



Fossil energy and mineral reserve statistics in Bosnia and Herzegovina, Kazakhstan, Kyrgyzstan and Serbia

A baseline review of quality

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List of Acronyms

AGA – Adapted Global Assessment

B&H – Bosnia and Herzegovina

CisGir – Central Information System for Geology and Mining

CRIRSCO – Committee on International Standards of Mineral Reserves Reporting

EITI – Extractive Industries Transparency Initiative

EU – European Union

FBH – Federation of Bosnia Herzegovina

GeolISS – Geological Information System of Serbia

IEA – International Energy Agency

IPA – Instrument for Pre-Accession

MID – Ministry of Investment and Development of Kazakhstan

ME - Ministry of Energy of Kazakhstan

NSC – National Statistical Committee of the Kyrgyz Republic

RS – Republic of Srpska

SCIESU - State Committee for Industry, Energy and Subsoil Use of the Kyrgyz Republic

UNECE – United Nations Economic Commission for Europe

UNFC – United Nations Framework Classification for Resources

UN-SEEA – United Nations System of Environmental-Economic Accounting

WBIF – Western Balkans Investment Framework

1 Introduction

1.1 Background and objectives

The UNDA project *Integrated energy and water resource management in support of sustainable development in South-East Europe and Central Asia* (Bosnia and Herzegovina, Serbia, Kazakhstan and Kyrgyzstan). An important element in this project is improving national capacity for the collection of fossil energy and mineral reserve statistics that are coherent with the *United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009*¹ (UNFC) and with the *United Nations System of Environmental-Economic Accounting Central Framework 2012*² (UN-SEEA).

Resource assessment and management based on the UNFC is regarded as an essential element in the post-2030 development agenda. Resource extraction is often portrayed in a negative light as a source of pollution and environmental degradation. In addition, critics point to resource depletion, so-called “Dutch disease” and the volatility of commodity prices as negative aspects of resource extraction. The Sustainable Development Goals (SDGs) call for integrated natural resource management, which requires a single framework for classifying all mineral and energy reserves. The UNFC provides such a framework and therefore is recommended for use in all UN member states.

Assessment of mineral and energy resources using the UNFC and application of the resulting data and information in policy development and strategic decision making has much to offer to policy and decision-making processes. The UNFC is a single framework that may serve at once as the basis for national resource stock assessment, business process innovation and efficient capital allocation. As such, benefits of its use accrue to many stakeholders. Rather than furthering the traditional divide between economic development and environmental/social goals, the UNFC offers the potential to inform all three at the same time. This has the potential to transform previously negative social and environmental impacts into opportunities for holistic benefits across all three pillars of sustainability; for example, improved food security and environmental quality from mineral extraction, as well as resource security.

The objective of the training workshop was to introduce experts from the beneficiary countries to the UNFC and outline the benefits of its use. The training was conducted by international experts, including Robert Smith of Midsummer Analytics, and focused on the application of the UNFC to the classification and management of mineral energy resources. The goal of the training was to provide participants with sufficient knowledge and understanding of the UNFC to be able to use it to organize data in their countries.

1.1 Scope of the baseline review

The baseline review was focused on official statistics related to fossil energy and mineral reserves. Official statistics were defined as publicly available statistics produced by the national statistical office and/or other ministries/agencies of the national government, including state-owned enterprises. Statistics produced by international agencies for the beneficiary countries were out of scope for the review.

¹ See https://www.unece.org/fileadmin/DAM/energy/se/pdfs/UNFC/pub/UNFC2009_Spec_ES42.pdf

² See https://seea.un.org/sites/seea.un.org/files/seea_cf_final_en.pdf

Fossil energy and mineral reserve statistics were defined as those related to physical quantities of commercially important fossil fuels and mineral reserves found within the borders of the focus country.

The exact statistics covered in the review are laid out in the tables found in Appendix 1. For each country, the review covered the following:

a. A basic description of the national system for producing official fossil energy and mineral reserve statistics:

- the names and roles of the ministries/agencies/companies involved in the system
- a brief description of the legal basis for collecting fossil energy and mineral reserve statistics (e.g., the national statistical law or other relevant national legislation)
- a brief description of relevant national policies/programs affecting fossil energy and mineral reserves (e.g., a sustainable mining policy)
- the names of major national energy statistics databases/publications containing fossil energy and mineral reserve data and, where available, their Internet addresses
- a brief summary of the financial and human resources devoted to the collection of fossil energy and mineral reserve statistics
- a brief summary of any major statistical improvement programs underway or planned for the near future that are relevant to the quality of fossil energy and mineral reserve statistics.

b. The quality of the official fossil energy and mineral reserve statistics. Quality was evaluated by assessing the statistics against the following criteria:

- **timeliness:** the delay between the reference period and the date of public release
- **frequency:** the interval (months, quarters, years) between release
- **time series:** the earliest and most recent dates for which statistics are available
- **coverage:** the completeness of the data in terms of periods; are there periods for which data were not collected?
- **accessibility:** the ease with which users can access the statistics
- **interpretability:** the availability of information, such as metadata, to help users understand the statistics
- **transparency:** the availability of information regarding the methodology used to gather the statistics
- **accuracy:** the availability of information regarding the degree to which the information correctly describes the phenomena it was designed to measure
- **consistency:** the degree to which data are collected in a consistent manner across time
- **coherence with international frameworks:** the degree to which the statistics are coherent with the concepts and definitions used in the UNFC and UN-SEEA.

The exact basis on which these quality characteristics were evaluated is laid out more clearly in Appendix 1.

c. Recommendations for the improvement of fossil energy and mineral reserve statistics covering:

- the gaps in fossil energy and mineral reserve statistics
- the means to overcome the main obstacles standing in the way of improving fossil energy and mineral reserve statistics (institutional, legal, technical and human/financial).

1.2 Structure of this report

This report is divided into four sections (including this introduction).

Section 2 presents a summary description of the fossil energy and mineral reserve statistics system for each beneficiary country covering the points listed above (roles and responsibilities of the main players involved; the legal basis for the system; relevant national policies and programs; major databases/publications; financial/human resources; and any major improvement projects planned).

Section 3 summarizes the quality of fossil energy and mineral reserve statistics in each beneficiary country.

Section 4 summarizes the recommendations for the improvement of fossil energy and mineral reserve statistics in each beneficiary country.

2 Overview of fossil energy and mineral reserve statistics systems

In this section, we provide overviews of the fossil energy and mineral reserve statistics systems in each beneficiary country covering:

- the ministries/agencies/companies involved in the fossil energy and mineral reserve statistics system and their roles
- the legal basis for the fossil energy and mineral reserve statistics system
- national policies and programs relevant to the fossil energy and mineral reserve statistics system
- major national fossil energy and mineral reserves statistics databases and publications
- financial and human resources devoted to fossil energy and mineral reserve statistics, and
- major improvements to fossil energy and mineral reserve statistics systems planned or underway.

2.1 Ministries/agencies/companies involved in the system and their roles

2.1.1 Bosnia and Herzegovina

Statistical collection, processing and dissemination in Bosnia and Herzegovina (B&H) is characterized by the decentralization of the federal state. A second level of government is charged with overseeing internal functions. This second tier is comprised of two legal entities, The Federation of Bosnia and Herzegovina (FBH) and the Republic of Srpska (RS).

As shown in Figure 1 below, there are three statistical institutes within Bosnia and Herzegovina. The **Agency for Statistics of Bosnia and Herzegovina** operates at the national level. The **Institute for Statistics for the Entity of the Federation of Bosnia Herzegovina (FBH)** and the **Republic of Srpska Institute of Statistics for the Entity of the Republic of Srpska (RS)** operate at the entity level. The **Central Bank of B&H** compiles monetary, balance of payments and financial statistics for B&H.

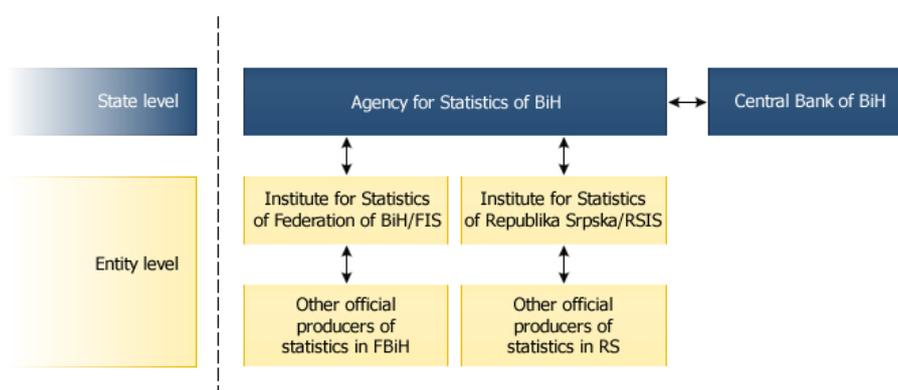


Figure 1 - Statistical system of B&H (source: Agency for Statistics of Bosnia and Herzegovina)

The entity statistics institutes and the national statistics institute are responsible for collecting, processing and disseminating production data related to fossil energy and mineral resources on a sector by sector basis. The entity statistics institutes deliver data to the national statistics institute.

The two entity governments have additional departments for the further collection of fossil energy and mineral reserve data. The responsible ministries are the **Ministry of Industry, Energy and Mining** in RS and the **Ministry of Energy, Mining and Industry** in FBH.

Data on fossil energy and mineral explorations and defined reserves is collected by the geological surveys. In RS the geological survey is part of the Ministry of Industry, Energy and Mining. In FBH, the geological survey is under the jurisdiction of the entity government. There is no geological survey on the national level.

Exploitation of these resources is under the exclusive jurisdiction of the entities. Companies involved in exploiting a mineral resource are required to submit The Book on Reserves once per year. As a result the ministry entities have the most comprehensive data on fossil energy and mineral resources.

There is no corresponding national ministry and data collected by these ministries is not used as the basis for the official statistics produced by the statistics institutes. As a result, the ministry entities have the most comprehensive data on fossil energy and mineral resources.

2.1.2 Serbia

The main organizations involved in the collection and dissemination of fossil energy and mineral reserve statistics are the **Statistical Office of the Republic of Serbia**, the **Ministry of Mining and Energy**, public enterprises and other business entities and the **Chamber of Commerce and Industry of Serbia**.

The Statistical Office of the Republic of Serbia represents Serbia in the international statistical system and is its main producer and disseminator of official statistical data. The Energy (and Mining) Sector of the statistical office processes monthly, quarterly, semi-annual and annual data related to industrial production of fossil energy and mineral resources (import, export, etc.).

Public enterprises and private firms deliver data to the statistical office on a monthly and annual basis. This data does not contain or include the baseline information about the physical quantities of fossil energy and mineral reserves discussed below.

