Overview

Kazakhstan has a population of approximately 15.48 million, with a GDP around USD 33.13 billion. The total primary energy supply in 2007 was 66.46 Mtoe, of which 1.1% is hydro power, 46.5% is coal/peat, 0.1% is combustible renewable and waste (including biomass, biogas and waste), 35.5% is natural gas and 16.8% is oil. Kazakhstan is a net exporter, with net exports calculated at around 69.74 Mtoe. CO₂ emissions are 190.45 (measured as Mt of CO₂).\textsuperscript{xiii}

1. Institutional structure

The Ministry of Energy and Mineral Resources (MEMR) is the leading policy maker for the energy sector. According to the Presidential decree dated 24 June 2009, policy-making authority with respect to state regulation of electricity supply (0.4 KV grids) was transferred from the Ministry of Energy and Mineral Resources (MEMR) to the recently established Agency of Construction, Housing and Public Utilities.

A separate regulatory authority, the Agency of the Republic of Kazakhstan on Regulation of Natural Monopolies (ANMR), is responsible for state regulation of activity of natural monopolies and prices of goods (works, services) on regulated markets. ANMR has territorial bodies, which are legal entities.

Its predecessor organisation, the State Committee of Kazakh SSR on the support of the new economic structures and limitation of monopolistic activity (Kazakhstan’s first anti-monopoly body), was established in 1991 to support the new economic structures and restrain monopolistic activity. On 29 September 2004, the functions of natural monopolies’ regulation and protection of competition were separated, resulting in the transfer of the pricing authority to ANMR and authority for protection of competition to the Ministry of Industry and Trade, within which the Committee on Competition Protection was established. On 13 October 2007 the Agency on Competition Protection (ACP) was established and replaced the abrogated Committee on Competition Protection. ANMR is a central executive body which carries out state regulation of the activity of natural monopolies, as well as of the prices for goods (works, services) of market entities occupying dominant (monopolistic) position in the market, particularly in the power and heat industry, oil transportation, oil products and gas. ANMR has the authority to set tariffs and define the tariff methodology. ANMR does not have the power to authorize new capacity, but does have the right to exercise control over procurements in limited circumstances. In the event of a violation of the legislation on natural monopolies and regulated markets, ANMR issues binding instructions for market entities to eliminate such violations. In the event that a regulated entity’s actions cause damage to customers, ANMR has the right to set a reduced (compensatory) tariff in favour of the violated party.

Management of ANMR is carried out by its Chairman, who bears a personal liability for work of ANMR, and also by a collective management body, ANMR’s board. The Board is made up of the Chairman of the Agency, his deputies and representatives of the Government. Board decisions are adopted by a simple majority of votes of the board members.

\textsuperscript{86} Information provided below is drawn primarily from the sources reported in the bibliography.
The Chairman, his deputies (on the recommendation of the Chairman) and members of the board, are appointed by the Government. There are no specific term lengths for the Chairman, Deputies or representatives of the Government and no apparent limits on reappointment. Members of the Board of Directors, including the Chairman, may be dismissed, without explanation, by the Government.

ANMR also has an Executive Secretary, who is responsible for implementation of the policy formed by the Chairman of ANMR and who is assigned for an indefinite term and is discharged by the President, with the concurrence of the Prime-Minister. The resignation of the government and of the Chairman of the Agency does not entail termination of powers for the Executive Secretary. ANMR has approximately 185 employees.

With regard to conflicts of interest no special provisions are made in the legislation for the regulatory bodies. Yet, the Law on state service provides limitations related to the activity of public officers performing government service. In particular, a public officer may not: participate in the management of a commercial company regardless of its form of incorporation, unless such direct participation is within the scope of his functions according to the legislation of the RK; hold a position which is in direct subordination to the position held by his closest relatives, except for the cases stipulated by the legislation. The Chairman and his Deputies are civil servants and are paid according to their civil servant category; salaries in large companies are higher than for comparable civil service positions. Staff members are administrative civil servants; their compensation is set in accordance with the staff list approved by the Government, generally in the same range as that of other central state authorities’ employees.

