



THE CENTRAL ASIAN COUNTRIES' ELECTRIC POWER SECTOR AND THE PROBLEM OF ENERGY INEFFICIENCY

Central Asian countries' electric power sectors were initially designed during the Soviet Union to operate within a unified Central Asian Power System (CAPS). After gaining independence Central Asian governments started pursuing independent energy policies, which strained the coordinated operation of the system. Turkmenistan left the CAPS in 2003. Withdrawal of Uzbekistan, a key country that pulled regional power sectors together, in 2009 resulted in complete breakdown of the system. Within largely isolated national power sectors, authorities have been prioritizing the introduction of new power generation capacities and the establishment of a countrywide electric power transmission lines.

Kazakhstan

Kazakhstan's electric power system was designed to function within three separate zones: northern zone (Akmola, Aktobe, Kostanay, Pavlodar, North-Kazakhstan, East-Kazakhstan, Karaganda); southern zone (Almaty, Zhambyl, Kyzylorda, South-Kazakhstan); and western zone (Atyrau, Mangystau, and West-Kazakhstan regions). In fact, Kazakhstan possesses the largest installed power production capacity in the region, which accounts for 20,844 MW generated in 102 power plants, including large TPPs such as Ekibastuz GRES-1 (4,000 MW), Aksu GRES (2,400 MW), Ekibastuz GRES-2 (1,000 MW), as well as Bukharta Hydro Power Complex (750 MW) and Shulbinsk hydropower plant (HPP) (702 MW). However, while the northern zone produces over 70% of the total electricity in mostly coal-fired thermal power plants (TPP), a number of large consumption centers are located in the South and the Southeast of the country. To cover the peak electricity needs of the southern regions the North-South 500 kV transmission line was built in 1998 and new power plants are to be introduced, including Balkhash TPP (1320 MW).

Kyrgyzstan

Kyrgyzstan has the potential to produce up to 142.5 billion kWh of hydroelectricity annually, which places it third after Russia and Tajikistan among the post-Soviet countries. However, the total installed capacity of the Kyrgyz power sector do not exceed 4,000 MW with an average electricity production rate ranging from 15 to 20 billion

kWh. HPPs generate over 90% of electricity in Kyrgyzstan. The largest HPP in the country is Toktogul with 1,200 MW power generation capacity. To utilize its hydropower potential the government is struggling to introduce new generation capacities by building large and medium HPPs, including the largest Kambarata-1 HPP (1600 MW).

Tajikistan

Hydropower potential of Tajikistan is enormous, which accounts for more than 527 billion kWh annually - 4% of the worldwide hydropower potential. Yet, Tajikistan currently generates only 16.5 billion kWh per year. Out of 5,190 MW designed capacity of the power plants in the country, currently the available capacity accounts for around 4,000 MW and only 2,661 MW is being operated. More than 98% of electricity is generated by HPPs. Tajikistan is counting on the largest Rogun HPP in the region, with total capacity of up to 3600 MW, to double the power production capacity of the country. While Rogun is in the prolonged construction stage, Nurek HPP (3,000 MW), Baipaza HPP (600 MW) and Sangtuda-1 HPP (670 MW) are the largest contributors to electricity production in the country.

Turkmenistan

The history of the Turkmen energy sector dates back to 1913, when the first HPP started supplying electricity to very small population areas. Gindikush HPP, with the capacity of 1.2 MW, has celebrated its 100 years anniversary in 2013. Preserving the symbolic meaning, the hydropower sector of Turkmenistan generates only 0.02% of the total electricity production balance, while the rest is supplied by TPPs. Differently from other Central Asian countries, the extension of the electric power sector of Turkmenistan has taken place relatively recently. While the first gas-fired (combined heat and power) TPP in the country, namely, Turkmenbashi TPP, was put into operation in 1961 with an initial capacity of 170 MW, it has now reached the capacity of 420 MW. Electricity generation on Mary TPP, with a capacity of 1,685 MW, started in 1987. In 2011 it produced 9,022 million kWh, accounting for 49.4% of total electricity production in the country. In 2010 Turkmenistan introduced four new electric power stations, which significantly increased power production capacity in the country: (a) Balkanabad TPP

with a capacity of 380 MW; (b) Dashoguz TPP and Axal TPP, both with a capacity of 254.2 MW; (c) Avaz TPP with a capacity of 254.2 MW.

