"Green" finance in Kazakhstan

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Abstract. One of the current priorities for the sustainable development of the world economy is to identify common directions of green finance development in all countries for sustainable development, as well as to study the most important areas of green finance and develop a green economy development concept. The concepts of green economy and green finance refer to a relatively new field of economic and financial knowledge that lies at the intersection of individual sectoral sciences and environmental disciplines. As a rule, the scope of interest of the green economy includes serving the liquid resources of society's development in an ecological direction. "Green" finance also aims at efficient use of natural resources and the maintenance of an adequate state of the environment. In view of this situation, green finance is one of the prerequisites for the sustainable economic development of society in the present stage. For this reason, many scholars recommend that they should be seen as an essential element of the mechanism for maintaining and preserving economic and political stability. The subject of "green" finance is a specific part of finance, which has established itself as an independent field of knowledge, but it is determined by both general development of finance and the requirements and rational use of nature, therefore "green" finance specializes in the turnover of liquid resources in the "human-nature" system.

1 Introduction

In recent years, economic and financial stability have been subject to numerous global challenges that require continuous monitoring, rethinking, and overcoming. The most pressing ones are, first, the catastrophic disruption of the environment caused by human activity, which requires costly measures to restore the balance of nature; second, the new opportunities connected with the transition to cleaner technologies and the multimillion dollar investments needed for this. This twofold approach results, on the one hand, in higher costs for the global community to maintain an acceptable environmental quality of life and, on the other hand, in increased efficiency of economic development as a result of the new investment opportunities arising from investments in cleaner technologies.

Environmental protection and the promotion of business projects, particularly in terms of investment and lending, are defined by many scientists as competing objectives. However,

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there is no denying that a new wave of innovation is increasingly leading to the integration of the natural environment and business. This synergy will result in synergies that drive economic growth and, in the near future, will be able to determine the main directions of global progress. Much of this development has to do with reshaping national economies in the following direction: from the struggle for energy independence through renewable energies to the accelerated deployment of green technologies, the supply of new jobs and green lifestyles associated with a green economy. The result will be a more sustainable global economy and greater security for humanity, which is an important prerequisite for sustainable economic development.

2 Materials and methods

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

3 Results

The authors of the research paper, based on analysis of data on the development of a green economy in the world, have identified that green finance offers new and potential opportunities for integrated approaches and solutions to environmental problems, as it intertwines many issues and interpenetrates the natural, economic, and sociocultural foundations of humanity as a whole.

The authors also argue that there is still a competitive advantage in the current global financial system to create an effective market for green finance, including green banking and green bonds, and there must be an ecosystem of green taxonomy, disclosure of financial products, and incentives for further development of green finance.

In addition, the authors of the article highlight that green investment banks attract resources from pension funds, insurance companies, sovereign wealth funds and mutual savings funds. By forming pools, they significantly expand their investment opportunities. At the same time, ecobanks are the main organisers of capital accumulation and deployment in the green economy.

4 Discussion

Before turning to an analytical overview of the state of green finance in Kazakhstan, let us define what green finance is and why it is so important for the Republic of Kazakhstan, and briefly review the experience of green finance and green bond issuance in developed countries.

In short, green finance refers to investments and other financial instruments aimed at working on environmentally friendly, energy-efficient and low-carbon projects. These include, for example, renewable energy, energy efficiency, clean transport, development of a low-carbon economy [1, p.20].

A number of international financial organisations (IMF, World Bank, etc.) and international financial analysts and economists believe that the formation of a separate subsystem of so-called "green finance" within the global financial system is necessary. It seems that such a viewpoint and fundamental changes are premature: such a subsystem, if it is a reality, is a distant future, as the concept of "green finance" itself is still not universally accepted and as such there is still no universally accepted global definition of it.

