

Baseline Review of Sustainable Energy Data in Kazakhstan

Summary	2
1. Introduction.....	5
2. Energy statistics system in Kazakhstan	6
a. Ministries / agencies/companies participating in the system and their roles	7
b. Legal basis	9
c. Relevant national energy policies/programs.....	12
d. Major national energy statistics databases/publications	15
e. Financial and human resources devoted to the collection of sustainable energy statistics.....	15
f. Major statistical improvement programs underway or planned.....	17
3. Sustainable energy statistics in Kazakhstan	17
a. Quality of completeness / quality of basic statistics of energy	17
b. Quality of completeness / quality of statistics of access to modern energy	18
c. Quality completeness / quality of statistics on energy efficiency	18
d. Quality of completeness / quality of statistics on renewable energy resources	19
4. Recommendations for the improvement of statistics of steady power in Kazakhstan	20
a. The priority list of gaps in statistics of steady power	20
b. Means for overcoming the main obstacles in the way of improvement of statistics of steady energy	20

Summary

Nature has endowed Kazakhstan with natural resources, primarily energy. For a quarter of a century since independence, the country has made tremendous progress in the fuel and energy sector: oil production has tripled, and Kazakhstan has reliably consolidated its position in the world energy market.

These achievements make a huge contribution to the economic and social development of the country. However, Kazakhstan's fuel and energy complex faces new challenges that require deep analysis and application of new approaches to them.

One of such challenges is to ensure the timely and effective implementation of the planned energy projects. The second challenge facing the energy industry around the world is the cost of projects. The third challenge is the sharp fall in oil prices, followed by the restoration of market equilibrium already at a lower price level, as well as the pressure this situation has on Kazakhstan's fuel and energy complex and the national budget. The fourth challenge follows from the third. World energy has entered a new era, which is characterized by New investment principles and a new "investment mentality" on the part of international companies.

Kazakhstan - the largest country that does not have access to the World Ocean, is the ninth country in the world by area (2.7 million km²). In this large area, there is a rich variety of natural and geological conditions.

The territory of Kazakhstan was formed under the influence of a wide variety of geological processes, such as folding, faults, accumulation of sedimentary deposits and metamorphism, due to which the country has practically no analogs in terms of diversity and abundance of mineral resources. The mineral and raw materials base of Kazakhstan is unique. Of the 118 elements of the periodic table of chemical elements, 99 have been identified in the bowels of the Republic, of which 70 have the potential for commercial extraction, and more than 60 elements are involved in the production.

On the world stage, the role of Kazakhstan as a producer of energy resources is especially noticeable. In 2014, its share in the production of world primary energy resources was 1.1% (the twentieth place in the world in this indicator). According to proven reserves of oil, coal, and uranium, Kazakhstan is among the first ten countries, and by natural gas reserves - in the first 20 countries of the world.

In addition, Kazakhstan is the world leader in uranium mining, and also enters the top ten countries of the world in terms of coal production and the top twenty in terms of oil production. Over the past two decades, the country has increased its oil production by almost four times and acts as a new world heavyweight in this category. It is expected that over the next two decades the greatest increase in oil production among the countries of the Commonwealth of Independent States (CIS) will be observed in Kazakhstan.

The economy of Kazakhstan is largely based on the extraction of natural resources, the leading role of which is played by energy resources. This is due to both the relative

provision of the country with resources, given the presence of significant reserves of oil, gas, coal and uranium, and the country's role in the world system of the division of labor that emerged after the collapse of the USSR.

The total output of primary energy resources of Kazakhstan (including oil, gas, coal, primary electricity, and uranium) are estimated at about 32 billion tons of oil equivalent, which is about 3.6% of the world's total proven primary energy reserves. The total volume of production of primary energy resources in the country since 2000 increased by an average of 5.5% per year, while primary energy consumption in the same period grew by 4.3% per year.

Kazakhstan is a net exporter of energy resources, consuming less than half of the aggregated volume of primary energy resources produced in the country. The energy sector plays a huge role in the country's economy - it accounts for about 22% of GDP, two-thirds of total export earnings and 50% of income to the state budget.

Considering the strategic importance of energy for the economy of Kazakhstan as a whole, it is not surprising that the energy sector is under strong state influence. The Ministry of Energy is the principal organ responsible for the entire energy sector. Public authorities, especially the Ministry of Energy, perform regulatory, legal and control functions in the energy sector, while production and investment decisions are made by corporate structures and companies (both private and public).

According to the Law of the Republic of Kazakhstan "On State Statistics", the Committee on Statistics is the authorized body that forms and implements the state policy in the field of statistics, which develops and implements programs to improve statistics in the Republic of Kazakhstan.