The Ministry of Mining and Energy compiles data related to physical reserves of fossil energy and mineral resources. It publishes a *Resources and Reserves of Mineral Raw Materials Balance* report each year pursuant to its responsibility for annual conjoint mineral raw materials balance and coal energy balance, oil and gas energy balance and electrical energy balance. (The statistics produced by the statistical office are not directly connected with this report.)

The Geology and Mining Sector within this Ministry is responsible for documenting physical quantities of fossil energy and mineral reserves. Public enterprises and private firms deliver data to this Sector by March 15 for the balance of the previous calendar year.

Accordingly, public enterprises and business associations are responsible for delivering customized data to each of the statistical office and the Ministry of Mining and Energy.

The Chamber of Commerce and Industry of Serbia processes electro-energy, oil and gas, coal and mining sector³ statistics and provides industrial production indexes by industry or fuel type. Data are gathered monthly, quarterly, semi-annually and annually. Physical quantities of fossil fuels and mineral raw materials included in the *Resources and Reserves of Mineral Raw Materials Balance* (per kind, quality and volume) are not included in these statistics.

2.1.3 Kazakhstan

The organizations involved in fossil energy and mineral reserves statistics are the **Ministry of Investment and Development** (MID), the **Ministry of Energy** (ME) and the **Committee on Statistics of the Ministry of Economics**.

MID is the most involved. One of its divisions, the Committee of Geology and Subsoil Use, operates the Extractive Industries Transparency Initiative (EITI). The EITI program collects and prepares baseline data from business enterprises that fall under the jurisdiction of MID and ME. The Committee's State Commission on Mineral Reserves maintains data on the state of mineral reserves for presentation in EITI reports.

The EITI is coordinated by the **National Council of Interested Parties**. This Council is headed by MID and includes deputies of the Mazhilis (lower house of Parliament) and representatives from MID, the Ministry of Economics, the Ministry of Finance, large oil and gas and mining companies and civil society.

2.1.4 Kyrgyzstan

Two organizations are responsible for collecting data related to fossil energy and mineral resources. The **State Committee for Industry, Energy and Subsoil Use** (SCIESU)⁴ is responsible for primary data collection and processing related to reserves of mineral deposits *in situ*. SCIESU's State Commission on Reserves accounts for reserves not related to mineral extraction and its Kyrgyz State Geological Fund is responsible for collecting and archiving reports and information related to the country's geology.

The **National Statistical Committee** (NSC)⁵ is responsible for processing primary information and preparing and disseminating state statistics, including data on the production of fossil energy resources.

Users of subsoil resources are required to report the state of reserves to SCIESU.

2.2 Legal basis for the system

2.2.1 Bosnia and Herzegovina

In this decentralized country, the legal basis for the statistical system for collecting, processing and disseminating data related to fossil energy and mineral resources production by sector at the national level is the *Law on Statistics of Bosnia and Herzegovina*⁶. Authorities for the two entities (RS and FBH) are the *Law on Statistics of the Republic of*

³ The mining sector includes coal, crude oil and natural gas exploitation, metal ore exploitation and other mining activities.

⁴<http://gkpen.kg/>

⁵<http://www.stat.kg/>

⁶ Official Journal of B&H, 26/04, <http://www.bhas.ba/dokumenti/stat.zakon-en.pdf> (in English language)

*Srpska*⁷ and the *Law on Statistics in the Federation of Bosnia and Herzegovina*⁸, respectively.

The *Republic of Srpska Institute of Statistics* is designated as the main institution in charge of collection and dissemination in that jurisdiction (*Law on Statistics of the Republic of Srpska*, article 4, paragraph 1). The following institutions are also involved: the Ministry of Finance; the Ministry of Interior; the Ministry of Justice; the Ministry of Labor; Veterans and Invalids; and the Fund of Health Insurance; the Institute for Health Protection; the Banking Agency; and the Hydrometeorological Institute (article 4, paragraph 2). These institutions apply unique methodologies and standards, harmonized with adopted standards in B&H and basic principles of official statistics adopted by UN Commission (article 5).

The *Law on Statistics in the Federation of Bosnia and Herzegovina* designates the Institute for Statistics of FBH as the main institution in charge of collection and dissemination in the FBH entity (article 6, paragraph 1). Cantonal branch offices are also responsible for data collection in each of the FBH's 10 cantons (member states) (article 6, paragraph 3). Responsible institutions for data collection are also the ministries of FBH, administrative organizations, public institutions and other authorized institutions (article 7),

The RS and FBH entities are required to collect data on energy and mineral resources pursuant to the entity Laws on Geological Explorations: *Laws on Geological Explorations of RS*, article 13 (Official Journal of RS, 110/13) and *Laws on Geological Explorations of FBH*, article 37 (Official Journal of FBH, 9/2010).

The entity ministries responsible for mining and geology (Ministry of Energy, Industry and Mining in RS and Ministry of Energy, Mining and Industry in FBH) are required to collect mineral resources data including:

- metallic mineral resources
- non-metallic mineral resources
- fossil fuels (coal, oil, gas)
- geothermal energy
- groundwater (mineral, thermal and thermo-mineral), and
- secondary mineral resources.

2.2.2 Serbia

The *Law of Official Statistics of the Republic of Serbia* (Official Gazette RS No. 104/2009) is the legal basis for the statistical system. The Law designates the Statistical Office of the Republic of Serbia as the main producer and disseminator of official statistical data.

The *Law of Mining and Geological Exploration of the Republic of Serbia* (Official Gazette RS No. 101/2015) is the legal basis for the Ministry of Mining and Energy to gather data regarding physical quantities of fossil energy and mineral reserves. Other legal bases are contained in *Book regulations on Classification and Categorization of Reserves of Solid Mineral Raw Materials* (Official Gazette SFRJ No. 53/79) and *Book regulations on Classification and Categorization of Reserves of Oil, Condensates and Natural Gases and Their Record-keeping* (Official Gazette SFRJ No. 80/1987) from the former SFR Yugoslavia.

⁷ Official Journal of RS, 85/03, http://www2.rzs.rs.ba/static/uploads/pravni_akti/o_zavodu/ZakonOStatisticiRS.pdf (In Serbian Language)

⁸ Official Journal of FB&H, 63/03 and 9/09, <http://www.fmks.gov.ba/kultura/legislativa/fbih/63.pdf> (In Bosnian Language)

2.2.3 Kazakhstan

The legal basis for the collection of statistics by the Ministry of Investment and Development (MID) is the *Code on Subsoil and Subsoil Use* (No. 125-VI dated December 27, 2017, Article 76, clause 3). This law requires businesses and public entities to submit reports according to the EITI standard, as confirmed by an auditor accredited in accordance with the *Law of the Republic of Kazakhstan “On Auditing”*.

2.2.4 Kyrgyzstan

The *Law on Subsoil*⁹ makes the State Committee for Industry, Energy and Subsoil Use (SCIESU) responsible for maintaining the state balance of mineral reserves for the Kyrgyz Republic. The legal basis for the SCIESU is found in the *Law on Subsoil* and other relevant legislation and regulations, including *On Oil and Gas*¹⁰ and *On Coal*¹¹.

The legal bases for the National Statistical Committee (NSC) are the *Law on State Statistics*¹² and other relevant legislation and regulations.

2.3 National policies and programs relevant to the system

2.3.1 Bosnia and Herzegovina

The two entities developed national policies relating to fossil energy in 2017:

- Framework Energy Strategy for FBH up to 2035¹³
- Energy Strategy of RS up to 2035¹⁴

The strategies advance a policy of sustainable development and consider three main aspects related to energy: security of supply, price competitiveness and decarbonization.

The strategies emphasize an efficient energy sector and effective resource utilization, in order to move the entities, together with Bosnia and Herzegovina as a whole, toward accepted EU obligations and policies.

These strategies act as resources to gain access to funding from the *Instrument for Pre-accession Assistance* (IPA) and the *Western Balkans Investment Framework* (WBIF), as well as to attract domestic and foreign investors for the sector.

The main strategic goals proclaimed in the entity energy strategies are split into 5 groups:

1. Sectoral transformation with the aim of cost effectiveness and efficient use of energy resources
 - investment in new technologies, production and services
 - restructuring and modernization of the coal sector

⁹<http://cbd.minjust.gov.kg/act/view/en-ru/111782>

¹⁰June 8, 1998 No. 77; As amended by the Law of the Kyrgyz Republic of March 9, 2004 No. 19; 18 of May 2012 No. 58; May 29, 2012 No. 74; October 11, 2012 No. 171; February 13, 2013 No. 15; January 20, 2015 No. 19

¹¹February 3, 1999 No. 18; As amended by the Law of the Kyrgyz Republic of June 18, 2005 No. 78; October 10, 2012 No. 170; July 30, 2013 No. 178; July 18, 2014 No. 144

¹²March 26, 2007 N 40; as amended by the Laws of the Kyrgyz Republic of March 27, 2009 N 85, February 22, 2013 N 27

¹³http://www.fbihvlada.gov.ba/file/20170606%20Okvirna%20energetska%20strategija%20FBiH_Radna%20verzija_v2.pdf in Bosnian language

¹⁴https://www.google.com/search?rlz=1C1CHBF_enBA831BA832&ei=jDNiXIfjG4i8kwWAwqeYAAQ&q=energetska+strategija+srspe+do+2035&oq=energetska+strategija+srspe+do+2035&gs_l=psy-ab.3...2574.5434..5618...0.0.148.1279.10j4.....0....1..gws-wiz.....0i22i30j33i160j33i21.tTm7JnVLAi4 available in Serbian language

- adequate utilization of renewable energy resources
 - intensification of hydrocarbon exploration and exploitation
2. Safe and available energy
 - cover domestic electricity consumption with national production and further market integration
 - diversification of acquisition and continuation of physical integration of coal and gas sector at the national and regional level
 - adequate development and maintenance of domestic energy infrastructure
 3. Efficient energy use
 - further development and application of energy efficiency measures in final consumption
 - interaction with end users about measures and benefits of energy efficiency
 - development and introduction of efficiency measures in transformation, transmission and distribution of electricity and co-generation
 4. Energy transition and environmental responsibility
 - reduction of harmful gasses emission
 - CO2 emission reduction
 - improvement of oil quality control
 5. Development and harmonization of the legal and institutional framework
 - harmonization of the legal policy with EU standards
 - providing appropriate staff for future challenges in the sector

Mineral Resource Management Strategies have not yet been prepared, despite being required by the current law in RS (The *Law on Mining*, article 8, paragraph 1, Official Journal of RS, 62/18), as well as the previous Law there from 2012). As with the energy strategies, the mineral resource strategies would be prepared separately for the entities.

