SECTION 6.
INTERNATIONAL RELATIONS

Caprian Iulia
PhD, Associate Professor
Moldova State University, Chișinău, Moldova

Bircа Iulita
PhD Student
University of Suceava "Stefan cel Mare", Suceava, Romania

Trushkina Nataliia
PhD (Economics), Senior Researcher
Research Center for Industrial Problems of Development of the NAS of Ukraine, Kharkiv, Ukraine

GREEN INVESTMENTS AS A PREREQUISITE FOR THE EFFECTIVE IMPLEMENTATION OF CIRCULAR BUSINESS MODELS: INTERNATIONAL PRACTICE

Currently, most countries of the world have recognized the feasibility of transition to a "green" economy [1-4]. At the same time, the European Union has adopted a national green taxonomy, that is, a strategy that allows investors to scientifically define the classification of types of economic activity for decarbonisation. The essence of the taxonomy is that in order to implement low-carbon technologies and solutions, it is necessary to implement a sustainable financing mechanism [5], including for the purpose of transforming logistics systems on the basis of green logistics [6-8] in the context of the circular economy [9-10]. At the same time, the taxonomy will become the basis for issuing "green" bonds in the coming years.

It is worth noting that the European Union is taking further steps to implement its strategy for financing sustainable development and the transition to a climate-neutral, resource-efficient economy. This regulation establishes uniform requirements for bond issuers wishing to use the designation "European Green Bond" or EuGB for their environmentally sustainable bonds available to EU investors, and establishes a registration system and a supervisory system for external audits of European Green Bonds. Environmentally sustainable bonds are one of the main investment financing tools related to green technologies, energy and resource efficiency, as well as sustainable transport and research infrastructure.

In 2021, the European Commission planned to issue green bonds in the amount of EUR 250 billion. For this purpose, the mechanism for the functioning of "green" bonds has been approved, which should guarantee that the funds raised will be directed to the implementation of "green" projects. In July 2021, the European Commission presented the Strategy for Sustainable Financing to Combat Climate Change and the European Standard for "Green" Bonds. The strategic document provides requirements for issuers of green bonds and reporting to investors, mandatory external verification of the terms of the issue by an independent verifier, etc. Therefore, the EU can become the largest issuer of green bonds in the world.

Most of the green bonds issued in the world are standard bonds. Green bonds are securities that are issued on return terms and are used exclusively for financing environmental projects.

According to the Climate Bonds Initiative, the size of the green bond market was 1.1 trillion dollars in 2020. USA (64.7% of the global volume of the sustainable financing market). Green bonds are used by 71 countries of the world. The number of issuers is 1428, instruments – 7716. The USA is the largest player in the "green" bond market, having issued this type of security in the amount of 211.7 billion dollars for 2009-2021. USA. In second place is China – 127.3 billion dollars, in third place – France – 115.6 billion dollars. A significant part of green investments is aimed at the development of the energy sector, construction and modernization of transport infrastructure. Together, these three segments make up approximately 80% of the green bond market.

In the USA, the Climate Act was adopted on August 16, 2022. The document aims to accelerate the nation's energy transition away from fossil fuels with federal grants, loans and tax breaks for clean energy projects that meet certain criteria. According to the updated analysis of the research firm Energy Innovation, tax benefits in the amount of 370 billion dollars should allow doubling the capacity of installed wind and solar installations by 2030. This additional resource can help ensure that 72-85% of the total electricity supply comes from clean sources. Tax incentives are key incentives provided to increase production from solar and wind farms, deploy storage systems and introduce new zero-carbon technologies.

The law provides for the return of the 26 MWh/dollars production tax credit and 30% of the investment tax credit for projects completed in 2022 or later for at least the next 10 years. Also, as noted in Recharge, the adopted law is a turning point for the "green" hydrogen industry, which is still emerging outside the United States. According to S&P Global Platts, a tax credit of up to 3 kg/dollars on "green" hydrogen would actually make it cheaper to produce in most regions of the US than existing "grey" hydrogen (produced from natural gas) installations. That is, until at least 2033, while such "tax holidays" will be in effect. Thus, the adopted law will allow the country to save up to 1.9 trillion dollars. US on climate change costs. It is predicted that the volume of emissions in the USA should be reduced by 2 times by 2030.

