



GSEU

GEOLOGICAL SERVICE | FOR EUROPE

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GSEU WP2 TRAIN-THE-TRAINER COURSE

Module: Other national reporting systems to

UNFC

Level 2

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the European Union



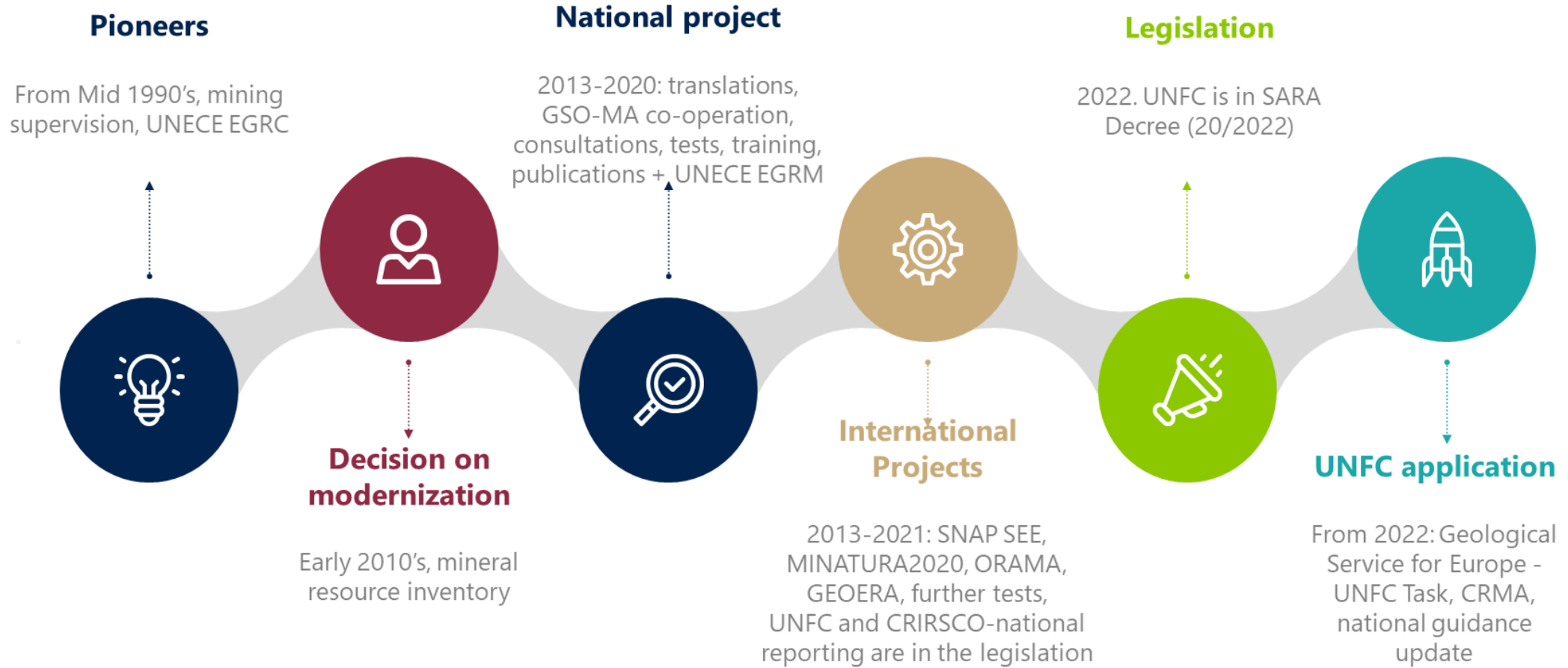
SARA Supervisory Authority
for Regulatory Affairs

Bridging Methodology

- General Principles of Bridging
- Bridging the Czech National System to UNFC
- **Bridging the ABC System to UNFC**
- Bridging the Austrian National System to UNFC



UNFC history in Hungary





UNFC in the legislation

- 20/2022. (I. 31.) SARA Decree on certain rules of law enforcement XLVIII of 1993 on mining



Experts

Mandatory contribution of qualified expert to reporting

Reporting form and data collection frequency

Annual, legally binding for companies, „G” category in the form, UNFC is derived information from two inventories

