

Green project financing in housing and communal services sector: Russian experience

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Abstract. Today, the sector of so-called "green projects" is expanding. To implement these projects, numerous financial instruments have been developed, including what is often referred to as "green financing". Green financing generally means funding projects in the fields of renewable sources and green energy, aimed at reducing carbon emissions and their adverse effects on health, developing climate-resilient infrastructure for cities, and ensuring environmental sustainability. The article is devoted to the mechanisms for implementing green financing projects in Russia based on Western experience. With a description of the main directions and areas of financing of this kind in the field of housing and communal services (water supply, wastewater disposal, waste incineration plants, electricity).

1 Introduction

The issues of financing projects that are critically important for the future of the Planet and for maintaining ecological balance on Earth are becoming increasingly relevant and significant. Such projects are receiving more attention. The Intergovernmental Panel on Climate Change (IPCC) has recently repeatedly issued warnings about the potential negative consequences of global warming and climate change that have been observed lately. The report states that global warming is compounded by multiple factors, such as land desertification due to water scarcity, deterioration in soil quality due to the thawing of permafrost and periodic forest fires, as well as the threat of famine caused by the unpredictability of crop yields. The changes in these phenomena negatively impact all aspects of life [1, 2].

Today, the sector of so-called "green projects" is expanding. To implement these projects, numerous financial instruments have been developed, including what is often referred to as "green financing"[3]. Green financing generally means funding projects in the fields of renewable sources and green energy, aimed at reducing carbon emissions and their

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adverse effects on health, developing climate-resilient infrastructure for cities, and ensuring environmental sustainability [4].

The need to implement such projects can arise in various industries, yet they are also crucial in the housing and utilities sector. These include areas such as wastewater sludge processing. As consumer water consumption increases, companies involved in water supply and sewage treatment face a growing need to process an increasing volume of wastewater. Additionally, projects such as waste processing are becoming necessary. The increasing amount of waste leads to the need for financing projects to create waste incineration plants, waste sorting, and other projects in this field.

Currently, the "green" financing sector is highly developed and in demand worldwide. It is expected to grow even more actively in the future, driven by the requirements of today's environmental situation on Earth [5].

In foreign markets, a "green" project must align with one of three directions—climate change mitigation (reduction of carbon emissions), conservation of natural resources and biodiversity, or pollution reduction [6,7].

Several international organizations have developed standards to define environmentally significant projects. The first and most well-known are the International Capital Market Association (ICMA) and the Climate Bonds Initiative [8]. In Russia, there is no local standard yet; its development is being handled by the state development corporation VEB.

It's important to recognize that the environment is a common heritage. The development of the green economy sector will become a leading industry in the future, capable of being a growth locomotive and a source of hundreds of thousands of jobs. In dialogue with ministries, agencies, the Bank of Russia, expert and business communities, VEB.RF is developing a national green financing system. This system should help Russian companies borrow funds to implement green projects on more favorable terms.

The foundation of this system will be the Methodological Guidelines on Green Financing, published in the "Methodology" section. They are developed based on national priorities (in particular, the national project "Ecology") and incorporate the experience of major international organizations in this field, such as CBI, ICMA, IDFC, as well as China's experience—the first country to develop and implement a similar document.

According to VEB, in Russia, in August 2019, the Sustainable Development Sector began operating on the Moscow Stock Exchange, the first comprehensive platform in Russia's financial market to support environmental projects. To date, five issuers in Russia have issued seven "green" bond issues totaling 7.55 billion rubles and €500 million.

For comparison, on the international market in 2019, "green" bonds worth \$257.5 billion were issued. The market for responsible financing is one of the key drivers of sustainable development. S&P Global has forecasted the issuance volume of ESG bonds in 2023 to reach \$1 trillion. Analysts are confident that the year will "close" at this figure, which will bring it closer to the record market data of \$1.06 trillion at the end of 2021. A significant issuance in 2023 was the placement of green bonds by the OPEC fund: \$1 billion to finance sustainable development projects, which will "mobilize additional resources in support of partner countries." The bonds generated significant interest from investors in regions: Europe, the Middle East and Africa (EMEA) – 52%, Asia-Pacific region – 27%, North America – 21%. Central banks and government structures accounted for a large share of investors – 62%. The Russian market for green bonds in 2023 remains small and continues to recover after 2022, when a sharp negative dynamics in rates also affected the market for sustainable bonds. Key issuers continue to be development institutions.

