

Baseline Review
fossil energy and mineral statistics
Kyrgyz Republic

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Introduction

On 01.10.2018 there are 16 Ministries and Departments, 6 State Agencies, 10 State Services, 6 Foundations and Inspections in the structure of the Government of the Kyrgyz Republic (<http://www.gov.kg>).

At the moment, 2 organizations are engaged in the basic information on the movement of reserves and the use of the Republic's mineral resources:

1. State Committee for Industry, Energy and Subsoil Use (SCIESU) (<http://gkpen.kg>);
2. National Statistical Committee (NSC) (<http://www.stat.kg>).

According the Statute of the NSC (NacStatKom) - the National Statistical Committee of the Kyrgyz Republic is a state authority that carries out state statistical activities on the principles of professional independence and independence and coordinates activities in the field of accounting and statistics throughout the Kyrgyz Republic. The National Statistics Committee is accountable to the President of the Kyrgyz Republic.

Under the Law "On State Statistics", the sources of statistical information are:

- primary statistics on respondents to be statistically monitored;
- administrative data of state and local authorities, other legal entities;
- banking and financial statistics, balance of payments statistics;
- statistical information of international organizations and statistical services of other countries;
- estimates and calculations made on the basis of the above data.

State statistical authority decide on the choice of a source of statistical information independently, taking into account the quality of information and the timeliness of its presentation, the costs of collecting and processing information, and the responsibilities of respondents arising in this connection.

The source of data on statistics of fossil energy sources and mineral resources in the Kyrgyz Republic is the State Committee on Industry, Energy and Subsoil Use, which operates on the basis of the Regulation No. 401 of July 15, 2016.

"The objectives of the Committee are the development and implementation of a unified state policy in industry, the fuel and energy complex and the sphere of subsoil use."

The complex and long-term geological development of the Kyrgyz Tien Shan has created a wide variety of geological complexes, geodynamic settings and favorable conditions for the formation of various mineral deposits.

The Kyrgyz Republic has significant potential for many types of mineral raw materials. For almost 80-year history of geological research (since the formation of the Kyrgyz Geological Administration in 1938), about 20 thousand deposits and ore occurrences of more than 150 kinds of various minerals have been identified by geologists on its territory. Mining industry in the Republic has always been one of the leading industries (Ore deposits of Kyrgyzstan. Ed. K.Z.Kurmanalieva. 2009).

All mineral resources of the Kyrgyz Republic can be grouped into 4 large groups - combustible, metallic, non-metallic and groundwater (including curative mud).

The following fossil energy resources - coal, oil, gas, peat - were revealed from the combustible minerals in the territory of the Kyrgyz Republic.

Uranium and thorium are extracted from metallic resources as fossil energy resources. Thermal and thermo-mineral waters are emitted from groundwater.

1. Ministries/agencies/companies involved in the system

The system for collecting, processing and accumulating statistics on fossil energy sources and mineral reserves includes:

Subsoil user - as a source of data on the increase or decrease in stocks, and their movement;

State Committee on Industry, Energy and Subsoil Use under the Government of the Kyrgyz Republic (SCIESU) - as a subject conducting the accumulation of primary data and their primary processing;

National Statistical Committee (NSC) - as a subject that processes primary information and prepares and disseminates State statistics.

2. Legal basis for collecting fossil energy and mineral reserve statistics

2.1 State Committee on Industry, Energy and Subsoil Use under the Government of the Kyrgyz Republic

State Committee for Industry, Energy and Subsoil Use, in accordance with the Regulation on the State Committee for Industry, Energy and Subsoil Use of the Kyrgyz Republic dated July 15, 2016 No. 401. (As amended by Government Decisions of December 12, 2016 No. 653, September 18, 2017 No. 590), "... is the central executive authority responsible for the development and implementation of state policy in the field of industry, with the exception of the food industry (hereinafter - industry), fuel and energy complex and subsoil".

SCIESU acts on the basis of the Constitution of the Kyrgyz Republic (<http://cbd.minjust.gov.kg/act/view/ru-ru/202913>), the Law of the Kyrgyz Republic "On Subsoil" (<http://cbd.minjust.gov.kg/act/view/en-ru/111782>), as well as other relevant legislation of the Kyrgyz Republic in the field of subsoil use ("On Oil and Gas" (June 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), "On Coal "(February 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), Regulations on State Accounting and Control of water in the Kyrgyz Republic (As amended by the Government of the Kyrgyz Republic on November 4, 1997 N 643; February 25, 2002 N 100), and the corresponding Regulations on the SCIESU.

According to the Law "On Subsoil", Article 6, clause 10 of the SCIESU "maintains the State balance of mineral reserves of the Kyrgyz Republic". Also, Articles 11 and 12 set forth

the provisions on maintaining the State Balance, and the body responsible for setting the State Mineral Reserves on the State Balance.

The State Commission on Reserves (SCR) operates in the structure of the SCIESU. The State Reserves Committee conducts its activities based on the Law of the Kyrgyz Republic “On Subsoil” and the Regulation on the State Commission on Mineral Reserves of the Kyrgyz Republic (No. 754 of December 30, 2014). “The Commission carries out approbation of the reliability of the availability and correctness of the calculation of proven reserves of mineral deposits and geological information on subsoil areas not related to the extraction of minerals. Mineral reserves of deposits are subject to accounting by the State balance of mineral reserves of the Kyrgyz Republic on the basis of a decision (protocol) of the Commission”.

“The Committee writes off, in the established order, the reserves of mineral deposits that have been extinguished or have lost their economic value” (Regulations on the SCIESU).

In the course of its activities, the subsoil user, according to the Law "On Subsoil", "On Coal", "On Oil and Gas", is obliged to report to the SCIESU on the movement of stocks (their growth, or write-off), with the mandatory approval of changes in stocks - exploration or mining operations.

2.2 National Statistical Committee of the Kyrgyz Republic

National Statistical Committee of the Kyrgyz Republic on the Regulation on the National Statistical Committee (Approved by Decree of the President of the Kyrgyz Republic dated July 11, 2007 N 335) “...is a state authority that carries out state statistical activities on the principles of professional independence and independence and coordinates activities in the field of accounting and statistics throughout the territory of the Kyrgyz Republic. National Statistical Committee reports to the President of the Kyrgyz Republic”.

The NSC acts on the basis of the Constitution of the Kyrgyz Republic, the Law of the Kyrgyz Republic “On State Statistics” (dated March 26, 2007 N 40; as amended by the Laws of the Kyrgyz Republic of March 27, 2009 N 85, February 22, 2013 N 27), the Law “On Population Census and housing stock "(of April 19, 2008 No. 59; as amended by the Law of the Kyrgyz Republic of January 30, 2014 No. 23), of the Law" On Agricultural Census "(of September 29, 2000 No. 80).

