



Necessity of Raw Materials information for Europe

Establishing the European Geological Surveys Research Area to deliver a Geological Service for Europe

GeoERA concluding conference

19 January 2022

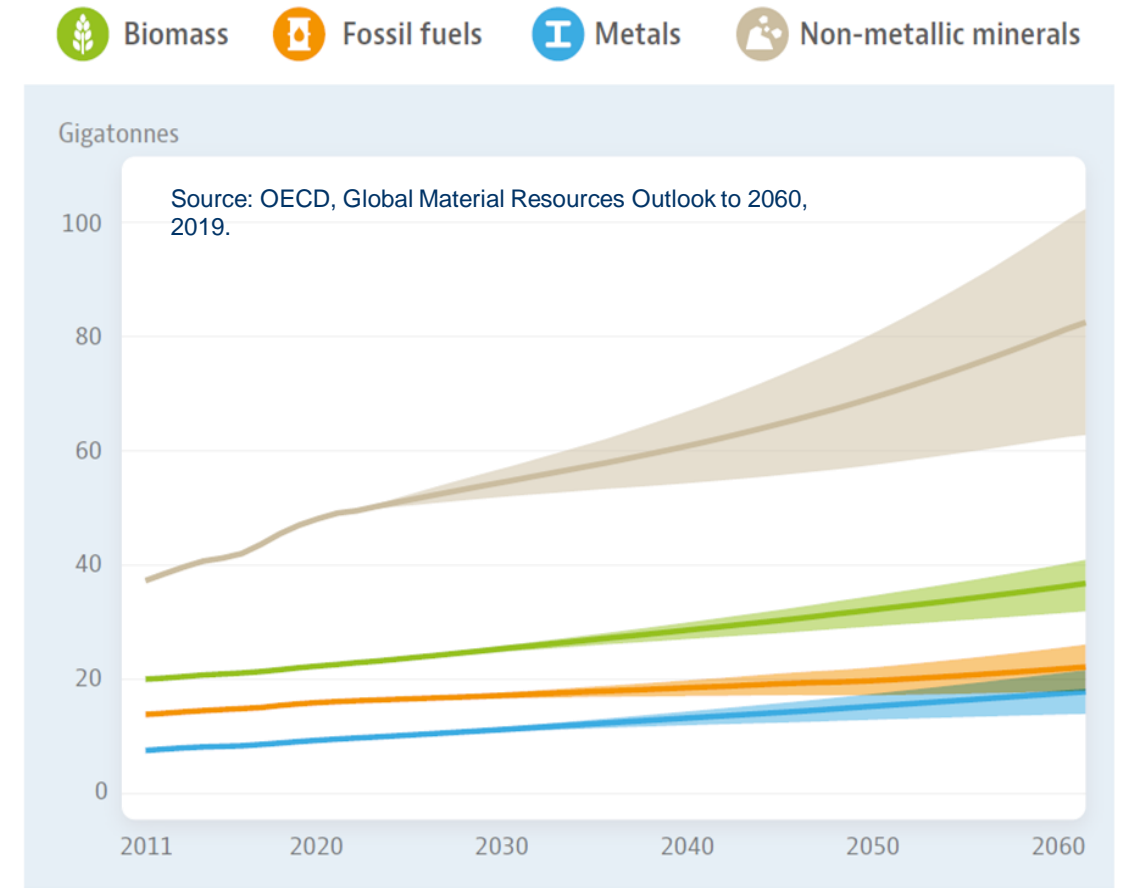


Peter HANDLEY

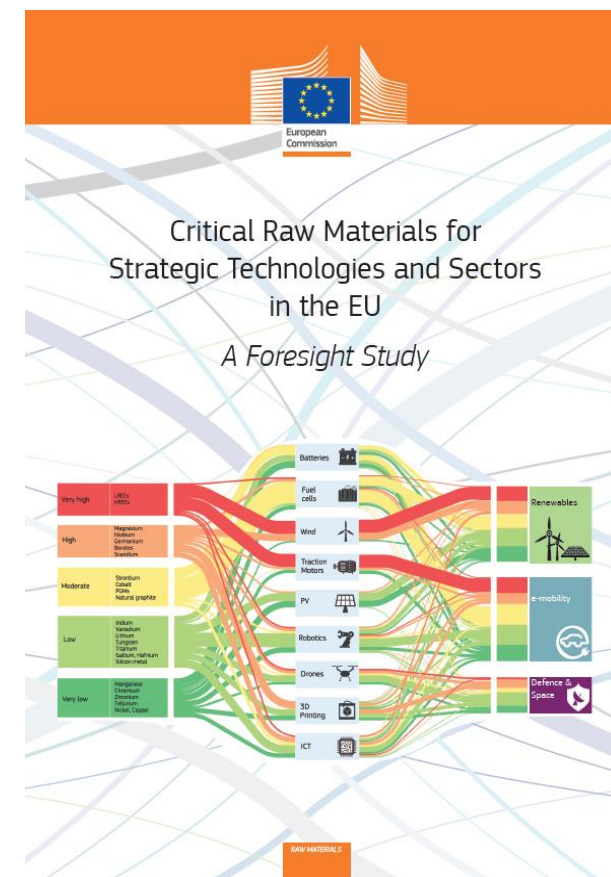
*European Commission. Directorate-General for Internal
Market, Industry, Entrepreneurship and SME's (DG GROW).*

Unit I1 - «Energy intensive industries and Raw Materials»

- **The EU Green Deal (12/19)**
- **New Industrial Strategy for the EU (03/20)**
- **New Circular Economy Action Plan (03/20)**
- **The NextGenerationEU - Recovery Plan for the EU (05/20)**
- **Critical Raw Materials Action Plan (09/20)**
- **European Raw Materials Alliance (09/20)**
- **Updated 2020 New Industrial Strategy (05/21)**
