



ENERGY



Layout of the application of the UNFC in assessing the resources and reserves of one of the fields in Serbia



**Training on data collection related to sustainable energy and water
resources management and monitoring and UNFC application**

Nur- Sultan, Kazakhstan, 19-20 June 2019

Energy and Mineral Resources of Serbia

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Energy and Mineral Resources owned by the Republic of Serbia and used in accordance with the law

- Law on Mining and Geology exploration (2015)

Mineral resources

Modifying factors

Reserves

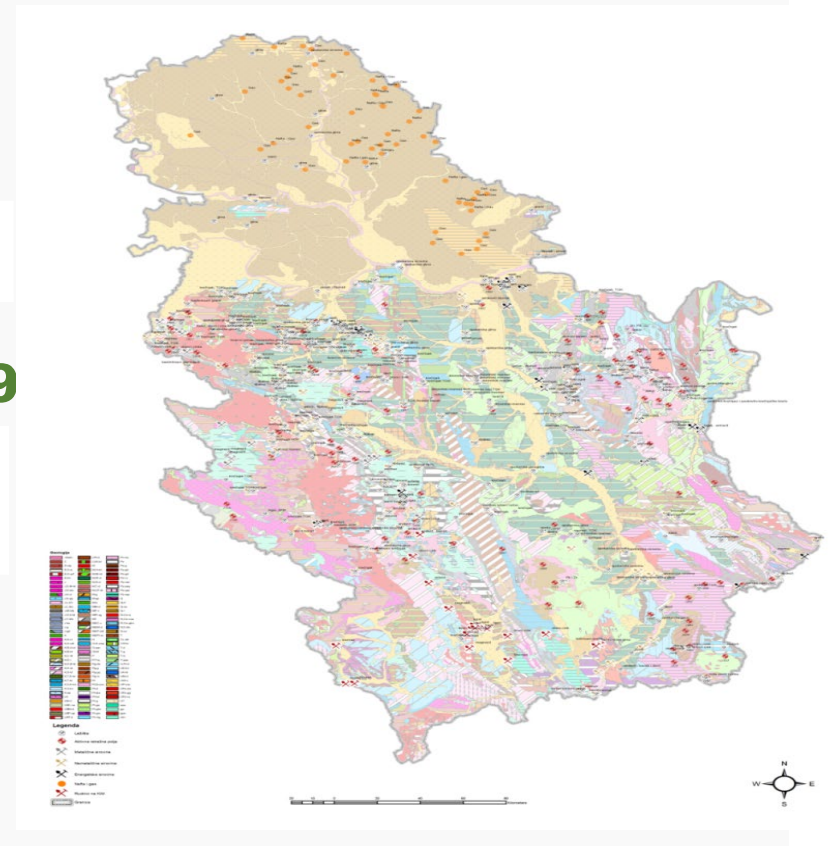
- Rolebook of of classification.(1979)

