



KAZAKHSTAN

FROM FOSSIL FUELS TO RENEWABLES

Kazakhstan is the world's largest landlocked country and is the ninth largest in the world. The bulk of the country is located in Asia, but the most western parts are in Europe. The country is the economically dominant nation in Central Asia, generating more than half of the region's GDP through its enormous oil and gas industry and vast mineral resources. On the back of these natural resources, Kazakhstan's economy has shown considerable growth over the last decade.

The total installed generation capacity is 21,673 MW. Of this, some 80% is provided by coal-fired plants. Only 10% is generated by hydropower, with about 2,456 MW. Supply and distribution of electricity through Kazakhstan is problematic because most of the energy is produced far from demand centers and the bulk power grid is in significant need of modernization.



Shardarinskaya, Syr-Darya River

Although Kazakhstan has an estimated technically feasible hydropower potential of about 62,000 GWh per year, only 13% of this potential has been developed so far. To meet future demand and address ambitious targets to increase the share of renewables to about 50% by 2050, the country needs to increase investment in the power sector. Even if measures regarding decentralized electricity, trading markets, and new tariffs are beginning to show results, more energy market reforms are required.

ANDRITZ HYDRO IN KAZAKHSTAN

For about 10 years, ANDRITZ Hydro has been active in the promising hydropower market of Kazakhstan. In 2017, the re-

presentative office in Almaty was established as a regional hub to support better access to the market and to be able to explore the excellent business opportunities not only in this huge country, but across the entire Central Asian region.

A stand-out reference is the Moinak hydropower plant (2 × 153 MW), where ANDRITZ delivered two Pelton turbines and a spare runner. Electro-mechanical equipment for two small hydropower stations on the river Issyk, each with a capacity of 5.25 MW, have also been delivered and installed in Kazakhstan.

SHARDARINSKAYA, SYR-DARYA RIVER

In December 2013, ANDRITZ signed a contract for new electro-mechanical equipment at the Shardarinskaya hydropower plant. ANDRITZ is replacing four Kaplan turbines with new runners, new generators, automation, and auxiliary systems. The power output will be increased by about 20% – from 26 MW to 31.5 MW per unit. The first two units are already in commercial operation, refurbishment of the remaining two units is scheduled for completion at the beginning of 2020.

GENERAL FACTS

Population: **18 Mio.**
 Access to electricity: **100%**
 Installed hydro capacity: **2,456 MW**
 Hydro capacity under construction: **<200 MW**
 Share of generation from hydropower: **11%**
 Hydro generation per year: **11,160 GWh**
 Technically feasible hydro generation potential: **62,000 GWh**

ANDRITZ HYDRO IN THE COUNTRY

Installed and/or rehabilitated capacity: **607 MW**
 Installed and/or rehabilitated units: **9**
 Locations: **Almaty**

TO KNOW