According to the Decree of the President of the Republic of Kazakhstan of June 30, 1998 "On Further Measures to Optimize the Public Administration", the Committee on Statistics is the central executive body that is not part of the Government. The Committee on Statistics has independence in the methodology and methods of statistical accounting, manages its territorial divisions, and coordinates the activities of subordinate organizations. Normative legal acts of the authorized body on the organization of statistics are mandatory for all individuals in cases established by the legislation of the Republic of Kazakhstan, as well as for legal entities.

The main tasks of the Committee on Statistics are:

- Formation of statistical methodology;
- Realization of statistical activities in compliance with the principles of state statistics;
- Satisfaction of the needs of society, the state and the international community in official statistical information.

In accordance with the current legislation and tasks assigned to it, the Committee exercises the following functions:

- 1) Develops and implements state policy in the area of government statistics;
- 2) Develops and approve normative legal acts in the area of government statistics within their competence;
- 3) Forms a statistical methodology in accordance with international statistical standards;
- 4) Approves statistical methodology for national statistical observations;
- 5) Organizes and conduct nationwide statistical observations in accordance with the statistical work plan;
- 6) Develops programs of national censuses and ensures their implementation;
- 7) Approves statistical forms for conducting nationwide and departmental statistical observations, instructions on filling them, as well as the procedure for their approval;
- 8) Develops and approve the procedure for the respondents to submit primary statistical data;
- 9) Provides respondents with statistical forms and instructions on filling them when presenting their primary statistical data;
- 10) Use of administrative data only for the production of statistical information and updating of statistical registers;
- 11) Provides government statistical authorities with statistical classification by representing them on the Internet resources of the authorized body;
- 12) Ensures the accumulation, maintenance, and updating of information statistical databases on the socio-economic situation of the Republic and its regions;
- 13) Organizes research and development in the field of state statistics;
- 14) To ensure the quality of statistical information, examines the statistical activities of state statistics bodies for compliance with the statistical methodology approved by the authorized body for departmental statistical observations and requests the documents (information) necessary for the examination;
- 15) Provides explanations on issues within the competence of the authorized body;
- 16) In order to improve the state statistics, it creates consultative and advisory bodies, the provisions of which are approved by the head of the authorized body;
- 17) Exercises state control in the area of state statistics, with the exception of audit, for compliance with the requirements of laws of the Republic of Kazakhstan and resolutions of the Government of the Republic of Kazakhstan in the field of state statistics;
- 18) Carries out international cooperation within its competence and concludes agreements within the framework of cooperation;
- 19) Implements other functions provided for by this Law, other laws of the Republic of Kazakhstan, acts of the President of the Republic of Kazakhstan and the Government of the Republic of Kazakhstan.

1. Introduction

With the formation in August 1920 of the Kazakh Autonomous Union Socialist Republic as part of the RSFSR, the Council of People's Commissars of the Kyrgyz (Kazakh) ASSR, by its resolution of November 8, 1920, established the Statistical Office of the Kazakh ASSR and approved the Statute on state statistics in the Kazakh ASSR. Thus, the date of formation of a single centralized statistical body of Kazakhstan is considered November 8, 1920.

The statistical bodies of Kazakhstan, like the entire statistical system of the former USSR, organized, conducted and summarized the results of the eight All-Union population censuses; Regularly published statistical yearbooks and numerous periodic, sectoral and thematic statistical compilations and handbooks.

In 1990, the State Statistics Committee of the Kazakh SSR started drafting the first law of the Kazakh SSR on accounting and statistics, which resulted in the adoption in January 1992 of the 7th Session of the Supreme Council of the Republic of Kazakhstan of the first Law of the Republic of Kazakhstan in the field of statistics "On State Statistics in the Republic of Kazakhstan".

In January 1999, by the Decree of the President of the Republic of Kazakhstan "On the Structure of the Government of the Republic of Kazakhstan", the National Statistical Agency of the Republic of Kazakhstan was transformed into the Agency of the Republic of Kazakhstan on Statistics.

On August 6, 2014, the Agency of the Republic of Kazakhstan on Statistics was abolished by the Decree of the President of the Republic of Kazakhstan "On the Reform of the Public Administration System of the Republic of Kazakhstan", the Ministry of National Economy of the Republic of Kazakhstan was formed with the transfer of the functions and powers of the Agency of the Republic of Kazakhstan on Statistics. The Agency of the Republic of Kazakhstan on Statistics has been transformed into the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan.

Having passed numerous phases of development, the Statistical System of Kazakhstan has today very high standards and adheres to many international recommendations. In the National Statistical Office - the Committee on Statistics all-important international statistical classifications are used. The period of introduction of new classifications in this area - usually takes less than two years, which corresponds to the normal pace in any developed country. In the Central Asian region, the National Statistical Office of Kazakhstan is an example of good working standards, adherent to the Fundamental Principles of Official Statistics and the international network. New structural changes in the production system, methods of distribution and use of modern information and communication technologies (ICT) will take place in the next few years.