ANMR is fully financed from the state budget according to the budget proceedings stipulated by the law, with the 2009 budget being approximately KZT 1,334 Million (~ USD 11 Million).

Natural monopolies and any other regulated entities have the right to appeal to court for actions (failure to act) of the ANMR that contravene the law; and to the authorised body (ANMR) or to the court for actions (or failures to act) of other entities which affect their activity, profits, property or legal status.

2. **Electricity sector**

   a. **Market framework**

   The main electricity market participants are: the transmission network (a national power grid company JSC KEGOK which also performs the functions of System Operator); electricity producers (over 60 plants with different forms of ownership, with a total available capacity of around 15,000 MW and total installed capacity – 18 990 MW); operator of centralised electrical energy trading KOREM JSC; regional electricity distribution companies (delivering electricity to retail customers); consumers of electricity, load serving entities (some of them fulfilling function of supplier of last resort). Until recently, Kazakhstan had a unified power system, consisting of a competitive (deregulated) wholesale market and retail markets.
The balancing market, which has operated since 2008, functions in simulation mode, without financial settlement of electricity supplied/consumed on the balancing market. At the wholesale market level, the producers, KEGOK JSC, regional electricity companies and the wholesale electric energy customers have established Capacity Reserve Pool of Kazakhstan (CR Pool) to maintain continuity of power supply.

The wholesale market structure is considerably more advanced than elsewhere in the region (with the exception of Russia), though there is not as yet a fully competitive market or a transition to a real time market. Electricity exchange has been taking place since 2001. Until 2008, when the Law on electricity was amended, the wholesale market involved deregulated purchase and sale of electricity, with bilateral deals based on forward (term) contracts. As a consequence, since 1 January 2009, a transition from competitive price formulation in the wholesale market towards price regulation has been taking place in Kazakhstan. In particular, the Law on electricity provides that:

- an energy generator sets electricity sales price independently, yet not higher than the maximum tariff set for a corresponding group of energy generators. The maximum tariff is approved according to 13 groups of energy generators classified by type, installed capacity, type of fuel and distance from fuel deposits, for a minimum term of 7 years
- if the investment obligations of an energy generator cannot be met at the expense of the maximum tariffs, the generator has the right to apply a calculated or individual tariff provided that technical specifications are approved by the authorised body and an investment agreement is made

The government has declared that after 2015 there will be a shift back to the competitive (deregulated) pricing in the electricity market.

b.  **Network access and tariffs**

According to the "grid code" both generators and customers have the right to non-discriminatory access to the power grids. For this purpose they need to:

- sign with the grid company a contract for "entry", stating all the necessary conditions of joint activity
- receive technical conditions from the grid company for connecting a specific energy unit to the network, and to fulfil some requirements provided by normative acts

A separate fee for access to power grids is currently not provided. Until January 2009 there was a procedure under which if connection to the network was leading to its expansion and reconstruction, the owner of the connection had to compensate the grid company. The fee was set pursuant to the methodology approved by ANMR, subject to the connected capacity and payment per unit of power, set forth in the grid company’s approved network development plan. Subject to entrepreneurship support measures, such payments were abolished in December 2008.

When calculating and setting the tariffs one of the following methods is applied, depending on the specific case presented: setting of the rate of profit on adjustable base of the involved assets or establishing tariffs for the intermediate term period.
Separate transmission, distribution and end-user tariffs are in place as follows:

- Transmission tariffs are fixed according to the zone tariffs set for each of the eight power transmission zones. The zonal tariff includes payment for the use of the national power grid and payment for electricity transmission to a certain region, the amount of which depends on the energy deficit level of a particular zone and on the grid’s transmission capacity.

- Distribution tariffs are fixed as “entry tariffs”, which are calculated according to one of two voltage groups (220/110/35 kV, and 10/6-0.4 kV) at the customer’s connection points to the power grids. The tariffs are fixed to cover: standard technical losses; excessive losses of up to 0.8% of the volume of rendered services, provided that the distribution company implements an investment programme for reducing the excessive losses approved by a corresponding regulatory agency; and excessive losses of up to 5% of the volume of rendered services (per year), provided that the average value of entry tariff was approved for the distribution company.

