

International Conference
Sustainable energy in Kyrgyzstan: prospects and challenges
Park Hotel Bishkek, 15 May 2023

Evolution of Renewable Energy promotion in Kazakhstan – achievements and lessons learned

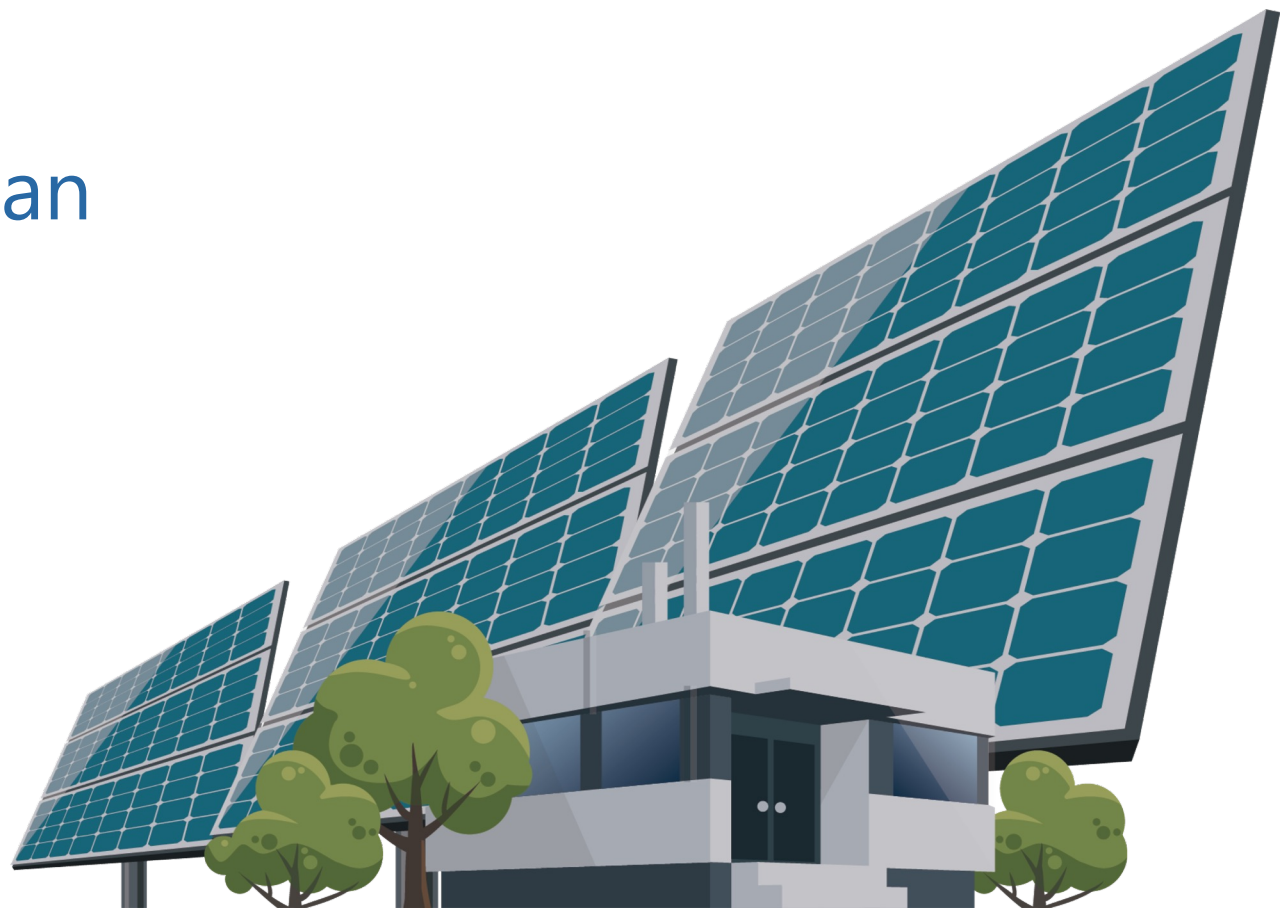
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Chairperson of the Board of Directors, Qazaq Green RES
Association