The mission and vision of the Committee on Statistics is the development of proposals for the formation and implementation of state policy in the area of state statistics

in order to needs of users (population, business, government authorities and the international community) in qualitative official statistical information.

2. Energy statistics system in Kazakhstan

The Statistics Department and Energy Statistics Department of the Statistics Committee of the Republic of Kazakhstan are engaged in energy statistics and are responsible for compiling the annual fuel and energy balance (FEB).

FEB provides information on the indicators that characterize the resource and distribution sections of the fuel and energy balance, in particular, production (production) and fuel and energy resources, their import and export, transformation into other types of fuel and energy, use for production needs and other consumption in natural and relative terms.

FEB of the Republic is being developed to assess changes in the structure of production and consumption of fuel and energy, as well as to determine the direction of development of the fuel and energy complex (FEC) of the country and its regions.

FEB is a complex material balance covering a set of interchangeable fuel and energy resources (FER). This balance links the private balances of various fuels and energy into a single whole. The methodology of the settlement FEB provides the possibility of forming the annual FEB of the Republic according to a system of indicators characterizing the main directions of production and consumption of fuel and energy resources, based on the requirements of domestic economic practice, and recalculation of TEQ indicators in accordance with the requirements of international statistical standards.

The estimated FEB is developed as a set of balances of individual fuels and energy, which are four main groups: solid, liquid and gaseous fuels, heat and electricity. The first group of "solid fuels" includes such types of fuel as coal, lignite (brown coal), coke and coal briquettes from coal, charcoal, and firewood.

The second group of "liquid fuels" includes: oil, including gas condensate, automobile and aviation gasoline, jet fuel such as gasoline and kerosene, kerosene, gas oil, household fuel, diesel fuel, fleet and fuel oil, bitumen and coke of oil and gas Liquid substances derived from natural gas, propane, butane and gasoline from commercial gases.

The third group of "gaseous fuels" includes such fuels as natural gas, coke oven gas, blast furnace gas, refinery gas, biogas, methane, ethane, propane, isobutene, butane, and pentane.

The fourth group consists of heat and electricity.

The scheme of the formed Republican FEB consists of two sections - "Resources" and "Distribution", each of which respectively reflects the process of forming the resources of certain fuels and energy and their use in the main target areas.

FEB is freely available through a common electronic database on the official website of the Committee on Statistics <http://www.stat.gov.kz>

a. Ministries / agencies/companies participating in the system and their roles

The main partner of the Committee on Statistics in the field of energy in interdepartmental cooperation is the Ministry of Energy of the Republic of Kazakhstan.

The Ministry of Energy of the Republic of Kazakhstan (hereinafter referred to as the Ministry of Energy) is the central executive body of the Republic of Kazakhstan, responsible for the formation and implementation of the state policy, coordination of the management process in the oil and gas, oil and gas chemical industries, hydrocarbon transportation, state regulation of the production of oil products, gas and gas supply, main pipelines, power industry, coal industry, nuclear energy, environmental protection, nature use, protection, control and supervision over the rational use of natural resources, the treatment of municipal solid waste, renewable energy development, control over state policy of "green economy".

A mission of the Ministry of Energy:

development of the fuel and energy complex in order to ensure a high level of competitiveness, national and energy security, ensuring the growing energy needs of the economy, developing scientific and technological potential aimed at their effective use, as well as creating conditions for the preservation, restoration and improvement of environmental quality, Ensuring the transition of the Republic of Kazakhstan to low-carbon development and a "green economy" to meet the needs of And future generations.

The tasks of the Ministry of Energy are:

1) The formation and implementation of state policy, the improvement of the public administration system in the oil and gas, oil and gas chemical industry, transportation of hydrocarbons, state regulation of the production of oil products, gas and gas, the main pipeline, electric power industry, coal industry, use of nuclear energy, environmental protection, Control and supervision of the rational use of natural resources, the management of solid domestic waste Development of renewable energy sources, state environmental control, economic methods of environmental protection, control over the state policy for the development of the "green economy" and the provision of regulatory legal acts in the field of technical regulation and regulatory and technical documents within its competence;

2) Coordination of the activities of central and local executive bodies in the implementation of state policy in the sphere of activities within the competence of the Ministry;

3) Ensuring the development of the fuel and energy complex;

4) Implementation of the state policy on issues of international cooperation in the areas within the competence of the Ministry;

5) Ensuring the reproduction of hydrocarbon, coal and uranium resources and their rational use, including associated gas;

6) Improving the quality of the environment, conserving natural resources, ensuring environmental safety and achieving a favorable level of environmentally sustainable development of society;

7) Development of a system for dissemination of information and education in the field of environmental protection;

8) Ensuring the implementation of the competence of the authorized body, arising from production agreements;

9) Public administration and provision of state control in regulated spheres;

10) Implementation of other tasks entrusted to the Ministry, within its competence.

