# Green bond market in Kazakhstan: problems and prospects

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Abstract. JSC "Entrepreneurship Development Fund "Damu" with the support of the United Nations Development Program (UNDP) for the first time in Kazakhstan placed "green" bonds in the IFCA trading system in August 2020. The issue was a debut: previously, Kazakh issuers did not issue green bonds. The authors of this research paper made an attempt to understand the relevance of this event, how the placement of "green" bonds will affect the economy of Kazakhstan, what are the prospects of these debt instruments. LIt should be noted that "green" bonds were immediately sold out, whether this indicates the popularity and profitability of these debt instruments in Kazakhstan, because the Kazakh stock market itself is not so well developed. On the other hand, green bonds do not differ much from ordinary debt instruments in terms of yield and terms of issue. What makes them special is the purpose for which they are issued - to attract financing for "green" investment projects related, for example, to renewable energy, energy efficiency, environmentally friendly transportation, etc. Key words. "Green" bonds, green financing, green banking, green investment projects, eco-investments, green bond market, ecology and environmental protection.

## 1 Introduction

"Green" bonds are debt securities, the issuance of which helps to create additional sources of funding for green projects. Their realization will allow not only to achieve economic goals, but will also contribute to improving the environmental situation in the country, as well as help in combating climate change by reducing carbon dioxide emissions. The issuance of green bonds is an important step for the further development of Kazakhstan's financial system. An important precedent and a convenient tool for attracting financial resources has been created: many large companies in Kazakhstan will be able to follow this example, as it is now clear that active development of the green economy is needed. UNDP, with the support of partners, continues to work on the development and scaling up of financial instruments for low-carbon economy development, targeting green projects:

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energy service contracts (for residential buildings, factoring and credit guarantees) for small businesses in the field of energy efficiency, as well as large-scale green bond issues and project auctions for the construction of large-scale renewable energy generating facilities.

By 2050, the transformations within the framework of the Concept of Kazakhstan on the transition to a "green" economy will additionally increase GDP by 3%, create more than 500 thousand new jobs, form new industries and services, and ensure higher standards of quality of life for the population [1]. "Green" bonds, being an attractive financial instrument, will contribute to further improvement of the investment climate of Kazakhstan. This provides great opportunities for creating conditions for the issuance of "green" bonds and the development of the market of new financial instruments - the market of "green" bonds, in the future Kazakhstan will be able to attract issuers from neighboring countries to its financial centers.

At the moment, the main instruments for attracting private investment in "green" projects in the world are stock market instruments, such as "green" bonds, "green" investment funds, "green" indices and ETFs, less often "green" loans, "green" mortgages.

Green bonds are considered by many market participants as a promising instrument of debt financing for the development of green projects.

## 2 Materials and methods

In substantiating and solving methodological issues of the problem under study, the authors relied on the fundamental provisions of modern economic theory and financial doctrines. The research was based on system analysis, the solution of specific problems was achieved by means of comparative, statistical and graphical analysis, using ranking, grouping methods.

### 3 Results

The authors of the scientific article on the basis of analyzing the data on the development of "green" economy and "green" finance in the world revealed that "green" bonds provide new and potential opportunities for integrated approaches and solutions to environmental problems, as they intertwine many issues and interpenetrate the natural, economic, financial and socio-cultural basis of existence of all mankind.

The authors believe that at present there are still competitive advantages in the global financial system to create an effective green bond market, there should be an ecosystem consisting of a green taxonomy, disclosure of information about financial products and incentives for further development of the green bond market.

#### 4 Discussion

Before proceeding to the analytical review of the state of green bonds in Kazakhstan, let us define what green bonds are and why they are so important for the Republic of Kazakhstan, as well as briefly consider the experience of applying green bonds and issuance of green bonds in developed countries.

"Green" bonds are bonds that meet the principles, standards and criteria in the field of ecology and "green" financing. The emergence of such bonds is associated with the spread of the principles of sustainable business development - ESG (environmental, social and corporate governance (https://aifc.kz/uploadsRUS) [2, p. 2].

With the help of "green" bonds the issuer attracts financing for projects related to nature conservation and environmental improvement.

Usually "green" bonds, as well as other bonds, are placed on the stock exchange. They can be purchased by investment companies and funds, banks and individuals. Private investors can buy green bonds with the help of a broker.

In some cases, these securities may be sold on a specific platform and not traded on the stock exchange.

The principal difference between green bonds and traditional securities is their target purpose, the focus of attracted financing on projects related to the environment.