3. A brief description of relevant national policies/programs affecting fossil energy and mineral reserves

3.1 Basic description of the national accounting system for fossil energy and mineral reserves

At present time, the SCR is using the Soviet system of accounting for the reserves of all minerals located in the sub soil of the Kyrgyz Republic

In accordance with the level of geological assurance, four reserve categories are established under the Soviet classification scheme: A, B, C₁ and C₂. Reserves under categories

A, B and C₁ are assigned to the proved or explored reserves while those under category C₂ are assigned to preliminary assessed reserves (Mineral Map. 1:1000000 scale. Text description.)

Category A

These resources consist of the most highly proved part of explored resources. They have been extensively investigated, and the mode of occurrence, shape and structure of an ore-body are known. These data are derived from drilling and mine works.

With A category resources, the technological properties of the ore minerals, including the hydro-geological, engineering-geological and other natural, environmental features, have been studied in detail, ensuring the acquisition of preliminary data necessary for designing ore processing flow-sheets and compiling a detail technical report for the development of the deposit. The contour of the mineral reserves is established in accordance with data from boreholes and mine works.

Category B

These reserves include those deposits whose characteristics have not been studied quite so thoroughly although some of their major characteristics have been delineated. The extent of these resources is determined with the help of information from drilling and mining operations, but their explorations is permitted to a limited extent only.

With B category resources, economic minerals are defined and delineated where possible; in cases where definition is impossible, the spatial distribution of industrial mineral types and grades is established. The technological properties of category B minerals are studied to a detail needed for the selection of a basic processing flow-sheet while hydro-geological, engineering-geological, geotechnical and other natural conditions are examined to a degree which enables a qualitative and quantitative characterization of their principal parameters and determination of their influence on the development of the mineral deposit.

Category C₁

These reserves are even less well delineated. Only their most general characteristics are known.

The changeability and possible discontinuity of mineral bodies are assessed while hydro-geological, engineering-geological and other natural features are studied to a degree that allows only a preliminary characterization of their main parameters.

Category C₂

Preliminary explored resources, category C₂, are established on the basis of geologic, geophysical and geochemical studies, and measurements of the ore-body in exploratory activities.

Resources in this category can also be estimated by extrapolation of geologic data. With category C₂ reserves, the quality and technological properties of the minerals are determined through analysis of only a few laboratory samples or by analogy with better-studied portions of the same or similar deposits. Hydro-geological, engineering geological and other natural

conditions are assessed based on evidence and observations in mine working and boreholes from other sites and by analogy with data available from the vicinity of the deposit.

Projected or probable resources consist of an undiscovered portion of the mineral base. Their appraisal is based on geological data from similar and explored deposits elsewhere. In contrast to reserves, probable resources are not computed but evaluated in a numerical form. Project or probable resources are also known as prognostic resources.

As with reserves, probable resources are evaluated for an entire country, for economic areas, ore basins and fields and individual deposits. Probable resources provide an indication of the expansion possible of a mineral-raw materials base and form a basis for current and long-term economic planning and defining geological exploration and prospecting activities.

Based on the level of geological assurance, probable resources fall into three categories: P_1 , P_2 and P_3 .

Category P_1

These probable resources are those of explored deposits or those currently being explored as well as the resources of new deposits where prospecting has been completed.

Category P_1 probable resources can be reclassified into reserves with an expansion of the mineral distribution area or discovery of new ore-bodies at the deposit. The quantitative appraisal of the deposit is based on an understanding of the type of deposit and its origin.

Category P_2

Project resources of undiscovered deposits thought to exist on the basis of evidence from geologic surveys, prospecting and geophysical and geochemical tests comprise category P_2 .

The availability of resources in this category is deduced from the estimation of ore occurrences as well as geophysical and geochemical anomalies whose nature has been determined through the course of large-scale (1:50000) mapping. Category P_2 probable resources from a basis for planning long-term prospecting and assessment programs.

Category P_3

These probable resources are those of potentially promising areas, districts, basins, and ore fields which do not contain mineable mineral deposits but based on stratigraphic, lithological, tectonic and paleogeographic evidence may reveal new deposits.

Quantitative estimates of this resource category are based on analogy with better studied regions, areas and basins, where explored mineral deposits of the same genetic type occur. Category P_3 probable resources from a basis for planning future large-scale geological mapping and prospecting programs for mineral deposits.

As soon as SRC approved, and the SRC secretary prepared a protocol on the SRC decision, the reserves for the deposit are recorded in the State Balance.

Information on the status and change of reserves subsoil user begins to submit from the moment of obtaining a license for exploration or mining operations. In accordance with the legislation, the subsoil user submits the following reporting forms to the SCIESU

(<http://gkpen.kg/index.php/homhh>):

1. **5-GR** (5-ГР) “INFORMATION ON THE STATE AND CHANGE OF RESERVES OF SOLID MINERAL RESOURCES”
2. **5-GR (COAL)** (5-ГР (УГОЛЬ) "INFORMATION ABOUT THE CONDITION AND CHANGE OF COAL RESERVES OR COMBINED SLATES"
3. **6-GR** (6-ГР)“INFORMATION ON THE STATE AND CHANGE OF OIL, GAS, CONDENSATE, ETHAN, PROPANE, BUTANE, SULFUR, HELIUM RESERVES”
4. **11-SHRP** (11-IIIPII) "INFORMATION ABOUT LOSSES, AT PRODUCTION, COAL (SLANTS) IN THE BOWELS"
5. **70-TP** (70-TII) "INFORMATION ON THE EXTRACTION OF SOLID MINERAL RESOURCES DURING EXTRACTION"

The obtained data are processed and entered into the appropriate forms of the State Balance. The state balance is conducted in several directions:

- Metals
- Gold
- Water
- Oil and gas
- Coal
- Nonmetallic raw materials

Submission of reporting forms by the subsoil user is annual until January 31 of the following year.

3.2 Reporting to the National Statistical Committee

According to Article 16 “Provision of primary statistics”

Respondents are obliged to provide free of charge to state statistics authorities the primary statistical data provided by the reporting and statistical documentation.

The structure, scope and methodology for calculating the indicators, addresses and deadlines for submitting statistical information specified in the reporting and statistical documentation are mandatory for all respondents and cannot be changed without proper permission from the state statistical authority.

The subsoil user submits several forms of statistical reporting (not necessarily all).

But the most important, in matters of inventory accounting, are

"Report on the performance of exploration work" 01-GR (form code 6125010) - financial costs

"Report on total water use indicators" 2 water management (form code 6127254) - in volume equivalent

The submission of reporting forms is annual, the deadlines for the submission of reports

are distributed throughout the year.

3.3 The names of major national energy statistics databases/publications containing fossil energy and mineral reserve data

As mentioned above information on stocks of mineral raw materials has:

Subsoil user - within its own field;

SCIESU - within each deposit separately, and by type of mineral as a whole;

NSC - by type of mineral and the movement of reserves on it, partially processed by the SCIESU.

