Development Bank of Kazakhstan

«Development Bank of Kazakhstan» JSC

Post-Issuance Use-of-Proceeds Report on Sustainable Bonds of the "Development Bank of Kazakhstan" Joint-Stock Company

Reporting period: from April 15, 2024, to April 15, 2025

Astana
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1. Introduction

Development Bank of Kazakhstan JSC (hereinafter - the Bank) is actively introducing ESG principles into its work and lending activities, including through the introduction of sustainable financing instruments for the development of a green economy in Kazakhstan. With the Bank's long-term strategy until 2033, the strategic direction of "Sustainable Development" has been defined, within which the Bank aims to continuously increase the share of green and sustainable projects in the loan portfolio.

As one of the tools to secure financing for green and sustainable projects, the Bank issues green, sustainable, and other types of thematic bonds. To date, the Bank has placed three thematic bond issuances:

- **Debut "Green bond" issuance under the Green Bond Framework adopted on February 1, 2022** (as amended on March 15, 2023), on Kazakhstan Stock Exchange in the amount of 10 billion tenge (≈USD M19.08 as per current exchange rate) in March 2023. The related pre-issuance Second Party Opinion (dated Marth 22, 2023) and post-issuance verification report (dated July 30, 2024) were provided by AIFC Green Finance Centre (hereinafter referred to as GFC). The Bank prepared a post-issuance report on debut green bonds in July, 2024, and received a post issuance verification from GFC (dated July 30, 2024). The same report and verification have also been released in 2025.
- **USD 15 million Climate Bond Certified "Green Bond" issuance on Astana International Exchange (AIX) in December 2023**. This issuance was the first Climate Bonds Certified green bonds in the Central Asian region. The related pre-issuance verification according to CBI standards (i.e. the Climate Bonds Standard (CBS), the Climate Bonds Taxonomy and relevant Sector Eligibility Criteria) was provided by GFC (dated December 15, 2023), which is also to prepare a post issuance verification on the Certified Bond. The issuance was fully repaid in December 2024 upon reaching maturity.
- **Debut Sustainable Eurobonds issuance placed on Vienna MTF (Austria) and Kazakhstan Stock Exchange (KASE) in April 2024**, in the amount of 100 billion tenge (≈USD M193 as per current exchange rate) under the revised Green and Sustainable Financing Framework (the former Green Bond Framework was revised on June 3, 2024, to extend to social and sustainable financing instruments as well). The related pre-issuance Second Party Opinions were provided by 2 different external review providers: GFC (dated April 1, 2024) and Sustainable Fitch (dated April 2, 2024).

This post-issuance report covers the Sustainable Eurobonds issued in April 2024

2. Debut Sustainable Eurobonds issuance placed on Vienna MTF (Austria) and Kazakhstan Stock Exchange (KASE) in April 2024

2.1 Bond description

On April 15, 2024, Development Bank of Kazakhstan JSC placed sustainable eurobonds (BRKZe15 ISIN XS2800066370) on Vienna MTF and KASE stock exchanges in the amount of 100 000 000 (one hundred) billion KZT with a maturity of 3 years and a coupon rate of 13%.

Within the scope of the issuance, the Bank received an external review for its Green and sustainable financing framework in the format of a Second Party Opinion (SPO) from GFC and Sustainable Fitch. According to the SPOs, the nominated projects comply with the Green Bond Principles of International Capital Market Association (ICMA) in terms of renewable energy (including production, transmission, appliances and products) and pollution prevention and control (including waste prevention and waste reduction).

JPMorgan, CitiBank, Societe Generale, Mashreq Bank and Halyk Finance acted as joint-lead managers, financial consultants, and underwriters in this transaction.

