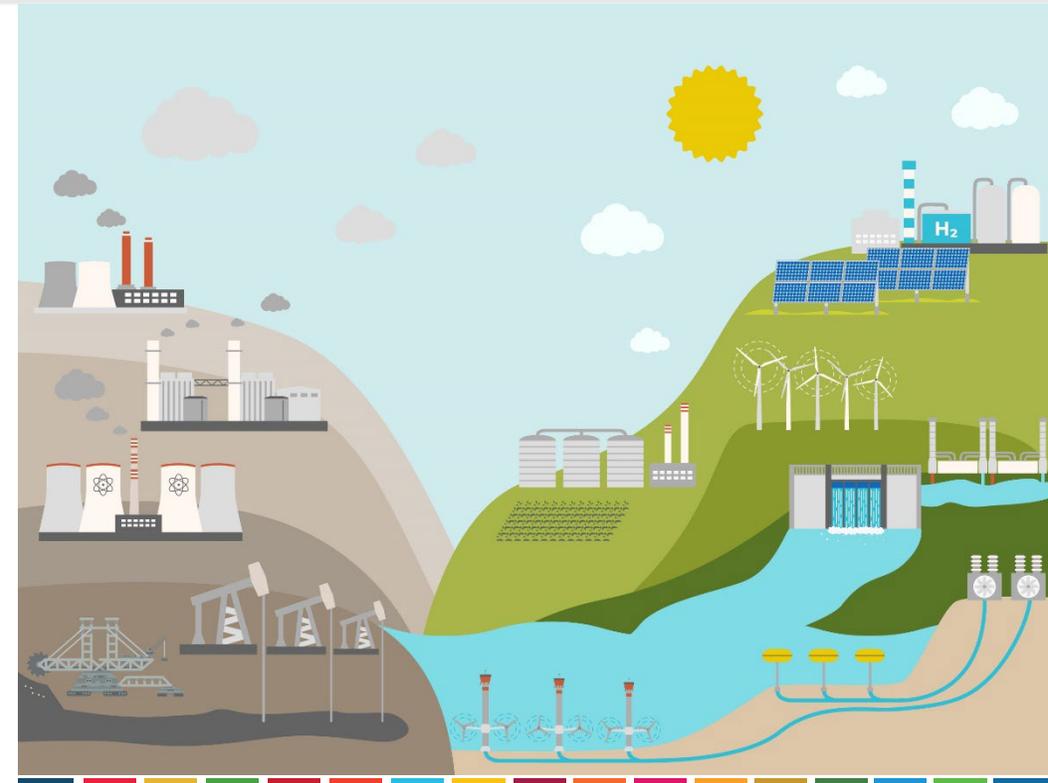


Bridging from the Czech Classification System of Mineral Deposits to UNFC

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Czech Geological Survey



RESOURCE MANAGEMENT WEEK 2024
ASSURING SUSTAINABILITY IN RESOURCE
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Content

- Legislative framework
- Brief description of the national classification/reporting system
- Mapping of Czech national system to UNFC

Legislative framework in the Czech Republic

- Minerals are divided into **reserved minerals** that constitute **reserved deposits** and belong to the state, and **non-reserved minerals** that constitute **non-reserved deposits** as an integral part of the land.
- Historically, certain important deposits of non-reserved minerals are declared as reserved deposits.
- 1952-1991 Soviet based ABC₁C₂ system
- 1991 - new national system introduced by amendment of the Mining Act No. 44/1988 Coll. in later amendments

Czech national classification/reporting system

	RESERVES				PROGNOSTICATED RESOURCES	
	EXPLORED		PROSPECTED		P	Q
	Free	Restricted	Free	Restricted		
ECONOMIC						
POTENTIALLY ECONOMIC						

	Geological reserves (All reserves in their original state, no losses and dilution considered)
	Mineable reserves (Economic reserves less mining losses)

The system of 1991 is not compatible with the CRISCO principles:

- All resources except for prognosticated are called „Reserves“.
- Mineable reserves do not take into account dilution
- Potentially economic „reserves“ are included in total inventory

