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**Research Topic**

**Green financing as a mechanism for financial support of investment activities in order to ensure balanced and sustainable growth: opportunity for Russia**

**Master Thesis  
Geneva Business School**

**Master in International Finance**

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**Date: 22/05/2020**

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## INTRODUCTION

At the end of the XX century, the international community came to realize the need to move to a new and efficient model of the economy (Drucker, 2009), in which the welfare of society, including employment, and combined with reducing the impact on the environment, the so-called "green" economy (Jacobs, 1993) . This was triggered by the serious environmental problems caused to a large extent by the active economic activity of people, and the understanding of the depletion of natural resources in the long term with their intensive use. In addition, despite the discovery of new mineral deposits, their development is a long and expensive process. Therefore, the issue of creating an international financial system that is effective in attracting "green" investments to ensure balanced and sustainable growth has become one of the key issues on the international community's agenda. It was actively discussed at the United Nation conference on sustainable development in 2012. (Rio +20) and at the G20 summit in 2016, which was chaired by China on 4-5 September.

Green spheres of the economy have great potential for growth compared to traditional, resource intensive industries that contribute to environmental pollution. In addition, the reorientation of investment flows from "dirty" economic activities to sustainable projects will reduce the dependence of the country's economy on raw resources, create new highly competitive industries, preserve natural resources for future generations, and create new jobs, thereby contributing to the development of human potential.

Sustainable investment is not just another product line. This is a complete investment approach. It is an investment philosophy that aims both to achieve returns comparable to those of traditional investments and to have a positive impact on society and the environment.

Sustainable investment takes into account the environmental, social and governance challenges that our world faces. For example, such as overuse of natural resources, environmental pollution, or the effects of urbanization. The need to change our attitude to the planet and people are becoming more and more urgent. There is also a growing willingness to act more responsibly. The United Nations has identified 17 sustainable development goals in order to engage the public in the overall challenges of transformation.

Sustainable investing, like any other new investment approach, is surrounded by a number of myths.

"Sustainable investment is philanthropy»

Sustainable investment is an investment based on financial returns. It does not require giving up financial returns for social or environmental change. In other words, it is not a gratuitous provision of funds to solve social or environmental problems. This is not philanthropy or grant making. Also, sustainable investment is not related to the financing of projects in the public sector. However, it is suitable for investors with different risk

preferences within the same structure and attracts investors interested in innovation from both the public and private sectors.

"Sustainable small-scale investment"

Historically, sustainable investment has focused on making changes through specific projects or in specific areas. But many social and environmental problems are global in nature, and their solution requires large investments. Sustainable investment funds are growing and expanding their geography, implementing commercially effective solutions to take advantage of mass scale investment opportunities.

"High yield means low impact»

The high financial rate of return does not mean that the quality of sustainable investment is reduced. On the contrary, a company can solve the problem faster if it is highly profitable and is able to quickly increase the production of products that have a positive effect.

"Sustainable investment - only for poor countries»

Because of problems such as water pollution and slums, poverty are more noticeable in sub-Saharan Africa than, for example, in Western Europe. But the sustainable investment can solve social and environmental problems regardless of their geography, for example, in developed countries, where the financial crisis has led to high youth unemployment in some regions of Europe, deprived many small companies of access to capital, or reduced investment in critical infrastructure.

"Sustainable investment is only possible in non-tradable asset markets»

Investors who want to foster positive change usually invest in private equity or non-tradable debt strategies. But there are more and more solutions aimed at this effect in the public markets. In particular, shareholders of public companies can demonstrate this intention and contribute to achieving a measurable social and environmental impact by implementing an interaction strategy.

We are now in a decade of transformation, and investors will have to adapt to the changes. But they can also use their capital to effect change. Many of the UN's sustainable development goals require broad based investment and offer attractive investment opportunities that allow private investors to generate high returns while contributing to important goals, from eliminating poverty and reducing inequality to ensuring access to clean water and quality education.

The world is entering an era of deglobalization, and the rivalry between the United States and China is amplifying this trend. The trade conflict between the United States and China has slowed investment and damaged companies, which were involved in international trade. The stocks of companies that depend on trade and investment are likely to remain volatile, and their returns will depend on political decisions. The US and China have made some progress towards agreeing on a partial interim trade agreement, but their long term positions are defined, and there is a growing belief that a significantly more conciliatory approach will be adopted, even after the US presidential election. There is also a shift away from globalization outside of the USA China conflict. The

Brexit is likely to lead to turmoil in trade between the United Kingdom and the European Union. Japan has taken measures to restrict technology exports to South Korea, and the United States has threatened to impose duties on goods from Europe. In other regions, the practice of controlling foreign property for reasons of national security is spreading. Therefore, choosing companies that are focused on the domestic market and on the consumer will be advantageous, as they should provide more stable returns. By replacing the traditional investments with sustainable ones, investors can prepare their portfolios to participate in the most important trends of the next decade. Thus there is a gap in the literature, in order to solve that problem the government of the country should start shifting toward the green economy, e.g. by issuing the "green" bonds, which will have a dual effect: sustainable world and a higher return.