The Strategy of Fundamental Geological Exploration in the Republic of Srpska defines the direction of future explorations of prioritized mineral resources (energy, metallic and non-metallic) and was adopted by the Parliament of RS in 2014. The strategy, together with the report *The Mineral Resources of the Republic of Srpska*, is an important starting point for the preparation of the *Mineral Resources Management Strategy* in RS.

2.3.2 Serbia

The primary policy related to fossil energy and mineral resources is the *National Strategy for Sustainable Development of the Republic of Serbia*. Two related strategies are of particular importance: *National Strategy on Sustainable Usage of Natural Resources and Wealth*¹⁵ (Official Gazette RS No. 33/2012) and *Mineral Resources Management Strategy of the Republic of Serbia until 2030*¹⁶.

These strategies provide detailed consideration of the physical quantities of fossil fuels and reserves of mineral raw materials, including all statistical parameters of their life cycles as contained in the *Resources and Reserves of Mineral Raw Materials Balance*.

¹⁵ <https://serbia-energy.eu/.../srbija-rudarstvo-strategija-upravljanja-mineralnim-resursima>

¹⁶ www.zzps.rs/novo/kontent/stranicy/propisi_strategije/s_mineralni_resursi.pdf

The primary goals of the *National Strategy on Sustainable Usage of Natural Resources and Wealth* are:

The *Mineral Resources Management Strategy* has not received formal governmental approval at this time. When formalized, it will outline the long-term development goals of mining and exploration, include projections of needs for mineral resources and account for economic, environmental and social goals.

2.3.3 Kazakhstan

There are two key documents relating to the development of fossil energy and mineral reserves.

The *Concept of the Development of the Geological Industry of the Republic of Kazakhstan until 2030* was adopted to overcome a number of problems in the mineral resource industry, including a low level of geological study and infrastructure, a decline in the number of easily accessible reserves, a lack of professional staff and problems in the legislative and regulatory framework. Goals set out in the document include an increase in the use of new technology for exploration, an increase in funding from extra-budgetary sources and increasing the general knowledge of the geology of the country.

The *State Program for Industrial Innovation Development of the Republic of Kazakhstan for 2015-2019* is focused on improving the linkages between the mining, metallurgical and manufacturing industries, with the goal of increasing the level of processing done in the country. The *Program* is aimed at entering export markets in priority sectors, including ferrous and non-ferrous metallurgy, agro-chemistry, oil refining and chemistry and manufacture of cars and electrical equipment.

2.3.4 Kyrgyzstan

The *National Development Strategy of the Kyrgyz Republic for 2018-2040*¹⁷ and the related *Taza Koom*¹⁸ digital infrastructure program were approved in 2018. The strategy is based on the principles of the Sustainable Development Goals and includes development goals for the mining sector. Among the most important are:

- increase efficiency of the mining sector, with the use of modern technologies that reduce environmental impacts
- use of financial resources secured in the mining sector for developmental goals
- support research and training in the mining sector, and
- support transition to high quality fuels and an expansion in the use of alternative energy.

2.4 Major national statistics databases and publications

2.4.1 Bosnia and Herzegovina

Statistics databases and publications are dispersed among the various institutions responsible for collection. These include the statistics institutes (national and entity), the entity ministries responsible for mining and industry and the entity level geological surveys. Data collected by ministries are more detailed than those published by the statistics institutes. Unfortunately, there is no obligation for the ministries to publish the mineral reserves book on a regular basis in either entity.

¹⁷http://www.president.kg/ru/sobytiya/12774_utverghdena_nacionalnaya_strategiya_razvitiya_kirgizskoy_respubliki_na_2018_2040_godi

¹⁸<http://tazacoom.kg/site/index>

The geological survey databases in RS and FBH contain information about the results of all mineral resource exploration in the past. Some of these are deposits with defined reserves (quantity and quality), some are simply registered as mineral deposits tagged for further geological explorations.

There is no internet accessible database for fossil energy and mineral reserves. Data can be obtained by request in both entities from the respective ministries and geological surveys in accordance with the *Law on Geological Explorations*.

The Agency for Statistics of B&H publishes an annual *Statistic Year Book* which contains data on energy produced from fossil sources and mineral resource production at the national level. More detailed analysis is done at the entity level.

Entity level — RS

The Institute for Statistics of RS official web page provides a database with searchable indicators for annual investments in ore and stone extraction. This data can be downloaded in Microsoft Excel and XML format. Queries can only be made in Serbian, with Cyrillic letters¹⁹, but search results are available in both Serbian and English.

The Institute for Statistics publishes a number of reports on its official web page, usually on an annual basis. as part of its dissemination activities. The most important reports related to fossil energy and mineral resources are:

- The Statistic Year Book — contains data on coal production and production of other mineral resources on national and entity levels²⁰
- The Energy Statistic—Annual Release — contains data on total gross production, total net production, energy received by Republic of Srpska, energy delivered by Republic of Srpska, transmission and distribution losses and data about sharing between hydro and thermal power plants in all above mentioned aspects²¹
- The Balance of Coal – Annual Release — contains data on gross production, consumption, etc.²²

Entity level — FBH

The Institute for Statistics of FBH official web page provides a web portal²³ and PX web²⁴. The PX web contains data on energy balances and coal balances²⁵, including data on production, export, import and consumption per sector by type of coal. No data related to other fossil energy or mineral resources is available.

The Institute for Statistics publishes a number of reports as part of its dissemination activities, usually on an annual basis. The most important are:

- The Statistical Year Book²⁶
- The Short-term Indicators on Energy Statistics — published monthly, contains data on energy production and consumption, as well as fuel use in thermal power plants²⁷

¹⁹ <http://www3.rzs.rs.ba/rzs/faces/indicators.xhtml>

²⁰ http://www.rzs.rs.ba/front/category/8/?left_mi=287&add=287

²¹ http://www2.rzs.rs.ba/static/uploads/saopstenja/energetika/2017/Bilans_Elektricne_Energije_2017.pdf

²² <http://www.rzs.rs.ba/front/article/3200/>

²³ <http://www.gis.fzs.gov.ba/gis/map.jsp>

²⁴ <http://www.px-web.fzs.gov.ba/pxweb/bs-Latn-BA/?rxid=3d11e5e4-6ae8-4b9e-8d77-49b384945f84>

²⁵ <http://www.px-web.fzs.gov.ba/pxweb/bs-Latn-BA/Energetika%20-%20Energy%20Statistics/Energetika%20-%20Energy%20Statistics/Tab%2014-3%20Bilans%20uglja.px/?rxid=3d11e5e4-6ae8-4b9e-8d77-49b384945f84>

²⁶ <http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/>

²⁷ <http://fzs.ba/index.php/category/mjesecni/>

- The Monthly Statistical Review of the FBH — contains data on ore and stone extraction²⁸

2.4.2 Serbia

The statistical office publishes the annual *Statistical Yearbook*²⁹ and monthly *Statistical Bulletins* in printed form and via its official web page. The yearbook and bulletins include data on production and import/export of fossil energy and mineral resources.

The statistical office's annual *Energy Balances*³⁰ include data on coal, oil and natural gas and are available in printed and electronic form. Energy statistics are also available on its website and in Microsoft Excel format³¹.

A *Resources and Reserves of Mineral Raw Materials Balance* is printed in book form annually by the Ministry of Mining and Energy. The electronic version is only available internally and data are not publicly accessible on the Ministry's website. This Balance provides national level data regarding physical quantities of fossil energy and mineral reserves.

The Ministry of Mining and Energy published two paper reports in 2013. The *Geology and Mining in 2012* report is based on data from the Geology and Mining Sector and from publicly available industrial production data from the statistical office. The report does not contain data for the disputed region of Kosovo and Metohija which is under the management of the United Nations.

The *Guide for Investors in the Geology and Mining Sector* (Belgrade, 2013) contains statistical data regarding fossil fuels and reserves of mineral raw materials.

These two documents are not available in the information system nor on the Ministry website. There is no public information advising of further updates, supplements, or pending new publications.

Statistical data regarding fossil fuels and reserves of mineral raw materials is publicly available through strategic documents: *National Strategy on Sustainable Usage of Natural Resources and Wealth, Mineral Resources Management Strategy of the Republic of Serbia until 2030* and *Energy Balance of the Republic of Serbia and Energy Development Strategy of the Republic of Serbia until 2025 with projections until 2030*³².

Data regarding mineral reserves is also published by business entities on their own websites.

Liquid and gaseous fossil fuel reserve data are not publicly available because it is considered a trade secret (*Law of Data Secrecy*, Official Gazette RS No.104/2009).

2.4.3 Kazakhstan

Data on fossil energy and mineral resources is available in the annual *National Reports of the EITI* published on the EITI website since 2005.³³ These government-funded reports are prepared by an independent auditing company selected by the Committee of Geology and Subsoil Use.

²⁸ <http://fzs.ba/index.php/publikacije/mjesecni-bilteni/>

²⁹ <http://www.stat.gov.rs/en-US/publikacije/?d=2&r=>

³⁰ <http://www.stat.gov.rs/en-us/oblasti/energetika/>

³¹ <http://data.stat.gov.rs/Home/Result/040102?languageCode=sr-Cyrl>

³² <http://www.mre.gov.rs/doc/efikasnost-izvori/23.06.02016%20ENERGY%20SECTOR%20DEVELOPMENT%20STRATEGY%20OF%20THE%20REPUBLIC%20OF%20SERBIA.pdf>

³³ <http://eiti.geology.gov.kz/ru/national-reports>

The data contained in the reports was significantly expanded in 2012 and Kazakhstan was granted the status of EITI Compliant Country in 2013³⁴.

The reports now contain data from:

- Annual reports of subsoil users, including:
 - Mining contracts (volume of extracted mineral reserves, losses and dilution, increment of reserves due to exploration, basic taxes, investment)
 - Exploration contracts (volume of drilling and mining, volume of geophysical work, exploration costs, basic taxes, total investment)
- Annual reports of the Committee of Geology and Subsoil Use for State Geological Study of the Subsoil, including a description of the objects of research, types and volumes of work performed, costs of the work, results obtained and increases in stock
- Statistical data of the Committee on Statistics of the Ministry of Economics relating to total industrial production in monetary and physical terms, including fossil energy and mineral resources for the country as a whole and for regions and by large deposits.
- Production data for fossil energy and mineral resources from the Committee on Statistics of the Ministry of Economics. (These data are also available directly from this Committee in electronic and Microsoft Excel format for the years 1990 to 2016.³⁵)

2.4.4 Kyrgyzstan

There are three sources for fossil energy and mineral reserve data in Kyrgyzstan: the SCIESU, the NSC and subsoil users.

The SCIESU provides historical stock data and modern data (where it exists) upon request. SCIESU historical data includes publications issued since 1999 that contain data on significant deposits and stock characteristics. The reports are available in the State Geological Fund and with specialists.