Sustainable Bond issuance parameters

Type of bonds	*Sustainable Coupon Eurobonds (international bonds)*
Currency	*Kazakhstani tenge (KZT)*
ISIN	*XS2800066370* *US48129VAC00*
Issue date	*15.04.24*
Maturity date	*15.04.27*
Denomination	*500 000 (five hundred thousand tenge)*
Number of registered bonds	*200 000 (two hundred thousand) units*
Issue volume	*100 000 000 000 (one hundred billion tenge)*
Placement volume	*100 000 000 000 (one hundred billion tenge)*
Exchange	*Vienna MTF, KASE*
Coupon rate	*13%*
Use of proceeds	*69.4% of net proceeds from the Sustainable Eurobonds were disbursed by the Bank as of the interim reporting date for loan transactions related to the following investment projects:* • ***"Construction of small hydroelectric power station-2 and hydroelectric power station-3 in Sarkand district of Almaty region",*** *borrower - "Baskan Power" LLP;* • ***"Construction of a processing plant for processing waste tailings from the Donskoy Mining and Processing Plant in the city of Khromtau",*** *borrower - «Transnational Company Kazchrome» JSC;*

	• ***"Construction of the 150 MW "Khromtau" Wind Power Plant,*** *borrower - "Kazakhstan Aluminium Smelter" JSC (JSC "Kazakhstan Electrolysis Plant").* • ***Construction of a 50 MW Solar Power Plant (Stage 1 of a 100 MW project),*** *borrower - «KAZ GREEN ENERGY» LLP* • ***Construction of the Turgusun hydroelectric power station with a capacity of 24.9 MW in the East Kazakhstan region",*** *borrower - «Turgusun-1» LLP* *30.58% of proceeds have not been allocated yet*

2.2 Allocation report on Sustainable Eurobonds

69,4% of net proceeds from Sustainable Eurobonds have been allocated to finance loan transactions associated with the following investment projects:

- **Construction of small hydroelectric power station-2 and hydroelectric power station-3 in Sarkand district of Almaty region"** (borrower - "Baskan Power" LLP) – the loan for the project was provided prior to the issuance of the Sustainable Eurobond, therefore, there is a replacement of the funding source of an existing eligible green loan with the bond proceeds, which qualifies as refinancing under the bond framework, as long as the eligible loan is still outstanding and the underlying project is either work in progress or in operation with the respective impacts in effect*;
- **"Construction of a processing plant for processing waste tailings from the Donskoy Mining and Processing Plant in the city of Khromtau"** (borrower - «Transnational Company Kazchrome» JSC) –similarly to the above, the loan for the project was provided prior to the issuance of the Sustainable Eurobond, therefore, there is a replacement of the funding source of an existing eligible green loan with the bond proceeds, which qualifies as refinancing under the bond framework*;
- **"Construction of the 150 MW "Khromtau" WPP** (borrower - "Kazakhstan Electrolysis Plant" JSC) – new financing, the loan for the project was provided after issuance of the Sustainable Eurobond.
- **Construction of a 50 MW Solar Power Plant (Stage 1 of a 100 MW project))** (borrower - «KAZ GREEN ENERGY» LLP) - similarly to the above, the loan for the project was provided prior to the issuance of the Sustainable Eurobond, therefore, there is a replacement of the funding source of an existing eligible green loan with the bond proceeds, which qualifies as refinancing under the bond framework*;
- **«Construction of the Turgusun hydroelectric power station with a capacity of 24.9 MW in the East Kazakhstan region"** (borrower – "Turgusun-1" LLP) - similarly to the above, the loan for the project was provided prior to the issuance of the Sustainable Eurobond, therefore, there is a replacement of the funding

source of an existing eligible green loan with the bond proceeds, which qualifies as refinancing under the bond framework*.

***Note:** The Green and Sustainable Financing Framework of the Bank allows for refinancing, and substituting the proceeds from sustainable bonds as the funding source for already financed green/social projects for previous funding sources is treated as refinancing. There are also no specific restrictions on the look-back period in the Framework.

See Table-1 for more details on the allocation of Sustainable Eurobond proceeds.