This thesis goal is to review the literature of the concept of green economy, what were the prerequisites of it. As the Russian economy is much dependent on the export of raw materials, the government of the country should start shifting towards "greening" the economy by using the foreign examples. In the work it was given two examples of the European countries, how they stimulate the "green" economy. The thesis concludes that Russia is only at the beginning of the "green" economy path and needs more further researches, stimulations in order to achieve sustainable economy.

## **Literature Review**

### **THE THEORY OF "GREEN ECONOMY": MAIN PROVISIONS**

#### **1 The concept of a "green" economy and its fundamental principles**

The quick growth of the world economy, almost throughout the twentieth century, identified industries as priority sectors of development, which more contributed to the consolidation of the extensive (with regard to the consumed resources) type of development and eventually led to a destruction of the ecological situation in some countries, and in the world as a whole and the recognition of the exhaustion of the possibilities of economic growth on the operating production and technological basis. As a solution to this problem, the idea of forming a new innovative policy of the country as the engine of a new model of economic growth was proposed. Thus, the new model of the country's economic growth is ideologically justified and technically provided with a new version of the country's innovation policy. The goal can be achieved only through the implementation of a new version of the innovation policy - improving the quality of economic growth.

A new option should offer a new way to stimulate the innovative behaviour of enterprises, business and organizations. Therefore, the idea of "green" financing or "greening" the financial system, is quite capable of solving the problem of stimulating the innovative behaviour of enterprises and organizations. The essence of this method is that the demand for innovation also needs to be created or conditions should be created for the formation of this demand. In the meantime, the state can create demand for innovations artificially by putting special conditions on the quality of institutions by implementing legislative and regulatory regulations, business rules, thereby ensuring the interest of business in innovation.

Measures taken by the state in the framework of stimulating the innovative behaviour of enterprises and organizations are usually classified as a form of state support for businesses, which acts as a system integrator of scientific, technical and investment solutions in the process of implementing large investment projects and ensure the orientation of innovation to national and global demand. In the context of countries' membership in the World Trade Organisation, the tools of state support fall within the framework of strict restrictions.

Among the mechanisms of state incentives and motivating businesses is to abandon their commitment to outdated methods of economic activity by modernization on a new innovative basis. This financial stimulation is among the most effective and in demand. It creates objective prerequisites for the intensive development of economic activities and regions of the country, thereby ensuring the growth of gross domestic product for the economy as a whole. In this regard, the attention of the governments of the countries to this mechanism of “launching” a new model of economic growth is quite understandable.

The current stage of development of society is characterized by such factors as the expansion of environmental relations between all countries of the world. The growth of environmental interdependence between countries, the initiation of the process of restructuring international environmental relations on the basis of equality and mutual benefit. All this indicates to the increasing importance of environmental relations for individual states and for the entire international community, as well as to the complication of the problem of choosing priority between economic and environmental interests.

Effective steps towards achieving parity between economic and environmental interests today are associated with the creation of an integrated environmental and economic mechanism for the sustainable development, which is based on the formation of the following system of interrelated tools:

- development of environmentally oriented national accounts that include justification for new macro-and micro-economic indicators;
- the establishment of a mechanism for environmental innovations;
- development and approval of a mechanism for intercountry relations on environmental protection;
- creation of a system of economic impacts on the greening of production, including the greening of taxation, trading quotas for environmental management and the greening of banking policy;
- consideration of the environmental factor in privatization;
- consideration of acceptable environmental risk factors when making business decisions, including environmental insurance.

Currently, there are more than fifty international institutions and agencies dealing with environmental issues in the world. To some extent, most of the UN specialized agencies are involved in international environmental cooperation at the global level: the International Maritime Organization (IMO), the Food and Agriculture Organization of the United Nations (FAO), the International Civil Aviation Organization (ICAO), the World Bank, the World Health Organization (WHO), the International Atomic Energy

Agency (IAEA), the World Trade Organization (WTO), etc. The UN structure includes such subsidiary organizational units as the United Nations Environment Programme (UNEP), the Commission on Sustainable Development (CSD), five regional social economic commissions, and so on. The growing role of the secretariats of various international environmental agreements in international environmental governance should be noted.