A number of experts and respected analytical-consulting firms see "green finance" as synonymous with investments in sustainable development projects and the production of environmental goods and services, including investments in the reduction of greenhouse gas emissions and climate change adaptation (the latter being categorised as climate finance) (according to wfin.kz' publikatsii/obzory...finansy...finansovogo...).

Other scholars interpret green finance from the perspective of the banking sector as "a type of financial services and products used in making environmentally sensitive loan decisions, monitoring and risk management and facilitating the implementation of environmentally oriented investments and low-carbon technologies, projects, industries and enterprises." [2].

In our view, for better compliance with generally accepted interpretations of the concept of finance and their classifications, it is appropriate to use the following definition - green finance refers to the totality of all financial products and services whose development, production and use are focused on reducing environmental and climate risks of economic development.

"Green" finance includes costs, primarily investments from public and private sources in the development and implementation of projects and programs in the field of, first, sustainable (balanced) environmental management, including sustainable production of ecosystem services (eg, water management, soil protection, biodiversity conservation); second, production of environmental goods and services (eg, the production of environmentally friendly equipment and technology, waste management, disposal of oil, etc.); third, the production of environmental goods and services (eg, waste disposal, recycling, etc.). The latter component is referred to as "climate finance" (climate finance), often standing out as a separate category and regarded as an independent object of study (according to qazaq green.com' news/world/334/).

Another interpretation of green finance, in our view, includes financial mechanisms to stimulate and subsidize the implementation of alternative energy projects that reduce greenhouse gas emissions and adapt to climate change, and the activities of financial institutions, the institutions that operate under the regulatory and administrative framework that supports them, specializing in green investments or instruments to finance or hedge such investments.

"Green" finance, when first considered, is not only a simple flow of resources, but also a set of monetary conditions and devices (instruments, processes and institutions) needed to maintain a balance in the human-nature system. This is why specific rules have been developed and exist in defining green finance.

First rule: Any changes to the balance of nature have a lasting impact not only on our current activities, but also on the lives and activities of future generations.

Second rule: In order to fulfil its functions, green finance uses special mechanisms that enable synergies and cumulative results.

The third rule: "green" finance has special functions and properties; with time, more and more understanding and mastery of them comes [3, p.90].

Let us briefly consider each of these three rules.

With regard to the first rule, it is worth noting that there is always the alternative of spending economic resources towards environmental improvements or directing them towards traditional economic development, so the main function of green finance becomes to provide links between the present and the future because it implies an alternative way of including nature in livelihoods: a transition from the practice of resource extraction and, as a consequence, depletion of the natural environment to engaging environmental practices in the future. The result is a new business model in which the human-nature system becomes the key factor.

As for the second rule, it can be said that in recent years the UN and its specialized

agencies have become the main international focal point for dealing with global ecological problems. It has already become obvious that on a global scale the differentiation of the forms and directions of world finance's participation in correcting the negative effects of economic activity and the development of new technologies has taken a categorical character. At the same time, it should be noted that capital investment directed at environmental issues does not always achieve its primary objectives or define "green" finance. "Green" finance follows the rules of systems, which are based on the characteristic of their superposition as derived from the scale of activity and the number of communications. And the greater the complexity, the greater the likelihood of risks and hazards. Complementing the rule of operation of these systems is the presence of a network environment and networking.

And the third rule determines the fact that scientists and practitioners have now advanced the understanding of the patterns of global natural hazards, enabling financiers to identify not only their insurance, but also the financing of those activities that reduce the likelihood of these disasters occurring. The significance of environmental finance innovations is that they do not so much change the way money and risk are manipulated as they reshape the way natural assets are economically exploited. To this end, the liquid surplus is redirected towards solving ecological problems and the relationship between man and nature is optimised. As a result, "green finance" has a purposeful impact on future generations, renewing global financial markets, optimising the supply and demand for new financial resources and strengthening the connection between investments and natural capital.

Let us now turn to the global experience of applying green finance in different countries. As we know, traditionally in the world green finance exists in the form of green bonds, soft loans or special subsidies for green projects. These financial instruments are specifically designed because using conventional offers from financial institutions makes the development of green projects more difficult.