Statistical reporting on energy is represented by:

- Joint-Stock Company "National Welfare Fund" Samruk-Kazyna ";
- Joint-stock company KEGOC;
- Joint Stock Company "Kazmunaygas";
- Joint-stock company "Kazatomprom";
- Joint Stock Company "Information and Analytical Center of Oil and Gas";
- Joint Stock Company "Zhasyl Damu";
- Joint-Stock company "Park of nuclear technologies";
- Republican state specialized enterprise on the right of economic management "Karagandalikvishshaht";
- territorial bodies under the authority of the Ministry of Energy;
- enterprises (organizations) for the extraction of coal, oil, uranium, gas;
- economic entities of all forms of ownership, consuming fuel and energy resources;
- economic entities of all forms of ownership, importing and exporting fuel and energy resources.

b. Legal basis

The Committee on Statistics is the authorized body that forms and implements the state policy in the field of statistics, which develops and implements programs to improve statistics in the Republic of Kazakhstan.

The Law "On State Statistics"

The Committee on Statistics of the Republic of Kazakhstan carries out its activities in accordance with the Law of the Republic of Kazakhstan of March 19, 2010, No. 257-IV "On State Statistics".

This Law regulates social relations arising in the process of state statistical activity and is aimed at meeting the needs of society, the state and the international community in official statistical information.

The main principles of state statistics are:

- 1) Consistency and comparability of state statistics with generally accepted international standards, classifications and methods;
- 2) Professional independence and independence in the implementation of statistical activities;
- 3) Ensuring equal access of users to official statistical information;
- 4) Confidentiality and use of primary statistics exclusively for statistical purposes;
- 5) Use of all types of information sources, taking into account the quality, timeliness, costs, and burden on respondents;
- 6) Reliability, scientific validity, timeliness of provision and availability of official statistical information;
- 7) Ensuring the safety and security of statistical information, primary statistical and administrative data.

Regulations:

- the order of the Minister of National Economy of the Republic of Kazakhstan from September 15, 2016, No. 411 "On approval of the Plan of Statistical Work for 2017";

- the orders of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan:

- the order of the Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan of December 13, 2016, No. 311 "On approval of the schedule for respondents to provide primary statistical data on national and departmental statistical observations for 2017";

- the order of the Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan of December 2, 2016, No. 300 "On

approval of statistical forms of state statistical observations on energy statistics and instructions for filling them";

- the order of the Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan of November 30, 2016, No. 292 "On Approving the Methodology for the Formation and Dissemination of Official Statistical Information in Electronic Form";

- the order of the Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan of November 30, 2016, No. 290 "On approval of statistical forms of state statistical observations on environment statistics and instructions for filling them";

- the order of the Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan of July 12, 2016, No. 142 "On approval of the Regulations of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan";

- the order of the Chairman of the Agency on Statistics of the Republic of Kazakhstan of July 9, 2010, No. 174 "On approval of the Rules for the approval of statistical forms for conducting national and departmental statistical observations, instructions for filling them out";

- the order of the Minister of National Economy of the Republic of Kazakhstan of September 30, 2014, No. 33 "On approval of the Statute on the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan".

- Regulations on the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan.

The main tasks of the Committee on Statistics are:

- formation of statistical methodology
- execution of statistical activities in compliance with the principles of state statistics

- satisfaction of the needs of society, the government and the international community in official statistical information.

Legal basis in terms of energy production

The law of the Republic of Kazakhstan dated July 9, 2004, No. 588 "On power industry".

The Law regulates social relations arising in the course of production, transfer and consumption of electric and thermal energy.

1. The purposes of the Law are:

- 1) to meet demand of energy consumers to the extent possible and to protect the rights of participants of electric and thermal energy market by creating competitive

conditions in the market guaranteeing right to consumers to choose suppliers of electric and thermal energy;

2) to provide safe, reliable and stable functioning of an electrical power complex of the Republic of Kazakhstan;

3) unity of management of Kazakhstan electric power complex as particularly important life support system of economic and social complexes of the country.

The law of the Republic of Kazakhstan dated June 24, 2010 No. 291-IV «On subsurface and subsurface use».

This Law regulates social relations in subsurface use field and oriented to protect interests of the Republic of Kazakhstan, dedicated for rational and complex analysis and use of subsoil.

The law on subsurface and subsurface use aimed at economic growth and protection of interests of the Republic of Kazakhstan and its natural resources.

The law of the Republic of Kazakhstan dated January 9, 2012 No. 532-IV «On gas and gas supply».