According to estimates by experts from the Political Economy Research Institute (PERI) of the University of Massachusetts Amherst, conducted for the Blue Green Alliance, it was determined that the implementation of more than 100 investment projects in the fields of climate, energy and environment will create more than 9 million jobs thanks to grants, loans and tax breaks, and nearly 3 million jobs stimulated by the US Department of Energy's new authority to provide loan guarantees. Consequently, the adopted law caused a number of positive responses regarding the creation of opportunities to reduce energy costs, the growth of investments in clean energy, the creation of new jobs, in particular "green" ones, and economic growth in general.

Clean Energy Finance Corporation (CEFC) is a state-owned "green" bank of Australia, established in 2012 with the aim of increasing investments in clean energy projects by 10 billion Australian dollars. Its mission is to help reduce Australia's carbon footprint by investing in renewable energy projects and low-emission technologies. CEFC also supports start-ups through the Clean Energy Innovation Fund and the development of Australia's hydrogen capacity through the Hydrogen Development Fund. CEFC uses a number of investment mechanisms, including direct investments (e.g. soft loans, equity investments or a combination of these), investment funds, asset financing (partnering with banks to provide discounted financing) and debt investments (e.g. buying green bonds). CEFC uses its partnerships with leading commercial banks across Australia to co-lend (on-lending) clean energy projects. CEFC lends funds to partner banks to finance their technologies and projects directly. Under the mechanism, the CEFC does not participate in the financing or administration decisions of the loans. Commercial banks are mediators in this process. Under such conditions, CEFC assumes the risk of a partner institution, rather than the underlying borrower, which allows it to offer low-cost financing to commercial partner banks, which in turn can offer attractive terms to customers, including reduced interest rates.

As of early 2021, CEFC has provided more than 1.27 billion dollars to around 18000 clean energy projects in Australia through its asset finance programs alone. For every dollar of private investment, CEFC helped attract 2.3 dollars of private investment. The total investment portfolio exceeded 6 billion Australian dollars. Supported projects range in scale from small-scale solar panels and rooftop storage to energy-efficient manufacturing and agricultural equipment, as well as improved thermal insulation of buildings, heating and cooling systems, demand management and low-carbon transport. Thus, CEFC funding allows supporting not only large-scale projects, but also small projects on the ground, in communities or individual projects of small and medium-sized businesses.

It is worth noting that the experience of "green" banks of the Organization for Economic Cooperation and Development defines a "green" bank ("green" investment bank) as a state, quasi-state or non-profit financial institution created specifically to promote investment in a national low-carbon, climate-resilient economy. To overcome investment barriers and increase the impact of available public resources, public green banks and similar organizations have been established in more than a dozen jurisdictions in recent years. Such specialized organizations for "green" investing have been established at the national level (Australia, Japan, Malaysia, Switzerland, Great Britain), at the state level (California, Connecticut, Hawaii, New Jersey, New York and Rhode Island in the United States), at the county level (Montgomery County, Maryland, USA) and city level (Masdar, United Arab Emirates). Such institutions are created on the basis of unique national and local conditions to meet specific needs, however, they have common features: they contribute to the accelerated achievement of climate goals, reduction of emissions, aimed at mobilizing private capital and reducing the cost of capital in general, reducing energy consumption, developing markets for "green" technologies, supporting the development of the local community and creating jobs.

In 2012, the UK government created the UK Green Investment Bank (GIB) to raise funds and finance projects related to the preservation and improvement of the environment. Initially, it operated as a non-departmental state body under the Department for Business, Energy and Industrial Strategy (BEIS). However, at the same time, the government estimated that the country needs significantly more financial resources: to fulfil the various international climate agreements and obligations of Great Britain, the investment gap was 38-64 billion dollars. USA. In order to achieve the government's main objective of mobilizing additional private investment, it was decided that the GIB should provide financing on a fully commercial basis (similar to other financial institutions) and not act as a public financing platform providing soft loans and grants.