Table-1. Allocation of Sustainable Eurobond proceeds

Borrower name	Purpose of financing	Date of conclusion of AOCL/ BLA	Repayment period	Loan amount in tenge	Allocated from Sustainable Bonds proceeds, tenge	Disbursed amount since the date of issue of Sustainable Bonds (in tenge)	Disbursed amount prior to the date of issue of Sustainable Bonds (in tenge)	Share of new financing in total allocations from Sustainable Bonds proceeds
«Baskan Power»LLP	Construction of small hydroelectric power station-2 and hydroelectric power station-3 in Sarkand district of Almaty region	31.12.2021	15 years	9,511,374,600	**9,482,920,947.2**	2,511,374,600.0	6,971,546,347.20	26.48%
«Transnational Company Kazchrome» JSC	Construction of a processing plant for processing waste tailings from the Donskoy Mining and Processing Plant in the city of Khromtau	26.12.2022	7 years	39,885,375,000	**30,450,562,792.9**	3,805,052,482.9	26,645,510,309.98	12.50%
"Kazakhstan Aluminium Smelter" JSC («Kazakhstan Electrolysis Plant» JSC)	Construction of the wind power plant (WPP) "Khromtau" with a capacity of 150 MW	14.06.2024	10 years	72,951,910,416	**19,257,426,690.1**	19,257,426,690.1	-	100.00%
"Turgusun-1" LLP	Construction of the Turgusun hydroelectric power station with a capacity of 24.9 MW in the East Kazakhstan region	22.04.2016	12 years	10,322,000,000.0	**4,602,140,998.4**	-	4,602,140,998.44	0.00%
«KAZ GREEN ENERGY» LLP	Construction of a 50 MW Solar Power Plant (Stage 1 of a 100 MW project)	22.11.2021	14 years	16,950,000,000.0	**5,629,138,333.9**	-	5,629,138,333.90	0.00%
	Total				**69,422,189,762.6**	**25,573,853,773.1**	**43,848,335,989.52**	**36.48%**

*AOCL - Agreement on opening a credit line, BLA – bank loan agreement

USD/KZT and RMB/KZT rates as of 15.04.2025 were used to convert loan amounts and bond proceeds from USD and RMB to Kazakhstani tenge

As shown in Table-1, the share of allocated funds from the proceeds of Sustainable Eurobond constitutes **69.42 billion tenge** out of total bond net proceeds 100 billion tenge, or **69.4%** out of total outstanding amount. Unallocated funds accounts for nearly **30.58 billion**, or **30.58%** out of the total outstanding amount.

Out of the allocated **51.46 billion tenge,** the shares of new financing vs. refinancing are the following:

- **25.6 billion tenge,** or **36.84%** of all allocated funds – new financing;
- **43.8 billion tenge,** or **63.16%** of all allocated funds – refinancing (substitution of the funding source).

As per the ICMA Handbook Guidance recommendations, the Bank strives to make the bond proceeds allocations as soon as possible and make appropriate disclosures.

2.3 Impact report on Sustainable Eurobonds

1) "Construction of small hydroelectric power power-2 and hydroelectric power plant-3 in Sarkand district of Almaty region" (hereinafter HPP-2 and HPP-3)

Project description

The project envisages construction of a cascade of two small hydroelectric power plants with total capacity of 14.6 MW (HPP-2 with 10.6 MW and HPP-3 with 4.3 MW capacity) for subsequent transmission of electricity to the power grids of the south of the Republic of Kazakhstan. Project cost is 14 755 251 thousand Kazakhstani tenge and project term is 2020-2024.

Purpose of the project

Stable production of inexpensive electricity, as well as a reduction in greenhouse gas emissions and harmful substances into the atmosphere, which helps reduce air pollution and climate change, plus provides savings on the use of organic fuel.

