

Astana solar energy market

Utility-scale solar is stirring in the region, with support from development banks. Following a series of competitive auctions, PV projects have been commissioned and are under development in Uzbekistan and Kazakhstan. In the latter nation, corporate interest in distributed, small-scale renewables is growing but for further market uptake, additional incentives should be introduced, practitioners say.

The Central Asian solar market is on a roll, with Kazakhstan the pioneer and regional leader and Uzbekistan not far behind. Kazakhstan installed 2.7 GW of solar capacity between 2017 and 2021, according to the new REN21's UNECE Renewable Energy Status Report, and in 2021, added over 1 GW of solar - resulting in it becoming one of the top-30 countries for renewable energy investment.

Uzbekistan's first utility-scale PV plant, with 100 MW of capacity, was commissioned by the UAE state-owned Masdar in the Navoi region in 2021. In June 2022, the second utility-scale solar plant, of 131 MW, was commissioned by French developer Total Eren in the Samarkand region.

These developments would be impossible without the investment-friendly economic moves that the two countries were undertaking to support the development of renewables, according to Yerlan Ramazanov, regional head of energy for Eurasia at the European Bank for Reconstruction and Development (EBRD). Those include several competitive auctions on solar and wind capacity in both countries.

"In Uzbekistan, the auctions attracted leading renewable energy developers and achieved some of the lowest tariffs internationally on both wind and solar, including \$0.0257/kWh on the EBRD-supported 100 MW wind tender last year," said Ramazanov. "In Kazakhstan, an auction system replaced feed-in tariffs in 2018 and has already tendered approximately 1.3 GW of new renewable capacity. Tariffs have also demonstrated a steady decline, with the weighted-average tariff for solar in 2021 lowered by around 63% and for wind by around 38% compared to the feed-in tariffs."

The solar expansion in the region is largely pushed by utility-scale projects backed by international financial institutions, most prominently by the EBRD. In Kazakhstan, the bank is the largest investor in renewable energy. By the end of 2021, the bank financed the construction and operation of 12 PV projects with the total value in EBRD financing of EUR328 million (\$318.5 million), according to the bank's country strategy.

The drivers for the development of renewables in both countries are based on security and diversification. Both countries have significant reserves of gas and oil and rely heavily on fossil fuel generation for electricity. Uzbekistan's electricity consumption is expected to double by 2030 and domestic natural gas production alone will not be able to cover the growing demand, according to the IEA. In Kazakhstan, air pollution from coal power generation, at 70% of the energy mix, is an additional driver.

Despite similar goals, the countries took different paths to attract investment in renewable energy. "Kazakhstan spent about six years on the development of a regulatory framework. Since the adoption of the first law on renewables, it took about six to seven years for the first serious renewable energy projects to be developed," said Almas Chukin, economist and partner at investment company Visor Kazakhstan. In 2019, Kazakhstan achieved its 2020 target of 3% renewable power generation and raised its 2030 target to 15%.

Meanwhile, developments in Uzbekistan were more ad hoc, according to Chukin. "Uzbekistan needed to swiftly solve energy supply issues and had no time for the development of a regulatory framework," he said. "Special auctions under the auspices of the government, the IFC, and the ministry of energy were accessible only for 'giant' investors." The advantage of this is speed, he said, but the systematic approach is missing.

In 2019, Uzbekistan declared plans to install 8 GW of renewable energy by 2030 with the aim of achieving a 25% share in electricity generation by 2030. Two years later, the target was raised to 12 GW, including 7 GW solar and 5 GW of wind. Since then, several projects have gone to auction and some were developed through bilateral contracts. After winning the first solar auction tender in 2019, the UAE's Masdar won a tender for a 457 MW project in the Surkhandarya region and two PV projects totaling 400 MW in the Jizzakh and Samarkand regions.

The latest 131 MW solar project, commissioned by Total Eren in 2022, was initially launched in 2018 during the visit of Uzbek president Shavkat Mirziyoyev to France, with a 25-year PPA agreed. Information about its price of electricity is confidential, the press office of Total Eren told pv magazine.

Beyond utility-scale projects, both countries have seen little progress on distributed, small-scale renewables. But in Kazakhstan, corporate interest for solar is growing, said Abdulla Ushurov, founder of Kazakhstan-based Solarway. "There are no state subsidies or tax breaks for the installation of solar panels. The only incentive for legal entities is the possibility to sell excess energy at a market rate," he said.

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