Solid and fluid type resources

+ mining wastes

Viable and Potentially-viable projects

UNFC 111, 112, 221 and 222 classes are defined

CRIRSCO-type reporting (JORC, PERC)

Defined in the context of the traditional reporting

A,B,C₁ and C₂ categories

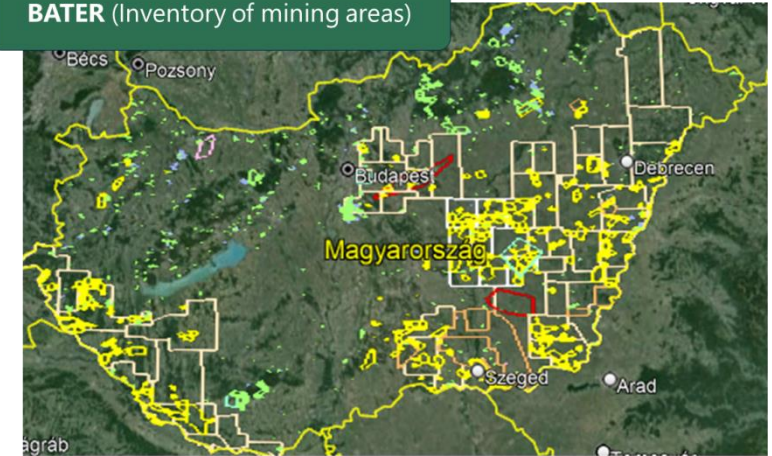
Evidence based, traditional



Resource management in Hungary

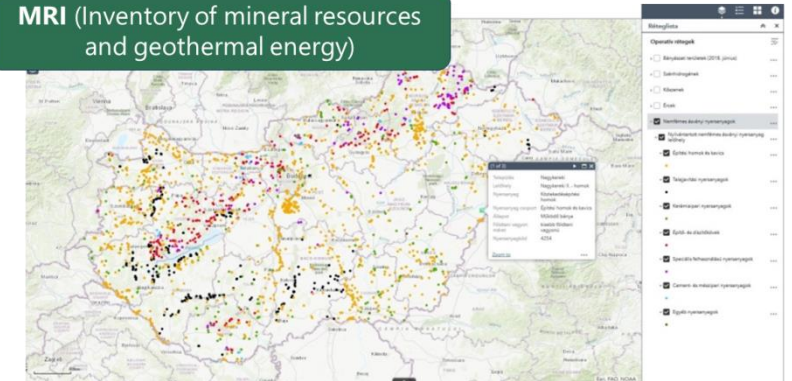
- The Directorate of the Mining Supervision in the SARA with its regional Mining Supervision Departments performs the procedures of mining activity.
- Act XLVIII of 1993 on Mining, the management of mineral resources is a set of decisions and measures of the mining inspectorate.
- 20/2022 (I.31.) SARA Decree on certain rules for the implementation of the Mining Act.
- In Hungary, mineral resources and geothermal energy are state-owned at their natural location.
- SARA maintains the State Register of Mineral Resources and Geothermal Energy (MRI, since 1953) and the inventory of mining areas (BATER) and inventories for closed and open mining wastes facilities.

BATER (Inventory of mining areas)



<https://sztfh.hu/nyilvantartasok/banyaszati-terulet-nyilvantartasa/>

MRI (Inventory of mineral resources and geothermal energy)



https://map.mbfisz.gov.hu/asvanyvagyon_kataszter/



Methodology of national resource classification

Mineral Resource Inventory (MRI)

- **Coal and ores (bauxite, U), non-metallic solid, hydrocarbones, geothermal energy, mining waste**
- **Basic** individual number, date, name of the mineral deposit, locality (xyz), code of change, block **Resource type**: inhomogeneity, knowledge (A-C2), geological resource in place, pillar, dilution, loss, production, exploitable resource, bottom, cover, quality depending on resources (gechemical, geotechnical)
- **Technical**: mining method, stability, fire and water hazards, temperature, drilling data
- **Admin.:** decisions, relation to mine plot

Inventory of mining areas / BATER

- **ID**: type of area management (mine plot, exploration, concession, initiations)
- **Type of decisions**: on exploration, establishment of mine plot, suspension, closure, merger, succesion,
- **Admin.:** name of licensee, date and number of decision and recording, registration
- **Other**: map viewer, resource data, all coordinates for a mine plot

