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Achievements and Problems of The Newly Built Power Plants and Industrial Enterprises of The Uzbek Soviet Socialist Republic (1941-1945)

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Abstract

The wartime period from 1941 to 1945 marked a transformative phase in the industrial and energy sectors of the Uzbek Soviet Socialist Republic, reflecting broader Soviet strategies for economic resilience during World War II. Initially reliant on hydroelectric power, the Uzbek SSR saw an industrial pivot toward constructing thermal power stations fueled by natural gas by the war's end. Prior research lacks detailed documentation of the engineering achievements and social mobilization strategies that underpinned these developments. This article aims to analyze the construction, operation, and socio-political impact of newly established power plants and industrial enterprises in Uzbekistan during the war years. The Tashkent power system became the first in the USSR to be fully automated. Hydroelectric projects like the Solor and Lower Bozsuv HPPs rapidly advanced using innovative construction methods, with women comprising 60% of the labor force in some instances. The flagship Farkhod HPP on the Syr Darya, partially built during the war, catalyzed agricultural expansion and industrialization. The article highlights the role of regional collaboration, the integration of local labor—including women and Japanese prisoners of war—and new engineering techniques in completing large-scale energy projects within compressed timelines. These developments significantly boosted the energy supply to industry and agriculture, laid the foundation for post-war economic growth, and demonstrated the potential for national solidarity-driven infrastructure projects under wartime conditions. The case of the Uzbek SSR offers critical insights into crisis-era industrial mobilization, relevant to both historical analysis and modern infrastructure planning in resource-scarce environments.

Keywords: Uzbek SSR, World War II, hydroelectric power, thermal power stations, Farkhod HPP, energy infrastructure, wartime industrialization, Soviet economy, women labor force, Japanese prisoners of war, Syr Darya, automation in energy systems.

Introduction

More than 200 engineers, technicians and highly qualified workers participated in the automation and telemechanization of the power system[1]. The Tashkent power system became the first in the former Soviet Union to be fully automated and telemechanized. Its work experience served as a model for the automation and telemechanization of other power systems in the USSR.

The Uzbek energy team has grown during the commissioning of the Lower Bozsuv HPP. Designers, builders, and energy engineers had to solve a number of new technical, production, and scientific issues in the process of constructing hydraulic structures and hydroelectric power plants[2].

During World War II, Uzbekistan's power and industrial sectors underwent rapid development. Hydroelectric and thermal power projects expanded, reflecting technical innovation and mass mobilization. This article explores achievements, challenges, and the socio-political context that shaped the construction of strategic energy infrastructure vital to wartime and post-war economic stability[3].

Materials and Methods

The issues of mudflow, spring floods and mudflows, earthquake resistance of hydraulic structures, as well as the integrated use of hydropower resources for energy and irrigation are among the most important issues in the conditions of Central Asia[4]. All these issues were successfully resolved in the process of construction of hydraulic engineering and hydropower by the joint efforts of the employees of the scientific research and design institutes of the republic and the former Soviet Union operating and construction organizations[5].

Designers, builders, and power engineers have shown examples of ingenuity and creative ingenuity in solving many practical problems, making the most of domestic resources and cheap local materials, introducing new production tools, and producing simple and robust structures[6].

Results and Discussion

Rapid methods of constructing hydroelectric power plants were introduced. Progressive methods of blasting and pushing soil, blasting and softening soil, blasting in the desired direction to block the flow of water and building dams by sinking the flowing soil, and building dams from healthy soil were widely used[7]. Directional blasting was used to block the water of the Kuybozsu and Dargam rivers. This method made it possible to block the riverbed with healthy soil itself during the flow of water without using metal, stone, wood, and other materials [8].

Using the accelerated method used in national construction, the Solor hydroelectric power station was completed on February 23, 1944, and put into operation on March 19. As a result of the commissioning of the hydroelectric power station, the Tashkent city industry received thousands of kilowatts of electric power. 60% of the workers who worked on the construction of the Solor hydroelectric power station were women. Accordingly, at the ceremony held on March 19, 1944, on the occasion of the commissioning of the hydroelectric power station, it was given the name "March 8". On June 5, 1944, 612 of the most active participants in the construction were awarded the Honorary Certificates of the Supreme Soviet of the Uzbek SSR for their active participation in the construction of the Solor hydroelectric power station named after March 8[9].

