

EUROGEOSURVEYS



Activities of EurGeoSurveys on mineral resource data harmonization

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40 Years Listening to the Beat of the Earth

EGS Strategic Vision: towards a European Geological Service



European Geological Knowledge Base and Geological Service for Europe



www.eurogeosurveys.org







3 PILLAR STRUCTURE







European Minerals Yearbook

- The first official European Minerals Yearbook: 15th October 2015: in Brussels, was launched in the frame of the Raw Materials Diplomacy Dialogue.
- Innovative comprehensive source of minerals statistics
- Can facilitate the European Union decision-making on investment planning and can be used to benefit the European economy, industrial development and trade and the lives of European citizens.
- Alongside data for primary minerals, the European Minerals Yearbook includes available data for mineral-based waste generation, treatment and trade.
- It presents national level statistical data for 40 European countries. All the data are accessible digitally through the European Minerals Knowledge Data Platform and provide the resource potential of primary and secondary mineral sources in Europe.
- **65 commodities from primary** minerals with a focus on the 20 (later 25) critical raw materials (CRM) for the EU, covering a 10-year span for production and trade.







Data service: INSPIRE

Responsible authorities including Geological Surveys have to register mineral resources, reserves or endowments with the indication of the reporting codes, classification systems.



- This infrastructure enables the sharing of spatial information among public sector organisations, facilitate public access to information across Europe.
- Based on the infrastructures for spatial information established and operated by the Member States of the European Union.





Unique pan-European datasets (mineral deposits, production, trade, ...)



http://www.eurogeosurveys.org/projects/promine/

ProMine mineral deposits database 12,979 records

http://www.minerals4eu.eu/

Europe	ean Minerals Knowled	lge Data Platform (EU-N	1KDP)
A simplified, u	ser-friendly and efficient access to al through the 'Minerals4EU	I available and new data related to mine ' Knowledge Data Platform.	ral resources
DATA STATES	AAT VEVEN MAR VEVEN We do the share that are ordered accesses nearest mass	HINTER PARAMETER	NEWS March 10, 2016 The Minerals4EU Foundation, the new private-public bridge for the EU Raw Materials Sector Following the huge success of the European Intelligence Network on the Supply of Rew Materials Oriental-SEC Direct, but
	CONTROL OF THE CONTRO		August 24, 2015 Dependent 24, 2015 Dependent 24, 2015 More than 17 European Geological Surveys are serving their national data and over 190 documents related to European mineral potential are available.
Back to Menu LIL EUROPEAN MINERA	HOME	DATA SEARCH MA	P VIEWER YEARBOOK
Welcome to the first edition of the new This Yearbook contains data for prin mineral-based waste generation, trea	w 'European Minerals Yearbook'! nary minerals production, trade, re- tment and trade. It also contains c	sources and reserves; and for second ase studies relating to the recovery o	lary materials it contains data for f 10 commodities from key waste
streams. Please select the data you wish to vi by category or case study).	ew from one the following 4 options	(primary minerals by country or by co	ommodity; or secondary materials
We would be pleased to receive any on here >>	comments you may have relating to	this Yearbook, please send them to	<< contact e-mail to be inserted
	C O	8	9
BY COUNTRY	BY COMMODITY FOR PRIMARY MINERALS FO	BY CATEGORY OR MINERAL-BASED WASTE FLOWS FOR C	DATA SEARCH ASE STUDIES ON COMMODITIES
Albania 👻	Aggregates and rel 💌	Batteries and accur OTHER VIEW	PROMINANCE AND REARBOOK-RELATED DOCUMENTS
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Infrastructure – EGDI examples



OneGeologyEurope; Surface

geology of Europe in 1:1 mil. Using

distributed architecture, including ISO19115 metadata and WMS/ WFS



http://www.europe-geology.eu



Mineral deposits; Compiled and harmonised through a number of projects (ProMine, EuroGeoSources, Minerals4EU) using distributed architectures, ISO, OGC and CGI standards



EMODnet-geology; Marine substrate map. Currently in 1: 1 million, but aiming for 1: 250 000 covering all European waters



GEMAS; geochemical mapping of agricultural and grazing land soils of Europe









ORAMA Project

- Optimising quality of information in RAw MAterials data collection across Europe
- ORAMA project is funded by European Union's Horizon 2020 research and innovation programme. Objective is to create a system to transfer information stored at national level to the EU common information system. This public service will show which metallic raw materials are produced in different parts of the EU, in which quantities and how much is imported to the EU.
- Identification of the best practices in collecting information on raw materials (WP1 & WP2).
- Lead Partner: Geological Survey of Finland (GTK)







ORAMA Project





ORAMA & JRC RMIS Joint Workshop:

13th June 2019. Joint Research Centre, Ispra, Italy

The ORAMA project (Optimizing quality of information in RAw MAterial data collection across Europe) focuses on optimising data collection for primary and secondary raw materials in the Member States of the EU. A cornerstone to the EIP on Raw Materials is the

...present to key stakeholders the methodologies it has developed around raw material enhancing data across Europe, using such tools as the UNFC system.

