RENEWABLE ENERGY AUCTIONS IN KAZAKHSTAN
Kazakhstan is

18
mln.
people

2.7
mln. km²

9th biggest in the world,
2nd biggest — among the
CIS countries

$133.6
bln.
GDP

$7,510.08
GDP per capita
Kazakhstan GDP\textsuperscript{b}ln.

Kazakhstan GDP per capita

According to the World Bank data
**GENERAL DESCRIPTION OF KAZAKHSTAN POWER SYSTEM**

- **25 thousand km** of National Power Grid
- **21.7 GW** of installed capacity
- **18.7 GW** of available capacity

Grid infrastructure of the country includes:

- **200 — 500 KV** National Electricity Grid (managed by the system operator JSC «KEGOC»)
- **Up to 110 KV** Regional Electricity Grid (managed by regional electricity grid companies)

**Generation mix**
- **12%** HPP
- **1%** RES
- **87%** CHP, including gas turbine stations
Key Performance Indicators

Electric power produced in 2017 — 102 bn. kWh
- Thermal plants, including gas turbine stations — 91 bn. kWh
- Hydro power plants — 10 bn. kWh
- RES — 1,1 bn. kWh

Electric power consumption in 2017 — 97 bn. kWh

Electric power production profile for 2017
- 88% CHP, including gas turbine stations
- 11% HPP
- 1% RES
RENEWABLE ENERGY RESOURCE POTENTIAL IN KAZAKHSTAN

Wind
920 bn. kWh a year

Solar
3000 hours of solar radiation a year

Hydro
62 bn. kWh a year

With UNDP support we have developed electronic resource atlases:
Solar atlas: atlassolar.kz
Wind atlas: atlas.windenergy.kz
Detailed RES research information: rfc.kegoc.kz
STRATEGIC TARGETS FOR RES DEVELOPMENT

2017
50 renewable energy facilities
340 MW of total capacity

2020 target
1 700 MW of total capacity

Wind 110 MW
Solar 60 MW
Hydro 170 MW

The share of RES in the total volume of electric power production

By 2050 — 50% taking into account alternative energy sources

The largest power plants
- «The first wind power plant» (45 MW)
- «Burnoye Solar-1» (45 MW)
- Korinskaya HPP (28.3 MW)
Under the legislation investors are guaranteed:

- Project selection process transparency: Auction winner and auction price for every project are determined during auctions held on an independent electronic platform.

- Guaranteed purchase and payment at auction prices for 15 years: Conventional power plants sign an agreement with the FSC and purchase renewable energy. The FSC creates a special Reserve Fund.

- Priority dispatch of renewable energy.

- Exemption from energy transmission fees of electric grid companies.

The following options of annual indexation of auction prices:

- For the level of consumer price index (the average CPI indexation level for 2015 — 2017 was 9.3%)
- Mixed — 30% for national to foreign currency exchange rate changes and 70% for consumer price index.

USD/KZT - 325,530
Primary and secondary laws drafting has been completed

Auction schedule has been approved (not to be changed)

Simple and clear mechanism to determine winners

Independent trading platform

Ceiling auction prices:
- Solar power plants— 34.61 KZT per kWh ($106.5 per MWh)
- Wind power plants— 22.68 KZT per kWh ($69.8 per MWh)
- Hydro power plants— 16.71 KZT per kWh ($51.4 per MWh)
- Biogas plants— 32.23 KZT per kWh ($99.2 per MWh)

Exchange rate— $1 — 325 KZT

Winners are automatically granted the right to sign PPA for 15 years
The first international renewable energy auctions in Kazakhstan — total capacity 1000 MW, where Wind— 620 MW, Solar— 290 MW, Hydro— 75 MW, Biogas plants — 15 MW.