Geological reserves

Techniko-economical evaluation

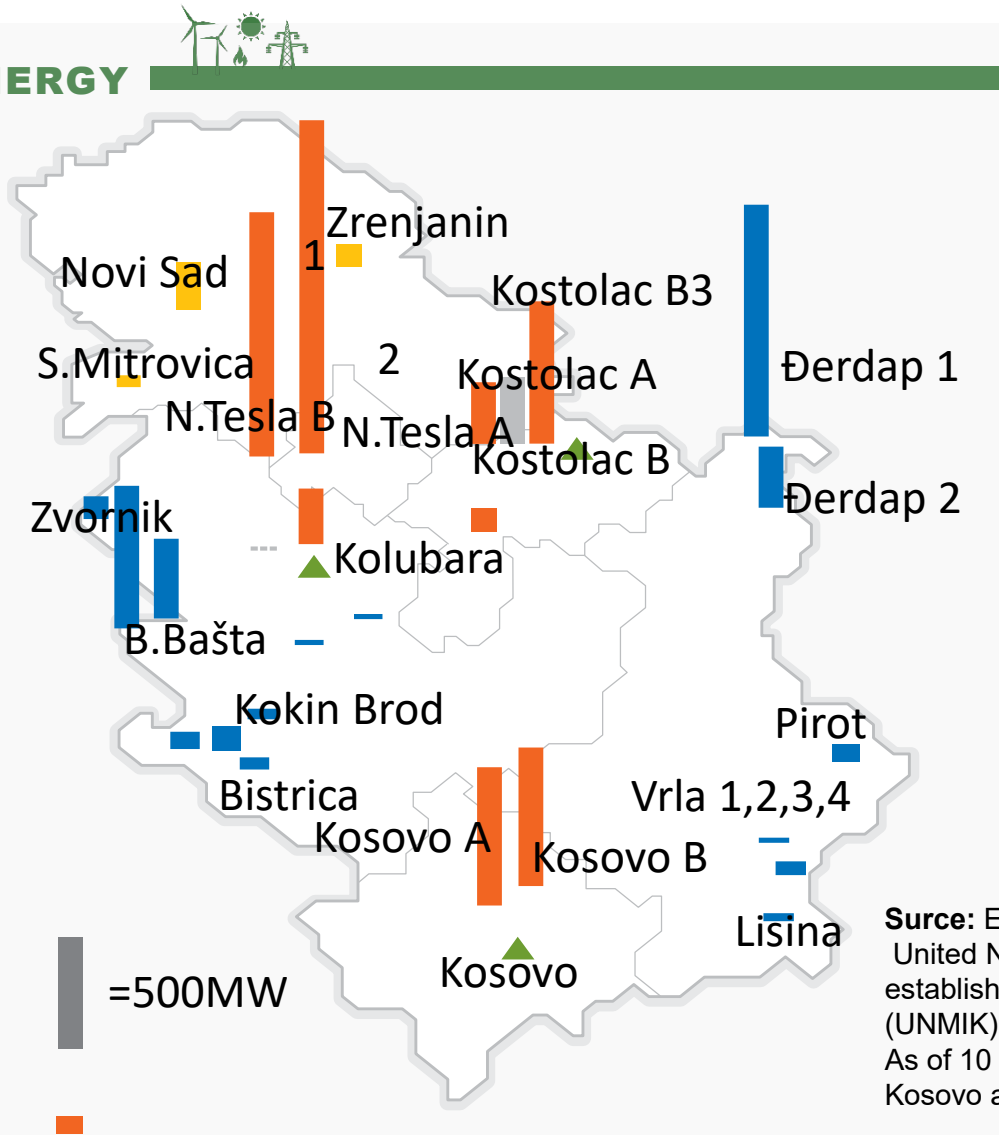
Balance or Non-balance reserves

Mineral resources and reserves are not harmonized with Geological reserves and Balance or Non-balance reserves



Installed Capacities – Generation Capacities

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Power plants

Net output capacity MW

THERMAL Power Plants	4,054
COMBINED Heat and Power Plants	336
HYDRO Power Plants	2,965



Coal , lignite mine

Source: EPS - Public Enterprise Electric Power Industry of Serbia; United Nations, Security Council Resolutin 1244 of 10 June 1999 and established United Nations Interim Administration Mission in Kosovo (UNMIK)
As of 10 June 1999, EPS does not operate its facillites on the territory of Kosovo and Metohija;

Statistical Office of the Republic of Serbia

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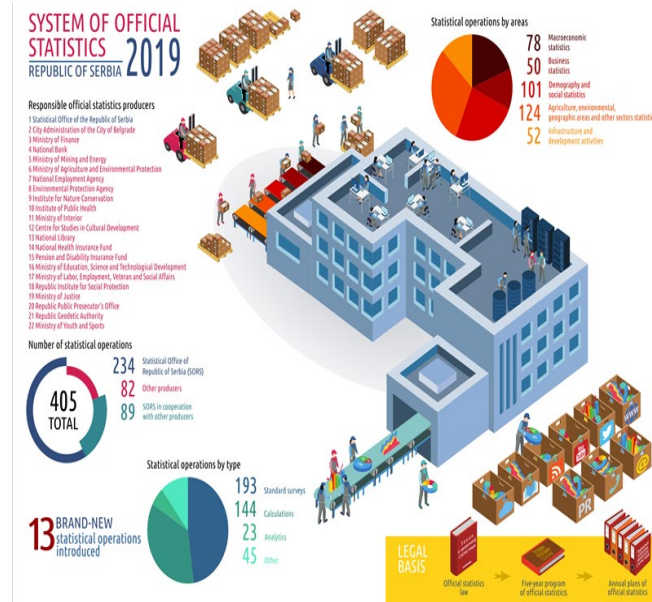