- End-user tariffs are made up of expenses of an energy supply company for purchase of electricity and payment for its transportation, sales market-up and profit.

The Law on natural monopolies stipulates that “the tariffs [...] for regulated services (goods, works) of a natural monopoly entity set by an authorised body shall not be lower than the costs of inputs needed for rendering such regulated services [...], and shall consider the possibility of getting a profit to ensure efficient functioning of a natural monopoly entity.” Nevertheless, the majority of end-user tariffs is regulated and tariffs for distribution companies are low, limiting revenue available to companies to rehabilitate and develop the networks.

The activity of electricity generation, transmission and distribution, operation of power plants, power grids and substations, as well as electricity purchase for resale, are all subject to licensing. The state body authorized to issue licences for such types of activity is ANMR; prior to 2008, this was a function of the MEMR.

c. Operational environment

Kazakhstan was one of the first former Soviet states to reform their electricity market, beginning in 1996. To date, about 70% of generation assets are in private ownership as a result of privatisation of energy enterprises.

The majority of domestic generation (primarily from coal-fired plants) is based in the north, while Kazakhstan’s hydro power plants are to the east. The grid infrastructure is old, resulting in considerable electricity losses. Until recently it was also not integrated; the transmission system was made up of three disconnected networks, with the northern two networks connected to Russia and the southern network the only one connected to the Unified Energy System of Central Asia. Security of supply issues to the south of the country has prompted efforts to build a north-south power line with the aim to supply southern Kazakhstan from the North.

After completion in 2008 of the construction of a second transmission line (500 kV), the North-South power system of Kazakhstan can meet domestic electricity
needs in electricity. Interstate flows in 2009 were: with respect to Russia – export 2.1 billion kWh, import 0.6 billion kWh; with respect to Kyrgyzstan – import 0.55 billion kWh (for solving irrigation problems in the South of Kazakhstan).

The Law on electricity provides for a supplier of last resort in the retail market. As a first step, the responsibility of the supplier of last resort is assigned to the distribution companies. There are no limitations on foreign investments into Kazakhstan’s energy sector. Investments in construction of large energy facilities require endorsement of the MEMR and permission from the Government. A state licence is also needed for electricity production.

In event that the client for construction is a state company, a tender is held in line with the correspondent legislation. If a facility is built subject to an investment programme of a company – natural monopolist, in order to take account of the construction expenses within the tariff of this company, such investment programme should be accorded with ANMR. The MEMR develops programmes for power sector development and national fuel and energy balances for the medium- and long-term. It also carries out permanent monitoring of the expected future demand for electricity and, if necessary, submits relevant proposals to the Government and Parliament.

For electricity and gas alike, ANMR is responsible for developing an annual plan of the Agency's operation and submitting a yearly report to the Government on the results of its activity. ANMR reports to the Government and Parliament at least once a year.

The decisions of the Agency are published in the mass media and on the Agency's website http://www.regulator.kz. The Regulator must communicate its decisions in writing.

For transparency purposes, in terms of its activity ANMR widely holds public hearings before making tariff (prices, rates of charge) setting decisions for regulated services (goods, works). Public hearings are held with members of the parliament, representatives of the governmental bodies, consumers and their public associations, mass media, independent experts and natural monopoly entities.

In 2008 ANMR held 850 public hearings: 366 on the consideration of tentative tariffs, 216 on the consideration of the draft technical losses, 268 on the execution of tariff estimates.

A grid code has been in place since 1996. It sets forth the reasonable amount of time that can be taken by the transmission company to connect or repair the line; ANMR as well as the State Power Supply Inspectorate (Gosenergonadzor) have the right to monitor time taken and address any infractions. Similarly, the responsibilities of ANMR include in particular control of the quality of services rendered in the markets it regulates. For this purpose, ANMR carries out inspection of enterprises both on its own initiative and upon customer requests and, if needed, issues binding instructions. In case service delivery standards are violated ANMR and ACP issue binding instructions for market entities for their elimination.
3. Gas sector

a. Market environment

Market participants in the gas sector are: the vertically integrated state oil and gas company, JSC NC KazMunaiGaz; large independent (private) gas producers such as TengizShevroil and Karachaganak Integrated Organisation; the main transportation network owned by JSC KazTransGaz (100% shares of which belong to JSC NC KazMunaiGaz); local gas distribution networks, suppliers and customers. JSC KazTransGaz owns packages of shares and acts as managing company for a group of gas and gas transportation companies, the main ones being:

- JSC “Intergas Central Asia” which is an operator of main gas transportation
- JSC “KazTransGaz Aimak” engaged in natural gas distribution in the regions of the country and its sale to companies, organisations and the public
- several other local distribution companies

In addition to the KazTransGaz system, gas distribution in certain regions is carried out by other local companies too, but their influence upon the gas market is insignificant.

Kazakhstan’s gas market is not open to competition. Gas supply is carried out based on gas supply contracts concluded between the suppliers and the consumers. Gas transportation is carried out based on a gas transportation contract. A contract for gas transportation is proposed and, as a rule, the transporter submits it to the supplier who previously filed an application for gas transportation.

As mentioned above, almost all extracted gas is accompanied by oil extraction, mostly from the Tengiz and Karachaganak projects in the West of the country. The major part of this gas is brought back into the well to support certain pressure in the reservoir and to improve oil extraction.

b. Network access and tariffs

Rules of supply, transportation and sale of natural gas approved by the Government have required Third Party Access to the transportation network since 11 June 2003. Specifically, they stipulate that the transporter shall ensure free access of the supplier to the gas transportation system at any time, and sign a contract for gas transportation subject to all the necessary conditions. In addition, Order No. 99-OD of the Chairman of ANMR dated 24 March 2005, established the norms for provision of equal access conditions for regulated services (goods, works) in the sphere of storage and transportation of gas or gas condensate, via main and/or distribution pipelines, operation of gas distribution units or related gas distribution pipelines. A customer has the right to equal access with respect to regulated services of gas storage.

Pursuant to the Decree No. 155 of the Government dated 14 March 2006, ANMR sets gas tariffs, including among others:

- natural gas transportation via main pipelines
- natural gas transportation via distribution pipelines for domestic consumers
- liquefied hydrocarbon gas transportation via gas pipelines from a group reservoir unit to a valve at the consumer's lead-in
natural gas storage

The methods used in Kazakhstan are:

- distance method of tariff calculation for the transportation of transit gas via main pipelines (Tariffs for transit gas transportation are set per every 1000 m$^3$ of gas for 100 km of transportation distance)
- tariff calculation method considering transportation volumes and reimbursement of expenses regardless of the distance (gas transportation tariffs for consumers are set per every 1000 m$^3$ of gas regardless of the length of gas pipelines within the territory of the RK, subject to technical possibilities)

When calculating and setting tariffs the following methods are applied: setting of the rate of profit on adjustable base of the involved assets; and establishment of tariffs for the intermediate term period.

c. Operational environment

Kazakhstan is a net exporter of gas. Most of Kazakhstan’s gas reserves are located in the west of the country near the Caspian Sea, with roughly 25% of proved reserves located in the Karachaganak field. The gas companies are largely state-owned. Privatisation of the state assets was carried out only in the sphere of gas extraction and, partially, in the sphere of distribution.

No supplier of last resort is provided for in the gas market structure.

JSC NC KazMunaiGaz and MEMR monitor the expected future demand and extra facilities in the gas sector and, if needed, MEMR submits correspondent proposals to the Government and the Parliament. MEMR is responsible for the development of the national fuel and energy balance in natural terms. MEMR also controls technical maintenance, operation, safety and use of main pipelines.

Decisions on covering peak load are made by gas transportation companies based on the possibilities of using technical gas reserves in gas storages and also other suppliers' sources, subject to agreement with the gas owner, or through redistribution of gas delivery to the consumers.

4. Renewable energy sources/energy efficiency

The renewable energy and energy efficiency policies of Kazakhstan are set forth in: the Law on energy savings, dated 25 December 1997, and amended in 2006, with new amendments currently under consideration; the Law on the measures of state support of renewable energy sources, adopted (by the Parliament) on 4 July 2009. Heat and electricity cogeneration are handled separately, and addressed in large part by the Law on the electricity sector as the majority of power plants in Kazakhstan are combined heat and electricity generation plants.)