Uzbekistan

Uzbekistan did not only enjoy strategically important place to pull all other power sectors together within the CAPS, but also possessed the largest power production capacity. Installed capacity of all electric power plants in Uzbekistan exceeds 12,300 MW, with TPPs contributing to more than 11,000 MW and HPPs to around 1,300 MW, which was equal to 50% of all generating capacities of the interconnected CAPS. The largest share of electricity in the country is produced in gas-fired TPPs, including Syrdarya TPP (3,000 MW), Talimardjan-2 TPP (2,400 MW), Novo-Angren TPP (2,100 MW), Tashkent TPP (1,860) and Novoi TPP (1,250 MW). The largest contributions to hydroelectricity production in the country comes from Charvak HPP (620 MW), Khodzhikent HPP (165 MW) and Farkhad HPP (120 MW).

Despite possessing considerable potential and production capacity, the problem of efficiency in Central Asia, with aging power generation and transmission facilities, is now raising even higher concerns. 64% of power generation assets in Kyrgyzstan and 74% in Tajikistan are over 30 years old. Current total loss in the electric power system of Kyrgyzstan is almost 40%, out of which 15% is technical losses. Energy efficiency initiatives in Tajikistan can potentially reduce electricity production and transportation losses by 30%. Efficiency of coal-fired TPPs, which generate 80% of total electricity in Kazakhstan, can be increased from 32% up to 42-53%. While 75% of power generation facilities are over 30 years old, aging infrastructure results in 13.7% transmission and distribution system losses in Uzbekistan. Even in Turkmenistan, with relatively recently constructed power generation and transmission facilities, around 12% of electricity get lost along the way toward the end consumers. In this regard, by implementing large-scale energy efficiency initiatives Central Asian governments can contribute to sufficiency and stability of electricity supplies for both population and economic needs.

Politics, Foreign Affairs and Security

- During the ministerial meeting of a Normandy Four held in Munich, the Ministers of Foreign Affairs of Russia, Germany and Ukraine, Sergei Lavrov, Frank-Walter Steinmeier, and Pavel Klimkin, and the Political Director of the Ministry of Foreign Affairs of France, Nicolas de Riviere, focused on the issue of the settlement of the crisis in Donbass and further implementation of the Minsk accords.
- During the meeting between the Minister of Defense of Iran, Brigadier General Hossein Dehqan, and the Minister of Defense of Russia, Sergei Shoigu, the parties discussed the expansion of bilateral military cooperation. On the same day, Iranian Foreign Ministry announced that a long-awaited deal for the purchase of the Russian S-300 air defense missile systems had been finalized.
- The Supreme Court of Tajikistan started hearings in the trial of 13 leading members of the Islamic Renaissance Party of Tajikistan (IRPT), which was banned by the Tajik government last year. The members of the IRPT faced an array of charges including attempts to overthrow the constitutional order and an organization of a criminal group.
- According to the General Staff of the Armed Forces of Kyrgyzstan, the State Defense Committee of the country received military equipment, such as armored vehicles and computer equipment for interactive training of armored vehicle drivers and mechanics, airlifted by the Ministry of Defense of Russia in the Manas International Airport. The military equipment was provided by Russia in accordance with the agreements reached earlier between the governments of two countries.
- The Ministry of Foreign Affairs of Tajikistan sent a protest note to Kyrgyzstan related to the placing of the Kyrgyz flag on one of the houses in Maksat border village of the Lyailyak district located in a disputed section of the Kyrgyz-Tajik border. The Tajik side required investigation of the incident and measures to prevent such actions.

Economy, Finance and Energy

- The operator company of the Kazakh Tengiz oil field, Tengizchevroil (TCO), produced a record volume of 27.16 million tons of oil in 2015 compared to 26.7 million tons of oil in 2014. Besides, the company sold 1.27 million tons of liquefied gas and

6.85 billion cubic meters of dry gas in 2015.