Other permissions: Indirect, other authority, web



Data source for UNFC „E” category

Mineral Resource Inventory (MRI)

Mineral deposits and mine plots

- Mine status: operating, suspended, closed, free (for further exploration and mining), under construction.
- Exploration activity: mine plot-exploitation, presence of exploration



Inventory of mining areas / BATER

Only mine plots and exploration areas

- Mine status: according to decisions (Technical Operation Plan; TOP for exploration via suspension to mine closure)
- Exploration activity: see above

- Other :**
- Environmental and social licenses are integrated into TOPs,
 - Data Repository of SARA (Mining and Geoscientific)
 - Co-authorities and municipalities: decisions and internet (e.g. public hearing)



Data source for UNFC „F” and „G” categories

„F” category

Mineral Resource Inventory (MRI)

- Secondary role; mine status and exploration; other:



Inventory of mining areas / BATER

Main datasource: Technical Operation Plan for exploratin via suspension to mine closure, and exploration activity.

„G” category

Mineral Resource Inventory (MRI)

- Level of knowledge on mineral deposits

Inventory of mining areas (BATER)

- Secondary role (resource data available due to relationship with MRI)

Other :

- Data Repository of SARA (Mining and Geoscientific)
- Internet (e.g. feasibility studies)



Category	General knowledge	Knowledge on additional parameters	Sampling, recovery
A	Extrapolation is forbidden	Groundwater Tectonics 	Min. 80 % full logging Boreholes
B	Extrapolation is allowed		Min. 80 %, in boreholes more than half with logging
C ₁	Extrapolation based on similarities		Sampling; less than in category B
C ₂	Extrapolation single observations		Minimum



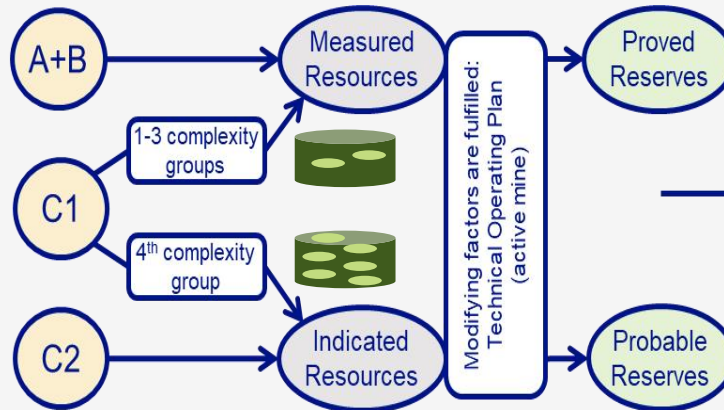
Mehodology for UNFC classification

National classification and reporting

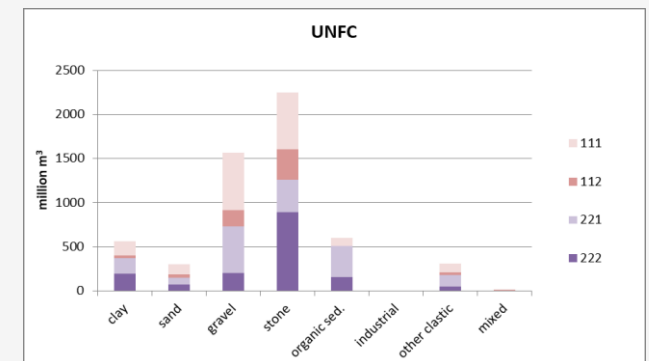
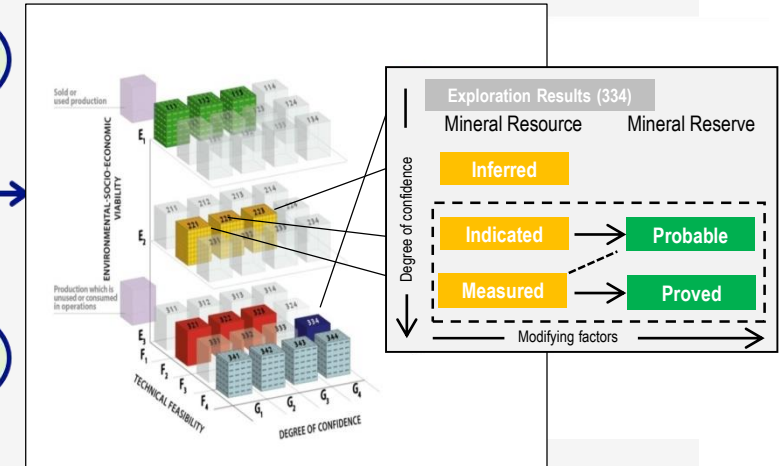
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C₁	Extrapolation based on similarities		Sampling: less than in category B
C₂	Extrapolation single observations		Minimum