The Law regulates legal, economic and organizational basis for regulation of social relations in Kazakhstan gas and gas supply field and oriented to create conditions for meeting demands for gas in Kazakhstan, and dedicated for effective, reliable and safe operation of objects of gas supply systems.

The purposes of legislation on gas and gas supply are to provide energy and ecologic security, to improve economic and social situation of Kazakhstan population.

The law of the Republic of Kazakhstan dated July 4, 2009 No. 165-IV «On support of usage of renewable energy resources».

The Law defines the purposes, forms and area of focus of harnessing of renewable resources support.

State regulation in the field of using of renewable resources support is carried out for creating favorable conditions for production of electric and (or) thermal energy with use of renewables to cut power consumption and decrease impact of cogeneration sector to environment and to increase share of using of renewable resources by production of electric and (or) thermal energy.

The law of the Republic of Kazakhstan dated January 13, 2012 No. 541-IV «On energy saving and increasing energy efficiency».

The Law regulated social relations and defines legal, economic and organizational basis of individuals and legal entities activity in the field of energy saving and increasing energy efficiency.

The main focus areas of state regulation in the field of energy saving and increasing energy efficiency:

- 1) implementation of technical regulation in the field of energy saving and increasing energy efficiency;
- 2) implementation of well-balanced rate policy and pricing in the field of production and consumption of energy resources;
- 3) stimulation of energy saving and increasing energy efficiency, including use of energy saving equipment and materials;
- 4) implementation of state control of effective energy resources use;
- 5) promotion of economic, ecologic and social advantages of effective energy resource use, increasing public educational level in this area;
- 6) enforcement of the law of the Republic of Kazakhstan on energy saving and increasing energy efficiency.

c. Relevant national energy policies/programs

1. The decree of President of the Republic of Kazakhstan dated November 15, 2006 No. 216 "On concept note for transfer of the Republic of Kazakhstan to sustainable growth for 2007-2024".

Concept note for transfer of the Republic of Kazakhstan to sustainable growth for 2007-2024 (hereinafter referred as Concept note) is developed in accordance with international commitments of Kazakhstan which has signed the Action program on transfer of the world community to sustainable growth - the Agenda for 21st century.

Sustainable development of the country is the development that meets demands of current generation and but does not pose a threat to possibility of future generations to meet their demands.

Sustainable growth is necessary for achievement of objectives of Kazakhstan development Strategy till 2030. The principle of sustainable development is behind the strategy on Kazakhstan's entrance to number of fifty most competitive countries of the world designated in the Message of the President to Kazakhstan people dated March 1, 2006.

In the Concept note three vectors of country development are considered as unitary whole. They are economic, social and ecologic vectors. In this regard the Concept note has to play the integrating role in relation to other program and conceptual documents accepted and realized in our country.

The purpose of the Concept note is achievement of balance in economic, social, ecologic and political aspects of Kazakhstan development as bases for improvement of life quality and providing of competitiveness of the country in the long term.

The concept defines the principles, priorities, focus areas and mechanisms of transfer to sustainable development. In particular, integration of resources, mechanisms

and instruments of development has to be provided. The target parameters of development set in the Concept has to serve as the basis for indicative planning of country development in general, branches, regions and subjects of economy in particular. Short, average and long-term plans of transfer to sustainable development broken down by regions and branches will be developed. Diversification of economy on the basis of innovative "groundbreaking" technologies is expected.

Implementation of the Concept note will encourage to improve life quality to the level of the most competitive and developed countries of the world, to increase efficiency of resources use as one of the main mechanisms of economic growth, to increase in population of the country up to 18 million by 2024, to improve quality of manpower, to improve environment conditions by decreasing human pressure and solution of "historical" environmental problems, to increase stability of development of regions in the country.

2. The resolution of the government of the Republic of Kazakhstan dated June 28, 2014 No. 724 "On approval of the Concept note for development of fuel and energy complex in Kazakhstan till 2030".

The concept note for development of fuel and energy complex in Kazakhstan till 2030 coordinates development of oil and gas, coal, atomic and electrical power branches in integral whole taking into account the best international experience and recent trends of development of world power.

Upon developing the Concept note for development of fuel and energy complex the following tasks have been taken into account:

- 1) ensuring energy security of the country by strengthening of self-reliance of resource supply and production of energy industry;
- 2) strengthening of geopolitical influence in the region by growing energy consumption of region economies;
- 3) development of economic capacity of the country:
 - development of scientific potential;
 - introduction of new technologies;
 - increasing safety and reliability of electric equipment and power facilities;
- 4) intensive development of energy industry branches by using technologies of 21st century:
 - dynamic involvement in energy balance of renewables and alternative energy sources;
 - power and resource saving, increasing energy efficiency.

3. The decree of the President of the Republic of Kazakhstan dated May 30, 2013 No. 577 "On Concept note for transfer of the Republic of Kazakhstan to "green economy".