Environmental issues are inherently integrated into almost all spheres of human activity (industry, transport, agriculture, construction, etc.), and therefore most international organizations, following the objective reality of international relations, include environmental issues in their sphere of activity. Meanwhile, practical activity in the sphere of greening economic relations, their transfer to a "green" (i.e., friendly to nature) basis, requires theoretical justification that has been formed over several centuries. Hence, the description of general theoretical approaches that justify the transition of economic relations to a "green" basis is presented below.

A study of the evolution of economists' views on the environment, covering the period from the 17th to the 20th centuries, draws attention to the fact that for a long time environmental problems did not fall into the spectrum of study, since no significant changes in the environment were observed. Nevertheless, studying the foundations of wealth, already in the 17th - 20th centuries. Such scientists as William Petty, Francois Quesnay, Anne Robert Jacques Turgot, Adam Smith pointed to the main role in its creation of labor, land, nature, agriculture (Petty, 1899; Turgot, 1793). The law of diminishing soil fertility, discovered by David Ricardo, allowed the formation of the theory of land rent (Haila, 1990).

At the turn of the 18th and 19th centuries on the basis of the revealed interconnections of economic processes and nature, Thomas Robert Malthus formulated the idea of limited natural resources (Malthus, 1992). In contrast, John Stuart Mill developed the ideas of the relationship between the social environmental aspects of welfare and society (Thompson, 2015). While, Karl Marx worked on the theory of reproduction of social capital (Giroux, 1983).

At the end of the nineteenth - the first half of the twentieth centuries, Arthur Cecil Pigou enriched the world economic thought with the theory of externalities, which allows one to take into account the influence of private property rights on environmental objects (Pigou, 2013). Environmental damage should be compensated to the affected party in the form of a state subsidy based on the introduction of a tax on such activities. Harold Hotelling, Simon Kuznets, Kenneth Ewart Boulding were actively studying the problems of the relationship between the depletion of natural resources and the economy (Hands, 1998; Kuznets, 1966; Boulding, 1956).

The study of theoretical approaches allows us to distinguish three main directions (streams) in economic theory, within which the concepts of solving environmental issues and problems are formed: the Neoclassical School, the School of Environmental Economics and the Post Keynesian Economics. The General characteristics of these areas are presented in table 1. Let's have a look at these directions in more detail.



Table 1-Characteristics of the main directions of economic thought in the area of ecologization of the economy

Economic school	Representatives of the school	Idea
The Neoclassical School	Scott Gordon	The market provides an optimal allocation of resources, and environmental issues are seen as “market failures,” which can be eliminated through taxes and trade permits. (Gordon, 1991)
School of Environmental (Ecological) Economics	Herman Edward Daly, Peter Robert Hay, Joan Martinez Alier, Robert Costanza	They consider the economy as an open subsystem which is part of the ecosystem. They are against economic growth. (Daly, 2007)
Post Keynesian Economics	Richard Holt, Marc Lavoie	Only the state can solve the problem of negative impact on the environment. To do this, it is needed to increase the role of the banking sector and reduce fundamental uncertainties. The main tool for this flow is investment. (Lavoie, 1992)

Source: Compiled by the author

Representatives of the neoclassical school of economic thought made an important contribution to the theory of Ecological Economics, especially significant were the studies conducted in the 50s of the 20th century. These studies looked at shared environmental resources as the root cause of many economic externalities (Gordon, 1954), arguing that, for example, the oceans and atmosphere do not belong to anyone, so they can be freely used by all.

The essence of the neoclassical concept is that the market provides an optimal distribution of resources and all resources are interchangeable, that is, when resources are scarce, their prices change, which encourages the development of new technologies and the emergence of new resources. Discounting allows you to take care of future generations (Holt, 2009). Emerging environmental problems are seen as "market failures" that can be addressed through taxes, permit trading, and other methods. For example, in the work of Armon Rezai, Duncan Foley and Lance Taylor, it was considered that the carbon dioxide emissions have a negative external effect which leads to inefficient allocation of resources, and the authors see the solution to this problem in the creation of special institutions to achieve cost transparency (Rezai, 2012). In fact, the neoclassical school deals with two key areas in ecology: the assessment of environmental assets and the development of policy tools for managing these assets (King, 2012).