The ORAMA project has close ties with the Joint Research Centre's Raw Materials Information System (RMIS). The RMIS was launched in 2015 to facilitate key information and knowledge needs of the European Commission and of the Member States on non-food, nonenergy raw materials. It is Europe's principal tool for those wishing to access data on raw materials.

This workshop will focus on sharing the outcomes of the ORAMA project. During the morning session the emphasis will be on the raw material data network in the EU looking at data collection, presentation and use. In the afternoon, there will be parallel workshops dedicated to introducing the detailed results and guidance for primary and secondary raw materials data. The programme will be split by a lunch time poster and banner session where the results of the ORAMA research will be displayed alongside those of other stakeholders present at the event.





PRELIMINARY AGENDA

Vedn	esday 12 th June							
9.00-	Dinner - La Scuderia, VILLA BORGHI, Piazza Borghi, 1, 21020 Varano Borghi (VA)							
2.00	Hosted by the ORAMA project this will be an informal opportunity to meet with other							
	delegates and the ORAMA and JRC teams.							
hurso	nursday 13 th June							
9.00- 2.00	 ORAMA: overview, objectives, outcomes and relation to RMIS, Perttu Mikkola, GTK Statistics on primary raw materials supply chains and products, Alin Popescu, 							
	 EUROSTAT tbc Improving environmental and material accounting towards robust supply chain and stock-flow materials databases, Arnold Tukker, EIT PANORAMA The role of European Geological Surveys in data collection of raw materials, Slavko Solar, EGS tbc Developments in the RMIS' commodity-specific material flow analyses (MFA), Cristina Torres De Matos, JRC Towards harmonized MFAs, Daniel Mueller, MINFUTURE Recent results and future plans in the Community R&D in the secondary raw materials and circular economy domain, Arnoldas Milukas/Marcin Sadowski, EASME 							
2.00	Lunch with poster & banners session To complement the morning session a poster and banners session will be held during lunch. Delegates are invited to display posters and banners from their own research.							
<u> </u>	ssion will focus on national minora							

This session will focus on national mineral resource data, and how the harmonization of such data can be achieved, by using tools such as UNFC.



Introduction, training material and guidance for secondary raw materials:

- Waste Electrical & Electronic Equipment
- Photovoltaic Panels
- Batteries
 End of Life Vehicles
- End of Life Venicle
 Mining Waste
- Discussion

NB: A shuttle service will be provided between the venue and Malpensa Airport. Details will be circulated at a later date.



https://orama-h2020.eu/about-the-project/





MINTELL4EU: Mineral Intelligence for Europe

Co-ordinator: Geological Survey of Denmark and Greenland



Country/Region
Denmark
France
Spain
Cyprus
Italy
Norway
Slovenia
Sweden
Ukraine
Slovakia
Portugal
Greece
Croatia
Finland
United Kingdom
Baden-Württemberg, Germa
Germany
Ireland
Belgium
Hungary
Luxembourg
Serbia
Albania
Czech Republic
Federation of Bosnia and

Herzegovina





MINLAND Project

Co-ordinator: Geological Survey of Sweden.

Main goal: to ensure access to areas with actual or potentially valuable resources for mineral exploration and exploitation activities within the EU. Exploration and exploitation are required in order to secure European access to necessary raw materials, including critical raw materials (CRM). Main topics are:

1) create a knowledge repository

With current policies and best practices about land use planning a reference to existing data repositories and earlier and ongoing EU projects will be included.

2) facilitate minerals and land use policy making

Develop practitioner guidelines for linking land use- and mineral policies; linking implications for land use planning and mineral safeguarding.

strengthen transparent land use practices»

3) Adequate land use data; adequate geological information; INSPIRE compatibility; necessary instruments, such as PERC and UNFC, etc. Case studies.

4) Networking

http://minland.eu/project/













Additional relevant EGS activites

- Survey on classification systems and UNFC.
- Annual representation of the EuroGeoSurveys on the UNECE EGRC Meetings.
- **Development of communication** on data harmonization. Meetings:
 - Dublin (2014),
 - Uppsala (2015),
 - Vienna (2015),
 - Athens (2016),
 - Lisbon (2016),
 - Kyiev (2017)
 - Brussels (2017)
 - Budapest (2018)
 - Rome (2018)
 - Trondheim (13-15 May 2019)
- Dissemination activity (UNFC)



- Specific data harmonization activity in EU and national projects (UNFC)
- MoU between UNECE and EGS since 2018.