"Green bonds are a type of ESG-bonds. They must meet special standards of the International Capital Markets Association (ICMA) - the Green bond principles (GBP), which we will discuss in more detail later on. ICMA has also developed separate criteria for social bonds, sustainability bonds and sustainability-linked bonds [3].

For investors, green bonds are another tool for generating income. In addition, it is important for responsible investors to invest in securities issued by companies that comply with the principles of Environmental Social Governance. Green bonds have another peculiarity: if they are issued by companies that build green generation facilities on the basis of project auctions of green capacity, such companies are less exposed to various market risks, as the realization of green energy in this case enjoys additional guarantees and privileges.

For business, this means access to financing on more favorable terms due to UNDP subsidies at the first stage, and in the future - due to investors' interest in "ethical" financial instruments.

Now let us turn to the global experience of using green bonds in different countries. As is known, traditionally in the world "green" finance exists in the form of "green" bonds, preferential lending or special subsidies for "green" projects. These financial instruments are specially designed because the development of environmentally friendly projects becomes more difficult when using conventional offers from financial institutions.

The first green bonds appeared 16 years ago - they were issued by the European Investment Bank in 2007. Until 2013, this market was underdeveloped: its total volume amounted to about 3 billion dollars. However, then, with the growing attention to environmental issues, it began to grow rapidly and reached 155 billion dollars by 2017. That same year, Toyota Financial Services issued \$1.75 billion in green securities to finance consumer loans for the purchase and lease of its electric, hybrid, and low-emission vehicles. According to the Climate Bonds Initiative (CBI), total global green bond issuance in 2022 is \$487.1 billion. Since the creation of the market in 2007, their total issue exceeded 2 trillion dollars, and by 2025 it may reach 5 trillion dollars [4, p.4].

The popularity of "green" bonds is explained by the fact that they have a number of advantages over loans - a long maturity period, a broad investor base, that is, not only in banks you can take a loan, but also from international financial institutions. The most important difference from loans is that no collateral is required, so it is a more flexible financial instrument.

Today, the world leader in "green" financing is the People's Republic of China - in 2022, more than 43 billion dollars' worth of "green" bonds were sold there. There is interest in such instruments and in the Islamic financial market: in early 2018, Indonesia for the first time issued "green" sukuk (Islamic analog of bonds). At a rate of 3.75%, the issuer attracted \$1.25 billion. Overall, the size of this market could grow to \$1 trillion by 2024. (https://informburo.kz/stati/zelyonye-finansy-chto-eto-takoe-i-zachem-oni-nuzhny-kazahstanu.html) [5].

"Green" bonds are also issued by states and government agencies, for example, in 2016 Poland became the first issuer of sovereign "green" bonds for 750 million euros, and the demand for these securities exceeded the supply three times. "Green" bonds in Poland have been used to finance and refinance projects in renewable energy, transportation and agriculture, improve railroad safety and reconstruct railway tracks.

In 2008, the World Bank issued the world's first green bond and approved the procedure for selecting projects applying for funds from green bonds. At the same time, startups that worked in the field of ecology and assessed the effect of certain eco-projects appeared: Sustainalitics, Cicero, MSCI, Vigeo Eiris.

Currently, to be included in international registries, green bonds must meet the requirements of the Climate Bond Initiative, which has developed standards for 15 sectors, and the International Capital Markets Association, which has developed the Principles for Green, Social and Transition Bonds Registry. Despite the complexity and length of the process, demand for greening operations is growing - large investment companies are buying green bonds to reduce environmental risks (https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/).

The aforementioned "Green Bond Principles" were developed by the International Capital Markets Association (ICMA) in 2014, which notes how, why and who can issue and handle eco-bonds. This document states that green projects are those related to renewable energy, efficient use of electricity, clean transportation, proper water management, environmentally efficient products of a zero-waste economy, production technologies, and pollution prevention.

These Principles have four main components: 1) the direction of the use of funds raised through green bonds, 2) the project evaluation and selection process, 3) revenue management, and 4) reporting.

The first element is key, according to which proceeds from the issuance of "green" bonds should be used exclusively to finance or refinance, in part or in full, eligible projects that contribute to the achievement of environmental goals such as renewable energy, energy efficiency, pollution prevention and control, sustainable management of living natural resources and land use, conservation of terrestrial and aquatic biodiversity, clean transportation, "green" buildings (https://www.icmagroup.org/ sustainable- finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/) [7].