The NSC publishes bulletins and publications related to the mining sector in the *Industry of the Kyrgyz Republic* collections³⁶. The reports present indicators for mining of fuel and energy minerals: coal and lignite (thousand tons); crude oil (thousand tons); natural gas (million cubic meters). Data is also available for download in Microsoft Excel format from the NSC website.³⁷

Subsoil users maintain databases on the movement of their own reserves. Information on reserves can be obtained on the websites of many public companies³⁸. In other cases, data can be acquired by request. This information may not be publicly available from all subsoil users.

³⁴ <http://eiti.geology.gov.kz/ru/homepage/normative-base>

³⁵ http://stat.gov.kz/faces/wcnav_externalId/homeNumbersIndustry?_afLoop=2953154477455027#%40%3F_afLoop%3D2953154477455027%26_adf.ctrl-state%3Dm4qb0ixfo_39

³⁶ <http://www.stat.kg/ru/publications/sbornik-promyshlennost-kyrgyzskoj-respubliki-2008-2012g/>

³⁷ <http://www.stat.kg/ru/statistics/promyshlennost/>

³⁸For example, the Kumtor Gold Company: <https://www.kumtor.kg/en/deposit/centerra-gold-inc-reports/>

2.5 Financial and human resources

2.5.1 Bosnia and Herzegovina

The Republic of Srpska Institute of Statistics has 133 employees: 90 women (67.7%) and 43 men (32.3%). The Institute for Statistics for the Entity of the Federation of Bosnia Herzegovina has 180 employees, organized in 9 sub-units: 53 men (29.5%) and 127 women (70.5%).

Based on the resource requirement projections described in the two tables below, it appears the institutions that deal with energy and mineral resource statistics are understaffed and their employees are undertrained.

Table 1: Risks to human resources of statistic institutions in B&H (Source: Strategy for Development of Statistics of B&H 2020)

Risk description	Probability	Consequence	Measures
Insufficient number of employees	High	High	Provide sufficient number of employees
Appropriate staff	Moderate	Moderate	Appropriate planning and staff education
Qualifications of staff for tasks	Moderate	High	Appropriate work activities and tasks
Staff changes	Moderate	High	Care about employee, stimulation measures and preparation of the analysis of staff fluctuation
Staff absences	Moderate	Moderate	Provide appropriate substitution, analysis of the causes

Table 2: Estimation of staff devoted to energy and mineral resources statistics in other institutions (Source: Strategy for Development of Statistics of B&H 2020)

Institution	Entity	Staff devoted to the data collection on energy and mineral resources
Ministry of Industry, Energy and Mining, department for mining and geology	Republic of Srpska	3
Geological Survey	Republic of Srpska	2
Ministry of Energy, Mining and Industry	Federation of B&H	3

Geological Survey	Federation of B&H	2
Total		10

2.5.2 Serbia

The statistical office employs a total of around 450 personnel, with 10 to 15 employed in its Energy (and Mining) Sector. The Geological Survey of Serbia has 1 to 2 employees dedicated to statistics.

The Geology and Mining Sector within the Ministry of Mining and Energy is the most important department for the production of fossil energy and mineral reserves data. Physical quantities of reserves, production data and other statistical parameters are published annually through mining plans and reports. One qualified person works on a part time basis in this Sector to process delivered data regarding physical quantities of fossil energy and mineral reserves.

In the autonomous province of Vojvodina, one to two persons deal with issues regarding fossil energy and mineral reserves on a part time basis. There are no special financial and technical resources allotted for these needs.

2.5.3 Kazakhstan

There is no publicly available data on financial and human resources.

2.5.4 Kyrgyzstan

Three people are employed by the State Commission on Reserves within the SCIESU. These people are responsible for maintaining the balance sheet and registering reserves, including accepting and verifying forms submitted by subsoil users.

Within the NSC, the Department of Statistics of the Real Sector contains the Department of Industry and Energy Statistics³⁹. This department is responsible for the analysis for the industry as a whole and for the mining sector.

2.6 Major improvements planned or underway

2.6.1 Bosnia and Herzegovina SEE MY NOTES 28 AND 29

Bosnia and Herzegovina is working toward harmonization with EU standards with the publication of its *Strategy for Development of Statistics of B&H 2020*^{40, 41}. The strategy was financed by the IPA Twinning Project and implemented in partnership with Statistics Denmark and published in 2013.

Priority 6 of the strategy recommends the following strategic measures with respect to the development of energy statistics

- establishment of the statistical survey on the use of biomass
- establishment of the system of monitoring of data on production, consumption and energy losses, in line with the IEA/EUROSTAT methodology

³⁹<http://www.stat.kg/ru/about/centralnyj-apparat/>

⁴⁰

<http://www.bhas.ba/planiprogram/STRATEGIJA%20%20RAZVOJA%20STATISTIKE%20BIH%202020FINAL%20BH.pdf>

⁴¹<http://www.bhas.ba/planiprogram/STRATEGY%20FOR%20DEVELOPMENT%20OF%20STATISTICS%20OF%20BIH.pdf>

- improvement of knowledge with regard to development of the statistical energy balances
- increased availability of the statistical data in order to enable monitoring of energy efficiency indicators
- improvement and methodological adaptation of statistical records for industry with the statistical standards used in EU in order to establish a base needed in order to monitor and evaluate energy efficiency indicators in B&H industry, and
- provision of the statistical data for the development of energy consumption indicators.

In addition, the Adapted Global Assessment (AGA) of the national system of official statistics of Bosnia and Herzegovina was undertaken within the framework of the Eurostat-funded project *Global assessments of statistical systems of candidate and potential candidate countries as well as ENP countries*. The AGA process was initiated by Eurostat on the basis of a request made by the Agency for Statistics of Bosnia and Herzegovina in 2009⁴².

Certain EU standards were verified, including *Fundamental Principles of Official Statistics of United Nations, European Statistical Praxis Codex* and the Eurostat document *Compendium of Statistical Requests*. Based on this, the AGA proposed adoption of the 3rd statistical program from the Agency for Statistics of Bosnia and Herzegovina, the *Statistical Program for Bosnia and Herzegovina For Period From 2017-2020* ⁴³.

In accordance with the *Strategy for Development of Statistics of B&H 2020* and this 2017-2020 *Statistical Program*, harmonization and improvement will continue in upcoming years. The focus of this period will be:

- optimization of the process and tasks in statistical production
- improvement and development of the statistical areas

Planned development must be in the line with the requests of domestic and international users of statistical data, while also accounting for the process of EU accession. The strategy emphasizes that realization of these goals also depends on available human and financial resources, as well as assistance of international institutions.

2.6.2 Serbia

The Ministry of Mining and Energy has developed and implemented the Central Information System for Geology and Mining (CisGir). This Integrated Management Information System (IMIS) project was financed by the European Union through *IPA 2010*.

CisGir was developed on the ArcGIS software platform for workflow management in the Geology and Mining Sector of the Ministry. It provides for the formation, classification, maintenance, presentation and distribution of numeric, descriptive and spatial databases on: geological resources and reserves; infrastructure of mines; archive documentation and approvals, permits and certifications; land registry of research and exploitation fields; land registry of deposits and balance of mineral raw materials; land registry of mining activities and facilities; land registry of mining waste and abandoned, rehabilitated and closed mines; register of documents; financial obligations regarding the fee paid by the researching and exploitation entity; performed monitoring and ordered measures by inspection service; production and consumption of mineral raw materials and other information of significance.⁴⁴

⁴²

https://ec.europa.eu/eurostat/documents/45004/6182541/Bosnia+and+Herzegovina_AGA_Final+Report_complet e.pdf/0724d36f-502f-451b-88fc-a92285d4c465

⁴³ http://www.bhas.ba/planiprogram/STATISTICKI%20PROGRAM%20BIH%202017_2020.pdf

⁴⁴ *Law on Mining and Geological Researches*, Article 138, 143 (Official Gazette of the RS, No. 88/2011) <http://www.en.terragold.co.rs/Laws/LAW-ON-MINING-AND-GEOLOGICAL-EXPLORATION.pdf>

CisGir is a complex system that consolidates a large amount of data from the Sector, makes every day work easier for the employees and enables direct communication with representatives of local governments. Public users have data access through a web GIS application⁴⁵ found on the Ministry's website.

A separate application of ArcGIS software, the Geological Information System of Serbia (GeolISS), has been developed over the last ten years. GeolISS is updated with new data about the geological resources of Serbia. The goal of GeolISS is to create a digital archive of geological data and a modern and efficient information base for activities related to geological planning, projecting and decision-making. Certain geological and research results are available through the website-based application on the official GeolISS webpage⁴⁶. Continued development of the web application will focus on the extent of public and commercial access.

Further development of information management programs, particularly CisGir, will facilitate data collection and horizontal connections between organizations. Data quality improvement can be expected in: (1) processing and review of data that business entities manage related to the *Mineral Resources and Reserves Report Book* for delivery to the Ministry, statistical office and Chamber of Commerce; (2) an increase in the current degree of regular data delivery to the Geology and Mining Sector; and (3) direct input of data into the established information system CisGir (by foreign business entities and public companies).

2.6.3 Kazakhstan

An EITI validation undertaken in 2017 by [the EITI International Secretariat](#)⁴⁷ determined that Kazakhstan should improve data reporting and access in order to improve public debate and understanding around fossil energy and mineral resources. Three goals for open data were set out:

- Promote transparency: raise awareness of how natural resources are used and how extractive companies' revenues are spent
- Increase availability of data
- Improve public debate around the implementation of the EITI principle: "Understanding the government's income and expenditure society will help the public debate and informed choice of correct and realistic options for implementing sustainable development"

2.6.4 Kyrgyzstan

Kyrgyzstan uses the Soviet system of state stock accounting and is considering a transition to international reporting systems for accounting of mineral resources. Towards this end, in 2017 SCIESU, the Committee on International Standards of Mineral Reserves Reporting (CRIRSCO) and the Kyrgyz Mining Association (KMA) signed a trilateral memorandum to assist with the preparation of modern public reporting forms. The KMA will lead this effort and has prepared an implementation plan for the project.

The SCIESU also reached an agreement in 2017 with Russia for assistance in implementation of the UNFC-2009 classification scheme.

⁴⁵ <http://qis.mre.gov.rs/Srbija>

⁴⁶ <http://geoliss.mre.gov.rs/>

⁴⁷ <https://eiti.org/document/kazakhstan-validation-2017>

The government implemented the Taza Koom program⁴⁸ as part of the *National Development Strategy of the Kyrgyz Republic for 2018-2040*⁴⁹. The Taza Koom program is aimed at using new information and communication technology to enable innovation and the widespread use of knowledge. A National Spatial Data Infrastructure (NSDI) is being developed to support the goals of Taza Koom.,

The National Statistical Committee released the *Program for Improvement and Development of State Statistics of the Kyrgyz Republic for 2015-2019*⁵⁰ in order to fulfill the goals of Taza Koom and the NSDI. The main goal of the program is to improve the effectiveness of the statistical system by improving the legislative framework, the use of information and communications technologies and data quality and advancing skills and knowledge related to statistical production. The program includes the goal of increasing harmonization of national statistics with international norms and standards.

