel and cobalt, and almost 90% for lithium. According to [IEA projections](#), **reaching net-zero globally by 2050 will require six times more mineral inputs in 2040 than today**.

However, the use of these finite resources is currently far from sustainable. The world's material footprint, currently at approximately 100 billion tonnes annually, is projected to double by 2060. The extraction and processing of materials, fuels, and food contribute to [half of total global greenhouse gas emissions](#) and over 90% of biodiversity loss and water stress.

Resource extraction and use must be more aligned with sustainable development. Concerted efforts will also be required to ensure respect for human rights and well-being, including for workers in the extractive industry, indigenous communities, and environmental defenders.

UN Framework Classification for Resources: a common language for all resources

The United Nations Framework Classification for Resources (UNFC), developed at UNECE, provides a common language and standard for classifying, managing, and reporting all energy, mineral and raw material resources. It can be applied to all raw material projects: primary raw materials (e.g. mining) and secondary (e.g. recycled materials, supporting the **circular economy**), as well as **renewable energy sources**, including wind, solar, geothermal and bioenergy, allowing for comparisons across resources and countries.

UNFC use is rapidly increasing worldwide:

- The **European Commission has used UNFC** to integrate information on critical raw materials, including battery raw materials. Dedicated [guidance for Europe](#) has been developed to help use UNFC so that the classified information facilitates policy decisions on raw material stocks and flows. UNFC is being incorporated into some national mineral inventories, and its [use is stipulated in the EU Critical Raw Materials Act](#).
- The [African Union](#) mandates using **UNFC-based African Minerals and Energy Classification and Management System**.
- [China](#) and other countries have harmonized their national standards with UNFC.
- Countries including Hungary, Slovenia, Poland, Ukraine, Sweden, Finland, the UK and Mexico have [successfully tested the application of UNFC](#).
- UNFC has been applied for [Graphite extraction in Norway, and for sections of Sweden's Kiruna mine](#), the largest iron ore mine in the world, as well as supporting national evaluation of critical raw materials projects in France.

- [Queensland](#), Australia, became the first jurisdiction to legislate the application of UNFC to geothermal energy.

The UN Secretary-General's [Policy Brief](#) calls on extractive industries to align sustainable resource management efforts with UNFC.

UN Resource Management System: a global standard

Based on UNFC, the United Nations Resource Management System (UNRMS) offers a set of principles and requirements that guide the planning, design, operation and closure of resource extraction and processing activities to balance economic development, environmental sustainability and social responsibility in line with the Sustainable Development Goals (SDGs) and the Paris Agreement.

The **endorsement of UNRMS by the United Nations Economic and Social Council (ECOSOC)** opens the way for the global application of UNRMS, recognizing its potential to help countries and companies sustain natural resources. It builds on the previous endorsement of UNFC by ECOSOC, completing the methodologies for sustainable resource management of global relevance.

The UK and several other countries are testing [the application of UNRMS](#) to enhance circularity in using critical raw materials and other resources.

This work also contributes to the [UN Working Group on Transforming the Extractive Industries for Sustainable Development](#), which is Co-chaired by UNDP, UNEP and the Regional Economic Commissions. The Group coordinates extractives-related work across the UN and beyond; serves as an information and knowledge hub to scale up and replicate good practices; provides policy advice and technical assistance; and assists in integrating the extractive industries' work into other UN-wide initiatives, including on Financing for Development.

Legislation to protect human rights and the environment in resource activities

Parties to UNECE treaties are bound by obligations that help address human rights and environmental issues concerning mining and resource activities. Parties include the EU and the majority of European countries.

The UNECE [Aarhus Convention](#) previews obligations on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

A rapid response mechanism to **protect environmental defenders** through a [Special Rapporteur](#) has been established under the Aarhus Convention. Environmental Defenders are increasingly under threat in many countries in relation to mining and resource projects. The Special Rapporteur's mandate is applicable worldwide concerning the operations of companies that are based in a country that is Party to the Aarhus Convention.

The [Espoo Convention](#) on Environmental Impact Assessment in a Transboundary Context helps avoid environmental damage from extractive industry activities across national borders.

Its Protocol on Strategic Environmental Assessment supports the integration of environmental and health considerations in countries' resource plans and programmes at an early stage.

The [Industrial Accidents Convention](#) helps countries reduce risks associated with increased mining and mining waste (known as "tailings") storage, including for CRM extraction. [Global consultations](#) under the United Nations Environment Assembly resolution on the environmental aspects of minerals and metals management underscored the value of UNECE Safety Guidelines and Good Practices on Tailings Management Facilities and other tools developed under the Convention for all UN Member States and operators.