



KYRGYZ UNAA KURULUSH





Project description

Description

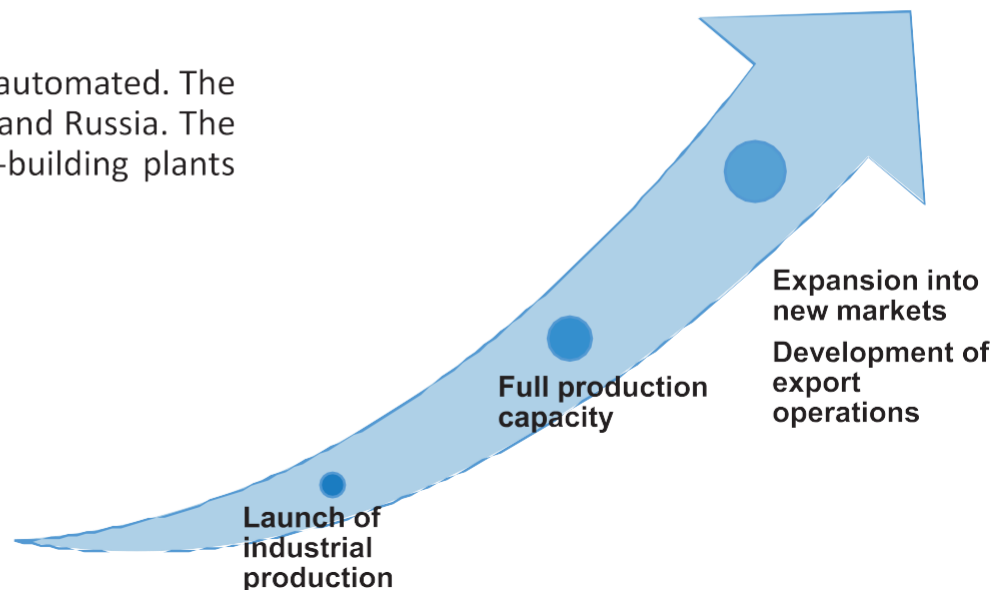
The Kyrgyz Unaa Kurulush LLC is designed to make input to the development of the Kyrgyz Republic's industry. The company will be the first machine-building plant established since the independence of the republic. This plant plans to produce "Ossberger" and "Pelton" class hydraulic turbines of different diameters and different types of generators as well as establishment of the assembly of electric vehicles in the future. The industrial enterprise will be equipped with the up-to-date equipment produced in Europe and Russia.

Thanks to this equipment, the entire industrial process will be highly automated. The Company plans to hire highly-qualified staff from Kyrgyzstan, Turkey and Russia. The Kyrgyz Unaa Kurulush aims to become one of the leading machine-building plants that designs and produces power equipment in Kyrgyzstan.

Characteristics

- **Location:** Osh
- **Land plot area:** 3 hectares
- **The enterprise area:** 12'000 sq. m.
- **Number of employees:** over 162 people
- **Investments:** over USD 10 million

Development stages





Project description

Construction works

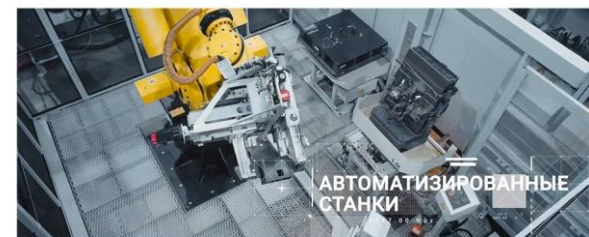
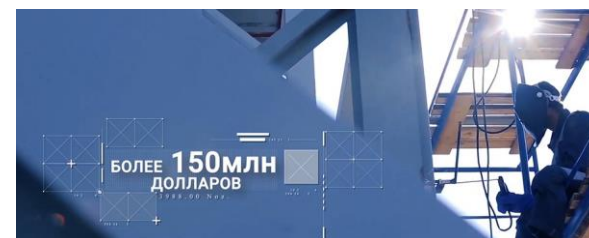
Currently the Company is constructing production facilities in Osh city. It is planned that the construction works will be completed in second half of 2019, and the launch of the enterprise is scheduled for the **end of 2019**. The land plot covers an area of 4 hectares, and the total area of the enterprise is **over 12 thousand square meters**. The factory will consist of several departments, including bending and stamping of rolled steel department, heat treatment workshop, generators production department, painting workshop and etc.

After launch of production the factory will become the most modern production complex in the Kyrgyz Republic equipped with the latest technological equipment of the leading producers and providing a full production cycle from mechanical processing to assembly, complex tests and installation.