In the late 60s and early 70s, the School of Environmental Economics appeared, which put forward concepts far from the mainstream. Its founders include Herman Daly, Peter Robert ay, Joan Martinez Alier, Robert Costanza, and others. Environmental

economists view human economic activity as a part or subsystem of a large whole which is nature, and the economy obeys nature in one way or another (Cavalcanti, 2010). The following provisions are recognized as the principles of this school (Holt, 2009):

- it is essential to be aware of the size and growth of the population, and the pressure they exert on social, economic and environmental systems;
- endless economic growth is unsustainable, both socially and economically;
- the impact and speed of changes in human and economic systems can have irreversible, uncertain consequences over time, and must be taken seriously;
- there is a need for going beyond the effect of capital substitution in Neoclassical Economics and recognize the necessity and role of all types of accumulated capital (i.e. natural and social) for the well-being and sustainability of the economy, the environment and society;
- the implicit value associated with economic growth should be better investigated;
- Economics cannot and should not be separated from ethical judgments, especially regarding the impact on people living today, on future generations, and on the health of the planet;
- nature has essential value.

This philosophical school considered the size of the economy relative to the ecosystem as one of the main issues and paid special attention to environmental issues. Environmental economists believed that the economic system cannot be considered separately from the ecosystem since it is part of it. But the ecosystem is limited, and the economy is part of it, so to solve environmental problems, it is essential to limit economic growth.

As a mechanism for the transition to a "green" economy, representatives of this direction suggested increasing taxation on the use of natural resources, while reducing the tax burden on other factors of production. As we can see, the policy measures proposed by environmental economists are similar to those proposed by Neoclassicists. But the idea of this school makes us think about modern problems related to the environment, and what awaits us in the future if we do not take any action to solve the main problem: the limited ecosystem and resources of our planet.

The Post Keynesian approach, in contrast to the neoclassical approach, is aimed at achieving sustainable economic development, in which a large role is given to the state. The school's approach addresses three major environmental issues: limited substitution effects, fundamental uncertainties, and problems with financing new investments, and suggests the following measures to address these issues (King, 2012):

- Eliminate fundamental uncertainties by setting long-term goals in public policy (for example, a balanced budget, low inflation, and the development of policies related to the protection of natural capital).
- Increasing the part of the banking sector in protecting the environment by increasing funding to this industry through the use of state guarantees for loans to "green" technologies and firms. This corresponds to one of the main principles of Post Keynesians, which was that economic growth is caused by an increase in demand for goods and services, which in turn changes under the influence of investment (in the formation of fixed capital) (Fontana, 2016).

- Use of various other additional direct intervention measures (for example, encouragement to change consumption habits; directing public spending to the environment to stabilize the economy; introducing "green" standards).

Thus, there are a number of major schools of economic theory that deal with environmental issues. The neoclassical school considers environmental problems as externalities that can be eliminated through taxes, permit trading, and so on. Environmental economists see the problem in economic growth itself, since the economy is part of the ecosystem, and it is limited. Therefore, the solution to this problem is seen in limiting economic growth, which is very difficult to implement in a capitalist economy. Post Keynesians consider a number of problems that hinder "green" growth and offer a set of measures to solve them. They see fundamental uncertainties and a low flow of investment in "green" projects as the main problems.

## 2. Advantages and obstacles to the transition to green growth

By choosing the path of "green growth", countries gain a number of advantages that arise from the voluntary decision of countries to abandon outdated methods of economic activity (see table 2).

Table 2-Advantages of switching to green growth»

Decision	Action	Received Benefits	Results
Abandoning commitment to outdated business practices that rely on traditional, resource-intensive industries and production methods that pollute the environment.	Modernization on a new innovative basis.	<ul style="list-style-type: none"> <li>• A new idea of forming the country's innovation policy as an engine of a new growth model,</li> <li>• A new, more effective way to stimulate innovative behaviour of enterprises and organizations,</li> <li>• New production and technological basis for economic growth.</li> </ul>	The sustainable social and economic development of the country on a qualitatively new basis.

Source: Compiled by the author

Firstly, a new version of the country's innovation policy is being formulated as an engine for a new model of economic development. Secondly, it is inevitable to develop new

ways of financial incentives (state support) for innovative behavior of enterprises. Thirdly, we define the conditions that ensure that businesses are interested in new types of innovations. All this reduces the uncertainty of business conditions for business entities and justifies the allocation of state and market resources to finance new investment projects in modernization.

The transition to a new model of economic growth also makes it necessary to test the technology of "restarting" economic growth on the basis of a new version of innovation policy. The most effective schemes are then subject to replication in all economic activities of the country. In this way, we reach the path of sustainable social economic development of society, while preserving the human environment.