The first green bonds were launched 16 years ago by the European Investment Bank in 2007. Until 2013, this market was underdeveloped, with a total volume of around $3 billion. Then, however, with the growing focus on environmental issues, it began to grow rapidly and reached $155 billion 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.

The popularity of green bonds is due to the fact that they have a number of advantages over loans - long maturity, a broad investor base, i.e. not only from banks 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 finance is the People's Republic of China - more than $43bn worth of green bonds were sold there in 2022. There is also interest in such instruments in the Islamic finance market: in early 2018, Indonesia issued its first green sukuk (the Islamic equivalent of a bond). At 3.75%, the issuer raised USD 1.25 billion. Overall, the size of this market could grow to $1 trillion by 2024. [4]

"Green bonds are also being issued by states and public authorities, for example in 2016 Poland became the first issuer of €750 million worth of sovereign green bonds, with demand for these securities exceeding supply three times. "Green bonds in Poland have been used to finance and refinance renewable energy, transport and agriculture projects, improve railway safety and reconstruct railways.

Many countries around the world are setting up specialised centres to raise awareness of green technologies and the sources and ways of financing them.

A major institutional innovation that has shaped the greening of the investment process has been the emergence of green investment banks.

More than twelve national and supranational Green Investment Banks were established in the second decade of the 21st century, specifically dedicated to financing low-emission,

climate-friendly technologies and infrastructure installations. The new green banks have defined their activities by using innovative practices to structure financial liabilities, issuing derivatives and lending and investment capital in local markets and in global financial centres. The new approaches have lowered the risk levels of green investments to acceptable levels and moved green investment activity into a highly competitive zone. In particular, one of the areas of activity of such banks has been to finance the spread of a new type of rooftop allowing the use of solar and light energy [5, p.6].

The assets of the largest "green" investment banks, Clean Energy Finance Corporation (Australia), Green Investment Bank (UK), Connecticut Green Bank (USA), amount to $5-7 billion. However, they are not yet large enough to solve the tasks at hand on their own, and are significantly smaller than the overall volume of green investment. For example, in Germany alone, ecoinvestments totalled $56 billion in 2019 - more than 10 times the total assets of all green investment banks, foundations and other ecofinance-orientated investment institutions (see Table 1).

Investment banks draw resources from pension funds, insurance companies, sovereign wealth funds, and mutual funds. By forming pools, they significantly expand their investment opportunities. At the same time, ecobanks are the main organisers of the accumulation and deployment of capital in the green economy.

"Green" investment banks are relatively young - the first one was only established in 2006. However, they will be the main drivers of green finance over the next ten years and will use new investment tools and mechanisms to do this. Therefore, organic banks are destined to become new active players in the global capital market.

China has a significant pivotal position in green finance and the creation of green investment banks. In 2016, China's Council for International Environmental Cooperation and Development recommended the establishment of a National Green Development Fund with an initial capital of $47 billion. The investment bank should also raise private capital on the national and international capital markets. China's investment needs in renewable energy will be $1 trillion from 2018 to 2035, and the new bank is expected to raise capital through pooling for a significant part of the planned investments [6].

Table 1. "Green" investment banks

no.	"Green" investment bank	Location	Year of foundation	Investments in 2021
1	California CLEEN Center	California, USA	2014	$5.6 million
2	Clean Energy Finance Corp. (CEFC)	Australia	2012	$ 4.7 million
3	Connecticut Green Bank	Connecticut, USA	2011	$ 25 million
4	Green Energy Market Securitization (GEMS)	Hawaii, USA	2014	$ 1.5 billion
5	Green Fund	Japan	2013	$10.39 trillion
6	Malaysia Green Technology Corp. (GMT)	Malaysia	2010	$ 4.5 billion
7	Masdar	Saudi Arabia	2006	$100 million
8	New Jersey Energy Resilient Bank (ERB)	New Jersey, USA	2014	$ 1 trillion
9	NY Green Bank	New York, USA	2014	$ 314 million

