

Astana solar energy for the environment

ASTANA - Rodina (Motherland) village, located 70 kilometers from the capital city Astana in the middle of the steppe, is the kind of spot the nation sees as the future of energy. Having its own wind turbines, the Rodina village generates enough electricity to meet its needs.

The majority of the current renewable energy generation in the country comes from wind energy. By the end of 2022, the volume of renewable energy generation reached 5.11 billion kilowatts per hour (kWh), with the highest share coming from wind - 2.4 billion kWh, the data from the Kazakh Ministry of Energy indicates.

As of 2022, the proportion of electricity Kazakhstan generates from renewable sources reached 4.53%, slowly moving to ambitious targets the country has set to bring the share of renewable energy to 15% by 2030 and 50% by 2050.

The targets are envisioned in the concept of transition to a green economy, which Kazakhstan adopted in 2013. The 2030 target was initially 10% but was changed in 2021 due to the "new realities and the current positive dynamics."

According to the data from the ministry, as of 2022, 130 renewable energy facilities were installed in the country with a total capacity of 2,400 megawatts (MW), including 46 wind farms, 44 solar power plants, 37 hydroelectric power plants and three biomass power plants.

Twelve were commissioned in 2022, with a total investment of 180 billion tenge (US\$403 million). In 2023, Kazakhstan plans to put into operation 15 facilities with a total capacity of 276 MW.

The nation transitioned to the auction system in 2018, a competitive bidding process where renewable energy developers submit their proposals to secure contracts for supplying electricity to the grid. Every year, the ministry approves the schedule of auction bidding, with a breakdown by type, capacity and region, which is published on the ministry's website.

According to the Kazakh energy ministry, 15 renewable energy projects were selected at the auction in 2022, with a total capacity of 440 MW, obtaining a record low price of 12.49 tenge, circa 3,5 cents. The majority, 400 MW, came from wind energy, again.

Nurbekova noted the need for additional efforts to support "small-scale distributed renewable energy generation," such as rooftop solar panels, solar water heaters, and biomass boilers.

In addition to the first law on supporting renewable energy adopted in 2009, an auction mechanism, and 20 years power purchase agreement with the off-taker, as well as taxes and investment preferences (a contractual



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agreement between energy buyers and sellers), another key document is the strategy for achieving carbon neutrality signed by President Kassym-Jomart Tokayev last February.

"This is an important visionary document, spelling ways and setting targets and milestones for the green transition of the country, detailed to the sectors of the national economy and international commitments," said Nurbekova.

UNDP supports Kazakhstan in improving the standards of legislation related to the development and implementation of policies, programs and regulations to reduce investment risks and increase investment to achieve renewable energy goals.

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