

Critical Raw Materials

What they are, why they matter, and how UNFC and UNRMS can help you manage them

Introduction

Critical raw materials (CRMs) are natural resources essential for the functioning and developing critical sectors, such as sustainable energy, sustainable transport, health, and digital technologies. CRMs include metals, minerals, and materials with high economic importance and supply risk.

CRMs are vital for transitioning to a low-carbon, sustainable economy, as they are used in various applications, such as renewable energy, electric vehicles, batteries, and electronics. However, the extraction, processing, and use of CRMs also pose significant environmental and social challenges, such as resource depletion, pollution, greenhouse gas emissions, human rights violations, and geopolitical conflicts.

Therefore, there is a need for a holistic and systematic approach to managing CRMs that considers not only the quantity and quality of the resources but also their environmental, social, and economic impacts and benefits. Such an approach should also promote the principles of circular economy, which aim to reduce waste, extend the lifespan of products and materials, and increase resource efficiency and security.

This is where the United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) come in. These are two interrelated systems developed by the United Nations Economic Commission for Europe (UNECE) to support the sustainable management of natural resources, including CRMs.

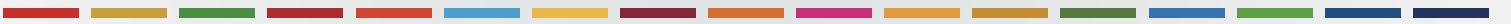


UNFC and UNRMS

UNFC is a globally applicable standard for classifying resource projects based on their environmental, social, and economic viability, technical feasibility, and confidence in estimates. UNFC covers various activities, such as minerals, petroleum, renewable energy sources, nuclear resources, anthropogenic resources, geological storage, and groundwater.

UNRMS is a comprehensive resource management system that builds on UNFC and provides a framework for integrated and sustainable resource management. UNRMS aims to help countries, organizations, and companies address sustainability challenges and advance the Sustainable Development Goals (SDGs). UNRMS considers various resources not as isolated or independent sectors but as part of the whole resource base of an area, region, or country.

UNFC and UNRMS are developed and maintained by the Expert Group on Resource Management (EGRM), a UNECE Committee on Sustainable Energy subsidiary body. The EGRM comprises experts from governments, industry, academia, civil society, and international organizations, who work together to develop and update the principles, specifications, and guidelines for UNFC and UNRMS. The EGRM also provides training, capacity building, and technical assistance to support the implementation and application of UNFC and UNRMS.



Benefits and applications of UNFC and UNRMS for CRMs

UNFC and UNRMS offer several benefits and applications for CRMs, such as:

- **Providing a common language and framework for classifying, reporting, and managing resource projects based on environmental, social, and economic viability, technical feasibility, and confidence in estimates.** This enables consistent and comparable data on CRMs across different countries and resource sectors, facilitating resource planning, policy-making, and investment decisions.
- **Supporting the development of policies and regulations in the sustainable management of CRMs and advancing the SDGs.** UNFC and UNRMS can help identify and address the gaps and challenges in the CRM value chain, such as supply security, resource efficiency, recycling, substitution, and environmental and social impacts.
- **Aiding the financing of resource sectors,** especially for small and medium enterprises (SMEs) and emerging markets. UNFC and UNRMS can provide a transparent and credible basis for assessing the value and potential of resource projects, which can attract investors and lenders, reduce risks and costs, and increase access to capital.
- **Enabling the integration of circular economy principles in the CRM value chain.** UNFC and UNRMS can help promote the optimal use of resources, minimize waste generation, and enhance resource recovery and reuse. UNFC and UNRMS can also support the classification and management of anthropogenic resources, such as secondary materials from mining and industrial wastes, which can serve as alternative sources of CRMs.

UNFC and UNRMS have been applied to various CRM projects and initiatives within and outside the UNECE region.

Conclusion

CRMs are essential for transitioning to a low-carbon, sustainable economy but pose significant environmental and social challenges. Therefore, there is a need for a holistic and systematic approach to managing CRMs that considers not only the quantity and quality of the resources but also their environmental, social, and economic impacts and benefits. Such an approach should also promote the principles of circular economy, which aim to reduce waste, extend the lifespan of products and materials, and increase resource efficiency and security.

UNFC and UNRMS are two interrelated systems developed by the UNECE to support the sustainable management of natural resources, including CRMs. UNFC and UNRMS provide a common language and framework for classifying, reporting, and managing resource projects based on environmental, social, and economic viability, technical feasibility, and confidence in estimates. UNFC and UNRMS also support the development of policies and regulations in the sustainable management of CRMs and advancing the SDGs. Furthermore, UNFC and UNRMS aid the financing of resource sectors and enable the integration of circular economy principles in the CRM value chain.

UNFC and UNRMS have been applied to various CRM projects and initiatives within and outside the UNECE region, demonstrating their benefits and applications for CRMs. UNFC and UNRMS applications are continuously improving and expanding, especially regarding data availability, quality, harmonization, stakeholder engagement and awareness, and alignment with other standards and frameworks.

You can access more information and resources on UNFC and UNRMS here:

<https://unece.org/sustainable-energy/sustainable-resource-management>