Concept note for transfer of the Republic of Kazakhstan to "green economy serves as basis for deep system transformations for the purpose of transition to new economic form by increasing welfare, life quality of Kazakhstan population and entry of the country to the list of 30 most developed countries in the world by minimization of load to the environment and degradations of natural resources.

The main priority objectives on transition to "green economy" are:

- 1) increasing efficiency of resources use (water, land, biological, etc.) and their management;
- 2) modernization of existing and construction of new infrastructure;
- 3) increasing prosperity of the population and quality of the environment in profitable ways of mitigation of pressure to the environment;
- 4) increasing national security, including water safety.

The concept note for transition of the Republic of Kazakhstan to "green economy" will be realized in three stages:

2013-2020 - the main priority of the country is optimization of resource use and increasing efficiency of nature protection activity, and also creation of "green" infrastructure;

2020-2030 – transformation of the national economy focused on careful use of water, encouragement and stimulation of development and widespread introduction of renewable power technologies, and also construction of buildings of high standards of energy efficiency will start on the basis of created "green" infrastructure;

2030-2050 – transition of national economy to the principles of the so-called "third industrial revolution" demanding use of natural resources on condition of their renewability and stability.

Measures for transition to "green economy" according to the Concept note, will be realized in the areas: steady use of water resources, development of steady and high-performance agriculture, energy saving and increasing energy efficiency, development of power industry, control system on waste products, decreasing air pollution and preservation and effective management of ecosystems.

Issues concerning realization of transition to "green economy" will be regulated by acts of the Republic of Kazakhstan concerning transition to "green economy".

Instruments of realization of specific objectives of the Concept note by economic sectors are the existing program documents taking into account changes and additions regarding introduction of the main directions of the Concept, such as Program for development of agro-industrial complex in Kazakhstan for 2013-2020 "Agrobusiness-2020", the State program on Kazakhstan forced industrial innovative development for 2010-2014, the State program of development of education sector in Kazakhstan for 2011-2020, programs of territory development, strategic plans of public authorities, the industry program "Zhasyl damu" for 2010-2014 and other industry programs which will be corrected and include new focuses on issues, such as improvement of air quality, waste

management of production and consumption, fight against desertification, degradation of lands and increase in soil fertility, development of fishery, aquacultures and reproduction of fish resources.

According to calculations, by 2050 transformations within "green economy" will allow to increase GDP by 3%, to create more than 500 thousand new job positions, to create new industries and service sectors, to provide the high quality standards of life for the population.

d. Major national energy statistics databases/publications

Annually relevant departments of Statistics Committee publish albums and bulletins on power: Kazakhstan by numbers; Industry of Kazakhstan and its regions; Fuel energy balance in Kazakhstan; Statistics.

The data on fuel and energy balance issued by services and power statistic unit of Statistic committee are published annually.

Information is posted on the official website of Statistic committee:

<http://www.stat.gov.kz>

(http://stat.gov.kz/faces/wcnav_externalId/publicationsPage?_afLoop=5321773350326541#%40%3F_afLoop%3D5321773350326541%26_adf.ctrl-state%3Dakxgmni3t_165);

(http://stat.gov.kz/faces/publicationsPage/publicationsOper?_adf.ctrl-state=akxgmni3t_178&_afLoop=5321841238740656);

(http://stat.gov.kz/faces/publicationsPage/publicationsPublications?_adf.ctrl-state=akxgmni3t_178&_afLoop=5321867424137589);

(http://stat.gov.kz/faces/publicationsPage/publicationsListOfMaterials?_adf.ctrl-state=akxgmni3t_178&_afLoop=5321910022743510)

e. Financial and human resources devoted to the collection of sustainable energy statistics

The system of state statistics agencies of the Republic of Kazakhstan contains:

- Statistic Committee of the Ministry of national economy;
- territorial authorities of the state statistics created by Statistic Committee in nationwide regions and the cities;

- Republican State enterprise "Information and Computing Center of the Agency of the Republic of Kazakhstan on Statistics"

The object and purpose of the Republican State Enterprise "Information and Computing Center of the Agency of the Republic of Kazakhstan on Statistics" is the formation and maintenance of statistical databases in all areas of statistics, presentation of these data to users of statistical information in the order established by law.