### THE SCHEDULE FOR THE SPRING AUCTIONS

<table>
<thead>
<tr>
<th>No</th>
<th>RES type</th>
<th>The volume of purchased installed capacity, MW</th>
<th>Unified Power System Zone</th>
<th>Auction time</th>
<th>Auction date</th>
<th>Documents submission deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wind</td>
<td>20</td>
<td>Northern zone</td>
<td>14.00 — 17.00</td>
<td>23.05.2018</td>
<td>28.03.18 — 15.05.18</td>
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<tr>
<td>2</td>
<td>Wind</td>
<td>50</td>
<td>Northern zone</td>
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<td>24.05.2018</td>
<td>28.03.18 — 16.05.18</td>
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<tr>
<td>3</td>
<td>Solar</td>
<td>10</td>
<td>Western and Northern</td>
<td></td>
<td>28.05.2018</td>
<td>28.03.18 — 18.05.18</td>
</tr>
<tr>
<td>4</td>
<td>Wind</td>
<td>10</td>
<td>Western zone</td>
<td></td>
<td>29.05.2018</td>
<td>28.03.18 — 21.05.18</td>
</tr>
<tr>
<td>5</td>
<td>Wind</td>
<td>50</td>
<td>Western zone</td>
<td></td>
<td>30.05.2018</td>
<td>28.03.18 — 22.05.18</td>
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<tr>
<td>6</td>
<td>Hydro</td>
<td>20</td>
<td>Northern and Southern</td>
<td></td>
<td>31.05.2018</td>
<td>28.03.18 — 23.05.18</td>
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<tr>
<td>7</td>
<td>Biogas</td>
<td>5</td>
<td>All zones</td>
<td></td>
<td>04.06.2018</td>
<td>28.03.18 — 25.05.18</td>
</tr>
<tr>
<td>8</td>
<td>Wind</td>
<td>10</td>
<td>Southern zone</td>
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<td>05.06.2018</td>
<td>28.03.18 — 28.05.18</td>
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<tr>
<td>9</td>
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</tbody>
</table>
The schedule for the fall auctions

<table>
<thead>
<tr>
<th>No</th>
<th>RES type</th>
<th>The volume of purchased installed capacity, MW</th>
<th>Unified Power System Zone</th>
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<th>Documents submission deadlines</th>
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<tbody>
<tr>
<td>1</td>
<td>Wind</td>
<td>50</td>
<td>Northern zone</td>
<td>14.00 — 17.00</td>
<td>03.10.2018</td>
<td>01.08.18 — 25.09.18</td>
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<td>01.08.18 — 26.09.18</td>
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<tr>
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<td>01.08.18 — 28.09.18</td>
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<tr>
<td>4</td>
<td>Wind</td>
<td>50</td>
<td>Western zone</td>
<td></td>
<td>09.10.2018</td>
<td>01.08.18 — 01.10.18</td>
</tr>
<tr>
<td>5</td>
<td>Hydro</td>
<td>55</td>
<td>Northern and Southern</td>
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<td>10.10.2018</td>
<td>01.08.18 — 02.10.18</td>
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<tr>
<td>6</td>
<td>Biogas</td>
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<td>All zones</td>
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<td>01.08.18 — 03.10.18</td>
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<tr>
<td>7</td>
<td>Wind</td>
<td>30</td>
<td>Southern zone</td>
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<td>15.10.2018</td>
<td>01.08.18 — 05.10.18</td>
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<tr>
<td>8</td>
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<td>01.08.18 — 08.10.18</td>
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<tr>
<td>9</td>
<td>Solar</td>
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<td>01.08.18 — 09.10.18</td>
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<tr>
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<td>Southern zone</td>
<td></td>
<td>18.10.2018</td>
<td>01.08.18 — 10.10.18</td>
</tr>
</tbody>
</table>
LAND PLOTS AND CONNECTION POINTS

The State reserves land plots for the construction of renewable energy facilities.

Energy transmitting organizations provide and reserve grid connection points for the construction of renewable energy facilities.
ADMISSION TO AUCTIONS

What is required:

- Articles of incorporation (*foreign legal entities shall provide equivalent documents according to the legislation of their country)
- Financial guarantee (bank guarantee/standby letter of credit)
- Contract with the Organizer of the auction
- Registration and access to the system
FINANCIAL GUARANTEE

The amount of financial guarantee for the participation in auctions is 2000(two thousand) KZT per 1(one) kW of project installed capacity

- **Applicant, bidder**
- **Financial guarantee**
- **The Financial Settlement Center for the support of renewable energy**

**Types of financial guarantee:**
- Bank guarantee issued through the SWIFT system;
- Standby letter of credit issued through the SWIFT system.

