The coming revolution in Mineral 101001 **Intelligence Capacity Analysis**

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MICA

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Primary and secondary raw materials are fundamental to Europe's economy and growth. The MICA project will identify raw materials information that respond to stakeholder needs.

WHAT is MICA?

The Mineral Intelligence Capacity Analysis (MICA) project will provide stakeholders with the best possible Raw Materials Information, in a seamless and flexible way using the European Union Raw Materials Intelligence Capacity Platform (EU-RMICP). The project brings together experts from a wide range of disciplines in order to ensure that Raw Materials Information is gathered, collated, organised and made accessible in the most useful way in order to correspond to stakeholder needs.

To accomplish this goal, MICA will assess sources of relevant data and information and conduct analyses of appropriate methods and tools in order to provide guidelines and recommendations.

Overall, the MICA project will build upon the concepts of "fact sheets" and "flow sheets". Fact sheets are domainspecific descriptions of data sources, methods, tools and models, whereas "flow sheets" can be considered "recipes" that describe what fact sheets should be used for, as well as how they should be combined and in what sequence to obtain answers to specific question. These fact sheets and flow sheets will be integrated into the European Union Raw Materials Intelligence Capacity Platform (EU-RMICP) and it is intended to be a stand-alone product. The EU-RMICP can be incorporated into the European Union Raw Materials Knowledge Base (EURMKB) with a future permanent structure of an EU Raw Materials Intelligence service. In this regard, the MICA project has strong links to the efforts of the Minerals4EU project where the EU Minerals Knowledge Data Platform (EU-MKDP) has been developed.

Objectives

The main objectives of MICA are:

- Identification and definition of stakeholder groups and their Raw Material Intelligence (RMI) requirements
- Determination of appropriate methods and tools to satisfy stakeholder RMI requirements
- Consolidation of relevant data on primary and secondary raw materials
- Investigation of (RMI-) options for European mineral policy development
- Development of the EU-RMICP integrating information on data and methods/tools with user interface capable of answering stakeholder questions
- Link the derived intelligence to the EU-RMICP developed by the Minerals4EU project.

Impacts

MICA project will:

- Help decision makers at EU level to better navigate through the Mineral Raw Materials Domain. MICA will be providing information related to mineral intelligence methods, tools and data organised, quality controlled and available in a single place
- Offer a framework for the recommendation of Research & Innovation priorities
- Contribute to evidence-based policy and appropriate, cost-effective management, planning and adaptation decisions by the public sector, businesses, industry and society
- Improve conditions for sustainable access and supply of raw materials in the EU
- Increase the competitiveness of the EU industry and promote the supply of minerals from EU sources.

HOW will MICA achieve its objectives?

- The Work Packages of the MICA project are:
- WP1 Management and Coordination
- WP2 Needs: Stakeholder identification, appraisal and mapping of stakeholder requirements
- **OWP3** Data: Data for raw materials intelligence capacity
- WP4 Methods: Methods and tools for mineral intelligence
- WP5 Policies: Minerals policy context
- **OWP6** EU-RMICP: European Raw Materials Intelligence Capacity Platform Development • WP7 Communication, outreach and linkages

WHY is Raw Materials Intelligence important?

Knowledge on raw materials is dispersed and variable, and the complexity of material cycles (across all life cycle stages), policies, mineral market trends, technological trends, environmental issues, social impacts and other, requires many fields of expertise. Therefore, combining data and information to support decisions is ambitious, and this is demonstrated in the Strategic Implementation Plan (SIP) of the European Innovation Partnership on Raw Materials (EIP-RM).

The SIP EIP-RM aims to ensure the sustainable supply of raw materials for the European economy whilst increasing benefits for society as a whole. This is done by promoting innovation across the entire materials value chain, i.e. by supporting technologies, improving the framework policy conditions for raw materials, and also by promoting international cooperation. Several projects related to mineral raw materials have been funded as a result of this increased awareness, notably ProMine, EuroGeoSource, EURare, Minventory, Minerals4EU, ProSUM, I2Mine, MINATURA2020, EO-Miners and most recently the Knowledge and Innovation Community, EIT KIC Raw Materials.

These initiatives aim to align the increasing requirements for environmental and social best practices in the mining industry on one hand, and with the rising demand for mineral raw materials on the other.

Stakeholders needs

The anticipated rise in global population and living standards in developing countries is expected to drive continuously increasing levels of demand for a wide range of resources. Furthermore, requirements for a broad range of minor metals and minerals are increasing with modern technology, especially with the development of low carbon technologies such as electric cars, catalytic converters and photovoltaics. Industry forecasts for a number of raw materials suggest that there could be medium to long-term supply shortages in certain areas, including but not exclusively for critical raw materials. Clearly, the outlook for base metals indicates a significant need for identifying additional mineral resources in the medium and long-term in order to satisfy the expected increase in global demand.

As a consequence there is an urgent need to satisfy the information and intelligence requirements of a large range of stakeholders in order to provide the best possible basis for decision-making. This issue is at the heart of the MICA project.

WHO is in the MICA Consortium?

The MICA project Consortium, 16 partners and 15 linked third parties, represents a multidisciplinary group with abundant experience in the diverse facets of raw materials research. The beneficiaries include geological surveys (GEUS, NERC-BGS, BRGM, BGR, GTK, GeoZS), research institutions (F-ISI, JRC), universities (UL-CML, UJF-LIG, NTNU, UCL ISR), professional associations (EFG, EGS) and two SMEs (MinPol, LPRC).