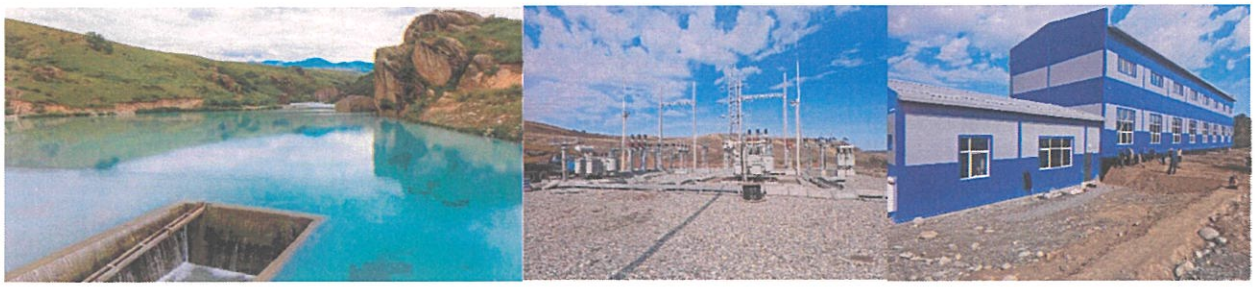
Project status

Comprehensive testing is underway. Project commissioned in the end of December 2024. According to the Progress Report of the Project Cost Monitoring and Management Expert for October 2024:

- For HPP-2, the overall facility readiness is 98.15%, readiness of process equipment is 100%;
- For HPP-3, the overall facility readiness is 95%, readiness of process equipment is 95%. All power generating equipment for HPP-2 and HPP-3 has been delivered in full;

Project Location

The project is being implemented in the Zhetysu region, Sarkand district, 435 km northeast of Almaty, 180 km from Taldykorgan, near the village of Ekiash.



Project Impact

Annual avoided greenhouse gas emissions (GHG) are estimated at 42,663 tCO2 per year

According to the latest information provided by the Borrower, the total planned annual electricity generation of the HPP is projected to be 83,983 MWh per year (based on the approved FEM).

Using the national Combined Margin Grid Emission Factor for hydroelectric power generation of 532 g CO2/kWh or 0.532 tCO2/MWh, the expected annual greenhouse gas (GHG) emission reduction from operation of the HPP would be 83,983 MWh x 0.523 tCO2/MWh = 43,923 tCO2. Given that the average life-cycle GHG emissions of HPP in CO2 equivalent terms are 0.024 tCO2 equivalent/MWh, according to the Intergovernmental Panel on Climate Change (IPCC), the annual avoided GHG emissions from hydropower production can be expected to be 83,983 MWh x (0.532 - 0.024 tCO2 = 0.508)/MWh = **42,663 tCO2.**

Additionally, a report was prepared by the borrower earlier in January, 2024, with an assessment of emission reduction volumes carried out according to the international methodology of the UNFCCC CDM ACM0002 "Grid-connected electricity production from renewable sources". According to this report, which used the national GHG emission factor for grid electricity generation (EFgrid) equal to 844gCO2/kWh[1], the expected volume of GHG reduction is 65,215.88 tons of CO2 per year.

2) Construction of a processing plant for processing waste tailings from the Donskoy Mining and Processing Plant in the city of Khromtau *(borrower - JSC Transnational Company Kazchrome)*

Project description

The global project for JSC TNC Kazchrome on waste disposal is divided into stages. The investment project "Improvement of the technology for additional enrichment of waste tailings of the Donskoy Mining and Processing Plant Tailings-2" is Stage 1

[1] Green Economy Transition Handbook, EBRD, 2018 page 51, based on a study carried out by Lahmayer International in 2012

which includes the construction of a gravity enrichment cycle with a capacity of 1,700 thousand tons of incoming materials (waste tailings of enrichment) with the construction of a tailings storage facility for final waste and the possibility of subsequent implementation of fine-class enrichment.

Donskoy Mining and Processing Plant (DMPP) is the second largest deposit in the world in terms of proven reserves. In terms of quality, the chrome ore mined and processed by DMPP has no analogues in the world. Most of the ore mined at DMPP is supplied to ferroalloy plants in Aksu and Aktobe. Every year, about 900 thousand tons of tailings (waste tailings of enrichment) are generated in the course of DMPP's production activities. Tailings result from crushing and grinding processes.