But, within described areas of greening the economy and identifying their boundaries, justifying concepts, we can distinguish a number of constraints to green growth (see table 3), grouped by level of impact on macroeconomic and microeconomic.

Table 3 - Obstacles to the development of "green" spheres of the economy

Obstacles to macroeconomic impact	Obstacles to microeconomic impact
1. Market imperfection	1. Preference for financial sector traditional investment
2. Problems of measuring green growth	2. Lobbying the interests of large companies
3. Difficulties in assessing the consequences of actions and environmental damage	

Source: Compiled by the author

The imperfection of the market in the sphere of ecology. This problem is confirmed by the existence of negative external effects and the effect of collective rejection (the tragedy of public resources). Both of these effects are cases in which the actions of individuals and firms, pursuing their own interests in a strategic and rational way within markets, produce various kinds of economic inefficiency.

The problem of measuring "green" growth. The widely used measure of gross domestic product (GDP) fails to account for the depletion of resources, and so green growth can be unsustainable. Difficulties in assessing the consequences and the inability to make such an assessment before the actions themselves are carried out (Reilly, 2012).

The financial sector, as an organizer, intermediary and source of investment financing, prefers investments in existing technologies and traditional companies (i.e. outdated, focused on large enterprises and "dirty"), rather than newer, small and "green" ones (King, 2012).

Lobbying the interests of large companies. For example, in the United States, large automobile corporations have used their power to create obstacles with higher standards, as the cars that produce the highest profits are not the most energy-efficient in production.

The identified factors have now been evaluated. There is a growing opinion in public opinion that short term commercial and entrepreneurial interests should not prevail over environmental ones. In order for the environment and economy to be effectively combined, specific legal and economic mechanisms must be developed (compensation for damage, assessment of the environmental impact of each project, promotion and support of environmental investments).

Today, Russian investors also assess the environmental and social risks of investing in large projects, but perhaps they do not always take them seriously enough or do not keep up with the growing environmental awareness of society. Nevertheless, some Russian financial organizations consciously choose responsible investment strategies as the least risky and most profitable and join the initiative of the principles of sustainable investment, which were developed with the mediation of the UN in 2015.

## **THE METHODOLOGY**

The methodology used in this thesis is the management report. Due to the gap in the literature in the Russian market, it was determined the need for a study focused on the process of financial interaction between the state and business aimed at ensuring the transition to a resource efficient model of the economy. As the "green" economy model is just emerging, while the European Union countries are already in the path of "greening". It was decided to provide examples of such transitions in Germany and the United Kingdom.

The topic under discussion includes many research models that are widely used both in theoretical analysis of the economic efficiency of investments in green technologies and in the development of practical recommendations on the feasibility of reorienting investment flows from dirty types of economic activity to green economic sectors. Therefore, this work focuses on assessing the impact of changes in macroeconomic parameters that occurred under the influence of a gradual reorientation of the national investment model (putting green projects among the investment priorities). The basis of the study is a combination of qualitative and quantitative analysis involving the identification of the reaction of national financial and budget systems to the implemented green financing policy. Of great importance in the study is also the analysis of theoretical and empirical works devoted to the study of the experience of "green" financing.

The object of the research is the process of financial interaction between the state and business, directed at ensuring the transition to a resource efficient model of the economy.

The purpose of the research is to create an information and analytical base that substantiates the sequence of actions for state support of a national investor and / or financial institution, in terms of attracting resources from international financial markets to finance investment projects.

During the work the following tasks were solved:

- studied the concepts used to justify the economic efficiency of reorienting investment flows from projects and parts of the economy that contribute to

environmental pollution in “green” projects and spheres of the economy, as well as in restoring the environment;

- identified factors and causes that ensure the preservation of "dirty" types of economic activity and support the flow of investment in projects that are contributing to environmental pollution;
- identified factors and causes that hamper the development of "green" economic sectors and the influx of investments in projects of the "green" economy;
- analyzed the organizational structure, financing methods, resource support, geographical and sectoral distribution of green financing programs initiated and / or supported by the World Bank;
- significant factors for the World Bank have been identified that justify the decision to accept / refuse to participate in the financing of green projects initiated by individual countries / implemented in individual countries;

The results obtained should provide the necessary information and methodological assistance in identifying new directions and sources of attracting external financial resources to the national financial system in order to finance economic growth.