2 International Standards

To combat climate change and its negative consequences, countries adopted the Paris Agreement at COP-21 in Paris on December 12, 2015 [9]. This agreement, which came into effect in less than a year, is aimed at significantly reducing global greenhouse gas emissions and limiting the increase in global temperature this century to 2 degrees Celsius, while simultaneously exploring means to further limit this increase to 1.5 degrees. To date, 194 parties have joined the Paris Agreement. The agreement requires all countries to take on commitments to reduce their emissions and to work together on adapting to the effects of climate change, and also calls on countries to strengthen their commitments over time. It opens a pathway for developed countries to assist developing countries in their efforts to mitigate the effects of climate change and adapt to them, while simultaneously creating a foundation for transparent monitoring and reporting of countries' climate objectives. The Paris Agreement provides a robust foundation that defines global efforts for the coming decades. The goal is to gradually increase the ambition of countries' actions to combat climate change over time. To facilitate this, the Agreement establishes two review processes, each conducted over a five-year cycle. The Paris Agreement marks the beginning of the transition to a low-carbon world, a path on which much remains to be done. The implementation of the Agreement is crucial for achieving sustainable development goals, as it serves as a "roadmap" for climate change-related actions that will reduce emissions and enhance resilience to climate change.

Ratification

Each party to the Paris Agreement must develop a plan for reducing emissions and adapting to climate change (Nationally Determined Contributions, NDCs) and update it every five years. In their NDCs, countries set target indicators for reducing greenhouse gas emissions that contribute to climate change and for adapting to its consequences. These plans specify how to achieve the targets and contain detailed monitoring and verification mechanisms to ensure that the process stays on schedule.

In 2018, delegates at COP-24, which was held in Katowice, Poland, adopted a set of rules specifying the procedures for implementing the Paris Agreement. In 2023, during the first round of the "global stocktake," progress in achieving the goals of the Paris Agreement was assessed. This assessment will serve as a stimulus for adopting ambitious climate actions at the national level, which will help keep warming below 1.5 degrees Celsius. The implementation of the Paris Agreement's goals is based on ESG principles [10, 11].

The acronym ESG stands for "environmental, social, and governance." In a broader sense, it refers to sustainable business development built on three principles: responsible environmental management, social responsibility, and high-level corporate governance. The concept of ESG and its principles were first articulated by UN Secretary-General Kofi Annan in 2004.

Thus, one of the global principles of responsible investment is to assess a company's compliance with ESG principles (environmental, social development, corporate governance). This index informs investors about the company's strategy, the working conditions of its employees, and how the enterprise cares for the environment.

Under international environmental agreements signed, 75% of the world's GDP will engage with the environmental agenda. Corporations that do not comply with ESG principles will be fundamentally unstable. Many companies have long been concerned with this agenda and have gradually taken steps to change their business model towards greener practices. The resource consumption ratio of 1.7 means we consume resources 1.7 times faster than we can replenish. The goal of the global community over the next 20-30 years is to reach a ratio of 1, meaning we will not borrow from future generations.

By the end of the summer, an ESG guide, prepared jointly with the Bank of Russia, should appear on the Moscow Exchange website—a set of rules for listing in the sector of green bonds (sustainable financing?).

3 Russian Standards

In Russia, the government resolution "On the Approval of Criteria for Development Projects in the Russian Federation and Methodological Guidelines Aimed at Achieving the Goals and Main Directions of Sustainable (including Green) Development in the Russian Federation" (as of May 19, 2021) (prepared by the Ministry of Economic Development of Russia) has established the goals and main directions for sustainable development, as well as defined "green projects."

A green project is a project that simultaneously meets the following principles [12]:

- 1) Compliance with the technological indicators of the best available technologies (achieving technological indicators BET or better than BET);
- 2) Compliance with one or more main directions provided by the goals and main directions (meeting the quantitative and qualitative criteria of green projects approved by the Government of the Russian Federation): Construction and modernization of water conduits and hydraulic structures, construction and modernization of drinking water supply infrastructure, construction and modernization of infrastructure for drinking water preparation, improving the resource and energy efficiency of drinking water supply infrastructure, construction and modernization of water treatment infrastructure, construction and modernization of waste utilization systems for water supply and wastewater;
- 3) Aimed at achieving the goals of the Paris Agreement or the UN Sustainable Development Goals: Goal 6 (Clean Water and Sanitation), Goal 7 (Affordable and Clean Energy), Goal 9 (Industry, Innovation, and Infrastructure), Goal 11 (Sustainable Cities and Communities);
- 4) No significant side effects on the environment (the "Do Not Significant Harm" principle). For projects implemented within the Russian Federation, the "Do Not Significant Harm" principle can be considered met if the project complies with the requirements of the Russian Federation legislation on environmental protection.

One form of "green financing" is the issuance of "green bonds."

Green bonds are bonds issued to finance "green" or environmental projects. Today, to obtain the official "green" status, the bond issuance must comply with the principles (standards) of the International Capital Market Association (ICMA) in the field of "green" financing [13]. In Russia, a standard is being developed in accordance with international standards to avoid separate verification by ICMA in the future. Moreover, the company as a whole must demonstrate a commitment to "green" policy and regularly report on the use of funds obtained through green bonds.

