SEMACRET project and UNFC resource mapping of selected CRM in Europe

UNECE Resource Management Week 2024
22-26 April 2024  |  Palais des Nations  |  Geneva

Blažena Wertichová, Vojtěch Wertich (Czech Geological Survey), Shenghong Yang (University of Oulu)
Sustainable exploration for orthomagmatic (critical) raw materials in the EU: Charting the road to the green energy transition

**HORIZON CL4 2021 RESILIENCE 01-06** - Innovation for responsible EU sourcing of primary raw materials, the foundation of the Green Deal (RIA)

- 1 June 2022 – 31 May 2025
- **16 project partners**, leaded by University of Oulu (Finland)

**Objective:** Enhancing exploration of orthomagmatic deposits (Ni, Cu, Co, PGE, Cr, Ti, V)

React to expected sharp increase of demand with green energy transition
What it is about?

• The aim is to increase prospectivity in Europe
• Exploration methods refining – “Mineral System Approach”
• Multi-expertise cooperation – economic geologists, geochemists, geophysicist, machine learning experts, biologists, social scientists, geoinformatics, etc.

Work packages:

WP1 – Refining the ore deposit model for orthomagmatic deposit types (metal source, metal pathway, metal sink)
WP2 – Regional-scale exploration, definition of proxies and prospectivity modelling applicable in exploration
WP3 – Brownfield exploration – geochemistry, geophysics, litho-geochemical modelling and machine learning on 5 reference sites
WP4 – Social awareness (stakeholder, community analysis, rising awareness, policy recommendation)
WP5 – Mineral resources mapping, UNFC conversion
WP6 – Dissemination, clusterring, communication, exploitation

5 reference sites:
• Lapland (Finland)
• Suwalki (Poland)
• Sleza (Poland)
• Ransko (Czechia)
• Beja complex (Portugal)
WP5 – Mineral resource mapping

- Resource mapping of orthomagmatic rocks related to exploration and exploitation potential of selected (critical) raw materials Ni, Cu, Co, PGE, Ti, V, Cr

Task 5.1

- Survey of primary and secondary mineral potential of exploration and production-related orthomagmatic mineral systems (deposits, prospects and occurrences)
- Main focus are European countries + Greenland
- Database development and feeding (sources: existing DTB, research papers, reports, etc.)
- GIS visualization will be produced

Figure 4: Graphical presentation of the SEMACRET project components and their interrelation (SEMACRET Project GA No. 101057741)
UNFC Task within the SEMACRET Project

Task 5.2 – conversion to UNFC based on the data collected within the task 5.1

- UNFC conversion in line with existing documents and guidances (UNFC update 2019, UNFC Guidance Europe 2022, CRIRSCO-UNFC Bridging Document – updated version), etc.

- Selected projects in different stages will be chosen as a „Case studies“ for a detailed conversion to UNFC – SEMACRET reference sites + few other exemplary cases,

- Single UNFC class per deposit/project („best UNFC class“) – testing for the objects within the database

- Work in progress - Report (Deliverable D5.2) will be provided by the end of 2024

*Figure 5: Illustration of preliminary version of SEMACRET database in MS Access (B. Wertichová 2024)*
Thank You

WWW.SEMACRET.EU

#SEMACRET #CriticalRawMaterialsEU
#SustainableExplorationEU

THE VIEWS EXPRESSED ARE THOSE OF THE AUTHORS AND DO NOT NECESSARILY REFLECT THE VIEWS OF THE UNITED NATIONS.