It was decided that the best option to overcome this barrier is the sale of a controlling stake in GIB to private investors, which officially started in 2016. The sale was completed in August 2017, when Macquarie Group paid £1.8 billion (2.1 billion dollars) to almost fully acquire GIB, with the government 15 retaining a small stake in assets valued at around £132 million (169 million dollars). GIB now operates as Green Investment Group (GIG), combining GIB and the Macquarie Capital team. The company continues to finance "green" projects in the UK, but without financial support from the government. It now has a greater international mandate and can invest in mature technologies and at all stages of the project life cycle.

To protect the environmental purpose of the GIG, the government has provided for a "special share" in the ownership of the Green Purposes Company (GPC), a not-for-profit company managed by independent trustees. GPC's primary role as a special shareholder is to approve or veto any proposed amendment to the 5 green goals set out in the GIG charter and to monitor compliance with those goals. According to the Report for 2021, Green Investment Group as an investor or developer has in its portfolio more than 30 GW of installed RES capacity and 240 supported "green" projects around the world.

The first "green" bank in the USA was established in the state of Connecticut. Connecticut Green Bank (CGB) is a quasi-public corporation established in 2011 under special state law as an

extension of the Connecticut Clean Energy Fund. CGB was created to develop and implement strategies that lower the cost of clean energy to make it more affordable for consumers in the residential, commercial and industrial sectors. CGB's capital is generated by surcharges on electricity bills, proceeds from the sale of emission allowances under the Regional Greenhouse Gas Initiative, grants from the US federal government, and private sources.

Since its inception, more than 2.26 billion dollars has been mobilized into the state's green economy. Projects registered through fiscal year 2022 show that for every 1 dollar in funds allocated to the CGB, an additional 7 dollar in private investment flowed into the economy. CGB works directly with building owners, contractors and project developers, as well as private lenders, and offers a wide range of green programs at the local level, including: construction financing for apartment building retrofits; inexpensive long-term loans for housing renovation; financial support for cities and state buildings; individual loans and solutions for project financing.

Since the summer of 2022, Switzerland has been discussing the creation of a state green investment bank (Green Investment Bank, GIB). As noted, the idea was born out of necessity – every year Switzerland needs almost 13 billion Swiss francs (13.6 billion US dollars) to achieve the goal of carbon neutrality by 2050 and to additionally invest 600 million Swiss francs per year in sustainable development projects in the countries, which are developing.

Switzerland has two state-backed stable investment funds, but currently no regulated bank focuses exclusively on this task. The idea of creating a new state-controlled bank that would invest 10 billion Swiss francs over the next 10 years in environmental projects was proposed by the Swiss think tank Foraus in early 2022 and received the support of dozens of Swiss parliamentarians. Foraus believes that the GIB would be an ideal solution to the current financing gap for sustainable development. The aim is to "be inspired by successful global business cases of green banks and apply them to Switzerland's challenges".

The Swiss Bankers Association (SBA) estimates that the country's "green" transformation will cost 387 billion Swiss francs in fixed investment over the next three decades. That is, to achieve Switzerland's climate goals by 2050, 12.9 billion Swiss francs per year are needed. However, the SBA believes that Switzerland has sufficient capacity to meet this challenge and does not need a new state-controlled bank to compete with private financial institutions.

Swiss Sustainable Finance (SSF), a group of 190 financiers, academics and public sector representatives focused on making Switzerland a leading centre for sustainable finance, is also sceptical of the idea of a stand-alone green bank. They point out that Switzerland's current regulatory framework is at odds with plans for sustainable investment (procedures for building permits are complex and lengthy) and stress that a better framework is needed to allow for more sustainable projects, rather than a new bank competing with private investors.

In addition, Switzerland already has two state funds 18 that contribute to the distribution of sustainable investments from the state budget: the Technology Fund (Technology Fund) in the amount of 500 million Swiss francs, focused on the country's need to reduce greenhouse gas emissions, provided bank loans for 220 million Swiss francs for the implementation of climate projects; Swiss Investment Fund for Emerging Markets (SIFEM), created to promote long-term, sustainable and large-scale growth in developing countries through financial support for small and medium-sized businesses. The fund has already invested more than 1 billion Swiss francs. At the same time, supporters of the creation of a separate "green" bank in Switzerland emphasize that such an institution can attract investments using a wider range of financial instruments than a fund. To this, representatives of the consulting group on sustainable financing South Pole, which manages the Technology Fund together with Emerald Technology Ventures, point out that the creation of a "green" bank "from scratch" will take about 10 years, and this will be lost time for climate measures. They suggest that reforming existing institutions (such as expanding SIFEM's mandate, giving it a clear climate mandate and allowing it to take more risks using a wider range of financial instruments) would be much faster and have a much greater impact.