1. Information on reserves can be obtained on the sites of the subsoil user, especially public companies (for example, Kumtor Gold Company <https://www.kumtor.kg/en/deposit/centerra-gold-inc-reports/>). In other cases, upon request, although this does not guarantee an answer.
2. Upon request from SCIESU. At the request will be prepared data from the archive / stock data, and modern data (if any). Such information is prepared at the request of government agencies, primarily to the Government.
3. Works with materials of the State Geological Fund and the archive of primary materials is regulated by the "Procedure for use ..." dated July 9, 2018 (<http://gkpen.kg/images/DOCS/prikaz.pdf>).
4. For those interested in issues of geology and reserves, there are historical data in publications of SCIESU issued since 1999. This literature is released in limited quantities and is available in libraries or with specialists. The literature provides data on the most significant deposits and occurrences. Given the characteristics of stocks for the period of publication.
5. Free access to the register of minerals, where you can find a brief information on most of the deposits and manifestations of minerals (<http://gkpen.kg/images/basa/Reestr%20PI.doc>). This registry is a text supplement to a mineral map of 1: 500000 scale. The map can be purchased without any restrictions.

According to the existing publication schedule, the NSC publishes bulletins and statistical data collections. Publications are general and sectoral. By sector stand out:

- Real sector;
- External sector;
- Social sector;
- Financial sector;
- Special editions.

Information can be found both in paper form (upon request) and electronically (<http://www.stat.kg/ru/publications/>). Information can be found in Kyrgyz, Russian and English (general data only) languages. The data on the mining sector can be found in the collections "Industry of the Kyrgyz Republic", which is published once a year, the publication period is September (<http://www.stat.kg/ru/publications/sbornik-promyshlennost-kyrgyzskoj-respubliki-2008-2012g/>). This compilation presents data on the indicator "Mining of fuel and energy minerals: Coal and lignite, thousand tons; Crude oil, thousand tons; Natural gas, million cubic meters.).

3.4 A brief summary of the financial and human resources devoted to the collection of fossil energy and mineral reserve statistics

The calculation of reserves of deposits, most often produced by specialized companies, but also subsoil users can produce the calculation.

SCIESU, 3 people are employed in maintaining the balance sheet and registering reserves in the SCR.

The SCR Secretary accepts the documents, keeps a record of the SCR meeting and draws up the adopted decisions of the SCR, with the subsequent transfer of data for putting on balance. The other two people keep a balance in their directions, accept and verify the correctness and completeness of filling in the forms of puffiness by the subsoil users.

In the structure of the Central Office of the NSC (<http://www.stat.kg/ru/about/centralnyj-apparat/>), there is the Department of Statistics of the Real Sector, one of whose departments is the Department of Industry and Energy Statistics. Based on the analysis carried out by this department, statistics are compiled for the industry as a whole, and for the mining component in particular.

3.5 A brief summary of any major statistical improvement programs

3.5.1 SCIESU

As noted earlier, the Soviet system of state stock accounting is used in Kyrgyzstan. Currently, Kyrgyzstan is considering a gradual transition to international reporting systems and accounting of mineral reserves.

October 31, 2017 in Jakarta (Indonesia) a tripartite memorandum of understanding was signed between the SCIESU, the Association of Legal Entities "Kyrgyz Mining Association" (KMA) and the Committee on International Standards of Mineral Reserves Reporting (CRIRSCO).

The reason for the preparation of the implementation of the CRIRSCO system is the need to prepare modern reporting forms for all types of minerals.

The main work on the implementation of CRIRSCO is carried out by the KMA, which, at this moment has prepared a plan for the implementation of this project, and is currently expected to start funding the development of the KyrRC reporting system.

The closest neighbors - Mongolia, Kazakhstan and China - have already moved to the international CRIRSCO system.

An agreement was also reached (in 2017) with Russian colleagues on assistance in implementing the classification of oil and combustible gas reserves and resources related to the United Nations Framework Classification of Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009).

3.5.2 NSC

Kyrgyzstan, as a member of the UN, has consistently supported the 17 sustainable development goals (SDGs). Based on the principles of the SDGs in Kyrgyzstan, the National Development Strategy of the Kyrgyz Republic for 2018–2040 was created and approved

(http://www.president.kg/ru/sobytiya/12774_utverghdena_nacionalnaya_strategiya_razvitiya_kirgizskoy_respubliki_na_2018_2040_godi), also the program "Taza Koom" was prepared (<http://tazacoom.kg/site/index>), which is a key component of the Strategy.

“Taza Koom“ is a high-tech program to build an open and transparent state through innovation, knowledge and the widespread use of information technology to improve people's lives, create new economic opportunities and a stronger society, centered on a person, his values and potential.

The mission of “Taza Koom” is to enable every person and every organization in our country to achieve more, acting as a catalyst for business transformation, as well as the development of technologies of "smart" cities and regions.

"Taza Koom" is formed from seven goals:

- 1) Building a world-class digital infrastructure based on green technologies and clean energy;
- 2) Creating an enabling environment conducive to sustainable innovative development;
- 3) Digital opportunities for all, digital skills for the digital economy
- 4) To help every Kyrgyz citizen to become a digital citizen with the necessary knowledge and capabilities;
- 5) To formation of an open digital society, the driving force of which is the data industry;
- 6) Making Kyrgyzstan a safe place to live and work in real time (on-line);
- 7) Transformation of Kyrgyzstan into a regional hub of the digital Silk Road for digital business and digital innovations.

To accomplish the strategic tasks of Taza Koom, a “National Spatial Data Infrastructure” (NSDI) (<https://grs.gov.kg/ru/articles/projects/9-Stratieghia-sozdaniia-i-razvitiia-Natsionalnoi-in/>).

Creation of the National Spatial Data Infrastructure - the formation of a spatial data infrastructure that provides free access for citizens, enterprises and organizations, public authorities and local self-government of the Kyrgyz Republic to state and regional spatial data resources and their effective use.

As part of the implementation of the NSDI, the National Statistics Committee has developed activities for capacity building of the SDGs.

Vision - sustainable mechanisms for implementing and coordinating state policy in the field of statistics are created, aimed at maximally satisfying the needs of users (population, business, government bodies and international organizations) in high-quality statistical information.

The main goal of the Program is to increase the effectiveness of the national information and statistical system based on improving the legislative framework, introducing advanced information and communication technologies to integrate statistical production processes, improving the quality of the data produced and user confidence in them, as well as increasing statistical intellectual potential.

The achievement of this goal will be facilitated by the implementation of measures aimed at solving the following tasks:

- further harmonization of legislation in the field of official statistics with international norms and standards;
- reducing the burden on respondents by providing the possibility of submitting reports in electronic form;
- improvement and development of information communication technologies;
- improvement of statistical methodology and tools;
- development of an integrated information and analytical system of statistical bodies;
- improving the management of statistical production processes and evaluating its results;
- integration of information systems of the National Statistical Committee of the Kyrgyz Republic with information systems of other state authority in order to use administrative data for statistical purposes;
- ensuring user needs for high-quality reliable statistical information;
- improving the infrastructure to provide professional development of personnel, the development of new forms and methods of their training.