The Law on the measures of state support for use of renewable energy sources provides for the creation of favourable conditions for the construction and operation of renewable energy facilities by means of: a process for development and approval of the plan (programme) regarding location; mandatory purchase of electricity by a regional grid company and KEGOK; partial compensation for electricity losses in their grids as a consequence of the above mentioned mandatory purchase of electricity; and an individual tariff is set by ANMR, with the tariff fixed at a level that ensures investment payback at reasonable levels.
Investor interest in wind power plants and hydro power plants in particular is evident, with more than 20 perspective sites for the construction of wind power plans and dozens of sites for the construction of small hydro power plants currently under review. Renewable energy projects must be submitted for approval to local authorities and MEMR.

The Law also stipulates that state regulation in this sphere includes general licensing procedures. Amendments to the Law on licensing exclude from licensing electricity and heat generation for own needs if based on renewable energy.

In March 2009 Kazakhstan ratified the Kyoto Protocol to the United Nations Framework Convention on Climate Change, with expectation that its "clean development mechanism" (CDM) will be applied in the country. The Japanese Public Company NEDO already has implemented a pilot project, to be executed pursuant to the CDM, for the reconstruction of the Ural CHP with a construction of a 25 MW gas turbine unit with investments of USD 15 million.

The legislation stipulates collection of the following payments for contamination of the environment and violation of the environmental legislation:

- for emissions (discharges) of contaminating substances, allocation of production and consumption wastes within the established limits (standard payment)
- for emissions (discharges) of contaminating substances, allocation of production and consumption wastes above established limits (above-the-norm payment)
- funds for compensation of the damage caused to the environment and natural resources due to violation of the environmental legislation

Payment rates for environmental contamination are calculated on an annual basis by the state provincial (municipal) funds for environmental protection, and are approved by the heads of the provinces, subject to an agreement with the MENR.

5. Conclusion

Kazakhstan performs satisfactorily with respect to its grouping (Group C) and particularly with respect to the other Central Asian Republics; specifically, it performs considerably above average for electricity and significantly above average for gas. Within its Group, Kazakhstan has an electricity sector score of 0.548 relative to a Group C average score of 0.461. Kazakhstan has a gas sector score of 0.465 relative to a Group C average of 0.399. The regulatory framework is well above the average of its grouping; the score given to the regulatory authority stands out.

The electricity market, and this is reflected in the Assessment, benefits from a competitive wholesale market for capacity and electricity, established as early as 1996, a power exchange, which has been in place since 2001, and a grid code was adopted in the same year. However, since 1 January 2009, a transition from competitive prices formation towards regulated prices has been taking place.

By contrast, the gas market is dominated by the vertically integrated state-controlled KazMunaiGaz, even though there are large independent gas producers. So far, gas exports have depended on one buyer, Russia, due to the geographical lay out of the pipelines, however the completion of the Trans-Asian pipeline to China is going to open more options for Kazakhstan.
The adoption in summer 2009 of a new law for the promotion of renewable energy sources has already produced an upsurge in the interest of investors, particularly in the sector of small hydro power and wind power.

Electricity spider graph – Kazakhstan

Note: The diagram presents the electricity sector results of Kazakhstan, in accordance with the benchmarks and indicators identified in the assessment model. The extremity of each axis represents an optimum score of 1.0, that is, full compliance with international best practices. The fuller the “web”, the closer the overall electricity regulatory framework approximates international best practices. The results for Kazakhstan are represented by the thick bold line. For comparison purposes, the shaded area presents the electricity sector average of the Group C countries.

Electricity Sector - Comparative view of Group C countries
Gas spider graph - Kazakhstan

Note: The diagram presents the gas sector results of Kazakhstan, in accordance with the benchmarks and indicators identified in the assessment model. The extremity of each axis represents an optimum score of 1.0, that is, full compliance with international best practices. The fuller the “web”, the closer the overall gas regulatory framework approximates international best practices. The results for Kazakhstan are represented by the thick bold line. For comparison purposes, the shaded area presents the gas sector average of the Group C countries.

Gas Sector - Comparative view of Group C countries