- According to the short-term February forecast of the U.S. Energy Information Administration (EIA), the oil production forecast of Azerbaijan was kept unchanged at 0.87 million barrels per day (bpd) in 2016 and 0.86 million bpd in 2017. Meanwhile, the forecast of oil production in Kazakhstan for 2016 has increased. Oil production in Kazakhstan was forecasted at 1.73 million bpd in 2016. Previously, the EIA predicted oil production in Kazakhstan to be at 1.72 million bpd in 2016.
- The Ambassador of Iran to Azerbaijan, Mohsen Pak Ayeen, announced that Iran begun construction of the Qazvin-Rasht and Astara (Iran) - Astara (Azerbaijan) railway sections as part of the International North-South Transport Corridor. Construction investments are estimated at \$400 million. Initially it is planned to transport 6 million tons of cargo, this number is projected to increase up to 15-20 million tons per year.
- According to the Ministry of Investments and Development of Kazakhstan, a new ferry terminal in the port of Kuryk on the Caspian Sea is to be commissioned until late 2016. It is expected that construction of the ferry complex will make it possible to triple the existing capacities of Kazakhstan on the transshipment of ferry cargo and to strengthen the Kazakh section of the international transport corridor in the China-Europe direction.
- According to the Ambassador of Iran to Russia, Mehdi Sanai, in the framework of the visit of the Iranian delegation to Moscow, Russia and Iran signed documents on opening a \$2.2 billion credit line for financing of two projects on construction of thermal stations and a railroad.
- During the meeting of the Head of Azerbaijan Railways CJSC, Javid Gurbanov, and the President of Russian Railways JSC, Oleg Belozero, the parties came to an agreement on setting competitive tariffs for cargo transportation via a route between Russia and Azerbaijan within the framework of the International North-South Transport Corridor.
- According to the General Administration of Customs of China, bilateral year-on-year trade turnover between Russia and China declined by 8.9% amounting to \$4.99 billion in January 2016. Chinese exports decreased by 4.2% to \$2.71 billion, while Chinese imports were down by

13.9% totaling to \$2.28 billion last month.

- According to the Automobile Manufacturers Committee of the European Business Association, General Motors Uzbekistan (GM Uzbekistan), formerly known as UzDaewooAuto, reduced the sale of cars in Russia by 37% down to 1,269 in January 2016 compared to January 2015. The share of GM Uzbekistan's cars on the Russian market amounted to 1.6% for the first month of 2016 compared to 1.7% a year earlier. The total amount of GM Uzbekistan's cars sailed in Russia reached 20,451 in 2015, which is 46% less compared to 2014.
- The Minister of Labor of Russia, Maxim Topilin, announced that the Ministry expected the unemployment rate in the country to remain under 6% in 2016. According to the State Statistics Committee of Russia, Rosstat, the country's unemployment rate stood at 5.8% in December 2015.
- The Board of the National Bank of Kyrgyzstan announced its decision to prohibit commercial banks to provide mortgage and consumer loans in foreign currency.
- The Statistics Committee of the Ministry of National Economy of Kazakhstan reported that the gross yield of grain and leguminous crops in all categories of farms in the country had amounted to 18.67 million tons in 2015, which is 8.8% higher than a year earlier. In 2015, the initially recorded weight was 20.27 million tons, which is 7.3% more than that in 2014.

Society and Culture

- The Spokesman of the Ministry of Health of Russia, Oleg Salagai, announced Russia's plans to present its Ebola vaccine to the World Health Organization in Geneva in February 2016.
- According to the Head of Russia's Antarctic Expedition, Valery Lukin, Russia and the United States have jointly withdrawn the last 4 radioisotope thermoelectric generators and 4 ionizing radiation sources from the Russian polar stations in the Antarctic.
- Patriarch of Moscow and All Russia Kirill and Pope Francis have signed a joint declaration on religious unity after their historic meeting in Cuba. The declaration calls for peace in Syria, Iraq and Ukraine, and urges Europe to maintain its faithfulness to its Christian roots.