The NSC's strategy to fulfill the tasks of the NSDI (<https://unstats.un.org/unsd/capacity-building/meetings/da10-workshop-2017/4b-Kyrgyzstan-RU.pdf>):

- improved access to data;
- the ability to combine data from various sources;
- improving data quality and compatibility;
- support of business environment working with geo-data;
- reducing the cost of collecting and storing data;
- supporting the development of e-government.

4. The quality of the official fossil energy and mineral reserve statistics of Kyrgyz Republic.

4.1 SCIESU

Criteria for evaluation	Evaluation
<ul style="list-style-type: none"> • timeliness: the delay between the reference period and the date of public release 	<p>As such, the public release of data does not exist. Information on mineral reserves is available upon request of the interested person.</p> <p>The publication of data on reserves is not permanent in nature and is published in reference books on types of minerals.</p>
<ul style="list-style-type: none"> • frequency: the interval (months, quarters, years) between release 	<p>The subsoil user, according to the Law “On Subsoil”, is obliged to hand over data on the movement of reserves until January 31 of the following year.</p> <p>Data processing and updating of balances goes throughout the year.</p>
<ul style="list-style-type: none"> • time series: the earliest and most recent dates for which statistics are available 	<p>The registration of mineral resources began with the organization of the geological service of the Republic (Decree of the People’s Commissariat of Heavy Industry of the USSR dated July 28,</p>

	1988 No. 275)
<ul style="list-style-type: none"> coverage: the completeness of the data in terms of periods; are there periods for which data were not collected? 	Inventory of mineral resources is conducted on an ongoing basis, without interruption, since 1938
<ul style="list-style-type: none"> accessibility: the ease with which users can access the statistics 	<p>According to the existing regulations, on request, you can access the geological funds of the SCIESU, as well as receive current data on reserves;</p> <p>Upon request, you can get information from subsoil users;</p> <p>If necessary, you can work with the released books with the characteristic of mineral deposits in general, and with reserves for them in particular.</p> <p>The registry of minerals is freely available, where you can find a brief information on most of the deposits and mineral manifestations (http://gkpen.kg/images/basa/Reestr%20PI.doc). This registry is a text supplement to a mineral map of 1: 500000 scale.</p>
<ul style="list-style-type: none"> interpretability: the availability of information, such as metadata, to help users understand the statistics 	Metadata acquisition is not likely, unless a major international project is being carried out.
<ul style="list-style-type: none"> transparency: the availability of information regarding the methodology used to the gather the statistics 	Provisions and reporting forms in free access (http://gkpen.kg/index.php/homhh).
<ul style="list-style-type: none"> accuracy: the availability of information regarding the degree to which the information correctly describes the phenomena it was designed to measure 	<p>In general, the accuracy of the data is high, in some cases, the human factor may appear. (mechanical error).</p> <p>It depends on the correctness of the data provided by the subsoil user.</p>
<ul style="list-style-type: none"> consistency: the degree to which data are collected in a consistent manner across time 	Data collection is strictly stipulated by existing legislation. Article 20, paragraph 17 of the Law "On Subsoil" - "the delivery of the annual report on the implementation of the social package in respect of subsoil objects of national importance to the executive authority of the relevant administrative unit within 30 days after the end of the previous calendar year and to the state authority on subsoil use the stage of submission of annual reports in accordance with the

	requirements of this Law; ”
<ul style="list-style-type: none"> coherence with international frameworks: the degree to which the statistics are coherent with the concepts and definitions used in the UN-FC and UN-SEEA. 	<p>Registration of mineral reserves is carried out according to the SCR methodology.</p> <p>Modern methods of inventory and valuation of reserves in Kyrgyzstan are in their infancy. It was decided to gradually introduce the CRIRSCO system and develop the KyrRC standard on its basis, and to partially use UN-FC regarding the classification of reserves and resources of oil and combustible gases.</p>

4.2 NSC

Criteria for evaluation	Evaluation
<ul style="list-style-type: none"> timeliness: the delay between the reference period and the date of public release 	<p>On the website of the National Statistics Committee, you can familiarize yourself with the statistical calendar (http://www.stat.kg/ru/statistics/calendar/), which is designed to inform reporting subjects about the deadlines for submitting statistical reporting forms to statistical bodies.</p> <p>After processing the information received, the data is published according to the established deadlines (http://www.stat.kg/ru/publications/).</p>
<ul style="list-style-type: none"> frequency: the interval (months, quarters, years) between release 	<p>The frequency of publications is different, and depends on the importance of the data and the sector of published data (http://www.stat.kg/ru/publications/).</p>
<ul style="list-style-type: none"> time series: the earliest and most recent dates for which statistics are available 	<p>By the Resolution of the Kara-Kirghiz Oblast Revolutionary Committee of April 29, 1926, a committee on statistics was formed, which was entrusted with the task of comprehensive development of statistical data, as well as coordinating the activities of statistical bodies that were part of various departments and agencies at that time..</p>
<ul style="list-style-type: none"> coverage: the completeness of the data in terms of periods; are there periods for which data were not collected? 	<p>The data was collected and collected in accordance with the existing Regulations, which ensure the completeness of the information collected that is relevant at the moment.</p>

<ul style="list-style-type: none"> • accessibility: the ease with which users can access the statistics 	<p>Information can be found both in paper form and in electronic form (http://www.stat.kg/ru/publications/). Information can be found in the Kyrgyz, Russian and English (general data only) languages.</p> <p>In the Law on State Statistics, Chapter 4, Articles 18 and 19 clearly define the possibility of using statistics.</p>
<ul style="list-style-type: none"> • interpretability: the availability of information, such as metadata, to help users understand the statistics 	<p>According to the SDGs achievement program, the NSC is developing a metadata system. As part of this work, a page with data that can be attributed to the metadata is created on the Web site - http://www.stat.kg/ru/opendata/.</p>
<ul style="list-style-type: none"> • transparency: the availability of information regarding the methodology used to gather the statistics 	<p>The basics of data collection are given in the Laws and Statistical Regulations. Laws are available without restrictions. (http://www.stat.kg/ru/about/pravovye-osnovy-organov-gosudarstvennoj-statistiki/).</p>
<ul style="list-style-type: none"> • accuracy: the availability of information regarding the degree to which the information correctly describes the phenomena it was designed to measure 	<p>In general, the accuracy of the data is high, in some cases the human factor (mechanical error) may appear. It depends on the correctness of the data provided by the subsoil user, or government services.</p>
<ul style="list-style-type: none"> • consistency: the degree to which data are collected in a consistent manner across time 	<p>Data is collected according to a statistical calendar.</p>
<ul style="list-style-type: none"> • coherence with international frameworks: the degree to which the statistics are coherent with the concepts and definitions used in the UN-FC and UN-SEEA.. 	<p>Activities to promote the SDG program started in 2015.</p>

5. Recommendations for the improvement in of fossil energy and mineral reserve statistics

Based on the baseline assessment, several recommendations can be made to improve the statistics of fossil energy sources and minerals. It is hard to say about the priority of recommendations, since the old system of accounting for mineral resources is working, and it works well, and the new system is in its infancy. The abrupt commissioning of a new accounting system can lead to a collapse of the entire accounting system, and it's too early to talk about it.