Issuers are also encouraged to use independent appraisal to confirm that their bonds meet the key requirements of the above Principles. There are several levels and types of assessment, the difference being the degree of verification of the issuer's documents by the verifier and the investor's requirements to the issuer (second party opinion, verification, certification and rating).

Compliance with the requirements of the Green Bond Principles guarantees investors that the issuer meets certain standards regarding where the proceeds from the placement of green bonds are directed, how projects are selected and what reports are presented to investors.

Currently, green bonds are categorized into four types according to their mechanism of action:

- standard bonds, the proceeds of which go to green projects actually, this is a typical debt instrument with a claim on the issuer;
- revenue-linked green bonds: a non-recourse debt obligation to the issuer in which the credit risk is linked to cash receipts from revenues and taxes;

- "green" project finance bonds: bonds with or without recourse to the issuer are aimed at financing green projects, where the investor in which the investor bears the risks associated with the projects.

"Green" securitized bonds are bonds backed by one or more green projects and include bonds and securities. The key source of repayment of such bonds is money from the assets (https://aifc.kz/uploadsRUS) [8].

It is well known that the green bonds issued by the World Bank and the European Investment Bank more than a decade ago were the starting point for major investment projects that could eventually attract trillions of dollars for projects related to climate, energy efficiency, ecosystem protection and restoration.

Through green bonds, the global community is learning lessons that make it possible to expand the use of sustainable finance in various areas, for instance: complex collateralized loan obligations, local currency loans and guarantees, and subordinated debt.

Initially, banks had a more challenging objective than developing green impact bonds. The original plan was to create a new class of securities that would be credible and attractive to both institutional investors and environmental organizations.

In this, the founders and developers of green bonds have certainly succeeded. The Climate Bonds Initiative (CBI), an international organization, notes that dozens of institutions and governments have issued more than \$521 billion in green bonds between 2008 and 2022. In the first half of 2023 alone, new certified green bond issuances worldwide exceeded \$100 billion, and the pace of issuance of these securities continues to increase [9]. All of this makes it undeniable that the green bond market has proven to be robust, durable and scalable for a wide range of global financial market participants.

Beginning to reallocate proceeds from issued green bonds to finance climate and environment-related investment projects was a major step that has the potential to develop the attractiveness of these projects to new, results-oriented investors, as well as incentivize banks to focus on issuing green bonds. This potential is not being realized at the same rapid pace, but the progress over the past decade has still been significant.

Intriguingly, large banks are offering a new type of service to issue and offer digital securities, such that in January 2023, ABN Amro, a large Dutch bank, became the first bank in Europe to register a digital bond on a public blockchain for client Midcorp. The digital securities raised €450k of investment on behalf of an APOC serviced by the bank. Ownership is digitized in the form of traditional blockchain tokens transferred to investors after the actual purchase of the bond. The Dutch bank said that it will soon offer new services for customers to invest in digital bonds [10]. Bonds on blockchain have the same functionality as traditional bonds, but thanks to blockchain they are more transparent, save money, have increased efficiency and real-time data synchronization. Another advantage of digital bonds is that they can be divided into a number of specific small stakes and through this make common investments.

In February 2023, the European Investment Bank, in collaboration with BNP Paribas, HSBC and RBC Capital Markets, issued the first ever digital pound sterling bond on blockchain. The Bank said the £50 million or \$61.6 million floating rate bond is registered on a private blockchain.

In early January 2023, the Government of the Hong Kong Special Administrative Region of the PRC decided to issue \$5.75 billion worth of tokenized green bonds for institutional investors. The digital securities are denominated in US dollars, euros and Chinese yuan. This green bond offering was the largest ESG bond issuance in Asia [11].

Despite the above positive trends and progress in the formation of the global market of "green" bonds, there are also certain problems. Thus, at the moment, a unified standard for

assessing green bonds for environmental friendliness and a mechanism for monitoring the targeted use of attracted funds has not yet been developed.

Another serious problem that can become an obstacle to all forms of sustainable finance is ensuring transparency, verification, measurement and compliance of green bonds with international standards.

At the very beginning of issuance, the World Bank developed a rigorous and transparent model for the verification of green bond issues. Several robust and influential frameworks and protocols for investors and issuers have been established. For example, the CBI, launched in 2010, published its own standard and certification scheme for climate bonds.

Despite competing national standards and a lack of robust bond issuance mechanisms, ICMA and CBI have brought most green bond issuances in accordance with clear indicators and ensured that projects benefit accordingly.