- **European Parliament report on CRM (11/21)**



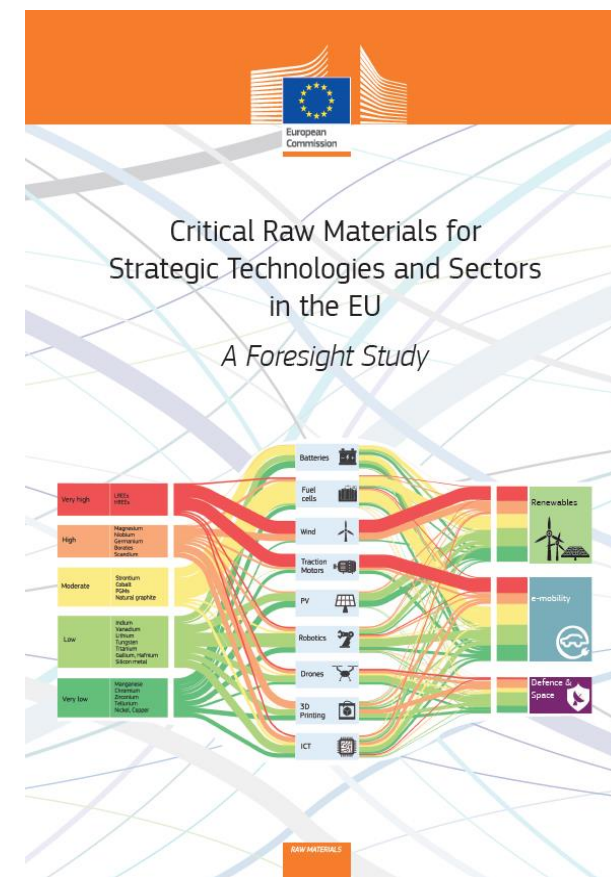
2020 Critical Raw Materials (new as compared to 2017 in bold)		
Antimony	Hafnium	Phosphorus
Baryte	Heavy Rare Earth Elements	Scandium
Beryllium	Light Rare Earth Elements	Silicon metal
Bismuth	Indium	Tantalum
Borate	Magnesium	Tungsten
Cobalt	Natural Graphite	Vanadium
Coking Coal	Natural Rubber	Bauxite
Fluorspar	Niobium	Lithium
Gallium	Platinum Group Metals	Titanium
Germanium	Phosphate rock	Strontium



EU CRM Assessment 2023 exercise started

E.g. data sources used for the criticality analysis:

- Eurostat data to monitor EU production, imports and exports of raw materials.
- World mining data (Austria government)
- European Minerals YearBook (EuroGeoSurveys)
- Data from the USGS and the BGS
- Other commercial data sources