## **ANALYSIS AND SYSTEMATIZATION OF COUNTRIES ' EXPERIENCE IN THE DEVELOPMENT OF GREEN FINANCE**

### **Factors that favor green investments**

Increasing the growth rate of the national economy is now recognized as an extremely urgent problem and has been declared a priority for governments in almost all countries of the world. The solution to this problem has difficulties that are typical for all countries, for example, the complexity of external and internal factors affecting the national economic system, ambiguity in the assessment of their impact, the lack of practical tools to measure them, and increasing geopolitical tensions. Accordingly, an important role is played by the ability to see emerging new trends in the global regulation of investment in the production sector of the economy in order to identify changes that may occur in the near future in the structure of the domestic economy.

Today, special attention should be paid to the global trend towards greening, the essence of which is that the most significant among the problems of world development is recognized as the problem of global climate change under the influence of human economic activity. In this regard, the environmental factor is becoming an increasingly powerful driving force, and the forecast period until 2030 will be characterized by an increase in the value of environmental parameters of production and consumption, technological innovations in the field of ecology.

The process of modernization and transition to a new technological order has been taking place in the world economy since the late 1980s, and the leaders of this process are, first of all, the industrialized countries. Not only post-industrial technologies are recognized as distinctive features of this way of life (Holt, 2009), but also resource conservation and, above all, energy conservation and energy efficiency. Already today,

energy conservation and energy efficiency are typical for a number of economic activities and, according to forecasts, will cover the entire economy in the future.

The beginning of the 2000s gave a significant acceleration to this process as the role of the climate factor in shaping the economy of the future increased (Rezai, 2012). Today laid the character of this economy with high-quality technological change in production and consumption benefits, institutional changes, increase of significance of the environmental component in national and global politics.

The policy of "green" economic growth was officially adopted by the OECD in 2009 as a strategic direction for the development of all OECD member States for the long term (until 2030) and longer term (until 2050).

At the global level, today there are conditions that call (compel) national governments to step up actions to modernize the economy at a qualitatively new level, which is based on the idea of "greening" production and technology.

Official documents of various States that define the "green" economy emphasize various aspects of its mission in social economic development:

- for developed countries, the priority is competition and job preservation;
- for developing countries - sustainable development, the fight against poverty, issues of equity and citizen participation;
- for the BRICS group countries - resource efficiency. (BRICS group: Brazil, Russian Federation, India, Republic of China, South Africa)

But it is significant that the actual environmental problems, especially the environmental limits of development, do not appear in the definitions of the "green" economy in the documents of any of these groups of countries. Thus, it is proved that the main thing in the "green" economy is not environmental problems, but problems of economic development and social policy.

At the beginning of the twenty first century, the idea of introducing environmental standards in the world economy, focusing on the maximum reduction of carbon intensity and energy intensity of production, reached a new level of fulfillment, expressed in a new UN initiative, the so-called "New global green course" (2008), which focuses on combining the development and climate conservation tasks through the priority development of environmental niches of growth and the latest environmentally friendly technologies.

Currently, we can talk about the existence of a multi-level system that affects the behavior of companies in the financial and non-financial sector, motivating them to implement in their activities standards of corporate environmental and social responsibility, developed by a particular regulatory structure.

### **Barriers to the development of green finance**

The scale of the global "green" economy is still relatively small, but the pace of development of this segment is very high, due to two reasons: the high rate of institutionalization of environmental standards in the economic practice of States and the

rapid growth of investment in the "green" economy. A strong influx of investment and the rapid pace of development of the "green" economy have generated serious expectations, among a certain part of scientists and politicians, of great prospects for this segment of the economy. This is indicated by numerous reports and forecasts, including by specialized UN organizations, prepared with the participation of international experts, government bodies and scientific structures of both developed and developing countries. Taking into account the expectations of supporters of "green" growth, however, it seems appropriate to distinguish expectations from factors that significantly affect the scale and effectiveness of the transformation of the world economy in the direction of "greening".

The development of the "greening" of the economy has also revealed a number of problems. We can identify a number of factors that hinder "green" economic growth, grouping them by the level of impact on the factors of the external and internal investment environment.