In our view, independent verification of bond compliance with ICMA and CBI level standards is needed - for a bond to be labeled green, i.e., 95% of proceeds must go to environmental needs. Independent rating results and pre-screening of environmentally-oriented issuers should ensure that the assets backing the bond meet the minimum ICMA and CBI requirements and are indeed green.

Investors who adhere to ICMA and CBI guidelines and standards are confident that they are investing financially in low-emission infrastructure, but this view may be mistaken. For instance, to avoid sharp disagreement, certification to the CBI's highest standards does not affect areas important to climate welfare and investors such as nuclear power and air travel, which currently account for 2% of global carbon intensity of emissions, and their share continues to grow.

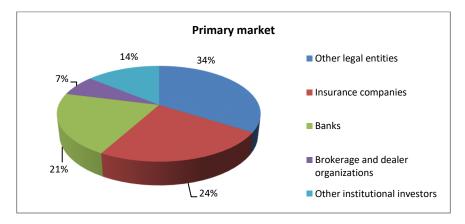
Let us now provide an analytical overview of the state of green bonds in Kazakhstan.

Kazakhstan entered the Global Green Finance Index (GGFI) for the first time at the end of April 2022 and immediately ranked first in the Eastern Europe and Central Asia region. In August 2020, Entrepreneurship Development Fund "Damu" placed the debut issue of green bonds for 200 million tenge on the stock exchange. The circulation term of the securities amounted to 36 months, coupon rate - 11.75%. This offering was the first listing of securities that comply with the exchange's green bond rules (https://kz.kursiv.media/2021-05-25/kakproiskhoditvypuskesgobligaciy-v- kazakhstane) [12].

Since summer 2020, the Damu Entrepreneurship Development Fund, the Development Bank of Kazakhstan, the Asian Development Bank and the Eurasian Development Bank have conducted about ten placements of ESG bonds worth tens of billions of tenge. The final formation and development of the green bond market in Kazakhstan can be considered 2021.

On September 8, 2022 the Agency of the Republic of Kazakhstan on regulation and development of financial market registered changes and additions to the prospectus of the second issue of non-government bonds of KEGOC, issued within the second bond program of the company. Type of KEGOC bonds was changed to "green". This was the first issue of "green" bonds of KEGOC.

In 2022, globally, new ESG bond issues decreased by 20% against the previous year's figure (in 2021 - an increase of 64%). In Kazakhstan, on the contrary, the volume of new placements of stable bonds increased by 14%. Over three years, KASE registered ESG-bonds in the amount of 139.7 billion tenge, of which 85.8 billion tenge were placed, which is less than 1% of the corporate debt traded on the exchange (https://kz.kursiv.media/2023-04-04/lgtn-kegoc-2/)[13]. The main buyers of ESG-bonds are presented in Figure 1.



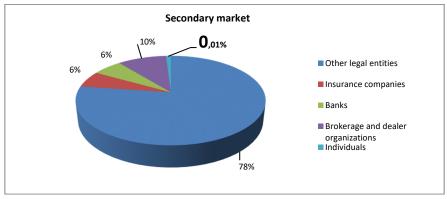


Fig. 1. Principal purchasers of ESG bonds. Note - compiled on the basis of [13]

Over the last three years, KASE has registered KZT139.7 billion worth of sustainable development bonds, of which KZT85.8 billion were placed, which is less than 1% of the corporate debt traded on the exchange. For comparison, the similar global indicator tends to 10%.

The growth of new ESG bond issues on the local market is not a sufficiently clear indicator of investor involvement due to the short history of stable bonds in Kazakhstan and a small base for calculation. Therefore, we presented a brief analysis of the level of demand for subscription to ESG-bond issues on the Kazakhstan exchange for 2020-2023.

So far, ten out of 11 ESG-bonds registered on the Kazakhstan Stock Exchange have been placed. Nine of them were successful, one placement failed. The debut issues of ESG-bonds on KASE from the Asian Development Bank, which accounts for more than half of all sustainable development bonds on the exchange, took place in November 2020. With the first issue of "green" bonds the issuer raised KZT3.9 bln. At the same time another issue of ADB bonds was placed, already for KZT10.1 bln. There were 12 active bids, seven of which were satisfied. Total demand at subscription reached 179.5% of the offer volume. The funds from the issue of ADB green bonds were used to finance two solar power plant projects in the south of Kazakhstan (https://kase.kz/files/publications/2023/03\_23\_01Kursiv.kz.pdf) [14].