We would like to relay as much as possible on public data elaborated in the EU



10 actions to ensure Europe's access to raw materials

1. European Raw Materials Alliance
2. Develop sustainable financing criteria for mining
3. Research and innovation on waste processing, advanced materials and substitution
4. Map the potential supply of secondary CRM from EU stocks and wastes
5. Investment needs for mining projects that can be operational in 2025
6. Develop expertise and skills in mining
7. Deploy Earth observation programmes for exploration, operation and post-closure environmental management
8. Develop research and innovation projects on exploration, exploitation and processing of CRMs
9. Develop strategic international partnerships to secure CRMs supply
10. Promote responsible mining practices for CRMs



Kick-starting the EU
hydrogen Industry to
Achieve the EU Climate
Goals



- 2 IPCEIs including 12 MS and 25 Bn EUR to build EU battery value chain
- 28 ready to go CRM projects for 11 Bn EUR to strengthen EU CRM value chain
- On-going discussion on 2 IPCEIs including to develop green hydrogen value chain in EU



- 28 ready to go CRM projects for 11 Bn EUR to strengthen EU CRM value chain
- These projects will be evaluated using the United Nations Framework Classification for Resources (UNFC), permitting to monitor the project development while taking into account the environmental, socio-economic dimension

- The EU sustainable finance taxonomy is an EU classification to guide public and private investments towards sustainable activities.
- A Delegated Act will establish the actual list of environmentally sustainable activities by defining technical screening criteria for each environmental objective.
- This should **help to mobilize investments for exploration**, mining and processing projects for critical raw materials in a sustainable and responsible way.
- **Mining extractive and processing sustainable financing criteria to re-start from January 2022**



Raw Materials topics in Horizon Europe

~ EUR 300 million, 2021-2022

Opening: 22 Jun 2021 Deadline: 23 Sep 2021	Opening: 12 Oct 2021 Deadline: 30 Mar 2022
Innovation for responsible EU sourcing of primary raw materials	Monitoring and supervising system for exploration and future exploitation activities in the deep sea
Building innovative value chains from raw materials to sustainable products	Technological solutions for tracking raw materials flows in complex supply chains
Reducing environmental footprint, improving circularity in extractive and processing value chains	Earth observation technologies for the mining life cycle
Building EU-Africa partnerships on sustainable raw materials value chains	Developing digital platforms for the small scale extractive industry
Identifying future availability of secondary raw materials	Streamlining cross-sectoral policy framework throughout the extractive life-cycle environmentally protected areas
Developing climate neutral and circular raw materials	Innovative solutions for efficient use and enhanced recovery of mineral and metal by-products from processing of raw materials
Support to the activities of the European Geological Services. Deadline: 5 Jan 2022	Sustainable and innovative mine of the future

HORIZON-CL5-2021-D3-02-14: Support to the activities of the European Geological Services.

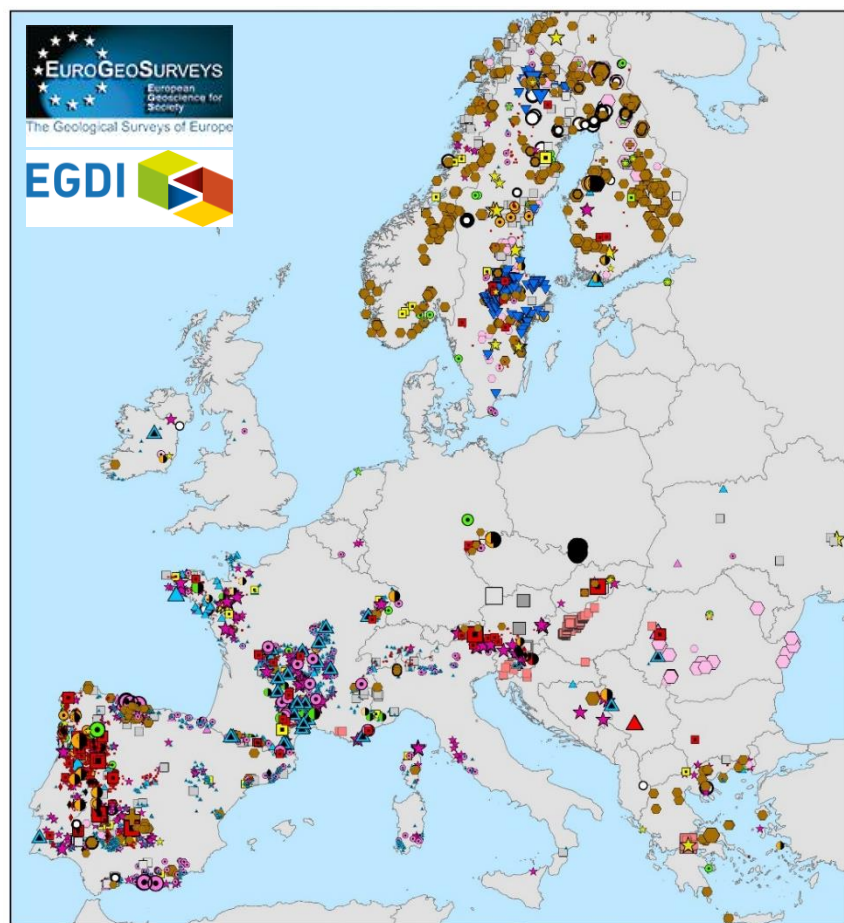
Key objectives for Raw Materials:

- Comprehensive **inventory of harmonized data on primary and secondary raw materials in Europe**, with a focus on applications of critical raw materials.

Key related issues:

- **Re-evaluation of European resources in primary raw materials and mining waste**, with a focus on critical raw materials needed for climate transition, filling the currently existing gaps in data and information at European level.
- Developing a **database on mineral resources and reserves (excluding fossil fuels) according to United Nations Framework Classification for Resources (UNFC)**
- Developing an **EU International Centre of Excellence on Sustainable Resource Management focused on promoting and building capacity on United Nations Framework Classification for Resources (UNFC) for mineral resources** (primary and secondary) and supporting the United Nations Resource Management System (UNRMS) in line with the UN 2030 Agenda for Sustainable Development.

Mineral resources in the EU

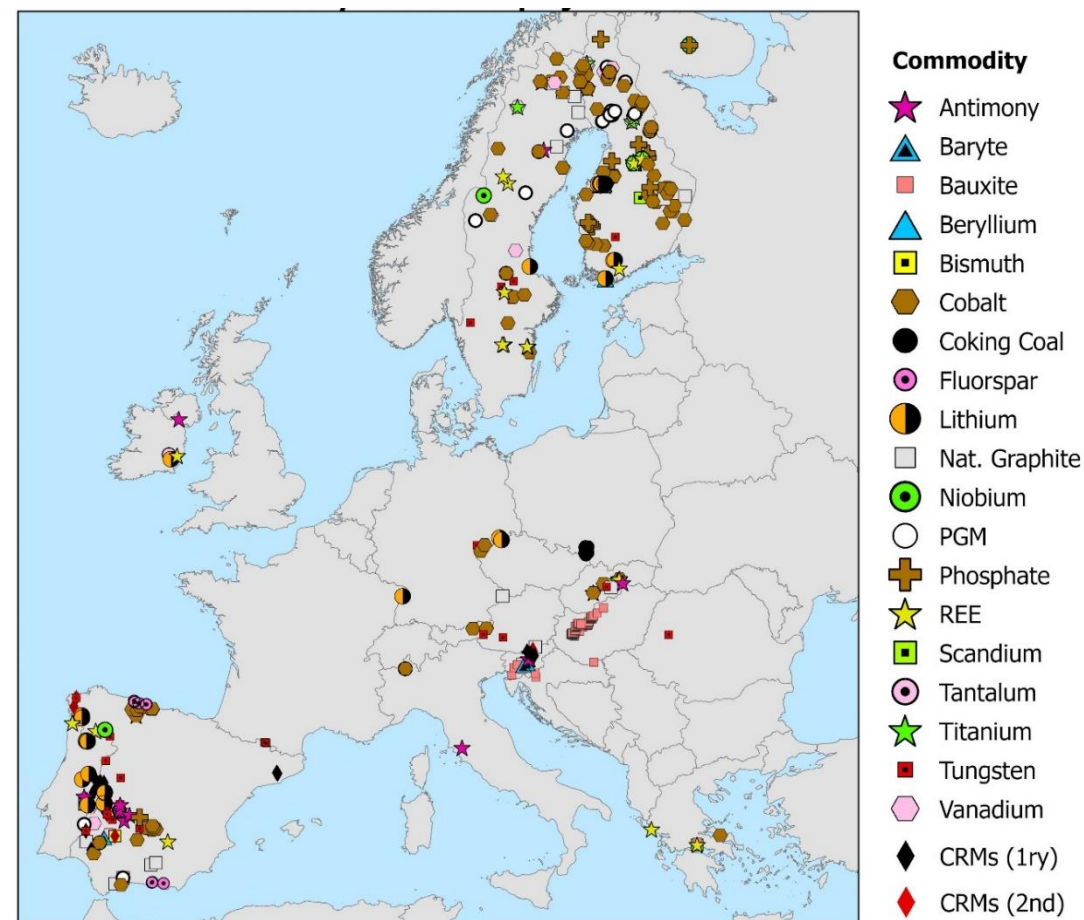


Data provided by EGS combined with other EU data sources

EC & EGS &
MS mining
authorities

UNFC

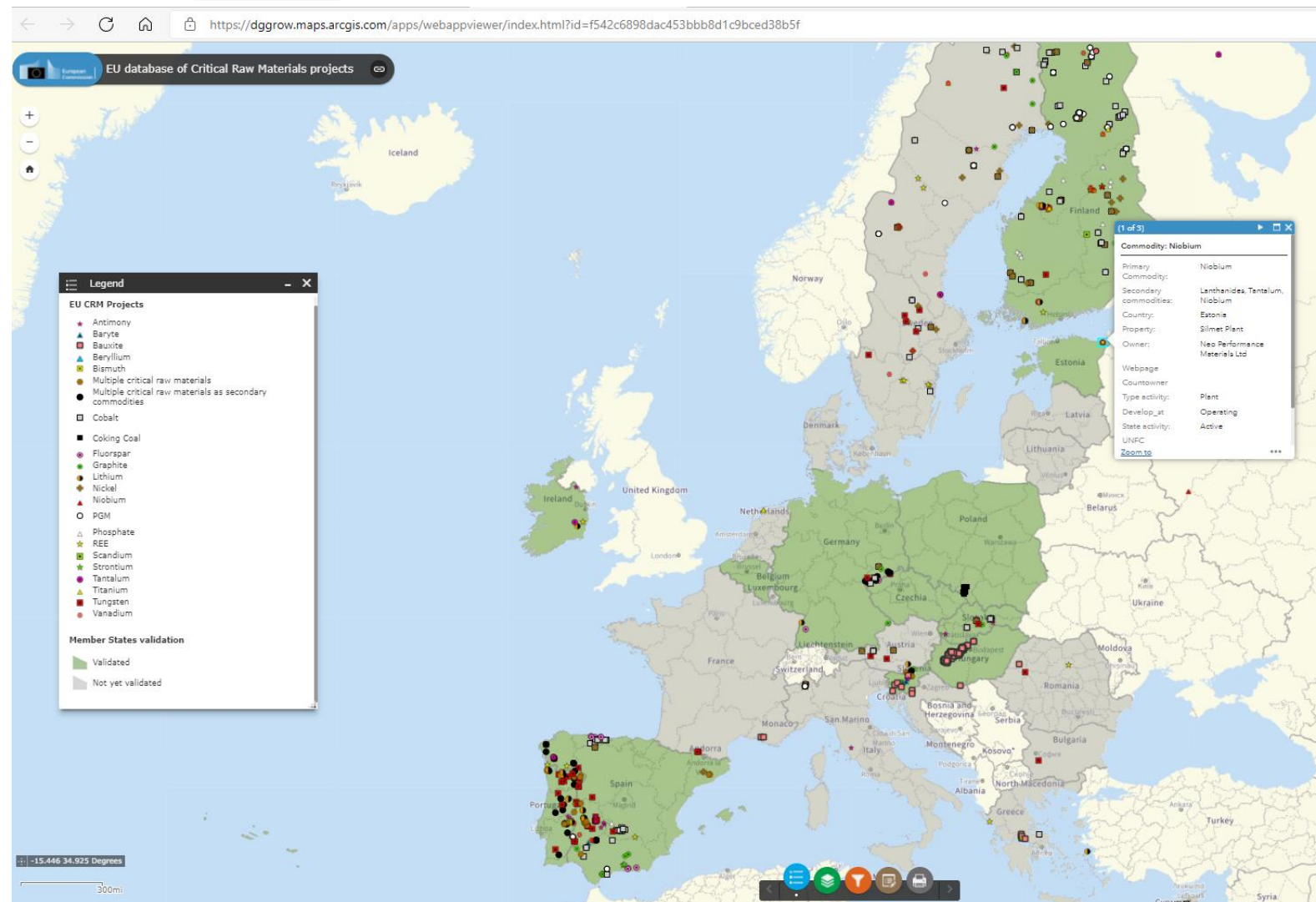
Potentially viable CRM projects in the EU