Example for a regional level data management (North Eastern Hungary)

National to CRIRSCO



From CRIRSCO to UNFC





Mehodology for UNFC classification

	UNFC code	Description of cases with valid licences (TOP)	UNFC name
1	E1.1., F1.1., G1+G2	Mining plot with extraction TOP (Technical Operation Plan).	viable project
2	E1.1., F2., G1+G2	A newly established mining plot that does not have a TOP yet. Within 5 years from the date when the authority decision on establishing the mine becomes final, the licensee must submit the extraction TOP.	viable project
3	E2., F2.2., G1+G2	Mine that currently has no TOP, but neither tendering, nor new licensee, nor mine closure are not the case. In this case, the mining authority obliges the licensee to submit a TOP.	potentially viable project
4	E2, F2.1., G1+G2	Mine or mineral deposit that has TOP for development or mine for which tendering is in progress. After cancellation of the mining right by the authority the mining right can be obtained again through a tender.	potentially viable project
5	E2, F2.2., G1+G2	Mine that has TOP for suspending mining activity. After suspending the activity, extraction can be restarted at any time.	potentially viable project
6	E3.3, F4, G1+G2	Mine that has TOP for mine closure and mine where mining activity has been permanently stopped. E.g. the landscaping and reclamation tasks are carried out; or mine where implementation of the mine closure TOP has already been approved by the mining authority.	non-viable project
7	E3.1, F2.3, G1+G2	Mine without licensee, after failed tendering. The mining right was tendered on two occasions but both were unsuccessful.	non-viable project

G category: State Register of Mineral Resources:
A,B,C1 and C2 (L/M complexity):
G1; C2 (High complexity):
G2 (D: G3)

Technical Operation Plan (TOP): permitting stages are closely related to the economic, social and environmental viability (E) of the project and technical feasibility (F); presence or lack of TOPs stages + other considerations

Considerations: Accessible periods for establishment of mine plots, renewals of TOP, permits: environmental, public hearing

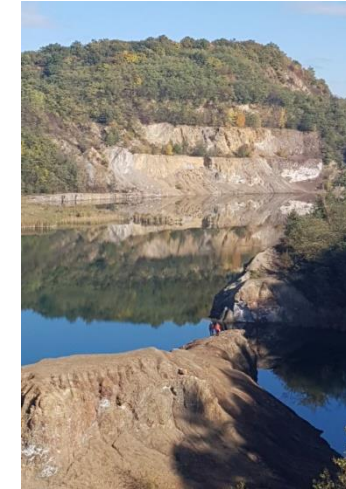
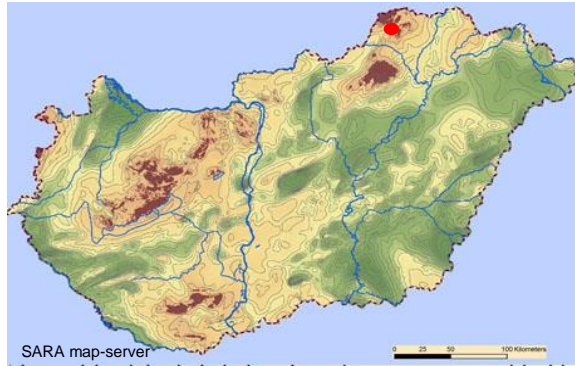
Benefits: All E,F,G related geological and mining data are available in the database of the mining inspectorate.

Limiting factors: access to environmental and public hearing information at other authorities and at local governments.