5.1 A list of gaps in fossil energy and mineral reserve statistics in Kyrgyz Republic prioritized from most to least important

The main problem with the introduction of a new reporting system is the lack of a legal basis for the commissioning of new reporting systems, which are designed to prepare an independent assessment of companies' mineral assets and attract investments to finance subsoil use projects. These systems are mentioned only in intentions, and so far have not advanced further.

The second problem is human resources, training of responsible persons for mineral reserve assessment, it takes time.

5.2 A list of changes required in fossil energy and mineral reserve statistics in Kyrgyz Republic to make them coherent with the UN-FC and UN-SEEA

The following changes are necessary for the harmonization of statistical data on energy (oil and gas) resources of the Kyrgyz Republic, officially recognized within the UN-FC and UN-SEEA system:

Harmonization of changes

		Changes
UN-FC	HARMONIZATION	(1) Formal decision on the implementation or application of the UN-FC system in the national oil and gas reporting system
UN-SEEA		(2) Memorandum of Understanding between UNECE and the Government of the Kyrgyz Republic (3) Order to establish a national group of experts (4) Training of domestic professional staff in the implementation or application of the UN-FC system, (5) Professional training of state personnel (government, academy, state company, etc.) in the implementation and application of the UN-FC system and the UN-ECE framework (6) Creation (conversion) of the initial statistical database on resources and reserves of the mineral resource base in accordance with the accepted rules and regulations in the Kyrgyz Republic (7) Inclusion of domestic publicly available statistics in international statistics in a generally recognized manner. (8) Gradual translation of existing and creation of new databases, in accordance with the UN-FC and UN-ECE framework

5.3 Overcome the main obstacles standing in the way of improving fossil energy and mineral reserve statistics in Kyrgyz Republic

Five (5) groups of funds can be identified to more easily overcome obstacles, and they include: institutional, legal, technical, human resources and financial resources.

Necessary means for overcoming the main obstacles

Group of funds	Characteristic
Institutional	<ul style="list-style-type: none"> - Expansion and strengthening of horizontal communication between the authorities and institutions involved in accounting for fossil fuel and mineral reserves, and statistics of its use in the Kyrgyz Republic; - Harmonization of functional responsibilities of authorities.
Legal	<ul style="list-style-type: none"> - Introduction to the legal acts of the very concept of standard reporting on the results of exploration, mineral resources and reserves of the object of research; - Harmonization of newly introduced legal norms from the existing legislative framework not only of the Kyrgyz Republic, but also taking into account possible integration with international reporting standards; - The process of full harmonization of national legislation and international statistical standards for the purposes of public data analysis.
Technical	<ul style="list-style-type: none"> - The introduction of new and development of existing electronic systems of accounting of minerals (software packages for primary data processing); - The introduction of electronic reporting on existing reporting forms, which will reduce the processing time of the data, and the transfer of primary analyzes to the following organizations for a more complete analysis.
Human resources	<ul style="list-style-type: none"> - Increase the existing level of statistical knowledge at all stages of data movement; - Increasing the existing level of human resources; - Attracting and training new (interested) personnel for conducting work on the input, collection of primary data and statistical analysis of data that have passed the primary processing; - Training of responsible persons for the maintenance and control of information provided on reporting standards.
Financial	<ul style="list-style-type: none"> - Start financing the development and implementation of a reporting standard.

Sources

Internet resources

- http://www.gov.kg/?page_id=27290&lang=ru – The website of the Government of the Kyrgyz Republic
- <http://www.stat.kg/en/> - Site of the National Statistical Committee of the Kyrgyz Republic
- <http://www.stat.kg/ru/formy-statisticheskoy-otchetnosti/> - Site of the National Statistical Committee of the Kyrgyz Republic, reports.
- <http://www.stat.kg/ru/publications/> - Site of the National Statistical Committee of the Kyrgyz Republic, publications.
- <http://gkpen.kg/> - Site of the State Committee by Industry, Energy and Subsoil Use of the Kyrgyz Republic.
- <http://ecology.gov.kg/> - Site of the State Agency for Environmental Protection and Forestry under Government of the Kyrgyz Republic.
- <http://aarhus.kg/en/> - Site of the Aarhus Centers of Kyrgyzstan.

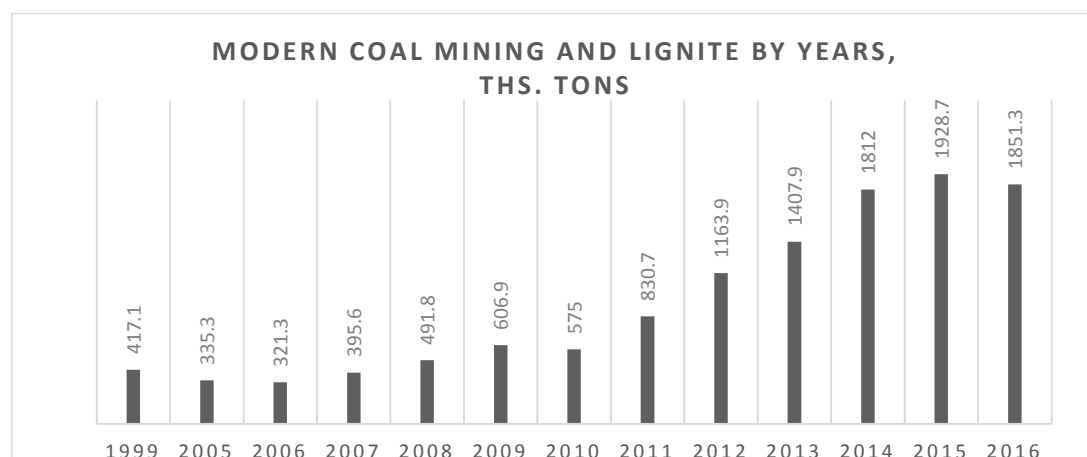
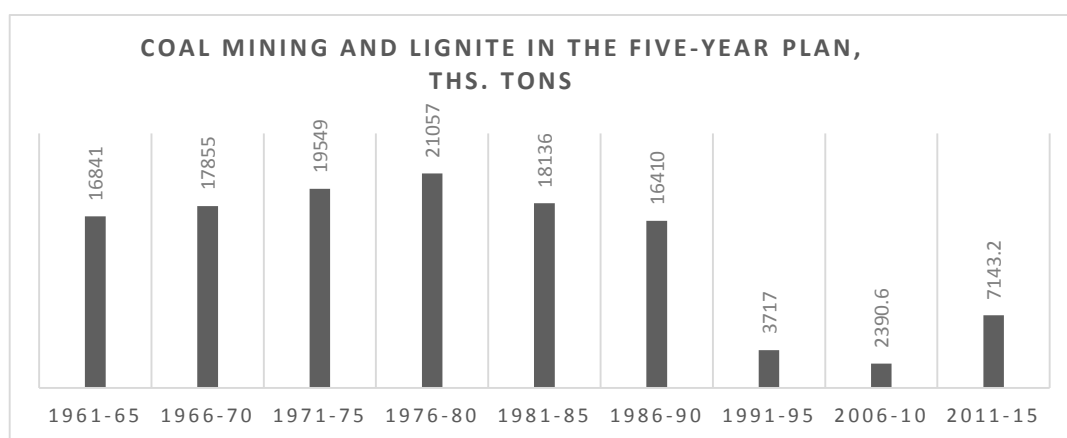
Appendix A - A brief overview of the quality of statistics on fossil energy reserves.