⁴⁸ <http://tazacoom.kg/site/index>

⁴⁹ http://www.president.kg/ru/sobytiya/12774_utverghdena_nacionalnaya_strategiya_razvitiya_kirgizskoy_respubliki_na_2018_2040_godi

⁵⁰ <http://stat.kg/en/about/pravovye-osnovy-organov-gosudarstvennoj-statistiki/>

3 Overview of the quality of the official fossil energy and mineral reserve statistics

In this section, the quality of fossil energy and mineral reserve statistics in the four beneficiary countries is reviewed and summarized against the following criteria:

- **timeliness:** The delay between the reference period and the date of public release (measured in months)
- **frequency:** The intended interval (months, quarters, years) between releases
- **time series:** The earliest and most recent dates for which statistics are available
- **coverage:** The completeness of the time series: Complete (no gaps); Some gaps (less than half of data points missing); or Significant gaps (more than half of data points missing)
- **accessibility:** The ease with which users can access the statistics: High (ready access via a publicly available electronic database managed by the national statistical office); Medium (access via a publicly available electronic database managed by an official organization other than the statistical office); or Low (access via some other means)
- **interpretability:** Whether readily accessible information, such as metadata, is available to help users understand the statistics
- **transparency:** Whether readily accessible information on the methodology used to compile the statistics is available to users
- **accuracy:** Whether readily accessible information regarding the degree to which the information correctly describes the phenomena it was designed to measure is available to users
- **consistency:** The degree to which data are collected in a consistent manner across time: High (no important breaks in the time series due to changes in methods); Medium (no more than one important break in the time series); Low (more than one break in the time series).

Please see Appendix 1 for more details.

3.1 Quality of fossil energy and mineral reserve statistics

3.1.1 Bosnia and Herzegovina

Statistics are published annually and monthly, with time series varying between the statistical institutes (Table 3). The delay between the reference period and release is less than 40 days for monthly statistics. Some data are available for download in excel spreadsheet format, with availability differing between the entities. For example, FBH does not yet include data on mineral resources on its web portal.

There is no internet-accessible database of energy and mineral reserves data collected by the ministries and geological surveys. Data can be obtained on request in both entities, however, in accordance with *Law on Geological Explorations*.

Table 3 - Published documents by the statistic organizations of B&H related to energy and mineral resources and their timelines

No	Document	Publisher	Available from - to (year)	Remark
1	Statistic Yearbook	AS B&H	2008-2017	Annually
2	Statistical Energy Balance		2014-2017	Annually

3	Short-term Indicators of Energy Statistic		2016-2018	Monthly
4	Business Statistic - Volume index of Industrial Production in B&H		2008-2018	Monthly
5	The Statistic Year Books	IS RS	2009-2017	Annually
6	Monthly Statistical Review		2012-2017	Monthly
7	Quarterly Statistical Review		2008-2013	Quarterly
8	Industrial Turnover index		2008-2017	Monthly
9	Energy Statistic - Annual Release		2012-2017	Monthly
10	The Statistic Year Books	IS FB&H	2006-2017	Annually
11	Monthly Statistical Review		2007-2018	Monthly
12	Short-term Indicators of Energy Statistic		2015-2018	Monthly
13	Industrial production		2008-2017	Annually

Methods, classifications and metadata are available on the national level⁵¹ and the entity level⁵².

The classification of mineral resources (including coal) is detailed in the *Rules on Classification, Categorization and Reserves of Mineral Resources and Recording of mineral reserve database* (RS Official Gazette 92/14 and FBH Official Gazette 36/12, respectively).

Each mineral resource is specified in the *Rules* and procedures to determinate categories and classes are defined precisely. This classification system corresponds to the Russian State Classification. The UNFC-2009 classification is not officially used at this point.

3.1.2 Serbia

Data was collected from 1945 onward for the former Republic of Yugoslavia and has been collected for the Republic of Serbia since 2006. Serbia does not collect statistics for the territory of Kosovo and Metohija, which is under the management of the United Nations.

The statistical office releases annual statistical yearbooks, monthly statistical bulletins and annual energy balance reports. Energy balance statistics are available online from 2010 to 2016⁵³. These statistics do not contain data on *in situ* reserves. Methodology documents⁵⁴ and reference metadata⁵⁵ are available on the statistical office website.

Data related to fossil energy and mineral reserves is collected and published once a year in the Ministry of Energy and Mining's *Resources and Reserves of Mineral Raw Materials Balance*. Data from the report is not publicly available and is publicly accessible only through other reports and national strategies.

Data from business entities and public enterprises is delivered to the Ministry on March 15, with data up to December 31 of the previous year. Although most data are published on July 1, some data are delivered to the Ministry late and must then be left out of the report.

Harmonization with EU standards is directed by the strategic documents for the mining sector (*Mineral Resources Management Strategy of the Republic of Serbia until 2030*) and

⁵¹ http://www.bhas.ba/?option=com_content&view=article&id=361&lang=en

⁵² <http://fzs.ba/index.php/klasifikacije-i-metodologije/klasifikacije/>,
http://www.rzs.rs.ba/front/category/33/?left_mi=44&add=44

⁵³ <http://data.stat.gov.rs/Home/Result/040102?languageCode=sr-Cyrl>

⁵⁴ <http://www.stat.gov.rs/en-us/istrazivanje/methodology-and-documents/>

⁵⁵ <http://www.stat.gov.rs/en-us/istrazivanje/referentni-metapodaci/>

for the energy sector (*Energy Balance of the Republic of Serbia and Energy Development Strategy of the Republic of Serbia until 2025 with projections until 2030*).

Fossil energy and mineral reserve statistics collected by the Ministry are not yet harmonized with the UNFC and UN-SEEA systems. There is no legal form or procedure in the Ministry for evaluating mutual harmonization of statistical data regarding physical quantities of fossil energy through formal implementation of the UNFC framework and its principles.⁵⁶ There is, however, coherence with the basic UNFC criteria: social-economic sustainability, project status and feasibility and geological knowledge. A pilot project was undertaken by the Geology Survey of Serbia in 2014 to harmonize the *Resources and Reserves of Mineral Raw Materials Balance* with the UNFC system. The project was not completed.

Over the last 20 years, the Faculty of Mining and Geology of the University of Belgrade undertook a number of scientific studies and projects in order to create a basis for harmonization of the classification of solid fossil energy (coal) in Serbia with the European Commission classification⁵⁷.

The coherence of fossil energy statistics based on industrial production under the authority of the electro-energy sector is less advanced. The *Energy Balance of the Republic of Serbia and Energy Development Strategy of the Republic of Serbia until 2025 with projections until 2030* notes that it is necessary to coordinate among the ministry in charge of energy, the statistical office and energy producers/users to establish a united system of gathering, processing and verifying data regarding production and usage of energy in accordance with EUROSTAT/IEA guidelines. It also states special attention should be given to coordination with standards and conventions established by the UNECE. Communication has been established with EUROSTAT/IEA on statistical data in the domain of fossil energy.

3.1.3 Kazakhstan

EITI reports are published each October with data up to December 31 of the previous year. Data is collected in the first quarter of the year and the time lag between data collection and publication significant due to the process for selecting an independent auditor and validating the report. From 2005 to 2011 the reports were published with a lag of two years.

The EITI national reports are available on the official website⁵⁸, which also includes information on the sources and methodologies used. The reports submitted by subsoil users are often not uniform, or not reported for a set time period. This makes data for certain minerals difficult to compare.

The volume and detail of indicators for coal and metals make it difficult to get a complete picture of deposits, exploration, reserves and other indicators. This is a significant flaw in EITI reports. The most complete, systematic and uniform data are provided for oil and gas.

Although in many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA, there is no environmental information, information on groundwater, or information on the social sphere. Further, there is no systematic annual data on the results of geological exploration and reserve growth and any data provided is often presented for periods that are difficult to compare across years.

⁵⁶ According to the current Law provisions, from 2015, the new Legal Regulation about mineral resources and reserves is being made, based on PERC (Pan European Reporting Code), whose application would revoke the current manner of reporting on fossil energy (in categories A, B, C and D; Book regulations, 1979) and ensure formal coherence and harmonization of fossil energy statistical data within international frameworks (indirectly and within UNFC and UN-SEEA framework)

⁵⁷ www.rgf.bg.ac.rs

⁵⁸ <http://eiti.geology.gov.kz/en>

3.1.4 Kyrgyzstan

Geological data has been collected regularly by the geological service of the Republic since 1938. Subsoil users are required to submit data to the SCIESU for the past year on January 31. The accuracy of the data collected by the SCIESU is high. Data on fossil energy and mineral is consistent with Soviet accounting principles. Kyrgyzstan has decided to introduce the CRIRSCO and to partially use UNFC for the classification of reserves and resources of oil and combustible gases.

Although the SCIESU does not publicly release data, both current data and the archives of the geological fund can be accessed upon request. Metadata are not available, but reporting forms are accessible on the website.⁵⁹ The NSC releases the *Industry of the Kyrgyz Republic Report* annually in September. Data from 2006 are available on its website.⁶⁰ The NSC is developing a metadata system, which includes a website linking data to relevant metadata⁶¹.

⁵⁹<http://gkpen.kg/index.php/homhh>

⁶⁰<http://www.stat.kg/ru/publications/sbornik-promyshlennost-kyrgyzskoj-respubliki-2008-2012g/>

⁶¹<http://www.stat.kg/ru/opendata/>

4 Summary of findings and recommendations

In this section, we summarize our findings for each beneficiary country and present our recommended priorities for the improvement of sustainable energy statistics.

4.1 Overall findings

Several themes common to all countries emerge from this baseline review.

- There is a need for better integration, both legal and operational, between institutions both horizontally and vertically.
- The established statistical lead in each country, whether that be the national statistical office or some other organization, must be given priority authority for gathering data and this must be reflected in all legislation. This should be defined by subject matter, Collection of mineral resource data, rather than continue piecemeal depending on the specific law.
- There is a need for improved use of information technology for data sharing institutions and with the public.
- There is a need for more employees and better training.
- There is a need for a systematic approach to UNFC integration.

4.2 Bosnia and Herzegovina

4.2.1 Priority gaps in fossil energy and mineral reserve statistics

Greater cooperation between the statistical institutes, the ministries responsible for mining and the entity geological surveys would result in greater coverage of both extraction statistics and fossil energy and mineral resources reserves data.