□ The Statistical Office of the Republic of Serbia (SORS) is the main producer and disseminator of official statistics, as well as the authorized professional agent, organizer and coordinator of the statistical system of the Republic of Serbia.

□ SORS performs statistical activities according to the five-year program and annual plans.

□ In scope of the international statistical system, the Statistical Office of the Republic of Serbia represents the official statistics of the Republic of Serbia.

- **REFERENCE METADATA**
- [01. Contact](#)
- [02. Metadata update](#)
- [03. Statistical presentation](#)
- [04. Unit of measure](#)
- [05. Reference Period](#)
- [06. Institutional Mandate](#)
- [07. Confidentiality](#)
- [08. Release policy](#)
- [09. Frequency of dissemination](#)
- [10. Accessibility and clarity](#)
- [11. Quality management](#)
- [12. Relevance](#)
- [13. Accuracy and reliability](#)
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Source: <http://www.stat.gov.rs>

Bulletin Energy balance, 2017

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INTRODUCTORY NOTES

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Data sources

Reporting units of energy statistics

Contents of rows in energy balance sheet

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Conversion Equivalents between Units of Energy

Balance of Electricity in 2016

Balance of Heat in 2016

Balance of Coal in 2016

Balance of Oil and Oil Derivates in 2016

Balance of Natural Gas in 2016

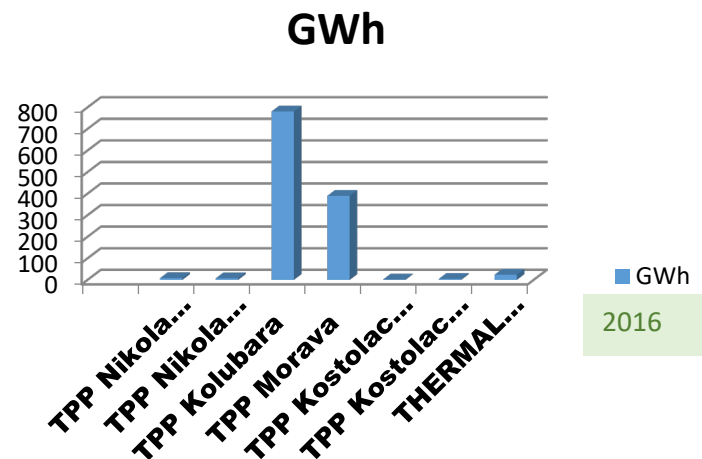
Balance of Geothermal Energy in 2016

Balance of Wood Fuels in 2016

Balance of Biogas in 2016

Total Energy Balance in 2016

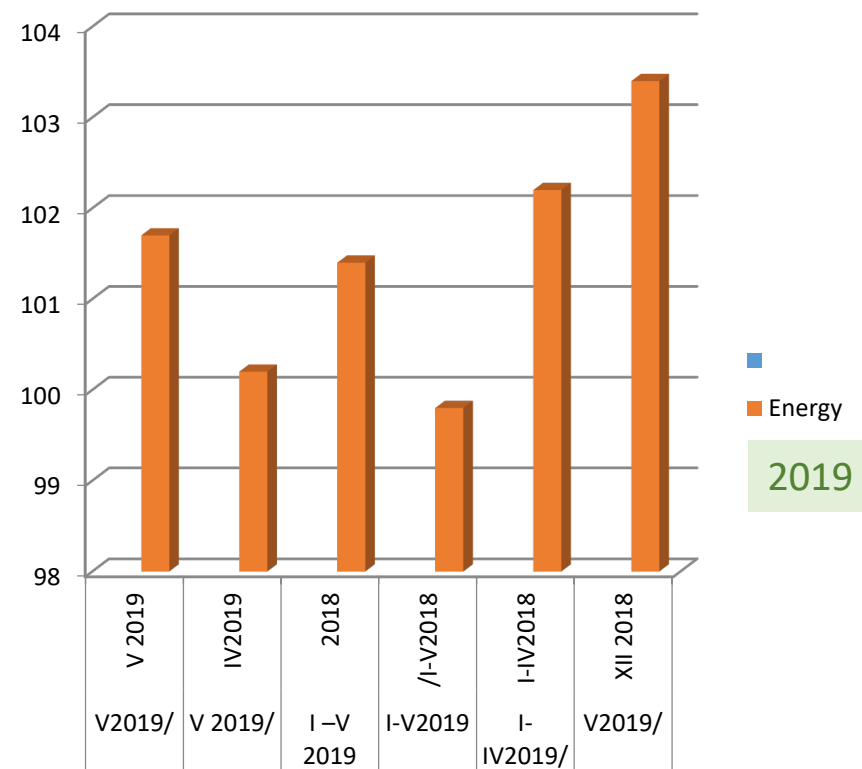
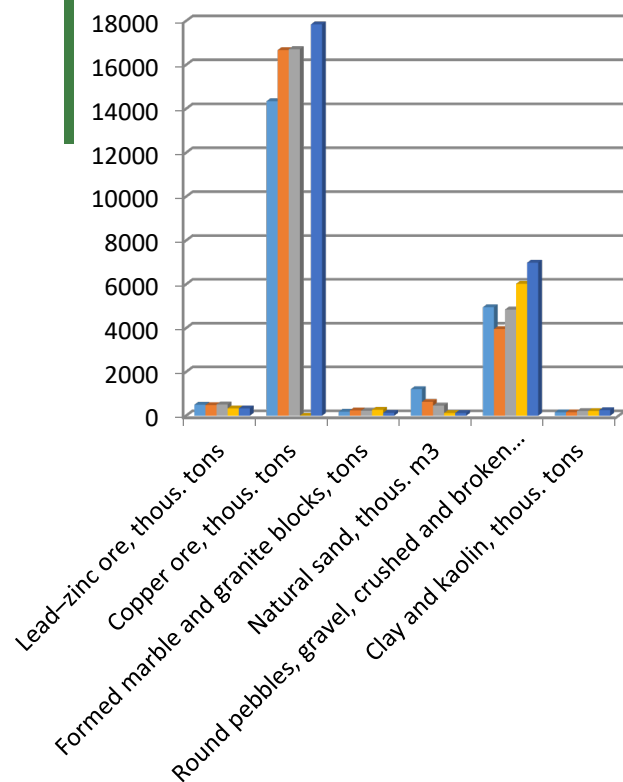
All data are harmonized with standards of Eurostat and International Energy Agency, thus being comparable on international level



Source: Statistical Office of the Republic of Serbia

Indices of mining and energy producers

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Source: Detailed methodological explanations are available on the website of the Statistical Office of the Republic of Serbia: <http://www.stat.gov.rs/sr-Latn/istrazivanja/methodology-and-documents>