Coal

Seventy deposits of coal and coal-showings has been discover during 80 years of Kyrgyz geology. They have formed four coalfields (South Ferganski, Uzgenski. North Ferganski, Kavakski) and three coal areas (Alai, South Issyk-Kul, Alabuka-Chatyrkulski). Sediments of Triassic and Jurassic ages, which consist of: interstratified clays, argillites, siltstones, sandstones, and conglomerates with coal layers composed these deposits. Commercial coal beds of Early Jurassic age are spread in the low part of sedimentary rocks sequence. Number of coal seams in the deposits is ranged from 1 to 50 with thickness from 0.5 up to 100m.

There are 1345000 thousand tons of coal on the State balance on 01.01.1999, including 1026800 thousand tone by A+B+C₁ category and 318200 thousand tone by C₂ category. Total and probable reserves are estimated at 6.73 billion tones. Coal production was ranging 3 to 4 million tons per year until 1991. For the time being coal production are 300-400 thousand tons per year on the Kok- Yangak, Tashkumyr, Abshyr, Uch-Korgon, Almalyk, Sulyukta, Dzhergalan, Kara-Kiche, Minkush and others more small deposits.

Operation of the known deposits began in the late nineteenth century, and for some (Kok-Yangak, Tash Kumyr, Sulukta, Kyzyl-Kiya) production with breaks of coal has been going on for 100 years. Over the 100-year history of operations, there have been ups and downs in coal mining in the Republic. Now, the reserves of small deposits or local areas are involved in the operation.



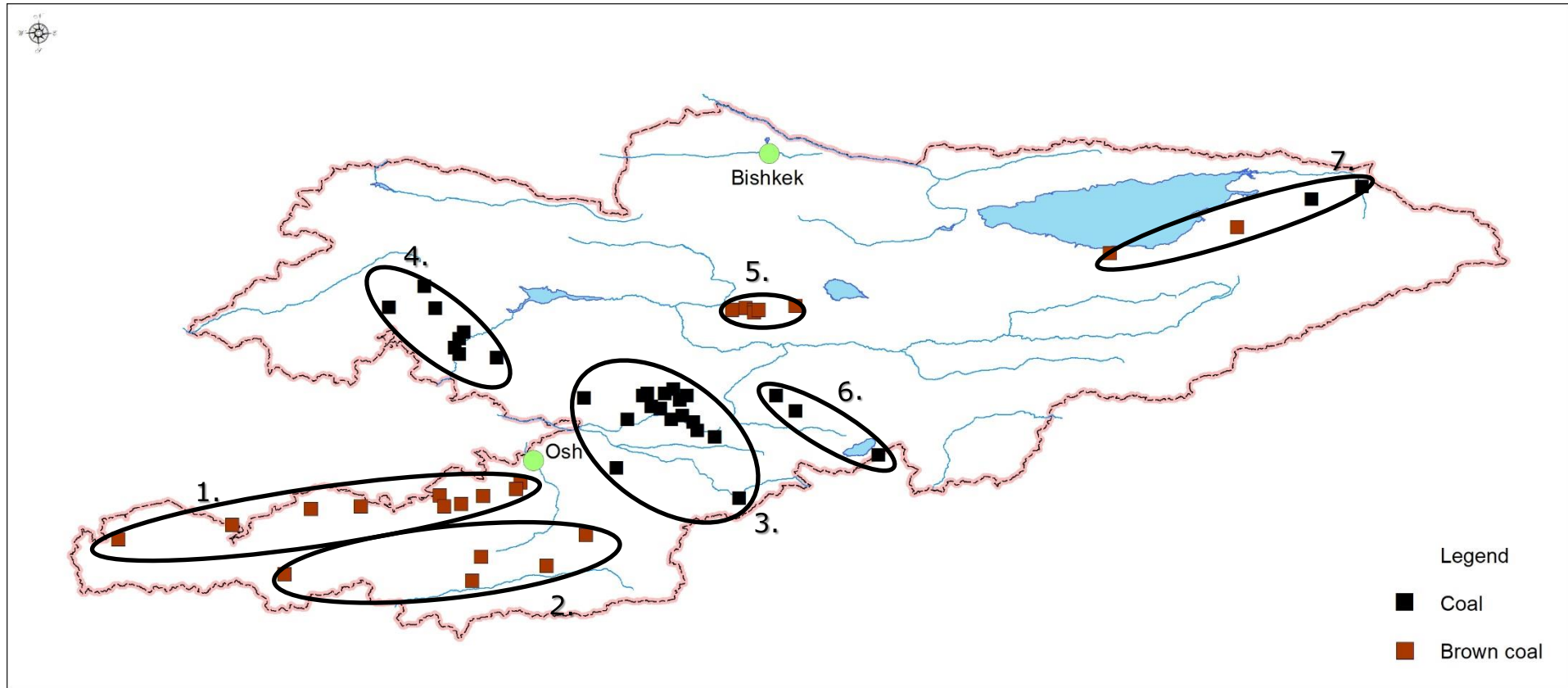


Figure 1. Map of coal deposits

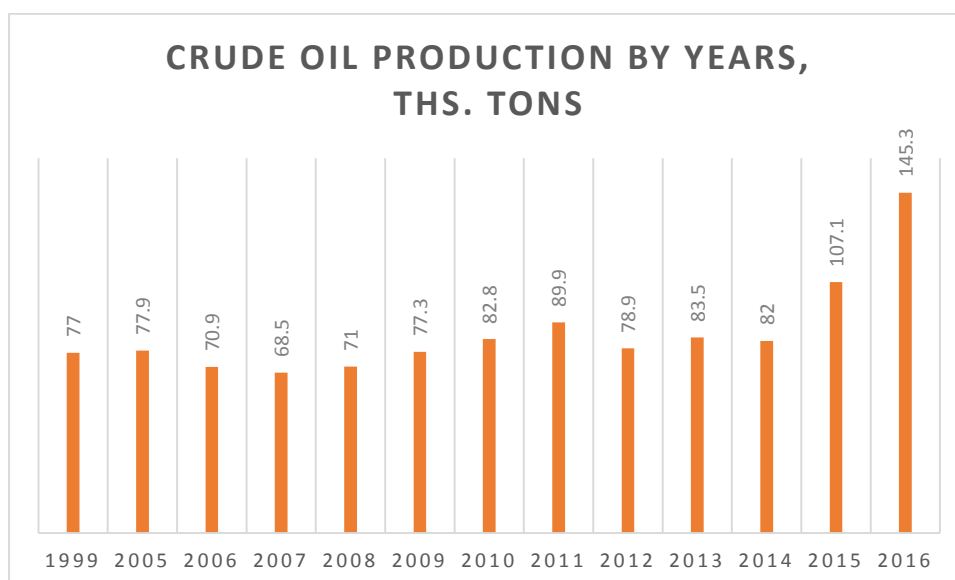
1. South Ferganski coalfield
2. Alai coal area
3. Uzgenski coalfield
4. North Ferganski coalfield
5. Kavakski coalfield
6. Alabuka-Chatyrkulski coal area
7. South Issyk-Kul coal area

