

Development Of The Electric Power System Of Surkhandarya Region During The Years Of Independence

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Received: 20 October 2025; **Accepted:** 11 November 2025; **Published:** 17 December 2025

Abstract: This article analyzes the formation and gradual development of the electric power system of the Surkhandarya region during the years of independence. It provides a scholarly overview of the modernization of electric networks, the commissioning of new capacities, the growing demand for electricity, and the technical re-equipment of the energy infrastructure in the region. The study also highlights state programs, investment projects, the construction of small and large power plants, and the expansion of renewable energy potential implemented in Surkhandarya. Statistical data, official reports, and sectoral scientific sources were used to assess the current state and future prospects of the region's electric power system.

Keywords: Surkhandarya region, electric power system, energy infrastructure, modernization, years of independence, electric networks, state programs, investment projects, renewable energy sources, energy security, capacity expansion, regional development.

Introduction: After our country gained independence, a unique path of economic development was chosen, and significant achievements have been made. In particular, identifying the priority sectors of the national economy (such as oil, energy, cotton processing, and others) and the results achieved in their structural reorganization played an important role in ensuring macroeconomic stability - one of the key components of the economic reforms carried out in our republic. Efforts toward achieving oil independence, in particular, created the initial opportunities and conditions for the rapid growth of Uzbekistan's economy [1].

After the Republic of Uzbekistan gained independence, the region began to acquire strong and reliable power networks. The highly responsible task of supplying consumers with electrical energy naturally fell on the shoulders of energy specialists. Following Uzbekistan's achievement of "Energy Independence" in 1995, the production of electrical power increased sharply[2]. This was due to the country's special attention to the intensive - that is, rapid - development of various sectors of the economy. As the First President of

Uzbekistan, Islam Karimov, emphasized, the most profound structural transformations during the independence years were linked to the need for the state, during the transition period, to work out and implement its own economic policy by identifying, encouraging, and supporting priority sectors and industries with great potential (oil-oil independence, energy-energy independence, grain-grain independence, cotton-cotton processing, etc.), and thereby carrying out a consistent policy of restructuring the economy[3].

Like all other production sectors of our independent republic, the Surkhandarya Electric Networks Enterprise also experienced severe economic difficulties in the early years of independence. Due to the hundredfold and thousandfold increase in the cost of material and technical resources, the enterprise faced challenges in purchasing fuel, lubricants, and electrical equipment from abroad. Nevertheless, the enterprise was able to use its internal capacities, save resources, and achieve several successes. In 1992, the number of electricity consumers was 170,000. By early 1994, the number of electricity subscribers had

reached 183,000[4]. In 1993, 2 billion 196.2 million kilowatt-hours of electricity were supplied to the national economy, and the assigned tasks were overfulfilled [5].

METHOD

The development of virgin and irrigated lands in the Surkhandarya region, the construction of machine-pump stations, and the establishment of joint ventures were all successfully ensured with a stable supply of electricity, and this activity continued in the following years as well. During the first ten months of 1998, 1 billion 739.5 million kWh of electricity, equivalent to 3.8 billion soums, was delivered to the national economy and the population.

The commissioning of 10,000 kW transformers in Sherobod and Obodon significantly improved the electricity supply for consumers in these areas. Achievements in capital investments were also noteworthy. Over eleven months, capital assimilation amounted to 134 million 367 thousand soums, fulfilling the planned target by 139 percent. Construction and installation work worth 103.3 million soums was completed, exceeding expectations by almost one and a half times. For consumers living in border areas, 6 kilometers of 110 kV and 50 kilometers of 10 kV transmission lines were commissioned.

By 2002, a wing of the “Surxon-500” substation was constructed and put into operation, where 35 energy specialists worked. Within a relatively short period – from 1980 to 1994-the number of substations with voltages of 35-500 kV increased from 59 to 123, their total capacity rose from 842.6 thousand kVA to 2 million 630 thousand kVA, and the number of transformer points increased from 1,495 to 2,270, with their capacity growing from 145.6 thousand kVA to 284.4 thousand kVA. The length of electric networks operating at 0.4-500 kV increased from 12,795 km to 18,261 km [6]. It can be confidently stated that the early 2000s marked the peak of this development. Over thirty-four years, energy specialists in the region built and commissioned more than 123 transformer substations and 18,300 kilometers of power lines and cable systems of various voltages.