As of the end of 2023, DMPP 's balance sheet included about 14.5 million tons of stale tailings of various granulometric compositions, with a Cr2O3 (chromium oxide) content of 17 to 35%. These tailings (waste tailings of enrichment) are stored in 16 temporary storage sites (deposits).

The issue of chrome tailings disposal has not been resolved in the world, and therefore waste accumulates in specially designated storage facilities at mining and processing plants.

The technology involves processing previously formed stale tailings in the amount of 12,800 thousand tons over the next 16 years, which will eliminate the current burden on the environment. Newly formed waste tailings with a low Cr2O3 content after processing will be buried in a new isolated landfill that meets all modern requirements (with best-in-class anti-filtration screens), which will eliminate the possible release of pollutants into the environment. The tailings storage facility will be mothballed in 2047-2050 after the end of its operational life under a separate project.

Project Impact

Reduction of the volume of generated waste at DMPP annually by 372,8 - 400 thousand tons as a result of enrichment of waste tailings.

According to the results of the positive conclusion on the project "Construction of an enrichment plant for processing waste tailings, DMPP, Khromtau" dated 06.09.2021, without the implementation of the "Tailings-2" project, by 2031 the volume of accumulated tailings (waste tailings of enrichment) of DMPP may amount to 22.7 million tons.

The implementation of the project will reduce the volume of man-made mineral formations by 4 million tons over 10 years and will reduce the needs of the existing production facilities of DMPP for new tailings storage facilities.

3) "Construction of the wind power plant (WPP) "Khromtau" with a capacity of 150 MW *(borrower – "Kazakhstan Aluminium Smelter" JSC ("Kazakhstan Electrolysis Plant" JSC))*

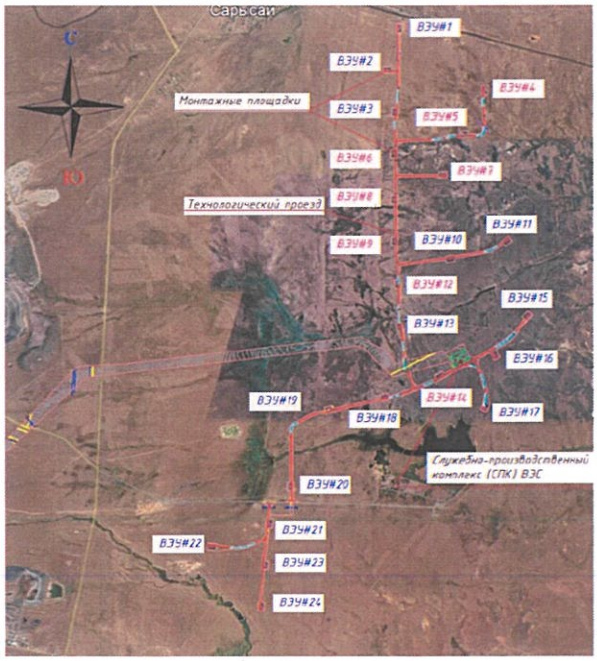
Project description

The investment project envisages the construction of a 150 MW Wind Power Plant near the city of Khromtau. Clean energy from the wind power plant will be conducive to less coal generation in Kazakhstan. The implementation of this project will result in avoided carbon dioxide emissions into the atmosphere. Windpower generation will not only cover the growing needs of the existing mining and processing plants, but also provide additional electricity to the Aktobe region and neighboring industrial enterprises.

The Wind Power Plant project is being implemented using the latest engineering and technological developments. Powerful IEC S class turbines are capable of generating electricity in a wide variety of weather conditions at wind speeds from 3 to 25 meters per second. This will guarantee the production of the necessary electricity output in the sharply continental climate of Western Kazakhstan.