10	Rhode Island Infrastructure Bank (RIIB)	Rhode Island, USA	2015	$ 2.5 billion
11	Technology Fund	Switzerland	2014	$ 50 million
12	UK Green Investment Bank	UK	2012	$ 330 million
Note - compiled by the authors according to official bank websites				

At the global level, the following four dedicated green finance funds are close in interest and scope to green investment banks: the Green Climate Fund (launched in 2014 with $9.9 billion in capital) and the Climate Investment Fund (established in 2008 with $5.5 billion in capital). The four dedicated green finance funds are: the Green Climate Fund (launched in 2014 with $9.9 billion), the Climate Investment Fund (established in 2008 with $5.5 billion), the Global Environment Facility (a "pilot" project of the World Bank, established in 1991 with an initial capital of $1 billion), the Adaptation Fund (established in 2009 with an initial capital of $331 million). These funds are intended not only to provide independent funding for the green economy, but also to organize related processes, guarantee investments and stimulate private eco-investment capital.

Let us now present an analytical overview of the state of green finance in Kazakhstan.

Undoubtedly, the ideal financing for Kazakhstan's economic projects is green finance. At present, the functioning International Financial Center Astana (MFCA) intensifies work on the implementation of "green" finance in the Republic of Kazakhstan, as it is the main coordinator, one of the priorities of which was the introduction of "green" finance in Kazakhstan.

MFCA promotes the development of green finance by providing a platform for issuing green bonds to companies engaged in projects to improve the efficient use of existing natural resources, reducing the negative impact on the environment, increasing energy efficiency, climate change mitigation and adaptation to climate change.

The MFCA regulator has already adopted the necessary legal acts for this purpose. In other words, the legal framework for issuing green bonds in Kazakhstan has been created. Work is now underway to form a so-called "green" taxonomy - a classification of types of economic activity and categories of projects that are "green" and sustainable.

To create an effective market for green finance, including green banking and green bonds, there needs to be an ecosystem of green taxonomy, information disclosure, financial products and incentives. Kazakhstan has already developed a roadmap for green and sustainable finance.

The main executive body for the further development of green finance in Kazakhstan is the Green Finance Centre (GFC), which was established in 2020. The Astana International Finance Centre (AIFC) is not only the founder but also the main shareholder of the GFC. In 2020, the Eurasian Development Bank (EDB) became a shareholder of the Green Finance Centre to promote green finance in Eurasia. As part of MFCA, a special section for issuing green bonds was launched on its stock exchange in 2020.

The Green Finance Centre's achievements for 2021 include an increase in the overall sustainable finance market in Kazakhstan to $250 million, the importance of the Centre's role as a regional office of the Green Investment Principles for BRI, and recognition by the International Capital Markets Association (ICMA) as a provider of external assessment of sustainable bonds.

Kazakhstan entered the Global Green Finance Index (GGFI) for the first time at the end of April 2022 and was immediately ranked number one in the Eastern Europe and Central Asia region. The green bond market appeared in Kazakhstan in 2021. In August 2020, the Damu Entrepreneurship Development Fund placed a debut issue of green bonds worth 200 million tenge on the stock exchange. The securities had a maturity of 36 months and a coupon

rate of 11.75%. This placement was the first listing of securities that comply with the exchange's green bond rules.

September 8, 2022 the Agency of the Republic of Kazakhstan for Regulation and Development of Financial Market registered amendments and additions to the prospectus of the second issue of KEGOC non-government bonds, issued within the second bond program of the company. The type of KEGOC bonds has been changed to 'green'. This is KEGOC's first issue of green bonds.