Production equipment

The total investment into production equipment is **over USD 6 million**. The company intends to purchase **over 40 types of industrial equipment**, including milling machines for high-precision 5-axis cnc machine, turning-and-boring machines, vertical boring machines, turning lathe with CNC, laser metal cutting machines and other. To date, **about 30% of the equipment** has already been purchased, the remaining equipment is being negotiated with leading Russian and foreign manufacturers.

This will allow the company to perform technological operations of any complexity in mechanical engineering with a high-precision equipment. The company also plans to implement modern technology and construct testing benches.





Human resources

To ensure the stable operation of the company and to achieve desired goals, the company attracts qualified personnel with vast experience and knowledge of production technology. In addition, to ensure the personnel reserve, the Company sent 10 young specialists to study mechanical engineering in the Czech Republic. Highly qualified personnel will create a powerful technological potential based on the latest scientific and technical achievements.

Along with the acquisition of equipment the plant is working on personnel training. In order to make learning of complex five-axis CNC machines faster, a team of highly qualified specialists will be formed to create programs and manage such equipment.

The company will also introduce lean manufacturing and quality management systems, which will make the working process as safe and effective as possible.

Design engineering unit

Technical services of the enterprise will include a design engineering unit, as well as technological and research units. They will lead the development and implementation of new product types and contribute to the development of scientific and technical potential of the enterprise.

Competitive advantages of the plant:

- highly qualified personnel;
- the most modern equipment and production methods;
- high level of production automation;
- a reliable system of production control, the availability of modern testing rigs and laboratories.





Renewable energy development potential in KR

Market potential

- **Significant shortage of electricity in Kyrgyzstan** (2014 – 2'300 million kWh; in 2015 – 1'600 million kWh). According to various data, the electricity deficit in the future will only increase and could exceed 10 billion kWh by 2024.
- **The construction of CASA-1000.** The project will enable the sale of 1'300 MW of electricity from Central Asia to Afghanistan and Pakistan from the existing energy surplus in the Kyrgyz Republic and Tajikistan in the summer period.
- At the same time, the growth of the country's economy will inevitably lead to an increase in electricity consumption. In the basic scenario of economic development (with an increase in demand of 5% per year), the annual increase in energy consumption is projected at a rate of 0.6-1 billion kWh.
- The annual volume of newly commissioned capacity should be 100-160 MW. If the growth of the economy accelerates (the growth of demand about 7-10% per year), then the figures should be increased by additional 30-40%.

Tax benefits

- The Parliament of the Kyrgyz Republic is considering a draft law that **implies the exemption from the corporate income tax** for owners of newly formed small electric power production capacities (from 1 to 30 MW) and other producers of renewable energy generated by newly installed equipment using renewable energy sources for a period of 8 years starting from the date of electricity supply to the distribution grid of the electric power company;
- **Exemption from VAT** on imported equipment for renewable energy, components for them, spare parts for repair of such equipment.

Tariff

- **Grace period of 8 years** is the statutory deadline for the application of a special tariff for enterprises using renewable energy equipment, which implies application of increasing coefficients. For 8 years, the tariffs for electricity generated by renewable energy sources are established by multiplying the maximum tariff for end-users by an increase coefficients.



Manufacturing

Today, the industrial sector accounts for 18% of Kyrgyzstan's economy. However, the industry is mainly represented by mining sector and light industry. There are almost no manufacturing and machine-building plants in the Kyrgyz Republic.

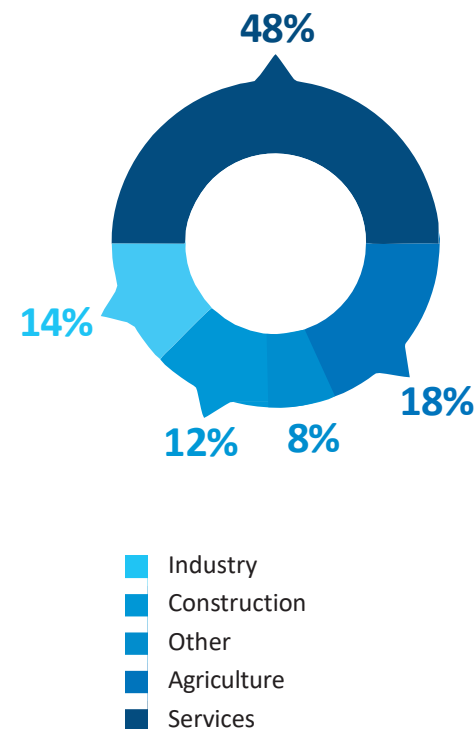
In addition, there is an acute problem of launching new capacities of both large and small production facilities based on renewable energy. To date, the renewable energy potential of the Kyrgyz Republic has been studied in detail in the process of participation in the CASA 1000 project. A comparative analysis with the amount of energy consumed by the fuel and energy complex of the republic showed that the potential of renewable energy sources can cover up to 51% of the energy consumption.