The construction site is located in the Republic of Kazakhstan, on the lands of the Kyzylsu rural area, on the territory of the Khromtau district of the Aktobe region. The nearest settlements are the city of Khromtau, the village of Sarysay, the village of Ongar. The 150 MW Khromtau WPP Project consists of 24 wind turbines of 6.25 MW each, manufactured by Goldwind International.

Khromtau Wind Power Plant project location



The environmental effect of the Khromtau WPP Project

Annual avoided greenhouse gas emissions (GHG) are estimated at 366,501 tCO2 per year

The P90[2] factor was used to correlate the annual output. Annual output is expected to be 592 757MWh x 0.9 = 533 481 MWh. Given the projected electricity output by the Khromtau WPP of 533 481 MWh /year and based on the national Combined Margin Grid Emission Factor of 698 g CO2/kWh, or 0,698 tCO2/ MWh (for Kazakhstan[3]), the annual GHG emissions avoided can be expected to be 533 481 MWh x 0,698 tCO2/MWh = 372 370 tCO2. However, since, according to IPCC, the average life-cycle CO2 equivalent emissions from onshore wind power plants themselves are estimated at 0,011t CO2 equivalent/MWh, the annual adjusted GHG emissions avoided are expected to be 533 481 MWh x (0,698- 0,011tCO2)/MWh = **366 501 tCO2**.

Note: According to an SPO issued to ERG (borrower's parent company) in June, 2022, which used the national GHG emission factor for grid electricity generation (EFgrid) equal to 844gCO2/kWh[4], the annual reduction was earlier estimated to be 433 856 tCO2.

4) Construction of a 50 MW Solar Power Plant (Stage 1 of a 100 MW project)

(borrower - KAZ GREEN ENERGY» LLP)

Project description

The project is implemented by KAZ GREEN ENERGY LLP and envisages the construction of a 50 MW Solar Power Plant (Stage 1 of a 100 MW 2-stage project).

Project cost was estimated at 21 730 million Kazakhstani tenge and was commissioned in 2022.

Project Location

Near the town of Balkhash, Karaganda region.

[2] So called exceedance probability P90, which denotes the level of annual wind-driven electricity generation that is forecasted to be exceeded 90% of the year

[3] According to the IFI Dataset of Default Grid Factors table, version 3.2 (used by IFIs as a basis for accounting for greenhouse gas emissions), Combined Margin Grid Emission Factor for Kazakhstan in relation to wind and solar energy projects is set at 0,698 tCO2/ MWh

[4] Green Economy Transition Handbook, EBRD, 2018 page 51 based on a study carried out by Lahmayer International in 2012. Alternatively, the baseline level of coal in terms of greenhouse gas emissions could be set equal to the carbon dioxide equivalent emission factor of 985 g/kWh (Order of the Minister of Energy of the Republic of Kazakhstan dated June 28, 2017 № 222).

Project status

Commissioned in June 2022.

Project Impact

As per the ESIA (Environmental and Social Impact Assessment as of 2020) for the larger 100 MW project (including the 50 MW SPP in question), the construction of these solar power facilities does not have a negative impact on the environment and does not worsen the living conditions and health of the population. During the construction period, the impact was assessed as temporary and does not cause irreversible natural processes and phenomena. Proposed design solutions, including organizational and technical approaches to operation and environmental protection measures, ensure high industrial and environmental safety of the facilities, rendering significant environmental disturbances unlikely. For possible emergency situations, the facility has an action plan of mitigatory measures. The project's environmental assessment complies with the Environmental Code of Kazakhstan. Based on the results of the facility's activities, negative consequences on the state of the environment and possible consequences in the social and public sphere are not expected. The construction and operation of the facilities were to be carried out within the Karaganda region and can result in a change in the regional social conditions towards increasing the benefits for the local population in terms of energy supply and improving the quality of the environment due to the use of alternative energy sources.