According to the Resolution No. PQ-4249 of the President of the Republic of Uzbekistan dated March 27, 2019, “On the Strategy for Further Development and Reform of the Electric Power Sector of the Republic of Uzbekistan,” the Joint-Stock Company “Hududiy Elektr Tarmoqlari” (Regional Power Networks) was established to manage the regional enterprises responsible for distributing and selling electrical energy to end consumers [7].

The system of “Hududiy Elektr Tarmoqlari” JSC includes

fifteen enterprises and two branches, of which fourteen regional electric network enterprises operate 0.4-6-10-35-110 kV electrical networks, carrying out new construction, reconstruction, capital repair, and maintenance works within the framework of system development [8].

Fourteen regional electricity enterprises, together with 224 district and city electricity supply units, deliver electricity to household and legal consumers of the Republic of Uzbekistan through 260.5 thousand kilometers of transmission lines originating from 1,660 substations operating at 35-110 kV and distributed via 86,389 transformer points.

The joint enterprise specializes in designing all types of electric networks and energy facilities using innovative technologies. The relevant agreement was signed on September 24, 2019, during a meeting at the Ministry of Energy of the Republic of Uzbekistan with representatives of the French company “Assystem Engineering and Operation Services S.A.S.” The joint enterprise is established together with the French partner company and “Uzenergoinjining” JSC and operates in Uzbekistan as a limited liability company.

The activities of the “Uzenergoinjining-Assystem” joint enterprise are based on the latest scientific achievements and innovative technologies in the design of all types of electric networks and energy facilities. It should also be noted that the signed agreement marks an important stage in the cooperation between the Ministry of Energy and the French company “Assystem Engineering and Operation Services S.A.S.”.

Furthermore, in May of the same year, the parties signed a memorandum of understanding aimed at mutually beneficial technical cooperation in the energy sector. This document is of great significance as it promotes new forms of technical cooperation, including project development and management in the energy sector [9].

Today, about 20 percent of the world’s electricity is generated by hydroelectric power plants (HPPs). Countries such as Iceland, Norway, Canada, Sweden, Paraguay, and China have fully developed the potential of hydropower. The Suvloyikha group of the planning department under the Ministry of Energy and Electrification of the Republic of Uzbekistan conducted an in-depth study of the project for the construction of the Topalang HPP, and the project was approved on October 12, 1992[10].

RESULTS AND DISCUSSIONS

The Topalang Reservoir was created by collecting the waters flowing down from the Sariosiyo mountains.

This major hydraulic structure, surrounded by unique natural landscapes and high mountains, serves as an essential resource for the population living in the area. While the farmlands of Denov, Sho'rchi, and Qumqo'rg'on districts are irrigated through this reservoir, the hydropower plants located downstream supply electricity to the southern parts of the region. On November 23, 1993, the Cabinet of Ministers of the Republic of Uzbekistan fully approved the construction project of the Topalang HPP and assigned the following parameters:

The power of two small units must be 15 MW each;

The power of two large hydro-units must be 72.5 MW each; [11].

The reservoir should be designed to store 500 million cubic meters of water, with the dam height reaching 167 meters, ensuring that the total installed capacity of the HPP is 175 MW and its annual electricity generation reaches 514 million kWh [12].

For this purpose, the builders of the Topalang Construction Directorate were primarily engaged in the construction of the reservoir. In 1993, they carried out work at 860 points of the dam. After the reservoir becomes operational, water supply will improve in several districts of the region, and hundreds of hectares of new land will become usable. A new division was established within the directorate to fulfill this task. It was headed by young engineer Viktor Shibanov, who had extensive experience in hydraulic construction. Beginning in May, construction work commenced with earthwork on the access road leading to the major facility. Bulldozer and excavator operators such as Juma Bobonov, Kenja Umbarov, Mukhammadali Ma'murov, and Kholboy Boboyev served as exemplary workers in this process.

After the commissioning of the new hydropower plant, the regional economy was expected to receive 160 MW of electricity annually, providing power to hundreds of water pumps. The HPP is located at an elevation of 1,775 meters above sea level, and all four units were initially planned to be operational by 2005. However, in order to achieve earlier results, the builders decided to shorten the water path and launch the first two small units in 2001.