Conversion map framework: Serbian category A,B,C₁ – UNFC-2009, JORC

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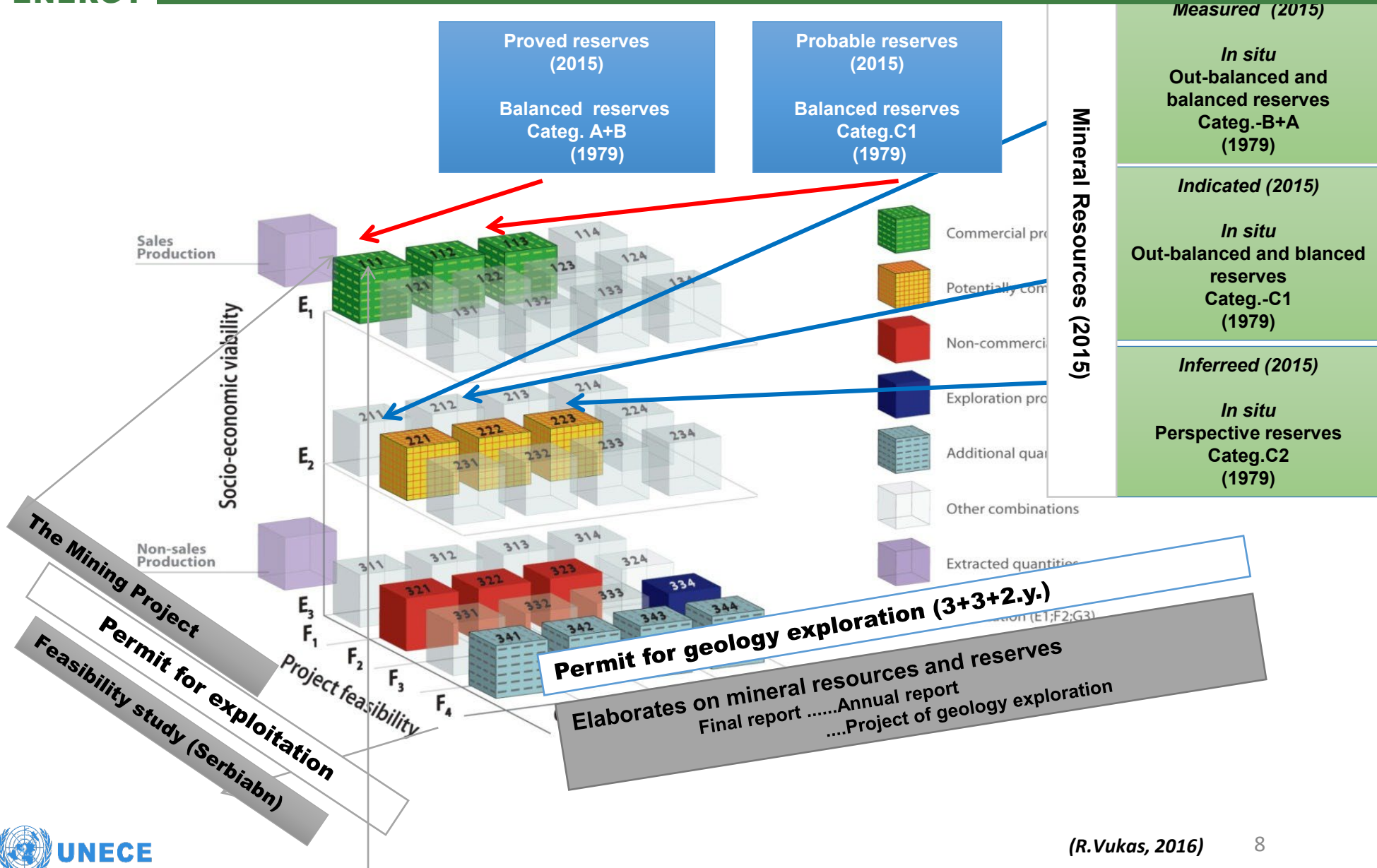
Proposed New Book of Regulations for Solid Mineral Raw Materials	Results of Geological Exploration	Mineral Resources			Mineral Reserves	
		Inferred	Indicated	Measured	Probable	Proved
Official Book of Regulations for Solid Mineral Raw Materials (1979)	Mineral Reserves					
	Potential	Potential	Established (<i>in situ</i> – Geological: <i>Out-of-Balance and Balance</i>)		Exploitation (<i>inclusive of dilutions and losses during mining</i>)	
	D ₂ , D ₁	C ₂	C ₁	B, A	C ₁	B, A
UNFC (2009)			Mineral Resources		Mineral Reserves	
	334	223	222	221	112	111

Source: M.Ilich and R.Vukas, 2016: On the harmonization of Serbia classification and accompanying...; <https://eurogeologists.europan-ge>