Data on extraction of all mineral resources could be collected with cooperation between the statistical institutions and the ministries responsible for energy and mining. This would add the following data to that already produced:

- data on production of construction stone (e.g. limestone, dolomite and igneous rocks quarries)
- data on production of decorative stone
- data on production of clays.

Closer cooperation would also provide the following data on reserves of fossil energy and mineral resources:

- metallic, ferrous and non-ferrous: lead, zinc, iron, manganese, silver, etc.
- non-metallic: quartz, quartz sands, clays, borosilicate, magnesite, etc.
- energy: coal and geothermal
- groundwater, including mineral and thermal
- secondary mineral resources.

4.2.2 Changes required in fossil energy and mineral reserve statistics to make them coherent with the UNFC and UN-SEEA

The current classification of fossil energy and mineral reserves corresponds with the Russian national classification, which is comparable with UNFC. Data collected as A, B, C1, C2, D1, D2 reserve classes are comparable, more or less, with the UNFC E, F and G

categories. Based on the short list of key mineral resources in the entities and the close coherence of the classification system, it is reasonable to generate and provide UNFC coherent reports once per year.

Appropriate UNFC classification training is necessary for national experts in order to support future consideration of this methodology as one possible reporting method at the national level. National experts must be included in the different UN regional commissions (e.g., UNECE) to provide accurate methodological information as well as to disseminate the methodology at the national level.

4.2.3 Overcoming the main obstacles standing in the way of improving fossil energy and mineral reserve statistics

Institutional measures

Greater cooperation is necessary between relevant institutions and ministries, especially at the entity level. This includes greater cooperation between the statistical institutions at different jurisdictional levels, as well as cooperation between ministries, the geological survey and statistical institutions. Mechanisms for cooperation between public and private institutions must be provided for in legislation.

In addition, representatives of the statistic institutions must be introduced to the capabilities and role of the geological surveys.

Legal measures

Legal measures must include adoption of mechanisms to facilitate mandatory and specific inter-agency cooperation. Although cooperation mechanisms are provided in the current legislation in a general way, more specific statutory language is necessary in order to explicitly place the noted ministries and institutions in charge of fossil energy and mineral reserves data collection in all laws that address this subject matter.

Further, it is necessary to legally define and codify procedures necessary for mineral resources data collection and format of delivery. These procedures and delivery formats should apply to geological laws and regulations as well the statistics laws.

Lastly, statistical institutions must be legally required to utilize geological survey services and data.

Technical measures

The current means of technical processing of mineral resource data is one of the weakest points in the reporting chain. GIS solutions are not yet fully applied as a standard tool in mineral resources reporting systems (i.e., as compared to their use in the water sector).

The entity geological surveys, in their capacity as the institutions responsible for GIS., store mineral resources data in GIS but do not provide access to this data via web platform.

All institutions that deal with mineral resources statistics must improve their technical capabilities related to presentation and dissemination, especially on the internet. This will require significant financial resources. Based on previous water sector experience, these resources should be provided from international financial support rather than from domestic financing sources.

Human resources and financial measures

Human resources and finances represent one of the most serious problems facing B&H in general.

It is not realistic to expect a significant step forward in the financing for statistics and geological surveys in the current economic situation, however. As a result, there may be serious difficulties providing appropriate staff.

The lack of appropriate staff in the statistical institutions of B&H is recognized and analyzed in the *Strategy for Development of Statistics of B&H 2020* referenced in Table 1. The key findings are:

- insufficient number of employees
- inappropriate qualifications of staff for tasks
- staff changes, and
- staff absences.

Proposed measures for solving these problems are inseparable from increased funding.

4.3 Serbia

4.3.1 Priority gaps in fossil energy and mineral reserve statistics

High priority

There is no direct legal connection between the basic statistics kept by the statistical office and the database of physical quantities of fossil energy and reserves of mineral raw materials maintained by the Ministry.

There is no established legal and formal procedure for mutual harmonization of statistical data regarding physical quantities of fossil energy and reserves of mineral raw materials between the basic Ministry of Energy and Mining database (*Resources and Reserves of Mineral Raw Materials Balance*) and European reporting standards.

Regulations of the *Law of Mining and Geological Exploration* (Official Gazette RS No. 101/2015) have not yet promulgated into legal effect. These regulations are based on PERC and would bridge the current harmonization gap when reviewing data and reporting on mineral resources and reserves.

Medium priority

A review of statistical data quality indicates that the initial processing of data gathered in public enterprises and other business entities is not performed by qualified professionals. There is also a lack of information about the qualifications of these personnel.

Data on physical quantities of fossil energy and reserves of mineral raw materials are not widely accessible and only publicly available in modified form through non-statistical government documents.

Data about fossil energy and reserves of solid mineral raw materials are often hard to compare with counterpart statistical data kept in the Ministry of Mining and Energy.

Low priority

Some basic statistical data was delivered to the Ministry after the lawfully stated deadline.

4.3.2 Changes required in fossil energy and mineral reserve statistics to make them coherent with the UNFC and UN-SEEA

The following steps are necessary for harmonization of the fossil energy and reserves of mineral raw materials statistics with the UNFC and UN-SEEA:

- formal decision on the implementation or application of UNFC system into the national reporting system
- establishment of a memorandum of understanding between the UNECE and the Government of the Republic of Serbia
- establishment of a national expert group

- training of national professional staff (government, academic, business) on implementation or application of UNFC system
- Serbian case study on the application of UNFC system
- creation of basic statistical database on fossil energy and minerals (raw materials balance) in accordance with the accepted rules and regulations in Serbia.
- inclusion of Serbian data in international statistical databases, and
- development of the fossil energy and mineral sector of the Republic of Serbia.

4.3.3 Overcoming the main obstacles standing in the way of improving fossil energy and mineral reserve statistics

Institutional measures

Greater connection is required between authorities and institutions dealing with fossil energy and mineral reserves data. It is particularly important to work toward integration of data collected by the ministry with that collected and disseminated by the statistical office.

Legal measures

Legal authority is required in order to integrate the basic statistics kept by the statistical office and the database of physical quantities of fossil energy and reserves of mineral raw materials maintained by the Ministry.

Regulations of the *Law of Mining and Geological Exploration* based on PERC ("Off. Gazette RS" No. 101/2015) should be formally approved passed in order to have legal effect and bridge the current harmonization gap. Harmonization of existing legal regulations related to fossil energy and mineral reserves data is required in order to achieve compatibility with EU Directives and international reporting norms.

Technical measures

Software such as CISGIR and ESRI GIR should be introduced into the initial data processing within business entities in order to streamline data processing and collection of the *Resources and Reserves of Mineral Raw Materials Balance*.

For public reporting purposes, there should be formal, electronic and software cooperation between authorized institutions that process and use statistical data regarding physical quantities of fossil energy and reserves of mineral raw materials.

For public dissemination purposes, a technical strategy should be prepared to address the need for public access to data on physical quantities of fossil energy and reserves of mineral raw materials. Internet upload and download capabilities should be reviewed.

Data on physical quantities of fossil energy and reserves of mineral raw materials are not widely accessible and only publicly available in modified form through non-statistical government documents.

Human resources and financing measures

Education is required to improve the statistical and related knowledge of existing staff (e.g., professionalism, statistical and IT literacy, communication).

Additional qualified personnel should be hired for basic database creation, for the development of the *Resources and Reserves of Mineral Raw Materials Balance* and for review and quality assessment of data, methods and public reporting.

A software system is required in order to enable horizontal institutional collaboration for the purposes of public data review.

4.4 Kazakhstan

4.4.1 Priority gaps in fossil energy and mineral reserve statistics

Data must be presented consistently in EITI reports in order to ensure uniformity and ease of comparison across time periods. This is largely caused by a lack of uniformity in subsoil user reports. This flaw makes it difficult to get a complete picture of deposits, exploration, investment, quality of reserves growth and other indicators. This is the main priority for Kazakhstan.

There is also a lack of environmental information, including on accumulated waste and emissions and the state and consumption of groundwater reserves.

4.4.2 Changes required in fossil energy and mineral reserve statistics to make them coherent with the UNFC and UN-SEEA

A phased implementation of the UNFC-09 is necessary in Kazakhstan. In addition to addressing the uniformity problems in the EITI reports, there is a need to include additional information:

- information on the environmental situation of specific firms and mining regions as a whole
- volumes of annual accumulated waste and emissions of pollutants
- data on payments for the emission of harmful substances
- information on fines for non-compliance
- information on waste and emission mitigation efforts
- data on groundwater reserves and consumption
- data on spending done by firms to address environmental and social issues

4.5 Kyrgyzstan

4.5.1 Priority gaps in fossil energy and mineral reserve statistics

The main priority is a formal legal basis for commissioning a new reporting system for Kyrgyzstan. New systems are mentioned only as intentions and have not advanced to legislation.

A second priority is a training strategy designed to train more people for mineral reserve assessment.

4.5.2 Changes required in fossil energy and mineral reserve statistics to make them coherent with the UNFC and UN-SEEA

The following steps are necessary in order to harmonize the statistics on fossil energy and mineral reserves of Kyrgyzstan with international standards:

- formal decision on the implementation or application of UNFC system into the national reporting system
- establishment of a memorandum of understanding between the UNECE and the Government of the Kyrgyz Republic
- establishment of a national expert group
- training of national professional staff (government, academic, business) on implementation or application of UNFC system
- creation of basic statistical database on fossil energy and minerals (raw materials balance) in accordance with the accepted rules and regulations in the Kyrgyz Republic

- inclusion of Kyrgyz data in international statistical databases, and
- gradual translation of existing databases and creation of new ones, in accordance with the UNFC framework.

4.5.3 Overcoming the main obstacles standing in the way of improving fossil energy and mineral reserve statistics

Institutional measures

It is necessary to expand and strengthen the horizontal connections between the institutions involved in accounting for fossil fuel and mineral reserves. It is also important to harmonize the functional responsibilities of authorities.

Legal measures

New legal acts are required in order to standardize reporting on exploration, mineral resources and reserves. These new legal acts need to consider the existing legislative framework and the potential for integration with international reporting standards

Technical measures

New software and the further development of existing systems is required for primary data processing of accounting for minerals. In addition, electronic reporting should be introduced alongside standard reporting forms. Such electronic reporting systems will reduce data processing time and support the transfer of primary data analysis to all involved organizations.

Human resources and financing measures

There is a need to increase the existing level of statistical knowledge across all levels. This is directly related to a need to increase the existing level of human resources, including attracting and training personnel to conduct work on the input and collection of primary data, as well as for statistical analysis of data beyond primary processing. There is also a need to further train personnel responsible for the maintenance of information provided on reporting standards.

Financial resources are required for the development and implementation of a new, internationally recognized reporting standard.