Thus, the development of Russian green finance standards is ongoing in Russia.

Currently, the state corporation VEB is involved in the development and active promotion of Russian green finance standards. As of today, 10-12% of the Eurasian Development Bank's portfolio consists of green projects. Adaptation projects in our context refer to projects that significantly reduce environmental harm, such as a bypass road, although by international standards, such projects are not considered green (they focus on reducing CO₂ emissions).

In Russia, the process for recognizing projects as "green" is established in accordance with the Methodological Guidelines for Developing Investment Activities in the Field of

Green Financing in the Russian Federation (approved by the decision of VEB.RF's Green Finance Committee on July 8, 2020). A green project is a project that simultaneously meets the following criteria:

- 1) Compliance with the main directions for the implementation of green projects in the Russian Federation (see below for the main directions of implementation);
- 2) Aimed at achieving the goals of the Paris Agreement or one of the following United Nations Sustainable Development Goals: Goal No. 6 (Clean Water and Sanitation), Goal No. 7 (Affordable and Clean Energy), Goal No. 8 (Decent Work and Economic Growth), Goal No. 9 (Industry, Innovation, and Infrastructure), Goal No. 11 (Sustainable Cities and Communities), Goal No. 12 (Responsible Consumption and Production), Goal No. 13 (Climate Action), Goal No. 14 (Life Below Water), Goal No. 15 (Life on Land).
- 3) Implementation of the project contributes to achieving one of the following priority goals:
 - Improvement of the environmental state;
 - Reduction in emissions and discharges of pollutants;
 - Reduction of greenhouse gas emissions;
 - Energy conservation and increased efficiency of resource use;
 - Adaptation of the economy to climate change.

The result of achieving these priority goals is an ecological effect that must be material—the effect of the project implementation has a long-term and significant positive impact on the climate and the environment [14]. The level of materiality of the ecological effect is determined by the Initiator and confirmed according to the methodology accepted by the Verifier.

The main directions for the implementation of green projects in Russia in the housing and communal services sector (taxonomy) include:

- 1) Waste utilization and recycling, including the creation of eco-friendly infrastructure for handling solid municipal waste (SMW), creating infrastructure for recycling and reusing waste generated during construction, renovation, and repair of buildings, structures, and infrastructure objects, creating infrastructure for waste utilization with the production of electrical and thermal energy, and others.
- 2) Power engineering, including increasing the energy and ecological efficiency of thermal power engineering, reducing harmful emissions from thermal power enterprises, reconstruction, modernization, and transitioning to more ecological energy sources for urban and municipal heating systems.
- 3) Construction, including the development and implementation of technologies, development and production of building materials and structures that enhance the energy efficiency of buildings and facilities, application of renewable energy installations in buildings (solar collectors for hot water supply, photovoltaic panels for electricity generation, heat pumps, communal heat recovery units from wastewater, etc.), and increasing the efficiency of heating and air conditioning systems, including through the use of low-temperature heat carriers, heat exchange devices, and reducing losses of thermal energy.
- 4) Transportation, including public transport, mainline railway transport, freight road transport, hydrogen and fuel cell transport, eco-friendly maritime and river transport.
- 5) Water supply and sewage, including the construction, reconstruction, and modernization of water conduits and hydraulic structures, construction, reconstruction, and modernization of drinking water supply facilities,

implementation of technologies to reduce water losses in water supply systems, construction, modernization, and reconstruction of wastewater treatment facilities and sludge utilization systems, implementation of water-saving technologies in agriculture, industry, and housing and communal services.

4 Implementation practice in Russia

The green bonds are gaining popularity all over the world. In December 2018, the first placement of green bonds took place in Russia, and in April 2019 a round table was held on the basis of the Moscow Stock Exchange with the participation of representatives of the Government, the Central Bank, commercial banks and large enterprises. So it is quite possible that a lot of green bonds with a variety of parameters will soon appear in our country [15,16].

Such bonds are different from ordinary ones. The first issue of green bonds in Russia was carried out on December 19, 2018, the first green bonds appeared on the Moscow Stock Exchange. They were placed by the company "KhMAO Resource Saving". The purpose of the loan is to create an integrated intermunicipal landfill for the placement, neutralization and processing of MSW for the cities of Nefteyugansk, Pyt–Yakh and settlements of the Nefteyugansk district.

Based on the conclusion of the Rating-Agentur Expert RA expert commission, the issuer's use of funds is carried out in accordance with the Principles of Green Bonds developed by the International Association of Capital Markets (ICMA).

Parameters of the bond RSB HMAO-01 (ISIN code: RU000A0ZZYS0):

- The nominal value – 1000 rubles;
- The total issue volume is 1.1 billion rubles (1.1 million bonds);
- The circulation period is 4563 days (maturity date: 06/17/2031).