The factors of the external investment environment should include:

- an imperfection of the market in the sphere of ecology. This problem is confirmed by the existence of negative external effects and the effect of collective rejection (the tragedy of public resources). Both of these effects are cases in which the actions of individuals and firms pursuing their own interests in a strategic and rational way within markets produce various kinds of economic inefficiency (Rogers, 2010);
- a high level of conservatism in the nature of economic development, which is due to the inertia of its institutional and technological base. This is reflected in the inability of the world economy to adapt production processes to the conditions of declining demand at the same rate as it adapts these processes to the conditions of growing demand. As a result, the decline in demand and income is not accompanied by an adequate reduction in emissions, which is a reason for some subjects to be skeptical about the "green" economy;
- the difficulties in correctly measuring green growth, including ambiguity in estimates of the impact of investment in the development of a green economy on production growth and employment in various industries and non manufacturing sectors. They have a number of manifestations. First, a widely used measure of gross domestic product (GDP) fails to account for resource degradation and depletion, and so the green growth can be unsustainable (Reilly, 2012). Second, significant differences in the level of development of the green economy, the nature and extent of the impact of green investment on the economic growth that exist between countries and between the different types of the economic activities (production complexes) also have a big impact on the measurement of green growth.

There are several causes of the measurement problems: the limited availability of various natural resources; lack of political support "green" industries or processes, to ensure the "greening" and lobbying the interests of large companies; lack of institutional support of the green economy in general and clean energy at the national level; the ambiguity of the superiority of private "green" technologies over traditional performance



and efficiency; discussion of attributing certain industries and technologies to environmentally friendly and nature saving.

But the transition to a model of the sustainable economic growth requires high quality macro indicators, which are necessary for global governance institutions to assess the success of countries on this path, and serve as one of the arguments for initiating measures to influence States that violate or ignore the conditions of global and international cooperation. To this end, not only are new ratings being created, but a number of existing ratings and rankings are expanding their analysis of indicators that take the competitiveness of countries beyond the traditional concepts of the economic growth, including the assessment of institutions, the policies and factors that support the performance of nations in the long term while ensuring environmental and social sustainability.

- difficulties in assessing the consequences of actions and environmental damage.

This is because the assessment cannot be made before the actions themselves are taken. The results of assessing the likelihood of environmental damage from these actions are considered somewhat questionable, and public policy is given a central role in decision making regarding the environmental pollution and the depletion of natural resources under the conditions of uncertainty (Holt, 2009).

A factor in the internal investment environment is the financial sector itself as an organizer, intermediary and source of investment financing, which prefers investments in existing technologies and traditional companies (outdated, focused on large enterprises, and "dirty"), rather than newer, small and "green" (King, 2012). Here we should highlight a number of reasons that make up this factor:

- weak development of competencies in the financial sector. Green Finance requires special technical knowledge and skills, in addition to knowledge of General issues related to Finance. Financial institutions do not have specific plans to improve the skills of staff needed to evaluate "green" projects and comply with environmental risk assessment;
- lack of an effective system for monitoring and controlling compliance by financial institutions with the green Finance policy. This circumstance reduces the initiative and activity of financial institutions to implement a policy of "green" financing and does not encourage them to make greater efforts to facilitate the transition of the domestic economy to sustainable development;
- weak diversification of sources of financing for "green" investments. Despite the existence of various financial alternatives to Bank loans (carbon finance, venture capital, private equity, etc.), the size and availability of funding from such sources were small and limited.

Venture capital and private equity can play an important role in financing the "green" growth of the national economy. However, these investments often support projects at a later stage, when the risk is low and the payback period is shorter, whereas many projects, for example in the field of green energy, need more support at the initial stage (Shen, 2013).

The identified factors have now been evaluated. There is a growing understanding in public opinion that short term commercial and entrepreneurial interests should not prevail over environmental ones.

### **Comparative analysis of investment financing mechanisms in "dirty" and "green" projects**

The transition from a traditional economy to a "green" economy is now one of the central topics of discussion on global business and political platforms. Having begun to take shape in the twentieth century, this problem has now become one of the key trends in global economic growth management.

But until now, the process of transition of countries to a "green" economy has not become the prerogative of development for the vast majority of countries on our planet. However, there are countries that are particularly active. In this regard, the study of the experience of these countries, a careful consideration of the forms of state support used and the developed market instruments for financing "green" projects will clarify the factors that support "dirty" investments and deter "green" investments. Let's examine more closely the financing mechanisms for "green" investment projects that are emerging in individual countries.

#### Example of the United Kingdom

The UK government has ambitious plans to transition to a low carbon, energy efficient and environmentally sustainable economy. Active efforts to transition to a green economy in the United Kingdom began with the adoption of the Climate Change Act in 2008 (Act, 2008), which aims to reduce carbon dioxide emissions by 80% by 2050 compared to the baseline year of 1990. The law sets out measures to improve resilience and adaptation to the effects of climate change: achieving the renewable energy target of 15% of all power from renewable sources by 2020 in compliance with the EU renewable Energy Directive; recycling 50% of household waste by 2020; and reducing landfills of biodegradable urban waste by 35% by 2020 compared to 1995 (HM Government, 2011).