It is well known that in the second half of 2020, the NBK reduced the main rate to the minimum 9%, and the rate remained at this level throughout the first half of 2021. In the second half of 2021, business activity in the country, reduced due to the forced quarantine,

began to recover, there were risks of unwinding the inflationary spiral. And the NB RK began to gradually increase the value of the prime rate at 0.25-0.5% until January 2022. In September 2021 the fourth placement of ESG-bonds on KASE took place, this time from the DAF "Damu". The fund raised KZT1 billion through a debut five-year social bond issue to finance SMEs from the hardest hit sectors of the economy during the COVID-19 pandemic. Naturally, the securities were in slightly lower demand than previous issues of sustainable bonds: demand for the issue amounted to 150%, and there were five active participants. Coupon rate was 2.4% higher than the prime rate at the moment of offering. Later "green" bonds were placed by Eurasian Development Bank in the amount of KZT20 bln with a coupon rate of 10.5% per annum. The raised funds were used for ESG projects in Kazakhstan, there were relatively many willing to purchase bonds - 14 active applications, but the demand to supply in total terms was lower than the early stable bonds - 102.3%.

February 21, 2022 the initial offering of the next social bonds of Asian Development Bank was held on Kazakhstan Stock Exchange. The coupon rate on ADB bonds amounted to 11%. In the auction was attended by eight active bids, demand to supply amounted to 140%. At the same time, the NB RK makes an extraordinary decision to increase the prime rate to 13.5%, due to the need to maintain price stability amid deteriorating geopolitical situation. This fact caused weakening of ESG bonds market approaches and no new offerings are made.

Development Bank of Kazakhstan in September 2022 registered the issue of "green" bonds on the local market in the amount of KZT15 billion, but there were no placements on securities, as favorable conditions for this on the Kazakh financial market were not noted. And only on October 20, 2022 trades in green bonds of Asian Development Bank for KZT3.4 bn were held. Yield of securities was formed at the level of prime rate of NB RK. This issue was the least popular among other issues of ADB sustainable bonds on KASE. Demand to offer amounted to 100%, only one member of KASE took part in trades. For comparison: on two "unsustainable" bonds of the issuer in the second half of 2022 demand to offer amounted 140% and 200%, respectively to (https://24.kz/ru/news/reklama/item/632347-bank-razvitiya kazakhstana razmestil zelenye-obligatsii-na-birzhe - mfts-astana.) [15].

In early December 2022, the National Bank of Kazakhstan raises the rate to 16.75% on the background of maximum inflation expectations. At the same time, a new instrument appears on the sustainable bond market - 15-year bonds with floating coupon rate linked to the TONIA indicator, with a fixed margin of 3% from the national electricity grid management operator KEGOC. It was the first ESG placement not by a financial institution, but by a Kazakhstani company. The securities were registered within the second bond program of KEGOC back in July 2021, subsequently the bonds were reclassified as green bonds. This did not arouse investors' interest, as under the conditions of tight monetary policy of NB RK financial market participants activated on the market of short-term loans. Demand to offer on green bonds amounted to 70.2%, two active bids participated in trades. Initially announced volume of placement on the issue amounted to 23 billion tenge, attracted 16.1 billion tenge. The funds were used for realization of two investment projects related to construction of necessary network infrastructure.

To date, the prime rate in the local market remains at a high level, but Kazakhstan is close to completing the cycle of prime rate increases. Inflation expectations in the country have declined after 2023, and medium-term forecasts for economic growth have been improved to 3.5-4.5%. Optimistic forecasts of the NBK had a certain impact on the decision of Kazakh investors: demand for the issue in February 2023. "green" bonds of Asian Development Bank amounted to 185.4%, which is comparable to the indicators of the first issues of sustainable bonds of the issuer. A total of nine active bids of KZT16.5 bln were

submitted to the trading system. By results of the offering five bids totaling KZT8.9 bln were satisfied. Yield to maturity on the bonds was determined slightly lower than the current prime rate, at the level of 16.65% per annum. Volume of ESG-bonds attraction on Kazakhstan stock exchange KASE is presented in Figure 2.