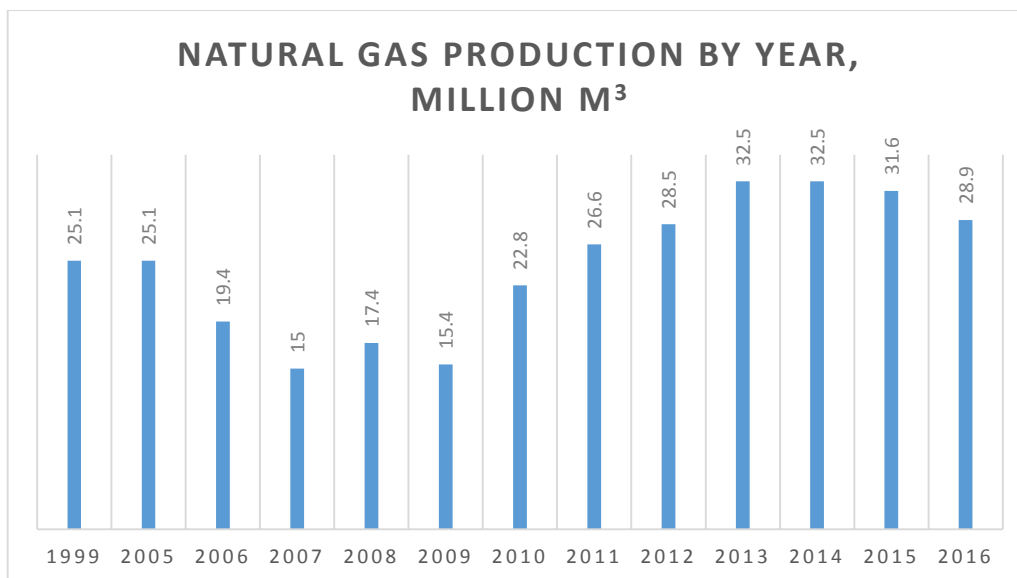
Oil and burning gases

Fifteen deposits have been discovered to this time, including: 6 oil deposits (Changyrtash, Chigirchic, Mailisai, Karagachi, Beshkent-Togap-Tashrvat, Tamchi), 5 gas-oil deposits (Mailisu IV Vostochny Izbaskent, Mailisu III, Niyazbek-Severny Karakchikum, Northern Rishtan), 4 gas deposits (Suzak, Southern Rishtan, Sarykamysh, Sarytok). Total perspective square for oil and gas exploration is 22.3 thousand km² in the Kyrgyz Republic and from them more than 5 thousand km² is place in the Fergana depression. Produced reserves of oil are about 12000000 tons and reserves of gas are 6500000000 m³. It has been produce about 10000000 tons of oil and 75000000000 m³ of gas since beginning of reservoir engineering in the Fergana depression. There are 313 oil and gas wells, including 247 producing wells on the balance of “Kyrgyz-oil-gas” joint-stock company. Extraction of produced oil and gas are 43% and 50% accordingly. 76000 tons of oil and 18000000 m³ of gas were produce in 1998. There aren't large oil gas deposits within the Kyrgyz Republic. Host rocks composed of sandstons and limestons of Triassic, Cretaceous, Paleogene and Neogene ages. Sandstons of Paleogene age are spread most widely than others. There are two reservoir types - porous and sometime mixed. Porosity of rocks is 6-24.1% and permeability is 0.02-3360 mD. Roof-sheet pools have clay lithological or tectonic screen.

The problem of providing Kyrgyz Republic with hydrocarbons remains relevant, determining the effectiveness of economic development.

Oil and gas resources are located in the Fergana Basin, within the foothills (the central part of the basin belongs to Uzbekistan), where oil production for 2016 amounted to 145.3 thousand tons, and gas - 28.9 million m³.





Peat

Cover of peat on the territory of the Kyrgyz Republic is 0.02% [9]. The largest number of peat deposits is confined to lowland reed-sedge bogs of floodplain areas of the Naryn, Chu, Talas, and Jyrgalan river valleys and their tributaries. Peat deposits are small, with reserves ranging from 3 to 5 million m³. 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 involved in the operation. Therefore, we regard this type of energy resources as potential.

Metal Energy Resources

The metal energy resources within the Kyrgyz Republic include Uranium and Thorium. Exploration and development of these minerals started in the 40s of the last century. In the 1960s and 1970s, work in this area was curtailed, due to the discovery of new, easily developed fields in Kazakhstan.

Work in this area carried out, and very successfully.

Thermal waters

More than 50 springs of warm and hot underground waters has been discovered for 80 years to this time. Extent of mineralization of thermal waters is from 0.2-5g/l and more. The stage of exploration of these deposits is irregular: from weakly explored, preliminary evaluated deposits up to detail explored deposits and some, which are being developed.

The most famous deposits: Furmanovskoe, Alamedinskoe, Issyk-Ata, Kochkorski, Barbulakskoe, Karabulunskoe, Pristan Prezgevalsk, Dzhety-Oguz, Aksuiskoe (Teploklyuchenka), Dzhahalal-Abad. Reserves of these, except Furmanovskoe and Alamedinskoe deposits were registered in the State balance with 9.884 thousand m³/day of total balance reserves. Total reserves of thermal waters are 10.244 thousand m³/day; regional probable resources are near 75 thousand m³/day. Karabulunskoe (3.154 thousand m³), Issyk-Ata (2.2 thousand m³/day), Aksuiskoe (1.552 thousand m³/day), Dzhahalal-Abad (1.201 thousand m³/day) deposits have main reserves of thermal waters within the Kyrgyz Republic.