UNFC case study - Hungary



- Stratiform Pb-Zn
- Metasomatic Fe-carbonate
- Tectonically fragmented ore bodies
- Barite zone with sulphides (Pb, Zn, Ag, Sb, Cu)
- Epithermal systems (Hg, Ag, Sb, As enrichments).
- Historical mining area from 1487 (Ag)
- 1880's-1985: iron ore mining.
- New researches and explorations

- Detailed surface and underground exploration results
- 2600 deep boreholes (deepest: ~ 1000 m)
- Drillings analysis database of 32,000 samples (Földessy 2020)
- Documentations are at the University of Miskolc and at the SARA



UNFC case study - Hungary

	Data source	Description	UNFC
E category	Inventory of mining areas, and internet	First exploration report approved with resource data, detailed EIA is in progress, new extended exploration is in progress, public hearing in the frame of EIA is planned later. Establishment of new mine plot has not yet initiated. No information on feasibility study.	3.2
F category	Inventory of mining areas	Technical Operation Plan for the new exploration is approved. The technical feasibility for mining and processing is solved due to existing practices.	2.2
G category	Mineral resource and mining area inventories	Approved exploration report is available (2022) with proper identification of Measured and Indicated Resources. Reserve is not defined.	1,2 (3)



UNFC Classes Defined by Categories and Sub-categories							INSPIRE Code List
Produced	Sold or used production						
	Production which is unused or consumed in operations Future production that is either unused or consumed in the Project operations is categorized as E3.1. These can exist for all Classes of recoverable quantities *						
Total Products	Class	Sub-class	Categories			INSPIRE Code List	
			E	F	Gr		
Known Sources	Viable Projects <i>Estimates associated with Viable Projects are defined in many classification systems as Reserves, but there are some material differences between the specific definitions that are applied within different industries and hence the term is not used here. *</i>	On Production	1	1.1	1, 2, (3)	operating continuously operating intermittently	
		Approved for Development	1	1.2	1, 2, 3	under development	
		Justified for Development	1	1.3	1, 2, 3	pending approval	
	Potentially Viable Projects <i>Not all Potentially Viable Projects will be developed</i>	Development Pending	2 ^b	2.1	1, 2, 3	feasibility evaluation of the ore deposit	
		Development On Hold	2	2.2	1, 2, 3	care and maintenance retention	
	Non-Viable Projects <i>Non-Viable Projects include those that are at an early stage of evaluation in addition to those that are considered unlikely to become Viable developments within the Foreseeable Future. *</i>	Development Unclassified	3.2	2.2	1, 2, 3	resource assessment (geological interpretation, approximate calculation of the resource)	
		Development Not Viable	3.3	2.3	1, 2, 3	closed abandoned historic	
	Remaining Products not developed from identified Projects <i>Remaining Products not developed from identified Projects or Prospective Projects may become developable in the future as technological or environmental-socio-economic conditions change. Some or all these estimates may never be developed due to physical and/or environmental-socio-economic constraints. *</i>			3.3	4	1, 2, 3	
	Potential Sources	Prospective Projects		3.2	3.1	4	subsurface exploration
				3.2	3.2	4	detailed surface exploration
Remaining Products not developed from Prospective Projects		3.2	3.3	4	regional reconnaissance		
		3.3	4.1	4			
		3.3	4.2	4			
		3.3	4.3	4			

From UNFC Guidance for Europe (2022)



Lessons to learn

Strengths and opportunities

- **Legally binding data provision for companies** to Authority (SARA); the operation of inventories is legally binding; almost 100% of UNFC data need
 - **Modern database** with a developing e-system
 - **Department and experts** are on board with openness for further developments
 - **Data** in both inventories are **based on decisions**.
- National reporting, CRIRSCO-type **reporting and UNFC, preliminary bridging are in the legislation**
 - **UNFC „G”** category is in the **reporting form**
 - **UNFC Methodology**: for all types of mineral deposits there are results with UNFC, semi-automatic
 - **UNECE (2009) and (2019) in Hungarian**; translation of UNFC Guidance for Europe is in progress

Weaknesses and threats

- **Historical data need to be considered** (pl. UNFC E3, F4, G1-2-3)
 - UNFC related data need to be collected from **separated databases and in some cases, for category „E” contact is needed to co-authorities, or searching via internet.**
 - Recent UNFC guidance will be updated according to the UNFC Guidance for Europe (2022)
- No threats, just benefits (with proper application of the UNFC).



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Thank you for your attention

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