Solar power plants cause less damage to the environment than other types of power plants. However, their operation could be associated with the following environmental and sanitary factors:

- electromagnetic radiation,
- synthetic chemicals,
- mechanical loads on the soil.

The project provides for a reduction in electromagnetic pollution due to increased insulation. Chemical impacts (detergents and transformer oil) are reduced by using a septic tank and oil collector. Mechanical impacts on the soil during construction were reduced by subsequent reclamation and surface stabilization, preventing erosion. A small number of production personnel is also a positive factor from the standpoint of potential sanitary and environmental damage.

Avoided greenhouse gas emissions (GHG) are estimated at 135 442,2 tCO2 (in 2022-2024), while annual projected avoided GHG are estimated at 60 196,5 per year

Since the commissioning of the 50 MW SPP, the electricity generated has amounted to 208 372,6 MWh in 2022-2024:

MWh

2022	2023	2024	TOTAL	Monthly and annual average output to date
41, 803.7 (6 months)	88 859,79 (12 months)	77 709, 14 (9 months)	**208 372,6**	**7 717,5 (monthly)** **92 610 (per annum)**

Given the actual electricity output by the Balkhash 50 MW SPP of 208 372,6 MWh in 2022-2024, and based on the national Combined Margin Grid Emission Factor of 698 g CO2/kWh, or 0,698 tCO2/ MWh (for Kazakhstan), as well as the average life-cycle CO2 equivalent emissions for solar power utilities assessed at 0,048t CO2 equivalent/MWh (according to IPCC), the GHG emissions avoided amount to 208 372,6 MWh x (0,698- 0,048tCO2)/MWh = **135 442,2 tCO2.**

Meanwhile, based on the projected annual output for the SPP (estimated as 92 610 MWh annual average output), the annual GHG emissions avoided can be expected to be 92 610 MWh x (0,698- 0,048tCO2)/MWh = **60 196,5 tCO2/year**.

5) "Construction of the Turgusun hydroelectric power station with a capacity of 24.9 MW in the East Kazakhstan region (Turgusun HPP) *(borrower - «Turgusun-1» LLP)*

Project description

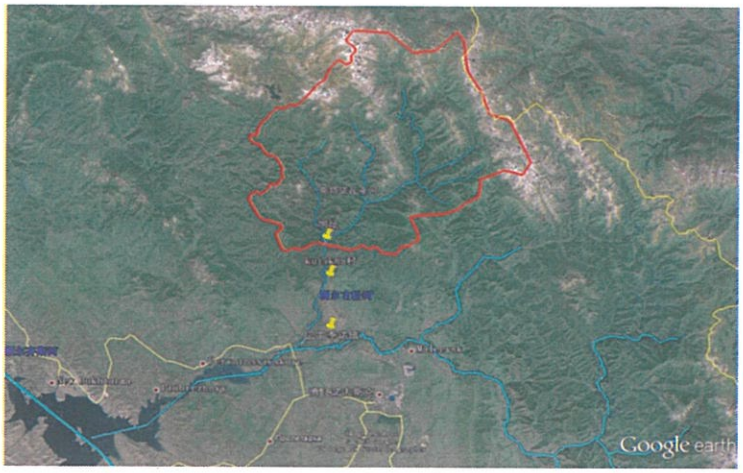
The project envisages the construction of a small hydroelectric power plant with an installed capacity of 24.9 MW.
Project cost was estimated at 13 552 million Kazakhstani tenge and was commissioned in 2021.
The selected technology for generating electricity involves converting the energy of the Turgusun River water flow, moving under pressure, into mechanical energy of rotation, which, in turn, is converted into electrical energy. The pressure of the HPP is created by concentrating the fall of the river on the section used by the dam. The generation of electricity was projected to amount to at least 66.48 million kWh per year. It is expected that the small HPP on the Turgusun River will meet 23% of the region's need for electricity, partially satisfy the increasing demand for electricity in the East Kazakhstan region and reduce the deficit by 62 million kilowatt hours per year, which, in turn, will increase the energy independence of the region, while also reducing carbon dioxide emissions.