Serbian reporting system at UNFC2009

unformal

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Case Study, Commodity of coal, lignite harmonized to UNFC-2009

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Extracted

Sale production

Non-sale Production

Coal - lignite,
Open – pit, mining operations
(UN 1244 Resolution; do not include data of
territory Kosovo and Metohija)

	Class	Categories			UNFC Category (E,F,G)	Serbian category (A,B,C1)	Commodity in Place
		E	F	G			
		Future recovery by commercial development projects or mining operations	Commercial Projects	1			
Potential future recovery by contingent development projects or mining operations	Potentially Commercial projects	2	2	1,2,3	221	N-bal.(A,B)	6 Mt
	Non –Commercial Projects	3	2	1,2,3	222	N-Bal.(C1)	38 Mt
Additional quantities in place associated with known deposits		3	4	1,2,3	321		(gaps)
Potential future recovery by successful exploration activities	Exploration Projects	3	3	4	341		40Mt
Additional quantities in place associated with potential deposits		3	4	4	334		30Mt
					344		(gaps)

Total Commodity Initially in Place

Layout of the application of the UNFC



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Instrumentality

Deadlines (year)

1 2 3 4 5

Institutional

1. The horizontal connections of Serbian institutions dealing with statistics of physical quantities of energy and mineral resources
2. To establish a unique system for collecting, processing and verifying data (in accordance with the EUROSTAT / IEA)
3. As a candidate country for EU membership need review and apply these international standards
4. Particular attention should be paid to the standards that have emerged during the years of operation of the UNECE

Legal

1. Mutual harmonization of existing legislation for the purpose of compatibility with EU directives and international reporting systems; no direct connect to UNFC-2009 and UN-SEEA
2. Fully provided an adequate overview of statistical data in the international statistical system

Technical

1. Introduction of known program and software packets into the initial data processing within business entities for the creation of the basic database kept in the Ministry
2. Formal, mutual, electronic and software connection between institutions that process and use statistical data regarding physical quantities of energy and mineral resources (in situ) and use for the public report

Human resources

1. Rise in the current level of statistical knowledge to a higher degree (statistical and IT literacy, necessary communicativeness regarding of law of energy resources and mineral resources)
2. Employment of a new number of expertly qualified and educated people for the process of statistics data, for the validity of public reporting

Financial

1. Budget for IT – software system for the horizontal institutional connection for the purposes of the public data review (in accordance with the law)
2. Add budget for additional education of existing staff that are in direct contact with the physical quantities of energy resources and mineral resources
3. To prepare the complete harmonization of national legislature and international statistical standards for the goal of the public data review and public reports
4. Add the employment of a number of professionally educated people in the work of statistics (in positions where there are gaps: in initial collection, processing of data and sending to the Ministry of Mining and Energy, Statistical Office, Chamber of Commerce and other institutions (that use data for the to do of national strategic documents, as well as for

Activities for application UN-FC and UN-SEEA system on Serbian reporting system



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INSTITUTIONS

1. Government of the Republic of Serbia
2. Ministry of Mining and Energy
3. Serbian Geology Survey
4. Mining institute
5. Serbian Geology Association of Engineers and technician
6. Association of Engineers and technician of Serbia
7. Mining and Geology Faculty of Belgrade,...

1. Decision for application UN-FC and UN-SEEA system
2. Memorandum of understanding to UNECE
3. To establish the Study team

ACTIVITIES

1. Introduce of UN-FC and UN-SEEA system and Serbian reporting system (report to Government and Public report (international standards))
2. Work shops for domestic professional staff in accordance to UN-FC and UN-SEEA experts

1. Making Role book for reporting and classification system of minerals
2. Making of Bridging Documents
3. Case study,

Application of UN-FC and UN-SEEA system at Geology exploration and Exploitation of solid minerals of Serbia and its Investment in transition period

APPLICATION

1. Application of UN-FC and UN-SEEA system at Serbia mineral sector in present marketing and business conditions



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Thank you!

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UNECE

Date 19.06. 2019, Nur - Sultan, Kazakhstan