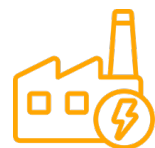
QAZAQ GREEN
Association

RES development in Kazakhstan

May 2023



Current situation in the electricity generation sector



204
power plants



23,9 GW
installed capacity

16,4 GW
peak load for 2022

19,1 GW
available capacity



of these RES **2,4 GW \approx 10%**

130 RES facilities



Solar
1149 MW
45 facilities



Wind
957,5 MW
45 facilities



Hydro
280 MW
37 facilities



Bio
1,82 MW
3 facilities



1643 workplaces (Men – 1395, Women – 245)

Target indicators of renewable energy development

2025

6%

Share of renewable energy in total generation

Total renewable energy generation

more than 7 TWh

Investments in renewable energy

2.4 billion \$

✓ 2020 is the milestone period for the implementation of the renewable energy indicator in the Concept of Kazakhstan's transition to a "green" economy.

2030

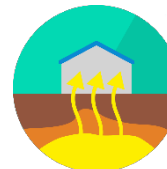
15%

Share of renewable energy in total generation

2050

50%

Share of RES in total generation, taking into account alternative energy sources



2060



Carbon Neutrality

Announced on December 12, 2020

CLIMATE
AMBITION
SUMMIT
2020

Results of 2022

Generation for 2022 – 5.11 billion.kWh (4.53%):





WEP – 2411 million kWh



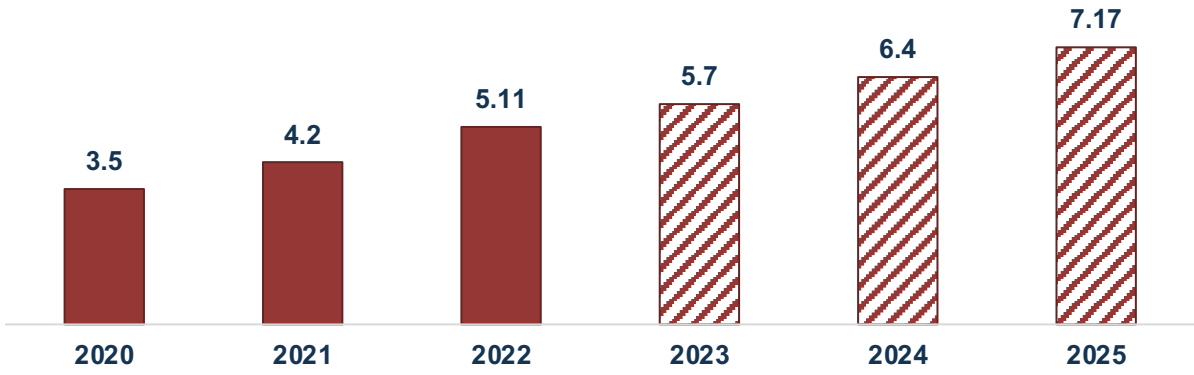
SEP – 1763 million kWh



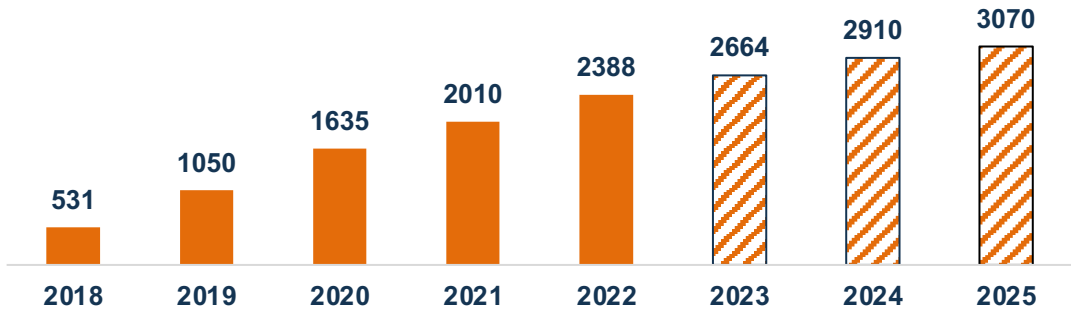
HEP – 934 million kWh

- 12 renewable energy facilities with a total capacity of 385.4 MW were commissioned, the investment amount is 180 billion tenge
- 158 permanent workplaces have been created
- Intergovernmental agreement has been signed with France for the construction of a wind farm with a capacity of 1GW  TOTAL eren
- Agreement on principles has been signed with  MASDAR for the construction of a 1 GW wind farm.