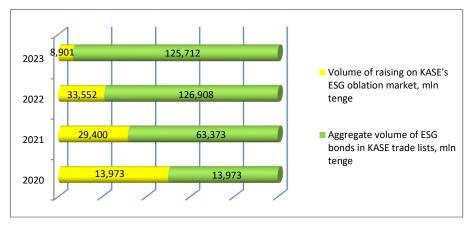


Fig. 2. Volume of ESG-bonds raising on Kazakhstan stock exchange KASE. Note - compiled on the basis of [15]

So, we will now define the problems arising in the course of development of Kazakhstan green bonds market and realization of the Concept on transition of the Republic of Kazakhstan to "green economy" for 2021-2030.

In accordance with ICMA requirements, funds received from placement of "green" bonds should be used to finance or refinance projects that benefit the environment, which should be taken into account by Kazakhstani issuers of "green" bonds.

"Green" bonds are issued for a specific project, which must comply with the principles of "green" financing. To obtain the status of "green" bonds, the project is evaluated by specialists of rating agencies, the methodology of which is approved by the NBK. The agencies also monitor the targeted use of funds.

The issuer, issuing such bonds, must ensure the targeted use of funds and full transparency of the project implementation process.

Thus, if the company fulfills its obligations and does not violate the requirements set for green bonds, these securities should really help to improve the environmental situation.

Currently in Kazakhstan, most companies limit themselves to coordinating financial issues without paying due attention to ESG risk management, and there is no mandatory requirement on the part of investors and financial organizations to assess ESG factors of companies when investing funds, as well as to report on them. Moreover, no Kazakhstani investor has joined the UN Principles for Responsible Investment, and domestic national funds and institutional investors have no special authorization to make "green" investments.

Despite the fact that Kazakhstani companies lag somewhat behind global trends and often do not pay sufficient attention to proper disclosure of information related to sustainable development of the green bond market, the number of companies competently issuing these securities is growing. According to the QRA's 2022 national ranking, of the top 100 annual reports, 9 companies issued sustainable development reports or integrated reports incorporating ESG factors. The top five national companies in terms of ESG reporting include KazMunaiGas, Kazatomprom, Kaztransoil, KazMinerals PLC,

Karachaganak Petroleum Operating B.V. (https://qazaqgreen.com/journal-qazaqgreen/green-finance/241/) [16].

## **5 Conclusions**

Summarizing, we would like to emphasize that, based on the international practice of purposeful development of the green bonds market, the work, as a rule, began with ideological transformation, when there was a general understanding that green bonds are a new model of development of the Kazakh financial market in connection with the solution of environmental problems.

The market of "green" bonds in Kazakhstan is not so well developed, but the demand for these securities is quite high. For example, the Ministry of Ecology, Geology and Natural Resources of Kazakhstan is currently developing a program for the utilization of solid domestic waste (SDW), and such an instrument as "green" bonds can be used in this direction. This instrument is also applicable to projects on modernization of heat and power networks in large centers, implementation of RES projects, etc. In the foreseeable future, in our opinion, the availability of an effective Kazakh market of green bonds will attract foreign issuers interested in the implementation of green projects.

At the same time, we should be guided by the fact that, as a rule, investors invest increasing amounts of money in bonds that look "green" - but the invested funds are not always directed to the good. Green bonds are not an effective means of financing environmental projects - the industry still lacks a coherent system of criteria for assessing the "sustainability of a project", which makes it impossible to properly assess the risks and expected returns of a project. Perhaps one of the solutions to some of the problems of the green bond market is to abandon the concepts of "sustainable" and "unsustainable" projects.

The initiative may also come from the country's government, the best solution for which would be to establish "sustainability of financing" as a legislated condition for attracting bank financing. A system should be established in which, upon reaching a certain scale, a company is obliged to report on the sustainability of investment projects.

## 6 Outcomes

- 1. "Green bonds are a type of ESG bonds. They must meet specific standards set by the International Capital Markets Association (ICMA) Green Bond Principles (GBP).
- 2. For better consistency with the world interpretations of the concept of "green" bonds and their classifications, in Kazakhstan practice it is reasonable to use the following definition: "Green" bonds are any debt instruments, the proceeds from the placement of which are used exclusively for financing the economy.

Green bonds are any debt instruments, the proceeds of which are used exclusively to finance or refinance (in full or in part) new and/or existing green projects.

- 3. it is necessary to pay special attention to ESG risk management, as there is still no mandatory requirement for investors and financial organizations to assess and report on ESG factors of Kazakhstani companies when investing funds.
- 4. Kazakhstani investors need to join the UN Principles for Responsible Investment, as domestic national funds and institutional investors have no special authorization to make green investments.

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