Data gathered by the Commission with the Member States. Work in progress to validate/complete/update available information

EU database of Critical Raw Materials projects:

- EC collaboration with Member States Mining Authorities and Geological Surveys.
- **961** projects, with **148** of them identified as viable or potentially viable according to the United Nations Framework Classification System (UNFC)
- When completed the EU database of CRM projects will be useful to monitor the progress of mining projects in the EU.

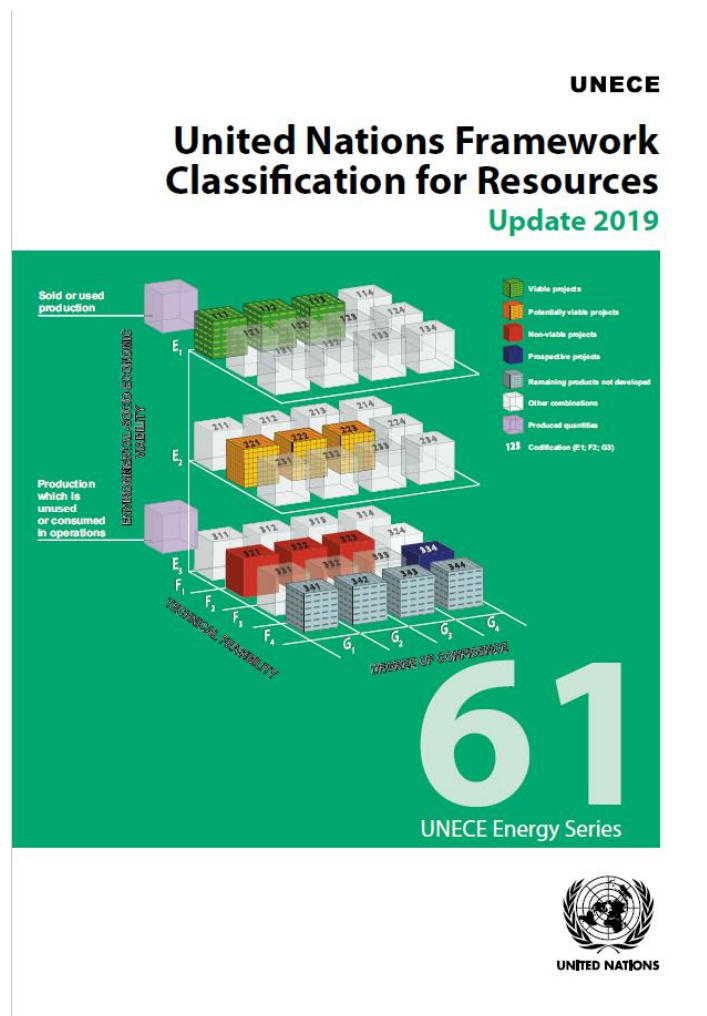


EU database of Critical Raw Materials projects:

Geological Surveys could support mining authorities from the Member States to apply UNFC to national databases of mining projects

This effort could be supported through:

- Guidance for the Application of the United Nations Framework Classification System (UNFC) for Mineral and Anthropogenic Resources in Europe (Spring 2022)
- UNECE Network of Practitioners and Experts for training in the EU



Funded by
the European Union



Optimizing quality of information in RAW Material
data collection across Europe

Deliverable 1.5 Good practice guidelines for harmonisation of resource and reserve data