Project purpose

Stable production of inexpensive electricity, as well as reduction of greenhouse gas emissions and harmful substances into the atmosphere, helping to reduce air pollution and climate change.

Project location

The project has a regional scale. The Turgusun HPP is located on the Turgusun River in the Zyryanovsky District of the East Kazakhstan Region. The plant site on the Turgusun River was selected 600 m below the confluence of the Stanovaya River and the Turgusun River.



Project status

Commissioned in September 2021.

Project Impact

Avoided greenhouse gas emissions (GHG) are estimated at 96 619,06 tCO2 (in 2021-2024), while annual projected avoided GHG are estimated at 33 770 per year

Since the commissioning of the 24,9 MW Turgusun HPP, the electricity generated has amounted to 190 195 MWh in 2021-2024, and has arrived at its full capacity in 2023-2024:

MWh

2021	2022	2023	2024	TOTAL
8 247,997 (6 months)	47 922,677 (12 months)	67 446,202 (12 months)	66 578,152 (until 16.12.2024)	**190 195**

Given the actual electricity output by the 24,9 MW Turgusun HPP of 190 195 MWh in 2021-2024, and based on the national Combined Margin Grid Emission Factor of 532 g CO2/kWh or 0.532 tCO2/MWh (for Kazakhstan, hydro), as well as the average life-cycle CO2 equivalent emissions for hydropower utilities assessed at 0.024t CO2 equivalent/MWh (according to IPCC), the GHG emissions avoided amount to 190 195 MWh x (0.532 - 0.024 tCO2 = 0.508)/MWh = **96 619,06 tCO2.**

Meanwhile, according to the latest information provided by the Borrower, the annual generation of electricity by the HPP for 2024 was projected at 66,477 MWh per year (based on the approved FEM). Based on that projected annual output, the annual

GHG emissions avoided can be expected to be 66,477 MWh x (0(0.532 - 0.024 tCO2 = 0.508)/MWh = 33 **770 tCO2/year.**

It should be also noted that the area of the impoundment at the HPP is 0,6 km2 (= 600 000 m2), making the GHG emissions from the reservoir itself insignificant. Power Density is 41,1 W/m2, which is higher than the threshold of >10W/m2 established in the Climate Bonds Taxonomy and Kazakhstan Taxonomy, attesting to high power efficiency in the Turgusun project.

Note: According to a previously conducted assessment of emission reductions using an alternative methodology with reference to the international methodology of the UNFCCC CDM ACM0002 "Grid-Connected Renewable Electricity Production", the expected volume of greenhouse gas emission reductions was 56,106.59 tons of CO2 per year, considering the projected generation of 66,477 MWh per year. The potential reduction in GHG emissions during the offsetting period from 2022 to 2042 was assessed to amount to 1,122,131.76 tCO2-eq. for the entire project period. According to the international methodology of the CDM UNFCCC ACM0002 "Electricity Generation from Renewable Sources", greenhouse gas emissions from the HPP project are equal to zero.

Advantages of HPPs

– Use of renewable energy.
– Cheap electricity.
– It is advantageous to use as an emergency reserve, since the station generators can be easily turned on/off depending on needs.
– Less negative impact on the air than other types of power plants.
– The frequency is well regulated and growing peak loads are covered.

Conclusion of the Environmental Impact Assessment

In 2013-2015, environmental impact assessments were conducted in relation to the Turgusun HPP construction project. According to the results of the environmental impact assessment, under normal conditions, the planned activities for the construction of facilities and operation of the Turgusun HPP were assessed to not have a significant negative impact on the natural environment and public health outside the conditional boundary of the sanitary protection zone, and within the conditional boundary of the sanitary protection zone will not cause long-term significant changes, therefore, it is acceptable for environmental reasons.

Date: *July 30, 2025*

Deputy Chairwoman of the Management Board for Financial Management **B. Abisheva**