Bridging from different International and National Systems to UNFC
Hungarian Case

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Hungary
The Directorate of the Mining Supervision with its regional Mining Supervision Departments performs the authority procedures of mining activity.

Act XLVIII of 1993 on Mining is a pillar for resource management.

20/2022 (I.31.) SARA Decree on certain rules for the implementation of the Mining Act provides more details e.g. for resource inventory.

Other selected specific regulations: 13/2022 SARA Decree on mining wastes and Act CL (2016) on general administrative regulations.

SARA maintains the State Register of Mineral Resources and Geothermal Energy (since maintained 1953) and the inventory of mining areas (since 1995).

In Hungary, mineral resources and geothermal energy are state-owned at their natural location.
UNFC activity in Hungary

Brief history

Pioneers
From Mid 1990’s, mining supervision, UNECE EGRC

National project
2013-2020: translations, GSO-MA co-operation, consultations, tests, training, publications + UNECE EGRM

Legislation
2022. UNFC is in SARA Decree (20/2022)

Decision on modernization
Early 2010’s, mineral resource inventory

International Projects
2013-2021: SNAP SEE, MINATURA2020, ORAMA, GEOERA, further tests, UNFC and CRIRSCO-national reporting are in the legislation

UNFC application
From 2022: Geological Service for Europe - UNFC Task, CRMA, national guidance update
Selected legislative aspects
Including reporting and UNFC

- 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
Bridging option to UNFC
With CRIRSCO

National classification and reporting

<table>
<thead>
<tr>
<th>Category</th>
<th>General knowledge</th>
<th>Knowledge on additional parameters</th>
<th>Sampling, recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Extrapolation is forbidden</td>
<td>Groundwater Tectonics</td>
<td>Min. 80% full logging</td>
</tr>
<tr>
<td>B</td>
<td>Extrapolation is allowed</td>
<td></td>
<td>Boreholes</td>
</tr>
<tr>
<td>C₁</td>
<td>Extrapolation based on similarities</td>
<td></td>
<td>Min. 80%, in boreholes more than half with logging</td>
</tr>
<tr>
<td>C₂</td>
<td>Extrapolation single observations</td>
<td></td>
<td>Sampling: less than in category B</td>
</tr>
</tbody>
</table>

National to CRIRSCO

<table>
<thead>
<tr>
<th>Measured Resources</th>
<th>Proved Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+B</td>
<td></td>
</tr>
<tr>
<td>C₁</td>
<td>Measured Resources</td>
</tr>
<tr>
<td>C₂</td>
<td>Probable Reserves</td>
</tr>
</tbody>
</table>

From CRIRSCO to UNFC

Exploration Results (334)
Mineral Resource

Degree of confidence

- Inferred
- Indicated
- Measured
- Probable
- Proved

Modifying factors

Example for a regional level data management
(North Eastern Hungary)
### National reporting system to UNFC

**With UNECE UNFC Guidance for Europe (2020)**

<table>
<thead>
<tr>
<th>UNFC code</th>
<th>Description of cases with valid licences (TOP)</th>
<th>UNFC name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. E1.1., F1.1., G1+G2</td>
<td>Mining plot with extraction TOP (Technical Operation Plan).</td>
<td>viable project</td>
</tr>
<tr>
<td>2. E1.1., F2., G1+G2</td>
<td>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.</td>
<td>viable project</td>
</tr>
<tr>
<td>3. E2, F2.2., G1+G2</td>
<td>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.</td>
<td>potentially viable project</td>
</tr>
<tr>
<td>4. E2, F2.1., G1+G2</td>
<td>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.</td>
<td>potentially viable project</td>
</tr>
<tr>
<td>5. E2, F2.2., G1+G2</td>
<td>Mine that has TOP for suspending mining activity. After suspending the activity, extraction can be restarted at any time.</td>
<td>potentially viable project</td>
</tr>
<tr>
<td>6. E3.3, F4, G1+G2</td>
<td>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.</td>
<td>non-viable project</td>
</tr>
<tr>
<td>7. E3.1, F2.3, G1+G2</td>
<td>Mine without licensee, after failed tendering. The mining right was tendered on two occasions but both were unsuccessful.</td>
<td>non-viable project</td>
</tr>
</tbody>
</table>

**G category:**
- A, B, C1 + C2 (L/M complex): G1
- C2 (High complex): G2 (D: G3)

**Access data to „E“ category:**
- TOP, Co-authorities
- Internet

**Benefits:**
- Most E, F, G related data is in the SARA Resource-management
Case study
Rudabánya

- 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
### Case study

**UNFC classification**

<table>
<thead>
<tr>
<th>Data source</th>
<th>Description</th>
<th>UNFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory of mining areas, and internet</td>
<td>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 (general business plan on the internet).</td>
<td>3.2</td>
</tr>
<tr>
<td>Inventory of mining areas</td>
<td>Technical Operation Plan for the new exploration is approved. The technical feasibility for mining and processing is solved due to existing practices.</td>
<td>2.2</td>
</tr>
<tr>
<td>Mineral resource and mining area inventories</td>
<td>Approved exploration report is available (2022) with proper identification of Measured and Indicated Resources. Reserve is not defined.</td>
<td>1,2 (3)</td>
</tr>
</tbody>
</table>

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**UNFC Classes Defined by Categories and Sub-categories**

<table>
<thead>
<tr>
<th>Class</th>
<th>Sub-class</th>
<th>Category</th>
<th>UNFC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>E</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>F</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>G</td>
<td>3</td>
</tr>
</tbody>
</table>

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**Key Sources**

- From UNFC Guidance for Europe (2022)
UNFC data management
Kibana visualization - project result

Fuctionality
- Selection by Project start time, by UNFC Category, by project name
- Spatial selection by bounding polygon
- Detailed attribute list and external link to repository

Benefits
- Clear up to date resource management information based on inventories
- Supporting maintenance of project status with visualization
Involvement in the GSEU project

Professional and technical support

Co-operation with GSEU WP2 T.3. (ICE-SRM) on trainings, training materials, promotion
Summary

- **Mandatory data collection** for primary raw materials (addressing CRMs) and for mining wastes, in addition to decades of experience with UNFC support resource-management and the fulfillment of the CRMA (Art. 21).

- **National project on modernization** of mineral resource inventory considering international reporting codes and UNFC with bridging to national reporting terms helps to prepare UNFC guidance on national level.

- **Presentations** on national and international forums, and **stakeholder consultations** including ministries, geological survey, authorities, professional society, mining association and universities effectively contribute to the deployment of the UNFC to support sustainable resource management. This, with **trainings** on national level also helps to stakeholders to be familiar with UNFC and **to build capacity** (including education).

- **Integration of bridging** between national reporting and international reporting and the UNFC to legislative document makes easier the data management, and supports the fulfillment of the CRMA (Art. 6.) as well.

- **Specific visualization** of UNFC linked to official inventories can support decision making on regional and national levels.

- **The Geological Service for Europe (GSEU) project** with considerations of updated UNECE documents facilitates the update on UNFC guidance on national level.
Thank you!

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Mining officer

UNECE
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