Title of the project:	Optimizing quality of information in RAW Material data collection across Europe - ORAMA
Grant Agreement number:	776517
Funding Scheme:	H2020 – SC5-15-2017 – CSA
Start date:	01.12.2017
Duration:	24 months
Document title:	Deliverable 1.5: Good practice guidelines for harmonisation of resource and reserve data
Work Package:	1
Author(s):	Tom Blide, Teresa Brown, Gus Gun, Richard Shaw, Carolin Kresse and Eimear Deady (BGS), Pedro Delgado (IGME), Zoltan Horváth (MBFSZ), Špela Bavec and Duška Rokavec (GeoZS), Taina Eloranta (GTK), Kari Aasly (NGU) and Henrik Schiellerup (NGU)
Date of delivery:	08/11/2019
Dissemination level:	PU ¹
Reviewed by:	
Status of the document:	Final
Document location:	Tiimeri: Documents / Deliverables
Project web site:	http://www.orama-h2020.eu

¹ PU=public, PP= Restricted to other programme participants (including the Commission Services), RE= Restricted to a group specified by the consortium (including the Commission Services), CO= Confidential, only for members of the consortium (including the Commission Services)

Earth Observation platform for Raw Materials (EORM):

- Facilitate access to Earth Observation products and services for the raw materials sector.
- Increase the collection of raw materials information in EU and non EU associated countries.
- Foster the exploration of primary and secondary raw materials, as well as the monitoring of the environmental performance of mining areas

EORM platform

ESA, GROW, DEFIS
International Partnership
countries

Mineral exploration tools

EO tech developers
and service providers



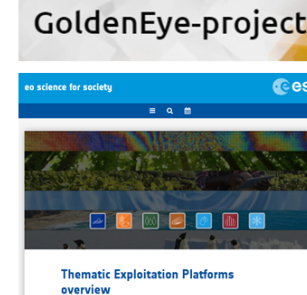
Copernicus data



- Local land cover
- European GMS

Mining monitoring tools

EO tech developers
and service providers



Capacity building & standards



- **EU-Canada:** partnership endorsed at the EU-Canada summit on 14 June 2021. Framework and action plan for 2021/22.
- **EU-Ukraine:** partnership signed on 13 July 2021 during the High Level Conference in Kyiv. *EuroGeoSurveys contributes to the digitalization and data management of Ukrainian mineral resources/reserves (Roadmap 2021-22).*
- **EU-Serbia:** kick off 18 January 2021. *EuroGeoSurveys invited to shape the content of the roadmap of this partnership*
- **EU-Latin America:** *Convention on Raw Materials 2021 on 25-26 Nov 2021. EuroGeoSurveys is a member of the consortium of the EU – Latin America Partnership on Raw Materials.*
- **EU-Africa** partnership: *HE call 2021 on Building EU-Africa partnerships on sustainable raw materials value chains. EuroGeoSurveys can contribute to develop knowledge on raw materials potential in Africa*



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**EU-Latin America
Partnership
on Raw Materials**



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- Sustainable batteries regulation (12/20): requires recycling and recovery of battery raw materials and imposes due diligence obligations on the batteries supply chains
- Conflict minerals regulation (in force since 01/21): requires EU companies in the supply chain of gold, tin, tungsten and tantalum to ensure they import these minerals and metals from responsible and conflict-free sources only.
- **EU sustainable principles for raw materials (2021.09.06)**
- JRC report: Collection of available techniques for the prevention or reduction of environmental impacts in non-energy extractive industries (NEEI)
- JRC report: Background study on the environmental impact assessment of non-energy minerals extraction projects with regard to European Union Community requirements





Role of EuroGeoSurveys in delivering Raw Materials information for the EU:

- Exploration and re-evaluation of primary and secondary sources of CRM in the EU and non- EU associated countries
- Promoting and building capacity on United Nations Framework Classification for Resources (UNFC) for mineral resources (primary and secondary) and supporting the United Nations Resource Management System (UNRMS)
- Contributing to develop an EU database of CRM projects (excluding fossil fuels) according to United Nations Framework Classification for Resources (UNFC)
- Contributing to the design and implementation of the international partnerships on raw materials
- Contributing to the design, exploitation and dissemination of the Earth Observation platform for Raw Materials
- Contributing to the adoption of the EU sustainable principles for raw materials



Thank you!

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