In 2019, another "green" placement took place on the Russian market, however, the largest and most market-oriented (unlike its predecessors), the organizer of the transaction was Sovcombank.

SFO RuSol 1 became the issuer of three issues of exchange-traded bonds, their total nominal value amounted to 5.7 billion rubles. Investors (qualified only) were offered issues of exchange-traded ten-year bonds with collateral secured by monetary claims of classes "A", "B" and "C". The final rates of the first coupons were 9.516%, 13.516% and 16.016% per annum, respectively. Coupon rates are floating and linked to the rate of long-term government obligations used for calculations in the wholesale electricity and capacity market.

The purpose of the bond issues was to refinance bank loans received by Sun Projects LLC and Sun Projects 2 LLC for the construction of two solar power plants — Zavodskaya and Promstroyaterialy. The stations were put into operation in 2017-2018 in the Astrakhan region. Payments on bonds are secured by their proceeds. Zavodskaya and Promstroyaterialy operate under long-term contracts for the provision of capacity for qualified generating facilities operating on the basis of the use of renewable energy sources.

Another advantage of using green financing in Russia is the option of subsidizing the rate [17]. The money to subsidize up to 90% of the coupon payment costs will be allocated within the framework of the national project "Ecology". Projects that have been selected will be able to receive subsidies according to the law. A number of criteria have been set for such projects, including the maximum amount of each issue — 30 billion rubles (Decree of the Government of the Russian Federation dated April 30, 2019 No. 541 "On Approval of the Rules for Granting Subsidies from the Federal Budget to Russian Organizations to Reimburse part of the cost of paying coupon income on bonds issued as

part of the implementation of investment projects to introduce the best available technologies, and (or) to reimburse part of the cost of paying interest on loans received from Russian credit institutions, as well as in international financial organizations established in accordance with international treaties in which the Russian Federation participates, for the implementation of investment projects for the introduction of the best available technologies”). With this type of financing, it is possible to use subsidies to finance subsidiaries.

Thus, within the framework of green financing, VEB organized and verified issues [18-20]:

- Exchange-traded interest-bearing non-convertible non-documentary bonds with centralized consideration of the rights of the 74 series of the Government of Moscow
- Non-convertible non-documentary interest-bearing bonds with centralized accounting of rights of the 001B-03 series of JSC Russian Railways.

Verification is the procedure for evaluating the applicant's documents to the established requirements:

- compliance of the funded projects or the general approach to the selection of green taxonomy projects;
- approaches to the use of attracted funds, including the period of investment after attraction, placement of temporarily available funds before their investment, reporting on the use of funds;
- validity of approaches to environmental impact assessment;
- compliance of the progress and results of the actual implementation of the green project with the declared indicators;
- Compliance with the general principles of sustainable development.

Rating agencies approved by VEB. The Russian Federation as independent verifiers on green financing (temporary list):

- Expert RA Agency - www.raexpert.ru +7 (495) 225-34-44, +7 (495) 225-23-54, info@raexpert.ru
- ACRE Agency - www.acra-ratings.ru +7 495 139 04 80 , info@acra-ratings.ru
- National Rating Agency - www.ra-national.ru .

5 Conclusion

One of the important achievements of the development of green finance in Russia in 2023 is the fact that the Bank of Russia has included sustainable development in the list of priority areas for financing until 2026.

Analysts believe that the Russian green bond market in 2023 overtook 2022 in terms of indicators, but is still far from the records of 2021. In total, according to ACRA, in 2023, the issue of ESG bonds in Russia was estimated at 115 billion rubles, and taking into account national and adaptation projects of the sustainable development sector of the Moscow Stock Exchange - at 160 billion rubles. This is 51% more than a year earlier.

From January to November 2023, eight issues of ESG bonds worth more than 100 billion rubles were placed in the sustainable development sector of the Moscow Stock Exchange. Also among the issues of ESG bonds there are two issues of a new instrument for the Russian market - sustainable development bonds. Gazprombank, "Dom.The Russian Federation", the developer "Legend", the Government of Moscow and VEB.The Russian Federation has organized the issue of green bonds worth more than 60 billion rubles. According to the Central Bank of the Russian Federation, as of November 1, 2023, the total volume of outstanding bonds included in the sustainable development sector amounted to 354 billion rubles.

It is worth noting separately that Russian banks have taken a course towards transparency. Thus, in 2023, a comprehensive responsible financing policy developed by Sbebank appeared in the Russian Federation. The document established a transparent mechanism for assessing the five levels of ESG risks and decision-making on the market.

The additional inflow of investments is hampered by the general increase in the cost of green technologies and the postponement of a number of policy decisions on their implementation, including in Russia, due to global instability. The constraining factors are higher interest rates, infrastructure problems and, in general, the high cost of raising capital.

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