The Topalang HPP was completed and commissioned in 2006. Two units with a capacity of 15 MW each began operation. In 2017, under the instruction of President Shavkat Mirziyoyev, the dam height was raised by 20 meters, increasing the reservoir capacity from 380 million cubic meters to 500 million cubic meters. During this period, two additional hydropower plants - "Zarchob-1" and "Zarchob 2" - were commissioned downstream of the reservoir [13]. As a result, the

number of HPPs built on the Topalang River reached three, with a combined capacity of 105.6 MW, allowing the generation of 300 million kWh of electricity annually. In 2019, the construction of the first and second hydro-units was ordered. This work is scheduled for completion by the end of 2022. The commissioning of two additional units with a capacity of 72.5 MW each will increase the total capacity to 175 MW. After this expansion, the Topalang HPP will become the second-largest hydropower plant in Uzbekistan after the Charvak HPP [14].

Based on Presidential Decree No. PQ-2661 dated November 23, 2016, the JSC "Surxondaryo Regional Power Networks" has been consistently implementing modernization and reconstruction measures for existing power networks. Specifically, under the program, a total of 265 transformer points of various capacities (6–10/0.4 kV) and 670.2 km of 0.4–6–10 kV power lines were planned for construction and reconstruction during 2017–2019. According to the plan, outdated and technically unsatisfactory wires were to be replaced with modern insulated cables, and transformer points that had long been in operation and frequently repaired due to short circuits were to be replaced with compact, technically appropriate units produced by domestic manufacturers.

As a result, during the implementation period, electricity losses were reduced by 45.6 thousand kWh, ensuring significant energy savings. The energy saved is now used by consumers for production processes and household needs. This not only generates additional income for the electricity supply enterprise but also allows for the reconstruction of equipment that had deteriorated due to prolonged use. Maintenance costs have also been significantly reduced.

CONCLUSION

The special attention of our President to deepening reforms in the sector, as well as the allocation of 250 million USD funded by the Asian Development Bank and the French Development Agency, is of great significance. In particular, it has been determined that all 516,634 electricity metering devices currently used by consumers in Surxondaryo region will be replaced with modern ones and integrated into the Automated System for Commercial Metering of Electricity (ASCME). The new automated system will ensure transparency in settlements between consumers and suppliers and will promote the rational and efficient use of energy.

In conclusion, it should be noted that after our country gained independence, Uzbekistan chose its own path of economic development, achieving significant success. In particular, defining the priority sectors of the

national economy (such as oil, energy, the cotton-processing industry, and others), which constitute an important component of ongoing economic reforms, and reorganizing them structurally has played a crucial role in achieving macroeconomic stability. Although the employees of the Surxondaryo power networks have achieved great success in the conditions of New Uzbekistan, a number of issues have also accumulated regarding the provision of high-quality electricity to the national economy, agriculture, and the population of the region.

REFERENCES

1. Karimov I.A. O'zbekiston iqtisodiy islohotlarni chuqurlashtirish yo'lida. – Toshkent : "O'zbekiston". 1995-yil. – B. 201.
2. To'rayev T., Ergashev K. Surxondaryo energetikasi odimlari. – Qarshi: "Nasaf" 2015-yil, - B 12.
3. Karimov I.A. O'zbekiston iqtisodiy islohotlarni chuqurlashtirish yo'lida. – Toshkent : "O'zbekiston". 1995-yil. – B. 201.
4. Tursunov S., Qobulov E. va bosh. Surxondaryo tarixi. – B. 506.
5. Surxon tongi. 1993-yil, 21-dekabr.
6. To'xtayev A.Q. "Surxondaryo viloyatini elektrlashtirish tarixidan". - Termiz, 1995-yil.
7. O'zbekiston Respublikasi Prezidentining 2019-yil, 27-mart. PQ – 4249-sonli qarori.
8. To'rayev T., Ergashev K., "Surxondaryo energetikasi odimlari". – Qarshi: 2015 – B. 18.
9. To'rayev T., Ergashev K. "Surxondaryo energetikasi odimlari". - Qarshi: 2015, B. 68.
10. To'rayev T., Ergashev K. "Surxondaryo energetikasi odimlari". - Qarshi: 2015, B. 69.
11. O'zbekiston davlat milliy arxivi. R-86, ro'yxat-1, ish-4123, - B. 321.
12. O'zbekiston davlat milliy arxivi. R-95, ro'yxat-2, ish-16, - B. 57.
13. Surxondaryo hududiy elektr tarmoqlari korxonasi AJ joriy arxivi. 503-jamg'arma, ro'yxat-1, ish-3350.
14. Yangi O'zbekiston gazetasi. 2022-yil, 3-iyun.