In order to implement the Concept of Transition of the Republic of Kazakhstan to Green Economy for 2021-2030 the Action Plan of the Government of the Republic of Kazakhstan was approved. According to this plan the EBRD's GEFF pilot project on green economy financing in Kazakhstan was developed to ensure availability of green technologies. In October 2020, the EBRD provided a KZT5 million loan to the microfinance company KMF under the GEFF programme.

Halyk Bank was the first among Kazakhstan's second-tier banks to begin lending, confirmed by an independent assessment by the MFCA's Green Finance Centre. The financing is provided under a green loan agreement with Kaz Green Energy LLP. The total amount of funding that the company, which is part of the Kazakhmys Holding fuel and energy complex, will receive from Halyk Bank is KZT7.9 billion. It should be noted that the green economy is an important global trend, which this financial institution actively supports.

Let us define the challenges that arise during the implementation of the Concept for transition of the Republic of Kazakhstan to a "green economy" in 2021-2030.

In the process of development of "green" energy in Kazakhstan there are obstacles associated with its further financing. One of the problems is the difficulty in raising funds for environmental projects. The high cost of renewable energy sources (RES) has been linked to this. So far, long-term financing in tenge for renewables is not available in Kazakhstan.

If in developed countries the financing of "green" projects goes on a long-term basis at 1-3%, in our country the rate on loans exceeds 10%.

Considering that the payback period for renewable energies is 10-15 years, investments at such interest rates are very expensive. The solution could be just to issue the so-called "green" bonds with lower interest rates for "green" economy projects. In addition to renewables, energy efficiency and green transport could be included in Kazakhstan's conditions.

In addition, another problem in the green technology financing process is that Kazakhstan's second-tier banks tend to be very cautious in choosing such projects and do not always lend to green projects, considering them risky.

In other words, barriers to the use of green technologies include difficult access to finance, its high cost, gaps in legislative regulation, as well as the system of tariff setting for traditional energy carriers.

5 Conclusion

In this way, green finance takes the management of society's financial resources to a new level, rebuilds organisational forms and the institutional structure of capital, and redistributes the liquid surplus in an ecological direction, thereby impacting on nature and the future of our planet. They are involved in shaping new financial and currency markets, modifying pricing laws, changing investment priorities, government regulation, and taxation. But most importantly, they participate in economic growth and environmental preservation.

In sum, "green finance" offers new opportunities for integrated approaches and solutions to environmental problems, as many problems intertwine and the natural, economic and socio-cultural foundations of human existence intermingle. An important condition for such an approach is to value all natural phenomena and processes related to the interaction of

natural, economic and social capital. Another condition is the change in cultural-economic and cultural-consumer relations and attitudes, which creates a favourable attitude toward 'greening' technologies, consumption, and waste management processes, transferring the life cycle of goods into a 'green' direction. On the other hand, the cost and financial assessment of possible benefits from the changed consciousness and behaviour in the system "man - nature" and the reduction of losses from unsustainable use of natural resources allows us to universalise and subordinate the whole process of natural resource use to a unified system. Such transition, certainly, facilitates the process of formation of the "green" economy and transfers the solution of this problem to new approaches, which improves the mechanisms of nature management in the cost direction.

6 Recommendations

1. “Green” finance is one of the prerequisites for sustainable economic development of society at present. Therefore, we recommend that they be regarded as an essential element of the mechanism for maintaining and preserving economic and political stability.
2. In order to be more consistent with generally accepted interpretations of the concept of finance and their classifications, it is appropriate to use the following definition: green finance is an aggregate of all financial products and services whose development, production, and use are aimed at reducing environmental and climate risks in economic development.
3. Share of Kazakhstan's green finance practises we recommend issuing so-called "green" bonds with lower interest rates for green economy projects. In addition to RES, under Kazakhstan's conditions, energy saving and green transport can be included there as well.
4. Since Kazakhstan's second-tier banks are usually very cautious in their choice of projects to finance green technologies and do not always lend to green projects, considering them risky, we recommend that second-tier banks intensify their activities in this direction.

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