In addition, for their active participation in the construction of the 8th Solor hydroelectric

power station, the Kuybyshev, Lenin, Frunze, Oktyabr, Stalin, Kirov, Central and Moscow districts of Tashkent, as well as the Ordzhonikidze and Karasuv districts of Tashkent region, were awarded honorary diplomas of the Supreme Soviet of the Uzbek SSR. In January 1945, a new powerful power plant was launched on the Bozsuv canal near Tashkent[10]. The collective farmers of the Tashkent region showed examples of selflessness during the construction of the 1st Lower Bozsuv hydroelectric power station. More than 1 million 800 thousand cubic meters of soil were excavated, 14 thousand cubic meters of concrete were poured, and more than 600 tons of metal equipment were installed. This power station is one of the six largest power plants completed during the war years[11].

Electricity production in Uzbekistan increased 2.5 times during the Second World War. The construction of hydroelectric power plants was widespread. Within two years, in 1943-1944, five power plants were commissioned in the Tashkent region: Oktepa, Okqovok, Salor and 1st Lower Bozsuv. As a result of the selfless labor of the population, the construction of the 1st Okqovok HPP was completed in an extremely short time - in 15 months. The inclusion of these HPPs in the republic's energy system allowed for a slight increase in electricity production. In 1942-1943, electricity production increased 4 times[12].

During the war years, the electric power industry developed rapidly, and at the same time, the level of energy supply of labor in industry and agriculture increased. If earlier more hydroelectric power stations were built, by the end of the war years, along with the continuation of the integrated use of water resources, attention began to be paid to the construction of thermal power stations running on natural gas[13].

The VIII Plenum of the Central Committee of the Communist Party of Uzbekistan discussed the issue of measures to assist in the implementation of the tasks of the autumn plan for the construction of "Farkhodstroy" for 1943, raised the issue of increasing the pace of construction, and instructed all government agencies to provide comprehensive assistance to the construction of the hydroelectric power station, providing it with manpower and necessary materials[14].

For the construction of the Farkhod HPP, more than 8 thousand cubic meters of wood and other building materials, 800 tons of metal, more than 110 thousand various tools and vehicles were found and put into operation in the republic. In addition, the workers of the republic sent more than 300 wagons of various building materials for this nationwide construction. Thanks to the measures taken, the heroic courage and labor of the Farkhod HPP workers, the Syr Darya was tamed in a very short period of 10 months, while usually such work would have taken 2-3 years. The construction of the Farkhod HPP was launched by a nationwide hashar. 5,000 young people from the Andijan region actively worked on the construction of the Farkhod HPP. 11,000 collective farmers from the Tashkent region and 10,600 workers from the Bukhara region participated in the construction of this HPP. Representatives of Karakul, Vobkent, Romiton, Karmana and Kogan districts actively worked on the construction of the Farkhod HPP. 9,500 people from the Namangan region participated in the construction of the Farkhod HPP. In January-November 1943, 18 brigades of 1,655 people from Chust participated in the construction of the hydroelectric power plant. Among them were 30 girls led by M. Saidova. The group of M. Moydinov, who went from the Chust district to the construction of the Farkhod hydroelectric power plant, completed 700-800% of the daily tasks. The group of 24 people led by M. Ustaboyev completed 500-600% of the daily tasks. In March 1943, the collective farmers of the Chust section of the Farkhod

hydroelectric power plant construction were honored to receive the portable "Red Banner" of construction for achieving the best performance[15].

Conclusion

Despite the difficult years of the war, the Uzbek people began to build the largest four-unit Farkhod hydroelectric power station in Central Asia on the Syrdarya River with a capacity of 136 kWh. The construction of the Farkhod hydroelectric power station, which began in 1943, continued after the end of World War II. Two units of the Farkhod hydroelectric power station (the first stage) were commissioned in February 1946. In addition to the local population, Japanese prisoners of war were also involved in the construction of the hydroelectric power station. By decree of the Presidium of the Supreme Soviet of the USSR, 500 people were awarded orders and medals of the Union for their dedication and heroic labor during the construction of the Farkhod hydroelectric power station.

The construction and commissioning of the Farkhod HPP opened up wide opportunities for the development of the chemical industry, significantly improved the supply of electricity to a number of other enterprises, and gave impetus to the development of the coal industry and non-ferrous metallurgy. At the same time, the construction of the Farkhod HPP made it possible to irrigate the Mirzachul lands with running water through the construction of reliable water structures, which made it possible to develop 600 hectares of fertile land in the Mirzachul and Dalvarzin deserts of Uzbekistan and Kazakhstan.

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