The volume of electricity generation by renewable energy facilities, billion kWh



Dynamics of growth of installed renewable energy capacity, MW



Auctions

Since 2018, the selection for the implementation of renewable energy projects has been carried out by an **auction mechanism**

2400 MBt

Auction results

232 companies from 13 countries

China, Russia, Turkey, Germany, France, Bulgaria, Italy, UAE, Netherlands, Malaysia, Spain, Singapore

 **Wind**
0,027 USD

 **Solar**
0,029 USD



Results of auctions in 2022

10 projects with capacity **440 MW** were selected

 WEP **400 MW**
 SEP **40 MW**

Record low rates based on auction results

WEP – 22,68 tg → **12,39 tg** **SEP** – 34,61 tg → **12,49 tg**

* in comparison with the tariff for coal-fired thermal power plant – **11,19 tg**
plant on gas – **12,44 tg**

Legislative framework for the development of renewable energy in Kazakhstan

Current legislation

- 1 Guaranteed purchase of all electricity produced and supplied to the grid
- 2 Distribution of electric energy from RES through the financial settlement center (FSC) to conditional consumers
- 3 Exemption from payment for the transmission of electric energy
- 4 Provision of investment preferences under the Business Code
- 5 Creation of a reserve fund at the FSC
- 6 Agreement on joining the networks of renewable energy facilities
- 7 Annual indexation of tariffs

Legislative innovations since 2021.

- 1 Construction of maneuverable capacities
- 2 Increase of PPA contracts from 15 to 20 years
- 3 Financial support of the FSC in case of insolvency risks
- 4 RE Passthrough tariff

Source: The Law of the Republic of Kazakhstan "On Electric Power Industry", the Law of the Republic of Kazakhstan "On Support for the Use of Renewable Energy"

The development of renewable energy in Kazakhstan has become a driver of the transformation of the electric power sector

Problems of the electric power sector of Kazakhstan

- 1 The lack of a strategic vision for the development of the industry, the low level of tariffs, which makes the industry not attractive for investment
- 2 Electricity generation deficit (consumption growth in 2021 exceeded 6%, which is 3 times more than in recent years)
- 3 Obsolescence of generating equipment at traditional stations, the growth of emergency repairs in the power system
- 4 Low diversification of electricity generation and dependence on coal plants
- 5 Dependence on electricity imports and flows from Russia

Challenges in the RE industry and sector in Kazakhstan

- 1 Speedy implementation of maneuverable capacity projects, without which achieving the above indicator for renewable energy is problematic
- 2 Introduction of market mechanisms in the electric power industry (launch of BME, improvement of the quality of forecasting of renewable energy generation, return to the practice of tariffs differentiated by hours of the day, demand management, etc.)
- 3 Stimulating and supporting the development of distributed generation (widespread use of renewable energy by households and businesses)
- 4 Development of the market of bilateral contracts – RES for the own needs of industrial enterprises
- 5 Formation of attractive conditions for investing in the renewable energy sector in Kazakhstan (increase in trading volumes, improvement of tariff indexation conditions, development of project auctions, etc.)

Changes in legislation in 2023

As part of the wholesale electricity market reform, the transition to a new target model of the electricity market is expected from July 1, 2023:



Introduction of a Single Electricity Buyer



Functioning of the balancing electricity market in real mode

The main functions of a Single Buyer

buys electric energy from energy-producing organizations for an hour and (or) a day, and (or) a month, and (or) a quarter, and (or) a year (years) in advance, in accordance with the procedure established by the authorized body: for sale to energy supply, energy transmission organizations, wholesale consumers; for sale to digital miners;

buys and sells RES imbalances (except for bilateral agreements) (balance provider);

enters into a contract of participation in the centralized trade of electric energy;

carries out (if necessary) the purchase of electric energy from suppliers (manufacturers) of electric energy from other countries (import) at the prices of these suppliers (manufacturers);

carries out (if necessary) the sale of electric energy to consumers of other countries (export);

provides targeted support to consumers of the wholesale market by differentiating tariffs in order to be able to implement a phased change in tariffs;

enters into a contract for the purchase and sale of balancing electrical energy and negative imbalances with the settlement center of the balancing market;

determines the forecast prices for the sale of electric energy;

concludes (if necessary) contracts for the transmission of electric energy with energy transmission organizations and pays for services for the transmission of electric energy;

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Thank you for attention!