To accomplish the objectives the Enterprise performs the following types of activities:

- 1) ensuring the collection of primary statistical data from the territorial bodies of the Public Administration Body in the time and amounts set by the Plan of Statistical Works, the provision of primary statistical data to the territorial bodies of the Public Administration Body;
- 2) participation in the provision of state bodies and other users with necessary statistical information about socio-economic and demographic processes occurring in the country based on scientific methodology and international standards;
- 3) conducting work on the input, processing of statistical data, census materials, one-off and/or specially organized statistical observations in the order established by law;
- 4) formation, maintenance and updating of information statistical databases, statistical registers, web-sites, and consultations to users and Public Administration Bodies on their exploitation;
- 5) participating in the creation, development, implementation and maintenance of a unified information and communication infrastructure of the Public Administration Body and its territorial bodies on the basis of modern information technologies;
- 6) provision of informational interaction with state bodies, respondents and users of statistical information;
- 7) ensuring the protection of information and telecommunication infrastructure of the Public Administration Body and its territorial bodies on the basis of modern information technologies;
- 8) installation and maintenance of basic software of the Public Administration Body and its territorial bodies;
- 9) technical, programming, and methodological support of works on the introduction of new forms and methods of statistical observation;
- 10) service and technical maintenance of computer and telecommunications systems, installation of local area networks (LAN), servers setup, system maintenance of workstations, copiers and offset printing equipment of the Public Administration Body and its territorial bodies;
- 11) technical maintenance and repair of computer and telecommunication equipment of the Public Administration Body and its territorial bodies;
- 12) organization of anti-virus protection of electronic information resources and the preservation of statistical data, including the introduction of security systems, archiving and backup for the Public Administration Body and its territorial bodies;
- 13) participating in the events and ensuring interaction with the information processing centers, state statistical bodies of the CIS and other foreign countries on the exchange of statistical and other information within the competence of the Enterprise;
- 14) organizing and conducting conferences, seminars, training courses and other training activities for training, retraining and further training in the area of statistics;
- 15) organizing and conducting consultations to individuals and legal entities on conducting the censuses;
- 16) organization of library and information services, strengthening the material-technical base of the library;
- 17) publication, printing and distribution of magazines, newsletters, collections, directories, information and advertising materials, scientific research results, educational materials on statistics for the Public Administration Body and its territorial bodies.

f. Major statistical improvement programs underway or planned

All works on collecting, input and information processing are carried out according to the annual plan of statistical works.

The committee on statistics annually develops the annual Plans of statistical works jointly with the interested public authorities. Plan for 2017 is posted on the official website of Statistic committee: http://stat.gov.kz/faces/homePage?_adf.ctrl-state=plgrh25w5_4&_afLoop=5324430803936457

3. Sustainable energy statistics in Kazakhstan

a. Quality of completeness / quality of basic statistics of energy

Similar to other CIS countries, the power industry of Kazakhstan after the collapse of the USSR represented two-level structure that included nation-wide system and several regional subsystems.

Fuel and energy complex plays a key role in economic and social prosperity of Kazakhstan. The country has the richest resources of oil, gas, coal, uranium and renewables.

The power industry includes production, transfer and supply of electric and thermal energy and serves as basis for functioning of economy and life support of the country.

For economy of the Republic of Kazakhstan the power industry has special value as key industries of the country, such as metallurgy and oil and gas production, has high power consumption. Respectively, competitiveness of the heavy industry in Kazakhstan and quality of life of the population mostly depend on reliable and high-quality power supply of consumers at reasonable prices.

Growth of energy consumption and development of the generating equipment in Kazakhstan, as well as improvement of quality and reliabilities of power supply, require development of integrated power grid. So, existing capacity of two power lines of 500 kV, "North-South" is not enough for covering of peak loadings in the Southern energy band due to power transmission from Northern zone.

It is also necessary to point out the problem of isolation of the Western power zone in Kazakhstan from an integrated power grid that leads to restriction of overflows between power zones. This shortcoming is especially urgent in hours of peak loadings.

Data on fuel and energy complex are available on the website of Committee according to the statistics, since 1991.

All statistical information is in the free access through the electronic database on the official site of Committee according to the statistics: <http://www.stat.gov.kz> (http://stat.gov.kz/faces/wcnav_externalId/publicationsCompilations?_afLoop=5324834092451527#%40%3F_afLoop%3D5324834092451527%26_adf.ctrl-state%3Dplgrh25w5_58)

b. Quality of completeness / quality of statistics of access to modern energy

The power energy is a key branch of Kazakhstan economy. Reliable and effective functioning of branch, stable supply of consumers with electric and thermal energy is the main development of national economy and the integral factor of providing civilized living conditions for population.

According to the balance of electric energy and power approved by the order of Kazakhstan Minister of Energy No. 460 dated October 26, 2016, deficiency of electric power isn't observed in power supply system of Kazakhstan in seven-year prospect. In present times, Kazakhstan power generation has considerable reserve. The power reserve on EEC of Kazakhstan in general makes more than 5000 MW at the maximum loads.

Besides, during the years of implementation of the limit tariffs program (7 years) the volume of investment in power industry increase 5 times that has allowed to modernize 5000 MW existing electric powers and to enter 1700 MW of additional electric powers. Thus, by implementation of investment contracts the power making companies have been given an opportunity to carry out relevant modernization and reconstruction of the capacities.

