

SRM Technical tools developed :

- WEEE: (a) Creation of 2 sampling protocols and a survey aimed at improving reporting of scavenging practices. (b) Creation of "Conversion protocol" to update the Collected and reported flow for EU28+2 .
- PV Panels: (a) Revised classification for UNU key 0002. (b) Creation of Survey and Sampling Protocols to improve knowledge lifecycle of PV panels. (c) Recommendations for official statistics (WEEE, Energy, Trade).
- Batteries: (a) Creation of a harmonized classification of battery chemistries. (b) Quantification of stocks and flows of batteries and the CRM they contain. (c) Definition of systems.
- ELV: Quantification of xEV battery stock in Norway using 4 different vehicle classification systems in order to draw a comparison and recommend a better classification.
- Mining Waste: (a) Survey of existing data providers (b) Creation of protocols for harmonization (c) Creation of non-technical practical roadmap to generate and share national data sets into ProSUM database based on existing practices.

'INSPIRE MR and EarthResourceML data models'

The EU INSPIRE Mineral Resources data model and its International counterpart, ERML, have been improved in the frame of ORAMA. A new data model allowing harvesting aggregated data at National level has been created for the automatic feeding of the e-Minerals Yearbook.

Main Results:

- Technical Guidelines and Training Materials
- Webinars
- Recommendations
- Deliverables
- Final Technical Report

Future Events

- E-waste World Conference and Expo



14-15th of November 2019



Kap Europa, Frankfurt Messe
Frankfurt, Germany



<https://www.ewaste-expo.com>

- ORAMA's Final event



22nd of November 2019



Hôtel Le Plaza, Boulevard
Adolphe Max, 1000 Brussels
Belgium



<https://www.eurawmaterialsweek.eu/event>

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Optimising quality of
information in **RAW**
MAterials data collection
across Europe



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Aim of ORAMA

- Improve data availability, geographical coverage, accessibility, standardisation, harmonisation, interoperability, quality and thematic coverage of primary and secondary raw materials.
- Build on results of past and ongoing projects such as Minerals4EU, ProSUM and MICA to identify best practices, develop practical guidelines and provide training to meet the specific needs.
- Demonstrate how to create more robust Material System Analysis studies and reliable Sankey diagrams for stocks and flows of raw materials.

About the Project

Information on the resources and production volumes of mineral raw materials needs to be easily accessible from a single source. The solid knowledge -base will support decision making within the metal refining and manufacturing industry, or in research and education programmes.

The two-year ORAMA project (Optimising quality of information in RAW MATERIALS data collection across Europe) started on 1 December 2017. The project supports the further development of the Raw Materials Information System (RMIS). ORAMA will identify the best practices in collecting information on raw materials.

Projects Partners



Projects Findings

Primary Raw Materials

The EU is highly dependent on primary raw materials (PRM) and to ensure for adequate planning for future supplies it is important to be able to access data on PRMs that is comparable on a European level. There are currently significant knowledge gaps regarding European PRM resources. The ORAMA project has undertaken a comprehensive review of all available PRM data and made recommendations on how they can be improved and harmonised as well as providing case studies and examples of good practice that allow information sharing at different levels.

PRM Technical tools developed :

The ORAMA project recommends that the best tool for the harmonisation of mineral resource data is the United Nations Framework Classification for resources (UNFC) and has created a range of training materials to enable its use. ORAMA has also compiled case studies from European countries, where a variety of different types of standards are used to report PRM data, to show good practice and how the UNFC can harmonise previously incomparable data. It is hoped that these resources can provide organisations, such as geological surveys and national statistical agencies, who are responsible for the collation of mineral statistical data at a national level, with the required tools to convert existing data to UNFC for the compilation of pan-European resource and reserve estimates.

Secondary Raw Materials

Securing responsible sources of secondary raw materials (SRM) as well as increasing recycling are complex challenges. The ORAMA project has analysed data collection methods and recommendations from past and ongoing projects. It has identified best practices, developed practical guidelines and provided training to better understand SRM from batteries, electronics, vehicles and mining waste in Europe and, in so doing, allow policymakers to make informed policy decisions to increase the supply of secondary raw materials.