Kyrgyz Unaa Kurulush was founded to develop the Kyrgyz Republic's industry, as well as to create conditions for improving the social status of the population and supporting the energy and environmental security of the republic.

Company product line

- Complete set of equipment for hydroelectric power plants, including turbines, generators and electric control devices
- Diesel and gasoline generators
- Wind generators
- Various types of machinery and equipment
- Pumps and valves
- Electro mobiles

Share of industry sector in GDP of KR





Company product line

A set of equipment for small hydropower plants

Kyrghyz Una Kurulush intends to start the production of basic equipment sets for small hydropower plants, including two types of hydroturbines, generators and electric control devices.

Impulse-type water turbine (Pelton wheel) – active hydraulic turbine, wheel's paddle geometry has the form of a bucket. The turbine is effective at:

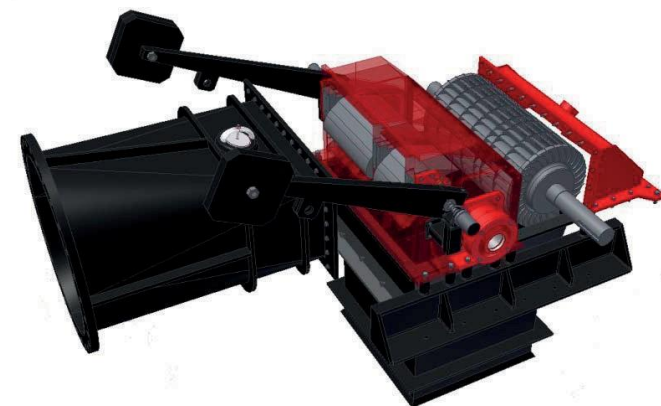
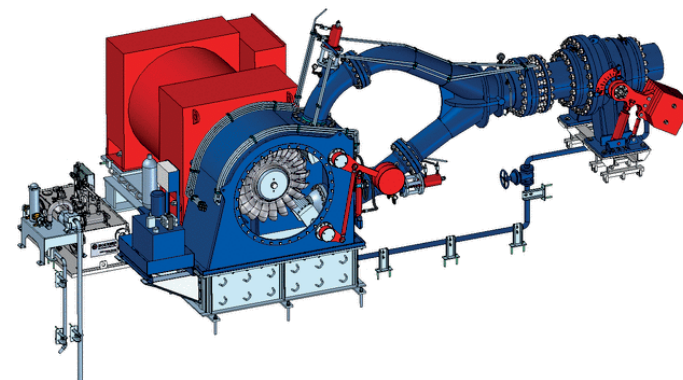
- Altitude range: **from 200 to 3000 meters**
- Water flow rate: **from 0.03 to 3 m³/sec;**

Advantages of Pelton turbines include the possibility of using very high water pressure and small water flows. Pelton turbines are very often used on small HPPs, built on small rivers with large river slopes in mountainous areas.

Cross-flow turbine (Ossberger turbine) – in a cross-flow turbine the water passes through the turbine transversely, or across the turbine blades. The turbine is effective at:

- Altitude range: **from 10 to 200 meters**
- Water flow rate : **from 0.1 to 15 m³/sec.**

The cross-flow turbine combines low operating costs with relative design simplicity. The maximum efficiency is about 80%, which is slightly less than the Pelton turbines. However, due to its excellent efficiency at partial loads, the Ossberger turbine is well suited for automatic power generation. Its simple design makes maintenance easier than with other types of turbines.





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Company product line

Along with the production of hydraulic turbines, the plant plans to launch production of other products.

Wind turbine

Wind turbines of modern designs allow to use cost-effective wind energy. Today, with the use of wind turbines it is possible not only to supply electricity to the power grid, but also to solve the power supply problems in remote areas.

Machine-tool manufacturing

In Kyrgyzstan, there is no production of machine tools. Local businesses are forced to purchase the necessary equipment in China, Europe and Russia. Kyrgyz Unaa Kurulush aims to solve these problems and provide domestic equipment to local enterprises. In the future, the company plans to export machinery and equipment worldwide.

Diesel and gasoline generators

Diesel generator allows you to provide backup or autonomous power supply for industrial enterprises, construction sites, data centers, shopping centers, medical institutions and any other facilities.

Electric vehicle assembly

According to modern trends, the company intends to establish the production of electric vehicles in order to maintain and develop the green economy of the country. At the first stage, the Company will carry out only assembly of vehicle from imported components. However, the company plans to establish its own production in the future.







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