Legislative framework in the Czech Republic

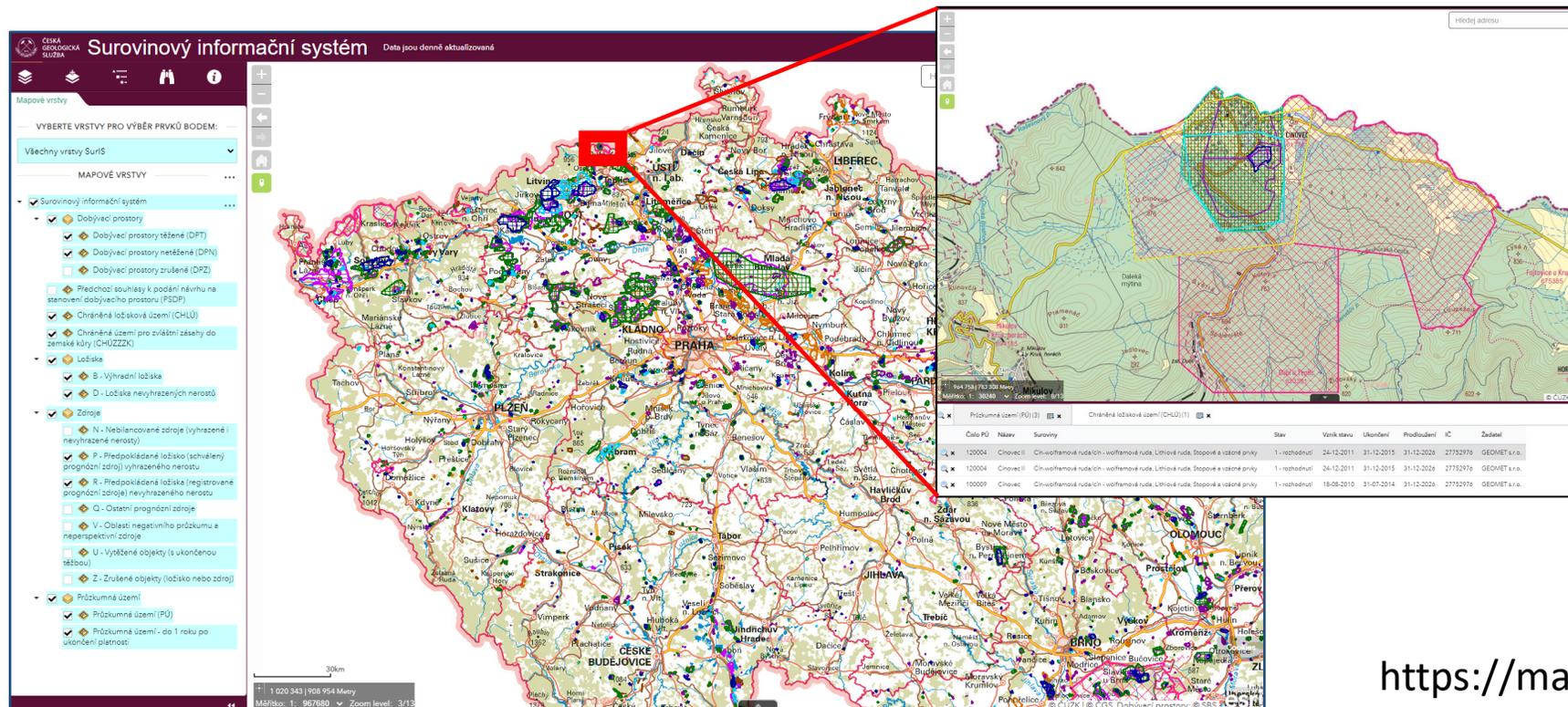
- National classification system is **obligatory** for all operators and so is the **annual reporting** in this system.
- Czech Geological Survey (CGS) is established by the Ministry of Environment and provides certain services also to the Ministry of Industry and Trade.
- CGS manages a database of all Czech deposits on behalf of the MoE and MoIT. All mining operators are required by law to submit annual reports on production and current reserves on their deposits to CGS. This information is considered confidential and can be published only as aggregated data or upon a written consent of the owner/operator.

Legislative framework in the Czech Republic

- The database further contains:
 - ✓ Technological quality, approval documents with reasoning, company reports – mostly at least temporarily confidential.
 - ✓ Geological setting, conflicts of interests, ownership history
- CGS also manages an archive of all reports on exploration results which can be also confidential for a certain period of time.
- Older research, exploration and technical reports are publicly available.

Raw Materials Information System - SurIS

SurIS contains data on all deposits (reserved, non-reserved, historic), protected deposit areas, exploration and mining licences and referencies to individual reports.