Based on the above, we can come to the following conclusion. It is advisable to use the best practices of Australia, Switzerland, and Great Britain in creating "green" banks in Moldova and Ukraine. This is especially relevant in the post-war development of the national economy of Ukraine. This will make it possible to create an appropriate toolkit for financing "green" recovery measures. Such a bank can either be created within the framework of the Recovery Plan of Ukraine as a development bank for post-war reconstruction, support of "green" projects, or by authorizing an existing state bank.

Prospects for further research consist in the scientific and methodological substantiation of the mechanism of green financing as a key component of the strategy of sustainable development of logistics systems.

References:

1. Miśkiewicz R. The Impact of Innovation and Information Technology on Greenhouse Gas Emissions: A Case of the Visegrád Countries. *Journal of Risk and Financial Management*. 2021. Vol. 14. Article 59. https://doi.org/10.3390/ jrfm14020059.
2. Liashenko V., Dzwigol H., Kwilinski A., Trushkina N. Operation of the transport and logistics system of "Podillia" economic and geographical region in the context of green economics. *Journal of European Economy*. 2021. Vol. 20. No. 3(78). P. 461-487. https://doi.org/10.35774/jee2021.03.456.
3. Trushkina N. Green economy in the conditions of modern challenges: conceptual frameworks. *International Science Journal of Management, Economics & Finance*. 2022. Vol. 1. No. 1. P. 1-6. https://doi.org/10.46299/j.isjmef.20220101.1.
4. Kuzior A., Vyshnevskyi O., Trushkina N. Assessment of the Impact of Digitalization on Greenhouse Gas Emissions on the Example of EU Member States. *Production Engineering Archives*. 2022. Vol. 28. No. 4. P. 407-419. https://doi.org/10.30657/pea.2022.28.50.
5. Trushkina N. Green investments as a nontraditional source of financing the development of the Czech national logistics system. *Moderní aspekty vědy*: XVI Díl mezinárodní kolektivní monografie. Česká republika, Jesenice: Mezinárodní Ekonomický Institut s.r.o., 2022. Str. 453-466.
6. Dzwigol H., Trushkina N., Kwilinski A. The Organizational and Economic Mechanism of Implementing the Concept of Green Logistics. *Virtual Economics*. 2021. Vol. 4. No. 2. P. 74-108. https://doi.org/10.34021/ ve.2021.04.02(3).
7. Dźwigoł H., Kwilinski A., Trushkina N. Green Logistics as a Sustainable Development Concept of Logistics Systems in a Circular Economy. *Proceedings of the 37th International Business Information Management Association (IBIMA)*, 1-2 April 2021. Cordoba, Spain: IBIMA Publishing, 2021. P. 10862-10874.
8. Hryhorak M. Yu., Zakharchenko O. V., Harmash O. M., Trushkina N. V., Lunov L. Ye. Infrastructure provision of industrial waste management in the context of the strategy for recovery of the national economy of Ukraine. *Intellectualization of logistics and Supply Chain Management*. 2022. Vol. 15. P. 19-35. https://doi.org/10.46783/smart-scm/2022-15-2.
9. Trushkina N., Prokopyshyn O. Circular economy as a new way of managing in the conditions of digital transformations. *Green, Blue & Digital Economy Journal*. 2021. Vol. 2. No. 3. P. 64-71. https://doi.org/10.30525/2661-5169/2021-3-10.
10. Ganea V., Trushkina N., Ţîrlea M. R., Birca I. Economia circulară – un model de perspectivă pentru Republica Moldova [Circular Economy – a Perspective Model for the Republic of Moldova]. *UNIVERS STRATEGIC – Revistă de Studii Strategice Interdisciplinare și de Securitate*. 2022. Anul XIII. Nr. 4(52. P. 52-68.