**Recovery of financial guarantee**
- The bidder did not win the auction;
- The auction winner signed the PPA.

**Retaining financial guarantee**
- The auction winner avoided signing the PPA with the FSC.
## Trading Day Scheme

Auctions are held according to the schedule approved by the authorized body. A trading session lasts 3 hours. Price determination — unilateral auction method.

<table>
<thead>
<tr>
<th>Trading session</th>
<th>Auction opening</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Submission of bids for sales, viewing general information</td>
</tr>
<tr>
<td></td>
<td>Bidders can change earlier submitted bids throughout the trading session</td>
</tr>
<tr>
<td></td>
<td>Closing of the trading session</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Automatically after closing of the trading session</th>
<th>Calculation of auction prices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Displaying results in private offices of bidders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1 hour after closing of the trading session</th>
<th>Publication of the Register of winners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notifications to bidders about the results of the auction</td>
</tr>
</tbody>
</table>
Bids are submitted starting from the opening of the trading session. Submitted bids can not be removed from the system;

The submitted bid can be modified by submitting a new one. New bid shall indicate a price lower than that in the previous bid whereas the volume of the earlier submitted bid can not be changed.

Bid prices shall not exceed the respective ceiling auction prices;

Bids that coincide with the bid prices of other Participants are rejected;

Bids that indicate volume exceeding the amount of the financial guarantee are rejected;

Investors can submit a number of bids for different connection points. Every single bid requires a separate financial guarantee.
CALCULATION OF AUCTION PRICES

Format — unilateral auction.
Auction prices are determined based on prices declared by the bidders.

- Separate auctions for small (from 0.1 to 10 MW) and large projects (above 10 MW);
- Auction is deemed failed if the number of bidders is less than three and the total supply volume is less than 150% of the total demand value.
Sending notifications to participants
In electronic form automatically after the closing of the auction

Publishing the Register of winners on the website of the Organizer
Within 1 hour after the closing of the auction

Sending the results to the authorized body
Not later than 1 (one) working day after the closing of the trading session.

The Ministry of Energy includes the winners of the auction in the siting plan of RE facilities and in the list of energy producing organizations that use RES within five (5) working days.
Connection to the Grid

Regulations
rfc.kegoc.kz

- Grid rules
- Grid code
- Grid connection contract

Auction → RES list
Siting plan → PPA

Grid connection contract:

- Power distribution scheme
- Obtaining technical specifications

Power plant comprehensive tests
THE AUCTION WINNER IS OBLIGED

- To submit the PPA performance bond
  - 10 thousand KZT/kWh (≈30$/kWh)

- To sign the PPA with the FSC
  Submit an application 60 days after being included in the list of energy producing organizations that use RES.

- To comply with the deadline for the start of the plant construction —
  12 months since the signing of the PPA (notification on the start of construction)

- To commission the plant:
  - Solar — 24 months after the signing of the PPA
  - Wind and biogas — 36 months after the signing of the PPA
  - Hydro — 48 months after the signing of the PPA

- To ensure high quality forecasting and comply with the generation schedule
The amount of the PPA performance bond is 10 000 (ten thousand) KZT per 1 (one) kW of the project installed capacity

**Types of the PPA performance bonds:**
- Bank guarantee issued through the SWIFT system;
- Standby letter of credit issued through the SWIFT system;
- Cash

**Recovery of the performance bond:**
Timely commissioning of the RE facility according to the PPA conditions

**Retaining the performance bond:**
- 30% of the PPA performance bond — if the winner fails to provide a copy of notification on the start of the RE facility construction and installation works within 12 months since the date of the signing of the PPA
- 100% of the PPA performance bond — if the winner fails to provide a copy of the RE facility operational acceptance certificate within the required timeframe:
  - Solar — 24 months after the signing of the PPA
  - Wind and biogas — 36 months after the signing of the PPA
  - Hydro — 48 months after the signing of the PPA
YOU ARE WELCOME TO PARTICIPATE IN AUCTIONS

Kazakhstan RES regulations database

rfc.kegoc.kz