<https://mapy.geology.cz/suris/>

Czech national system and UNFC

Mapping document for the Czech system to UNFC has been elaborated in 2023 for reserved minerals. Document was prepared by CGS and a group of exploration and mining company experts after having a training session by experts from GTK Finland.



Methodology of bridging to UNFC

All national categories were plotted in a table with relevant reasoning:

Czech Mining Law Categories	UNFC Category	UNFC Sub-category	Reasoning
Approved Mineable Reserves <i>Approved Commissioning, Development and Mining Plan</i> <i>In operation</i>	111, 112	E1.1 F1.1 G1,2	Mineable Reserves at an operated deposit that has all necessary approvals for mining activities. Czech Mining Law definition of "Mineable Reserves" is approximate to CRIRSCO definition of "Reserves". In UNFC the CRIRSCO Reserves are E1F1G1,2.
Approved Mineable Reserves <i>Approved Commissioning, Development and Mining Plan</i> <i>In development</i>	111, 112	E1.1 F1.2 G1,2	Mineable Reserves at a deposit in commissioning/development that has all necessary approvals for mining activities. Czech Mining Law definition of "Mineable Reserves" is approximate to CRIRSCO definition of "Reserves". In UNFC the CRIRSCO Reserves are E1F1G1,2.
Approved Mineable Reserves <i>Approved Commissioning, Development and Mining Plan</i>	111, 112	E1.1 F1.3 G1,2	Mineable Reserves at a deposit that has all necessary approvals for mining activities which is active but currently not operated. Czech Mining Law definition of "Mineable Reserves" is approximate to CRIRSCO definition of "Reserves". In UNFC the CRIRSCO Reserves are
Mineable Reserves <i>Commissioning, Development and Mining Plan not approved</i> <i>Currently not operating</i>	221, 222	E2 F2.1 G1,2	Active projects that do not have approved Commissioning, Development and Mining Plan, but have already calculated "Mineable Reserves". E2: "Development and operation are expected to become environmentally-socially-economically viable in the foreseeable future." F2.1: "Project activities are ongoing to justify development in the foreseeable future." G1 and G2 are acknowledged in the CRIRSCO template for Reserves and Measured and Indicated Resources.
Economic Explored Free Reserves <i>Established Mining Area</i>	221, 222	E2 F2.1 G1,2	Active projects that have Established Mining Area, but do not have approved Commissioning, Development and Mining Plan. E2: "Development and operation are expected to become environmentally-socially-economically viable in the foreseeable future." F2.1: "Project activities are ongoing to justify development in the foreseeable future." "Explored Reserves"