Appendix 1 – Fossil energy and mineral resources statistics reviewed

The tables in this appendix set out the fossil energy and mineral reserves statistics that were reviewed during the study along with the quality assessment criteria that were used.

Format for statistics reviewed

Statistic	Availability	Source	Quality assessment	Comment
Individual statistic (coal, iron, etc.)	available or not available	The name of producing organization and provide the Internet link or name of printed publication where the statistics can be obtained; indicate what languages the statistics are available in	<p>Timeliness: The delay between the reference period and the date of public release (measured in months)</p> <p>Frequency: The intended interval (months, quarters, years) between releases</p> <p>Time series: The earliest and most recent dates for which statistics are available</p> <p>Coverage: The completeness of the time series: <i>Complete</i> (no gaps); <i>Some gaps</i> (less than half of data points missing); or <i>Significant gaps</i> (more than half of data points missing)</p> <p>Accessibility: The ease with which users can access the statistics: <i>High</i> (ready access via a publicly available electronic database managed by the national statistical office); <i>Medium</i> (access via a publicly available electronic database managed by an official organization other than the statistical office); or <i>Low</i> (access via some other means)</p> <p>Interpretability: Whether readily accessible information, such as metadata, is available to help users understand the statistics (<i>Yes/No</i>)</p> <p>Transparency: Whether readily accessible information on the methodology used to compile the statistics is available to users (<i>Yes/No</i>)</p> <p>Accuracy: Whether readily accessible information regarding the degree to which the information correctly describes the phenomena it was designed to measure is available to users (<i>Yes/No</i>)</p>	Add any additional information relevant to this statistic

Statistic	Availability	Source	Quality assessment	Comment
			Consistency: The degree to which data are collected in a consistent manner across time: <i>High</i> (no important breaks in the time series due to changes in methods); <i>Medium</i> (no more than one important break in the time series); <i>Low</i> (more than one break in the time series)	

Bosnia and Herzegovina

Fossil Energy – Bosnia and Herzegovina

Statistic	Availability	Source	Quality Assessment	Comment
Coal	Reserve data not publicly available. Production data are available	<p>National level: the Agency for statistics of Bosnia and Herzegovina at the level of the state. Business Statistics, Industry (http://www.bhas.ba/index.php?option=com_publicacija&view=publicacija_pregled&ids=3&id=3&n=Industrija&Itemid=&lang=en)</p> <p>Federal Office of Statistics for the Entity Federation of Bosnia Herzegovina, Short Term Indicators of Statistics (http://fzs.ba/index.php/2019/02/27/kratkoročni-pokazatelji-energetske-statistike-januarsijecanj-2019-prvi-rezultati/)</p> <p>Republic of Srpska Institute of Statistics for the Entity the Republic of Srpska. Balance of Coal (http://www.rzs.rs.ba/front/article/3200/)</p>	<p>Timeliness: Monthly Statistical Reviews are available in download section on the web site shortly after reporting period is expired. (E.g., monthly review for September was available on October 29th 2018 on official web page of the SI of FBH.) The delay for monthly review is less than 40 days between reference period and release. Annual statistic book is released on national and entity levels at the beginning of the following year (now available for FBH for 2018)</p> <p>Frequency: monthly, annual</p> <p>Time series: from 2008 on national level, from 2006 on entity level</p> <p>Accessibility: production – High; reserves – Low</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: Low</p> <p>Coherence with international frameworks: Low</p>	Coal production is the best documented mineral resources statistic in B&H because of its crucial importance to the economy at both national and entity levels

Mineral resources – Bosnia and Herzegovina

Statistic	Availability	Source	Quality Assessment	Comment
Lead and zinc	Reserve data not publicly available. Production data are available	<p>Republic of Srpska Institute of Statistics for the Entity the Republic of Srpska. Statistical Yearbook (http://www.rzs.rs.ba/front/category/8/?left_mi=287&add=287)</p>	<p>Timeliness: The annual Statistical Yearbook is released on entity level at the beginning of the following year</p> <p>Frequency: annual</p> <p>Time series: from 2009</p> <p>Accessibility: production – High; reserves – Low</p> <p>Interpretability: Yes</p>	RS data only. No extraction of lead-zinc ores in FBH

			Transparency: Yes Accuracy: Yes Consistency: Low Coherence with international frameworks: Low	
Iron	Reserve data not publicly available. Production data are available	Republic of Srpska Institute of Statistics for the Entity the Republic of Srpska. Statistical Yearbook (http://www.rzs.rs.ba/front/category/8/?left_mi=287&add=287)	Timeliness: The annual Statistical Yearbook is released on entity level at the beginning of the following year Frequency: annual Time series: from 2009 Accessibility: production – High; reserves – Low Interpretability: Yes Transparency: Yes Accuracy: Yes Consistency: Low Coherence with international frameworks: Low	RS data only. No extraction of iron in FBH
Bauxite	Reserve data not publicly available. Production data are available	Republic of Srpska Institute of Statistics for the Entity the Republic of Srpska. Statistical Yearbook (http://www.rzs.rs.ba/front/category/8/?left_mi=287&add=287)	Timeliness: The annual Statistical Yearbook is released on entity level at the beginning of the following year Frequency: annual Time series: from 2009 Accessibility: production – High; reserves – Low Interpretability: Yes Transparency: Yes Accuracy: Yes Consistency: Low Coherence with international frameworks: Low	RS data only. No extraction of bauxite in FBH

Salt	Reserve data not publicly available. Production data are available	Institute for Statistic of FBH for the Entity Federation B&H. Statistical Yearbook (http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/)	<p>Timeliness: The annual Statistical Yearbook is released on entity level at the beginning of the following year</p> <p>Frequency: annual</p> <p>Time series: from 2006</p> <p>Accessibility: production – High; reserves – Low</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: Low</p> <p>Coherence with international frameworks: Low</p>	FBH data only. No extraction of salt in RS
Cement	Reserve data not publicly available. Production data are available	Institute for Statistic of FBH for the Entity Federation B&H. Statistical Yearbook (http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/)	<p>Timeliness: The annual Statistical Yearbook is released on entity level at the beginning of the following year</p> <p>Frequency: annual</p> <p>Time series: from 2006</p> <p>Accessibility: production – High; reserves – Low</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: Low</p> <p>Coherence with international frameworks: Low.</p>	FBH data only. No extraction of cement ores in RS
Gypsum	Reserve data not publicly available. Production data are available	Institute for Statistic of FBH for the Entity Federation B&H. Statistical Yearbook (http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/)	<p>Timeliness: The annual Statistical Yearbook is released on entity level at the beginning of the following year</p> <p>Frequency: annual</p> <p>Time series: from 2006</p> <p>Accessibility: production – High; reserves – Low</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p>	FBH data only. No extraction of gypsum in RS

			Consistency: Low Coherence with international frameworks: Low	
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Serbia

Fossil Energy - Serbia

Statistic	Availability	Source	Quality assessment	Comment
Coal	Reserve data not publicly available. Production data are available	<p>Production statistics: Statistical Office of the Republic of Serbia, Annual Energy Statistics (http://data.stat.gov.rs/Home/Result/040102?languageCode=en-US)</p> <p>Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Elektroprivreda Srbije Technical report (http://eps.rs/En/Pages/Technical-reports.aspx) (Serbian/English)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production data: High. Reserve data: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	<p>Statistics regarding physical quantities of solid fossil fuels (coal) are kept at the Ministry of Mining and Energy (<i>Resources and Reserves of Mineral Raw Materials Balance</i>), while production statistics are kept in Statistical Office of the Republic of Serbia (Statistical Yearbook). There are no data for AP Kosovo and Metohija since 1999.</p>
Hard coal, brown coal, brown coal-lignite	Available	Public Enterprise for Underground Coal Exploitation - Resavica (www.jppeu.rs) Book of reserves (in Serbian)	See above.	See above.
Lignite	Available	<p>RB Kolubara Lazarevac (www.rbkolubara.rs)</p> <p>Te-Ko Kostolac (www.kostolac.rs) Book of reserves (in Serbian)</p>	See above.	See above.

Oil and natural gas	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Annual Energy Statistics (http://data.stat.gov.rs/Home/Result/040102?languageCode=en-US)</p> <p>Energy Secretariat AP Vojvodina; Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Business entity: Naftna industrija Srbije” a.d. Novi Sad (www.nis.rs) Book of reserves (in Serbian)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production Statistics: High Reserve Statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	<p>Statistics regarding physical quantities of oil and natural gas are kept at the Ministry of Mining and Energy (Resources and Reserves of Mineral Raw Materials Balance), while production statistics are kept in Statistical Office of the Republic of Serbia.</p> <p>“Naftna industrija Srbije” a.d. Novi Sad is the only company that has research and production of oil and gas in Serbia.</p>
Geothermal energy	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Annual Energy Statistics (http://data.stat.gov.rs/Home/Result/040102?languageCode=en-US)</p> <p>Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	<p>Statistics regarding physical parameters of geothermal resources / energy are kept at the Ministry of Mining and Energy (Resources and Reserves of Mineral Raw Materials Balance), while production statistics are kept in Statistical Office of the Republic of Serbia (Statistical Yearbook). Availability is 215 TJ; production is zero.</p>

Mineral resources - Serbia

Statistic	Availability	Source	Quality assessment	Comment
Lead–zinc ore	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Enterprises:</p> <ul style="list-style-type: none"> Rudnik - Gornji Milanovac (http://www.contangorudnik.co.rs/en/) Veliki Majdan near Ljubovija (https://ciklomen.com/veliki_majdan_sr.html), Bosilmetal near Bosilegrad (https://ciklomen.com) 	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	There are no data for AP Kosovo and Metohija since 1999.
Copper ore	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Copper mines Bor (RBB) and Majdanpek Mine (https://rtb.rs/en/)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	

Formed marble and granite blocks	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Energy Secretariat AP Vojvodina; Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Enterprises: “Omya Venčac” Aranđelovac (www.omya.com/rs-sr) “Aranđelovac Granit Bukovik” Aranđelovac (https://www.poslovnivodic.com/) AD “Ukras” Novi Pazar (http://adukras.com/) “Granitpešćar” Ljig (www.granit.rs/)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	There are no data for AP Kosovo and Metohija since 1999.
Natural sand	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Energy Secretariat AP Vojvodina; Ministry of Mining and Energy <i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	There are no data for AP Kosovo and Metohija since 1999.