In addition to it, within Nurly-zhol program in 2018, the third "east" branch of transit "North-South" will be launched. This will allow to increase capacity of transit by 750 MW that will increase reliability of power supply of consumers of the southern zone and EEC of Kazakhstan in general.

Now, 84,9% of the electric power in Kazakhstan are developed at coal-dust power plants, 8,9% - on large hydroelectric power stations, 5,2 – on gas turbine power plants and 1% - from renewables. The industry is the main consumer of the electric power – about 68,7% of the general consumption, households consume 9,3%, service sector – 8%, transport – 5,6%, rural farms – 1,2%.

c. Quality completeness / quality of statistics on energy efficiency

Requirements of policy on energy saving and energy efficiency are defined by the Law of the Republic of Kazakhstan date January 13, 2012 No. 541-IV "On energy saving and increasing energy efficiency".

In recent years, in Kazakhstan energy saving and energy efficiency became one of priority problems of state policy. However the created legislative base is characterized by considerable prevalence of the limiting mechanisms without investment and stimulating norms. A number of legislative requirements (norm of energy consumption in the industry, the requirement to power factor, prohibition of glow lamps) accepted regarding energy consumption in the industry hasn't yielded essential results yet.

The statistics questions affecting energy efficiency are developed generally at the request of users by calculation method. There is no information on investments of public sector in the field of energy efficiency technologies.

d. Quality of completeness / quality of statistics on renewable energy resources

In recent years Kazakhstan promotes renewables as one of development vectors of power complex. By expert estimates, the potential of RES in Kazakhstan is very considerable.

Kazakhstan, as the country aimed at entry to the list of 30 developed countries of the world, have accepted Strategy "Kazakhstan-2050", in which the Head of state has set the task to develop alternative and renewable types of energy which must have not less than a half of all cumulative energy consumption by 2050.

System measures of RES state support in Kazakhstan are based on long-term policy and are implemented by development and improvement of standard and legal base.

Process of RES projects implementation has arisen in Kazakhstan after adoption of the Law "On support of RES use" and a number of the adopted regulations in 2009.

In these times, Kazakhstan has 50 operating objects of RES with a total power of 295,7 MW (hydroelectric power station – 139,8; wind power station – 98,2; solar electric station (SES) – 57,3; biogas installation – 0,35). Interest of investors in implementation of projects of renewable power construction is continuing to grow now.

Concrete target indicators of development of RES (renewable energy sources) and steps on their achievement are accepted. Since 2013 in Kazakhstan the concept of transition to "Green economy" is implemented. According to this the share of RES in the total production of the electric power will reach 3%, and by 2030 already 10% by 2020.

It is planned to put into operation about 53 objects of RES with a total rated capacity of 1966,24 MW till the end of 2020. They are:

23 wind power station - 958,95 MW;

17 solar electric station - 724,8 MW;

13 hydroelectric power stations – 282,49 MW.

The electricity generation statistics objects of renewables is carried out by Rules of implementation of monitoring of renewables use (the order of Kazakhstan Minister of Energy dated February 11, 2015, No. 74), the questionnaire of inspection of the enterprises with objects for use of renewables, approved by Statistic Committee.

4. Recommendations for the improvement of statistics of steady power in Kazakhstan

a. The priority list of gaps in statistics of steady power

- there is no availability to methodological documents: information which has been used for drawing up statistics, and also calculations of the existing indicators which are not integrated;

- certain numbers on indicators aren't available and aren't possible for calculations in connection with not enough necessary data (coverage, frequency and timeliness);

- divergences of the statistical methodological recommendations about calculation of indicators made in application in sector of steady power;

- there is no integrated approach to formation of statistical forms, everything is made chaotically, without due analysis, and without interests of business. And therefore, business, first of all Small and medium business suffers from it.

b. Means for overcoming the main obstacles in the way of improvement of statistics of steady energy

- It is necessary to reconsider both questions, and forms of reports, to harmonize them among themselves for further simplification and reduction of statistical forms;

- considering importance and complexity of obtaining extensive and qualitative statistical information, and also impossibility of the solution of the above problems by one public authority (Statistic Committee), we suggest to create the interdepartmental working group (commission) concerning improvement of statistics, revision of necessary indicators, and search of alternative ways of collection of information;

- it is necessary to carry out analysis and assessment of methodology of collecting and obtaining statistical information by methods of agencies of statistics of and methods of receiving and (or) calculation of indicators, conducting monitoring of subjects, structure and structure of indicators, reduction and simplification of the statistical reporting etc.;

- it is required to improve policy of distribution and achievement of statistical information through mass media to people, so it guarantees equal access to statistical information to all users.