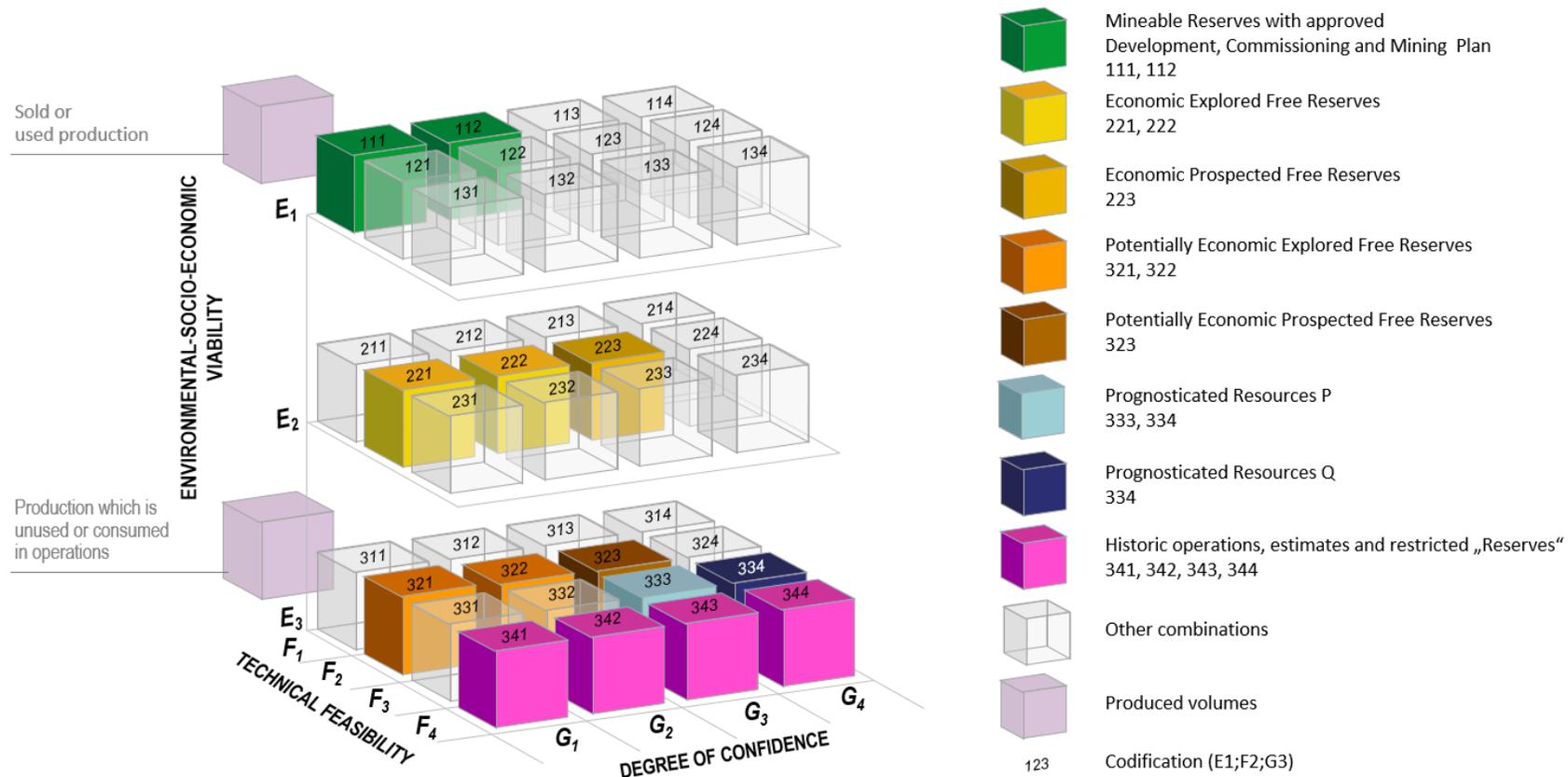
Methodology of bridging to UNFC

All national categories were then plotted to a 2D UNFC E vs. F matrix with G defined in each cell:

UNFC	F1.1	F1.2	F1.3	F2.1	F2.2	F2.3	F3.1	F3.2	F3.3
E1.1	"Approved Mineable Reserves" <i>Approved "POPD"</i> On Production G1,2	"Approved Mineable Reserves" <i>Approved "POPD"</i> Approved for Development G1,2	"Approved Mineable Reserves" <i>Approved "POPD", currently not operating</i> Justified for Operation G1,2						
E1.2									
E2				"Mineable Reserves" <i>"POPD" not approved</i> Development Pending G1,2					
				"Economic Free Reserves" <i>Established Mining Area</i> Development Pending "Economic Explored Free Reserves" G(1),2 "Economic Prospected Free Reserves" G3					
E3.1				Non-economic reserves in Economic Reserve blocks G1,2,3					
E3.2				"Economic Free Reserves" <i>Without Established Mining Area or Preliminary Approval to Establishing Mining Area</i> Development Unclassified "Economic Explored Free Reserves"	"Potentially Economic Free Reserves" <i>Established/Without Mining Area</i> Development Unclassified "Potentially Economic Explored Free Reserves" G(1),2		"Prognosticated Resources P" <i>Subsurface exploration works</i> Prospective Projects	"Prognosticated Resources Q" <i>Detailed surface exploration</i> Prospective Projects	"Prognosticated Resources Q" <i>Regional exploration</i> Prospective Projects