Round pebbles, gravel, crushed and broken stone,	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Energy Secretariat AP Vojvodina; <i>Ministry of Mining and Energy Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Enterprises:</p> <ul style="list-style-type: none"> • “USSB-Kučevo” Kučevo (https://www.ekapija.com/en/company/65064/osnovni-podaci) • Strabag Se –Strabag Serbia, Beograd (https://www.strabag.com/data-bases/internet/_public/content.nsf/web/SE-PRESSE.COM-index_e.html) • JP Surcin – Surcin, Beograd (http://www.jpsurcin.org.rs/) • Putevi Užice (http://www.puteviužice.com/) • Kamenolom Kijevo Beograd (www.kijevo.rs) • Beaz Plus Arandelovac (http://www.beazplus.rs/) • Ingrap Omni Beograd (http://ingrapomni.rs/) • Teko Mining Batočina (https://www.tekomining.com/) 	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	There are no data for AP Kosovo and Metohija since 1999
Clay and kaolin	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Energy Secretariat AP Vojvodina; <i>Ministry of Mining and Energy</i></p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p>	

		<p><i>Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Enterprises:</p> <ul style="list-style-type: none"> • “Alas holding” ad Novi Sad (https://www.ekapija.com/en/company/view?id=101202) • IGM Mladost Leskovac (https://mladost.co.rs/sr/) 	<p>Accessibility: Production statistics: High. Reserve Statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	
Cement raw materials	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Energy Secretariat AP Vojvodina; <i>Ministry of Mining and Energy Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Enterprises:</p> <ul style="list-style-type: none"> • “Titan Cementara” Kosjerić (www.titan.rs) • “CRH” Popovac (http://www.crhserbia.com/) • “Lafarge Srbija” Beočin (https://www.lafarge.rs/) 	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	There are no data for AP Kosovo and Metohija since 1999.
Quartz raw materials	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p>Energy Secretariat AP Vojvodina; <i>Ministry of Mining and Energy Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low.</p> <p>Interpretability: No.</p>	There are no data for AP Kosovo and Metohija since 1999

		<p>Enterprises:</p> <ul style="list-style-type: none"> • “Leon” doo Ub (https://www.ekapija.com/company/view?id=1113) • “USSB-Kučevo” Kučevo (https://www.ekapija.com/company/65064/osnovni-podaci) • AD Rudnik Nemetala Valjevo (http://www.mojakompanija.com/rudnik-nemetala/) 	<p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	
Ecological minerals (zeolite, sepiolite)	Reserve data not publicly available. Production data are available	<p>Statistical Office of the Republic of Serbia. Statistical yearbook (http://www.stat.gov.rs/en-us/publikacije/) (Serbian/English)</p> <p><i>Ministry of Mining and Energy Resources and Reserves of Mineral Raw Materials Balance</i> (http://mre.gov.rs/) (Serbian)</p> <p>Geological Survey of Serbia (http://www.gzs.gov.rs/index.php)</p>	<p>Timeliness: No delays.</p> <p>Frequency: Month, 6 months, year.</p> <p>Time series: permanent, from 1st quarter and from July 1st current year, for every year since 1945.</p> <p>Coverage: Significant gaps</p> <p>Accessibility: Production statistics: High. Reserve statistics: Low..</p> <p>Interpretability: No.</p> <p>Transparency: Yes.</p> <p>Accuracy: Yes.</p> <p>Consistency: Medium degree.</p> <p>Coherence with international framework: Low or non-existent degree of coherence with concept and definitions used in UNFC and UN-SEEA</p>	

Kazakhstan

Fossil Energy - Kazakhstan

Statistic	Availability	Source	Quality Assessment	Comment
Oil	Available	<p>Reserves. EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions. (http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!1769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rjw5_4)</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year only, not as time series.
Natural gas	Available	<p>Reserves. EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions. (http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!1769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rjw5_4)</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year, not as time series.

Coal	Available	<p>Reserves. EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions. (http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!11769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afrLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rwiw5_4)</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	<p>EITI reports present reserve numbers in the report year, not as time series.</p>
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Mineral resources- Kazakhstan

Statistic	Availability	Source	Quality Assessment	Comment
Gold	Available	EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Medium</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year, not as time series.
Uranium	Available	EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Medium</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year, not as time series.

Iron	Available	<p>EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions. (http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!1769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rjw5_4)</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year, not as time series.
Manganese	Available	<p>EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions. (http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!1769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rjw5_4)</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year, not as time series.
Bauxite	Available	<p>EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions.</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p>	EITI reports present reserve numbers in the report year, not as time series.

		<p>(http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!1769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rjw5_4)</p>	<p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	
Chromite	Available	<p>EITI National Reports (http://eiti.geology.gov.kz/en/national-reports)</p> <p>Production. Production of the mining industry in a cut of regions. (http://stat.gov.kz/faces/wcnav_externalld/homeNumbersIndustry.jsessionid=OalPBBDNAJ2SZN5zAallzdCe2vJY3nsJwfp8tC31SL3PR3QL-G97!1769380696!-2097452916?_adf.ctrl-state=m4qb0ixfo_39&_afLoop=3035285123154232#%40%3F_afLoop%3D3035285123154232%26_adf.ctrl-state%3D118c6rjw5_4)</p>	<p>Timeliness: 12 month delay</p> <p>Frequency: Annual</p> <p>Time Series: 2012-2017</p> <p>Coverage: Complete</p> <p>Accessibility: Production: High. Reserves: Medium.</p> <p>Interpretability: Yes</p> <p>Transparency: No</p> <p>Accuracy: Yes</p> <p>Consistency: Medium.</p> <p>Coherence with international framework: In many instances the EITI reports are consistent with the concepts and definitions used by the UNFC and UN-SEEA.</p>	EITI reports present reserve numbers in the report year, not as time series.

Kyrgyzstan

Statistic	Availability	Source	Quality Assessment	Comment
Coal	Reserve data not publicly available. Production data are available	<p>SCIESU responsible for reserve data. Not available online (http://gkopen.kg/)</p> <p>Solpuev T. Coal deposits of the Kyrgyz Republic (Reference). 2nd edition. Bishkek – 2011. In 2 books</p> <p>Solpuev T. Coal deposits of the Kyrgyz Republic (Reference). Bishkek – 1996. 500p.</p> <p>Site of the NSC, publications (http://www.stat.kg/ru/publications/)</p>	<p>Timeliness: No delays</p> <p>Frequency: Once a year</p> <p>Time Series: Permanent, from 1st January</p> <p>Coverage: Fully covers the period of existence of the deposit</p> <p>Accessibility: Production data: High. Reserve data: Low.</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: High degree</p> <p>Coherence with international framework: Low. The work is carried out according to the previously existing (USSR) inventory accounting system</p>	<p>According to the NSC, only production volumes are given.</p> <p>Seventy deposits of coal and coal-showings have been discovered. They have formed 4 coalfields and 3 coal areas.</p>
Oil and burning gases	Reserve data not publicly available. Production data are available	<p>SCIESU responsible for reserve data. Not available online (http://gkopen.kg/)</p> <p>Makeev V.P., Khristova M.P. Handbook “Oil and gas of Kyrgyzstan”. Bishkek – 2011. Two volumes</p> <p>Mineral resource base of the Kyrgyz Republic at the turn of the transition to a market economy. Ch.ed Turusungaziev B.T. Bishkek, 1998. 231p.</p> <p>Site of the NSC, publications (http://www.stat.kg/ru/publications/)</p>	<p>Timeliness: No delays</p> <p>Frequency: Once a year</p> <p>Time Series: Permanent, from 1st January</p> <p>Coverage: Fully covers the period of existence of the deposit</p> <p>Accessibility: Production data: High. Reserve data: Low.</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: High degree</p> <p>Coherence with international framework: Low. The work is carried out according to the previously existing (USSR) inventory accounting system</p>	<p>According to the NSC, only production volumes are given.</p> <p>Fifteen deposits have been discovered at this time, including: 6 oil deposits, 5 gas-oil deposits and 4 gas deposits.</p>

Peat	Reserve data not publicly available.	<p>SCIESU responsible for reserve data. Not available online (http://gkpen.kg/)</p> <p>Kyrgyz Soviet Socialist Republic: Encyclopedia /Ch.ed. B.O. Orozbaeva – Frunze: Main edition of the Kyrgyz Soviet Encyclopedia, 1982. 488p.</p>	<p>Timeliness: No delays</p> <p>Frequency: Once a year</p> <p>Time Series: Permanent, from 1st January</p> <p>Coverage: Fully covers the period of existence of the deposit</p> <p>Accessibility: Reserve data: Low.</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: High degree</p> <p>Coherence with international framework: Low. The work is carried out according to the previously existing (USSR) inventory accounting system</p>	Some of the facilities were previously developed, but a significant number of peat deposits are located in sanitary and protected areas and therefore cannot be accessed.
Uranium and Thorium	Reserve data not publicly available.	<p>SCIESU responsible for reserve data. Not available online (http://gkpen.kg/)</p> <p>Mineral resource base of the Kyrgyz Republic at the turn of the transition to a market economy. Ch.ed Turusungaziev B.T. Bishkek, 1998. 231p.</p> <p>Ore deposits of Kyrgyzstan. Ch.ed. Kurmanaliev K.Z. Bishkek, 2009. 482p.</p> <p>Azarga Uranium Corporation (http://azargauranium.com/projects/kyrgyzstan/kyzyl-ompul/)</p>	<p>Timeliness: No delays</p> <p>Frequency: Once a year</p> <p>Time Series: Permanent, from 1st January</p> <p>Coverage: Fully covers the period of existence of the deposit</p> <p>Accessibility: Reserve data: Low.</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: High degree</p> <p>Coherence with international framework: Low. The work is carried out according to the previously existing (USSR) inventory accounting system</p> <p>High. Companies evaluate deposits using international JORC and N143-101 systems</p>	No mining of this type of mineral.

Thermal water	Reserve data not publicly available.	<p>SCIESU responsible for reserve data. Not available online (http://gkpen.kg/)</p> <p>Hydrogeology of the USSR. Volume XL. Kyrgyz SSR. Sidorenko A.V. (ch. ed.) & other. - M. Nedra, 1971, 487p.</p> <p>Map of minerals of the Kyrgyz Republic. Scale 1:1,000,000. Explanation note. Editor-in-chief: Sh. Murzagaziev. Bishek. 2000.</p> <p>Matichenkov V.E., Imankulov B.I. Mineral waters of Kyrgyzstan. Frunze, 1987. 251p.</p>	<p>Timeliness: No delays</p> <p>Frequency: Once a year</p> <p>Time Series: Permanent, from 1st January</p> <p>Coverage: Fully covers the period of existence of the deposit</p> <p>Accessibility: Reserve data: Low.</p> <p>Interpretability: Yes</p> <p>Transparency: Yes</p> <p>Accuracy: Yes</p> <p>Consistency: High degree</p> <p>Coherence with international framework: Low. The work is carried out according to the previously existing (USSR) inventory accounting system</p>	<p>The stage of exploration of thermal water deposits varies, including :weakly explored, preliminary evaluated deposits; detail explored deposits; and some deposits which are being developed.</p> <p>Mainly used for treatment purposes.</p>
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