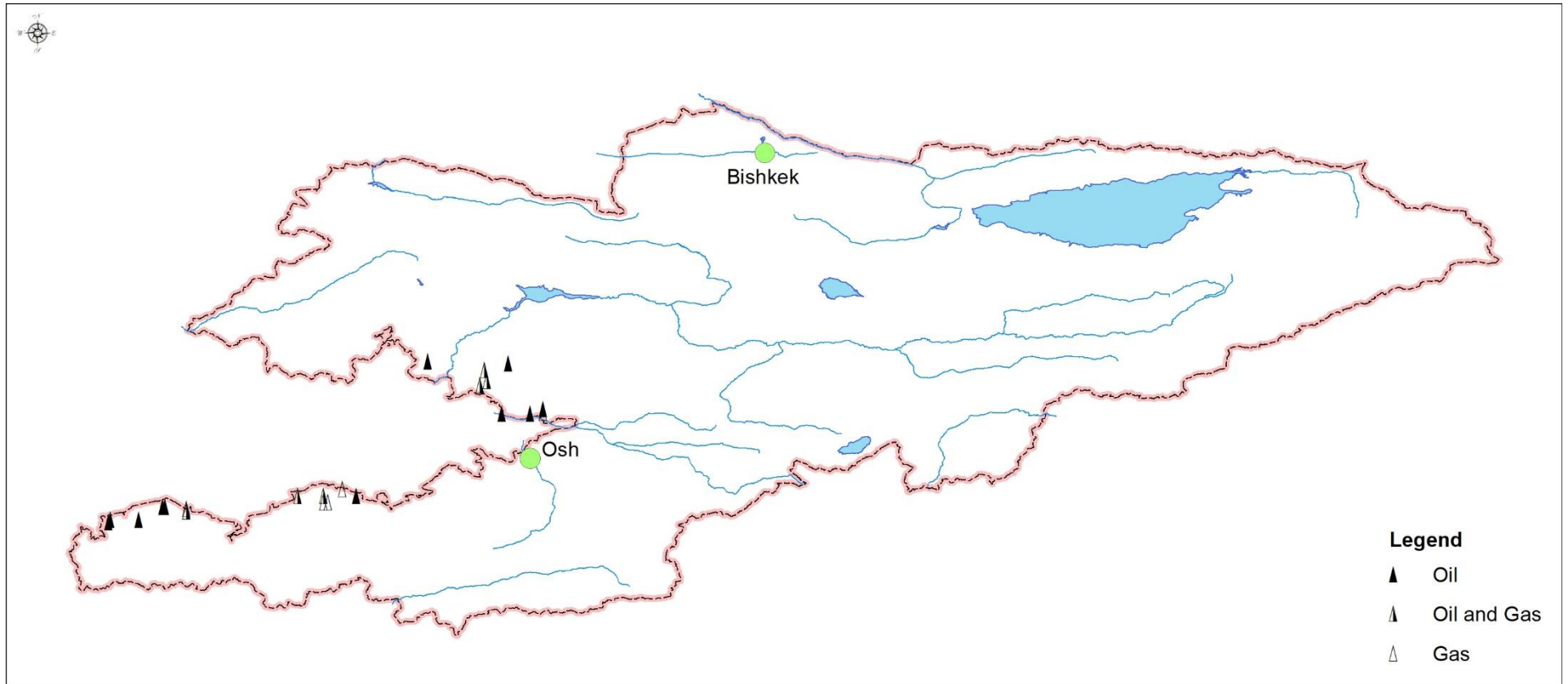


Figure 2. Location of oil and gas fields of the Kyrgyz Republic

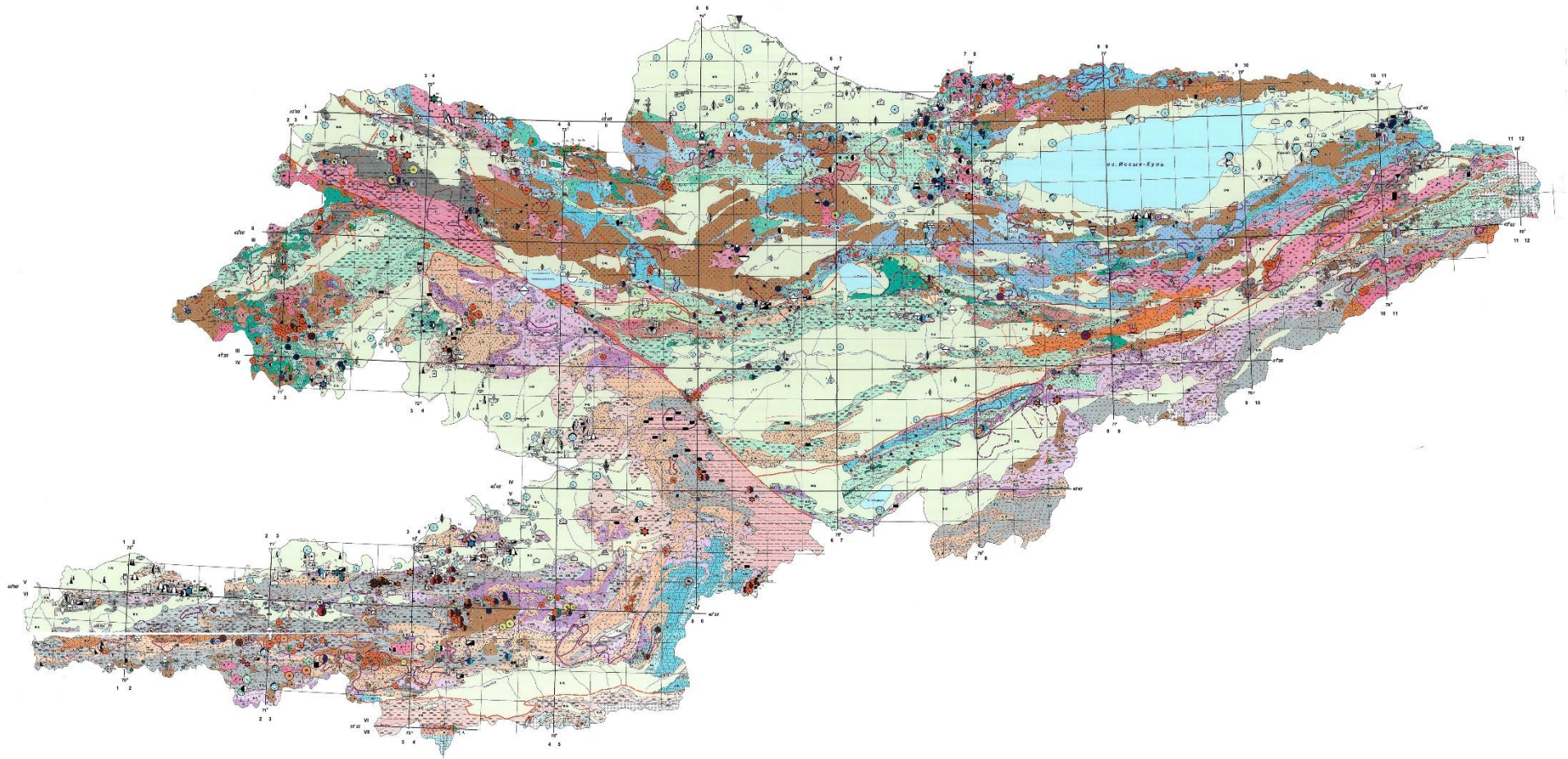


Figure 3 - Geological map of the Kyrgyz Republic with positions of deposits