Methodology of bridging to UNFC

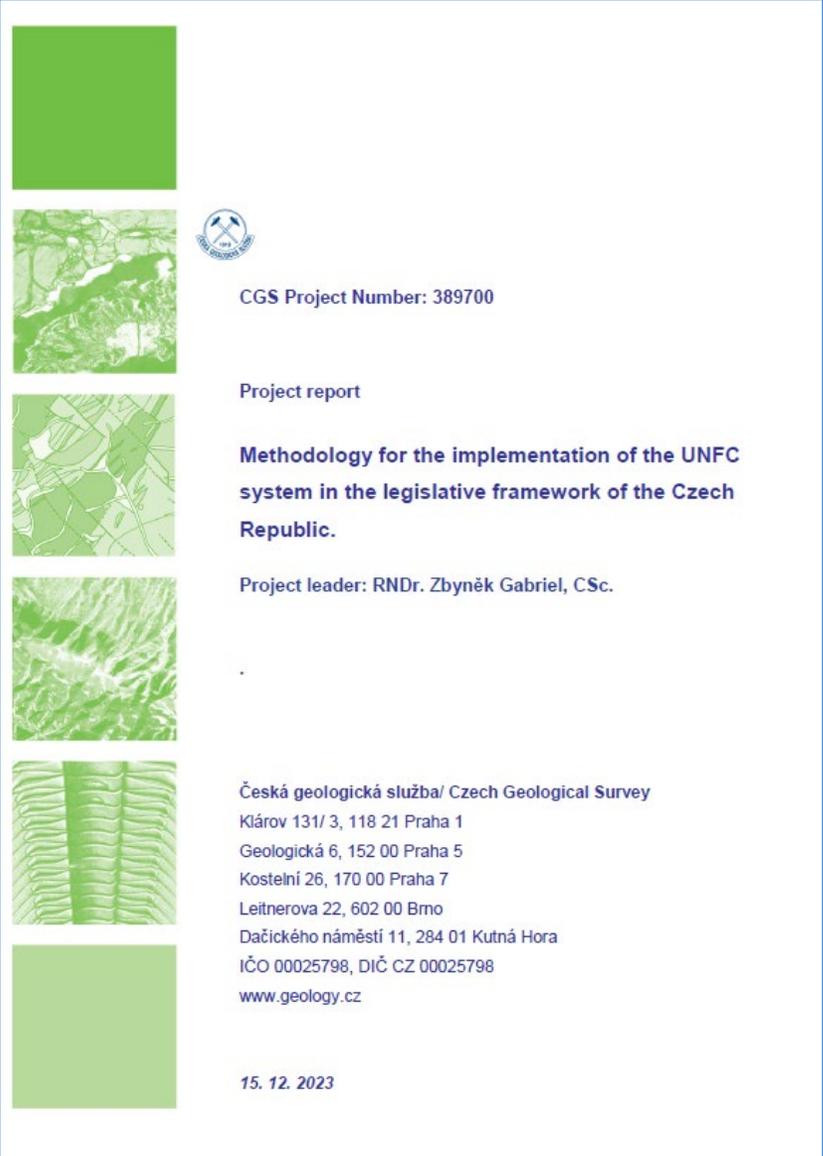
All national categories were also plotted to a 3D UNFC matrix:



Available publication

CGS Project Report:

„Methodology for the implementation of the UNFC system in the legislative Framework of the Czech Republic.“



The image shows the cover of a project report. It features a vertical column of six green-tinted images on the left side: a solid green square, a geological cross-section, a geological map, a topographic map, a geological structure, and another solid green square. To the right of these images is the text of the report cover. At the top right is the CGS logo, a circular emblem with a hammer and pickaxe. Below the logo is the project number 'CGS Project Number: 389700'. The title 'Methodology for the implementation of the UNFC system in the legislative framework of the Czech Republic.' is centered. Below the title is the project leader's name 'Project leader: RNDr. Zbyněk Gabriel, CSc.'. At the bottom right, the contact information for the Czech Geological Survey is listed, including several addresses in Prague and Brno, identification numbers, and the website 'www.geology.cz'. The date '15. 12. 2023' is printed at the bottom left of the cover.

CGS Project Number: 389700

Project report

Methodology for the implementation of the UNFC system in the legislative framework of the Czech Republic.

Project leader: RNDr. Zbyněk Gabriel, CSc.

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15. 12. 2023

Next steps

Clarify position of UNFC to the Czech law.

Ministry of Environment:

Any UNFC evaluation is a recalculation of resources/reserves. By law this can be done only within an exploration or mining licence.

Including historic estimates.

Financial support through the project „Rock environment and Natural Resource RENS” (SS02030023) is gratefully acknowledged.

THE VIEWS EXPRESSED ARE THOSE OF ZBYNĚK GABRIEL AND DO NOT NECESSARILY REFLECT THE VIEWS OF THE UNITED NATIONS.

Thank you!

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Date 23 | 04 | 2024, Geneva



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