Milestone: publication about the potential application of UNFC and international reporting codes

Bulletin of Hungarian Geological Society

- http://epa.oszk.hu/01600/01635/00452/pdf/
- Cs. Baksa, T. Fancsik, G. Katona: Preface to the special volume dealing with the national and international practice of the mineral resource inventories.
- Z. Horváth, K. Sári, B. Fodor: **Overview** of the international mineral resource classification framework and the reporting standards for solid minerals
- A. Nádor: An overview of the international classification and reporting systems for **geothermal energy** and the first attempts to bring Hungarian practice in line with these systems
- Zs. Kovács: Domestic practice with reference to the **hydrocarbon inventory** of Hungary and the uniform interpretation and correlation of classification, in line with international systems
- Z. Horváth, K. Sári: The modernisation of the Hungarian **non-metallic mineral resource** inventory based on the international mineral classification framework and reporting standards
- Z. Püspöki, Mrs Hámor M. Vidó, K. Sári, R. Szeiler, T. Fancsik: Facilities for, and deficiencies of the registry of Hungarian **coal resources**
- Gy. Falus, Á. Szamosfalvi: Overview of international systems for the registration of carbon dioxide geological storage potential









Conversion guideline











Conversion: Aggregates and industrial minerals

National – status of the mine	CRIRSCO	UNFC – E	UNFC – F	National – geological knowledge	CRIRSCO	UNFC – G
Active	Mineral	1	1	А	Measured Resources	
	Reserves			В	or	1
Suspended		2	2	Ca a ord	Proved Reserves	
	Minoral			$C1 - 1 - 3^{10}$ complexity		
Closed	Resources			C1 – 4 th complexity	Indicated Resources or	2
Explored area				C2	Probable Reserves	۷

				Original classification			After conversion			
Site ID	Raw material	Status of the mine	Complexity group (hypothetic)	A+B	C1	C2	Proved Reserves 111	Probable Reserves 112	Measured Resources 221	Indicated Resources 222
Site 1	Brick clay	active	1	2 158 322	4 062 500	3 460 700	6 220 822	3 460 700	0	0
Site 2	Sand	suspended	1	0	167 638	0	0	0	167 638	0
Site 3	Sand	closed	1	0	17 000	24 000	0	0	17 000	24 000
Site 4	Basalt	explored area	1	0	0	47 708 214	0	0	0	47 708 214





From national inventory to the UNFC via CRIRSCO **Original classification** 2500 **CRIRSCO - without Modifying Factors** 200 250 **CRIRSCO - with Modifying Factors** ົ້ 150 Noillin 100 UNFC 200 2500 ິ້ມ 1500 ທີ່ 1000 Transdanubia 50 2000 million m³ -Hungary 1 111 **^cu 1500 iiii** 1000 Large 50 1 112 volume of resources 221 and 500 222 reserves for 0 otherclastic stones and oreanic sed. industrial eravel stone sand mixed 124 small amount for sands.





Conversion: Hydrocarbons (Zsolt Kovács)



	UN	Hungarian inventory		
E category			F category	State of Production
1.1	Commercial Projects	1.1	On Production	Producing reservoirs in producing fields
1.1		1.2	Approved for development/ developed non- producing	Intermission of producing of reservoirs in <i>producing</i> <i>fields</i> (produced but non producing in the time of evaluation)
1.1		1.3	Justified for Development/ undeveloped non- producing	Non producing reservoirs in <i>producing fields</i> (never produced)
2	Potentially Commercial Projects	2.2-2.3	Development On Hold or Unclarified	Non producing reservoirs in non producing fields
3.2-3.3	Non Commercial Projects	2.2- 2.3	Development Unclarified or Not Viable	Non producing reservoirs with high inert (CO2, N2) gases & Abandoned reservoirs with minimal resoruce



G1+G2 quantity data distribution based on reservoir and field production and HC quality Analysis Sum recoverable oil = 100%, sum recoverable gases = 100%







Summary



- The European Minerals Yearbook is a powerful tool to provide proper data for minerals. Anthropogenic Resources can also be involved with additional improvements (National and EU funded projects).
- This period is favourable for development of the data existing infrastructure and to improve data quality based also on national and international projects.
- In case of **proprer information on geological knowledge** and potential for mineral resources the **"G" categories** can be identified (G1, G2, G3,G4).
- The **state of the project** from the plan of exploration via exploitation to the closure and reclamation may be described **category "F"** (F1, F2,F3, F4).
- Existence or lack of different permissions (e.g. from environmental authority and from the society: local/regional acceptance by communities, settlements with economic considerations) "E" categories can be identified (E1, E2, E3).





Summary



- **Tested methodologies are viable** (data transformation from national to CRIRSCO then UNFC, from national to UNFC then to CRIRSCO)
- Improvement of infrastructure and reporting system (e.g. reporting forms) including inventory and the improvement of relevant legislations (e.g. content of reports, complexity of a deposit).
- Careful assessment of available datasets on mineral resources is needed.
- On national level national experts can contribute to the data harmonization (informal datasets), however the involvement of Competent Persons / Euro-Geologists may have additional benefits.
- Preparation of national/regional level guidances and the use of UNFC /UNRM system can efficiently contribute to the sustainable resource management on different levels taking into account social, economic and environmental concept.







EuroGeoSurveys ^{MB} cooperation is our strength and future

Thank you for your attention!

If you would like more information do not hesitate to contact us EuroGeoSurveys Secretariat 36-38, Rue Joseph II 1000 Brussels, Belgium Tel : +32 2 888 75 53 Fax : +32 2 503 50 25 E-mail: info@eurogeosurveys.org