The transition to a green economy in the UK requires significant investment. For example, in the field of energy (renewable energy sources, carbon collection and storage, electricity transmission, etc.), at least 100 billion pounds are required; for renewable heat sources – about 10 billion pounds until 2020; for energy efficiency of homes from 14 billion to 21 billion pounds (HM Government, 2011). At that time, the Green Investment Bank commission (GIB) identified a number of barriers to investment in green projects in the UK (Green Investment Bank Commission, 2010):

- limits of investment market capacity and limited balance sheet capacity;
- political and regulatory risks,
- lack of trust among investors, taking into account technological risks, lack of transparency in public policy, and high capital requirements for commercialization,
- the difficulty of attracting institutional investors to low-carbon investment projects of small volumes.

In order to eliminate these barriers and attract investment in green projects, the UK government created the green investment Bank (GIB), which began operating in October 2012. The main objectives of this institution are to eliminate market failures and stimulate the flow of investment from the private sector in green infrastructure projects. The Bank uses the following main instruments: direct (credit and equity investment); indirect (investment Fund and guarantees).

Another institution that provides state support for "green" projects is the British business Bank. Its main goal is to increase financing for small and medium-sized businesses. This Bank does not provide financial resources directly, but operates through partners. For example, the VC Catalyst Fund program, which supports venture funds.

In addition to state guarantees, tax incentives are applied to support the country's transition to a "green" economy. For example, in order to reduce the amount of waste in landfills in the UK, a landfill tax was introduced in 1996, which is the first tax in this country introduced for an environmental purpose. The tax rate is from 2.65 to 84.40 pounds per ton. For businesses, there are also tax deductions that are applied when purchasing energy-efficient equipment with low CO2 emissions.

In addition to government support for "green" investments, market-based mechanisms for "green" financing are emerging in the United Kingdom. One of these mechanisms is social responsible investment funds, which Finance social and environmentally oriented projects and inform consumers about them.

Along with social responsible investment funds, ethical (social and environmentally oriented) financial products have emerged: current accounts, savings accounts, lending, insurance, mortgages, etc., i.e. "ethical banking". These services are provided by the following financial institutions: Charity Bank (savings account), Tridos Bank( savings account), Ecology BS (savings account, mortgage), Unity Trust (savings account), Naturesave (insurance), Golden Lane Housing (issue of "ethical" bonds).

But there are a number of problems and barriers that arise in the development of an "ethical" financial market: the lack of interest of major UK banks in this market; a high level of control over banks in this market, which leads to increased costs; lack of awareness among consumers; high risks and low returns on investment.

#### Example of Germany

Germany is one of the initiators in the sphere of political policy on the "green" economy, since the first Federal environmental program was developed in 1971 (Golden Growth, Germany). In 1973, the first oil crisis contributed to a sharp increase in the price of oil, which led to the passage of the energy conservation act in 1976. A mechanism has been developed to encourage investment in environmental protection through interest rate subsidies (Schröder, 2011).

In July 2007, after the G8 meeting, the German government set the following goals:

- reduce greenhouse gas emissions by 40%,
- increase the share of renewable energy sources to at least by 30%,

- increase the share of renewable heat sources to 14%,
- double energy efficiency,
- double the combined production of electricity and heat to 25% of electricity generation.

Since 2007, the German government has published a series of actions targeted at achieving the set goals, which include various regulations and requirements in the sphere of the environment (for example, since January 1, 2009, owners of new homes must provide heating and cooling from renewable energy sources; setting limits on greenhouse gas emissions by vehicles; tax incentives for the establishment of power management systems in enterprises since 2013, etc.).

State financial support for "green" projects in Germany is provided by the national investment Bank "Die Kreditanstalt für Wiederaufbau" (KfW), which was established in 1948 to implement the Marshall plan. The Bank is jointly owned by the German Federal government (80 percent) and the federal states of Germany (20 percent) (Wigley, 2013). The main areas of funding for KfW in the sphere of ecology are renewable energy sources, energy efficiency, and low-carbon transport. In 2011, 22.8 billion euros were allocated to Finance environmental projects. The Bank supports "green" projects in the following form (Hubert, 2013):

- concessional lending by using multiple sources of borrowing;
- credit intermediation;
- project lending: attracting appropriate private funds through the formation of consortia (KfW allocates up to 50% of long-term financing);
- targeted subsidies for improving energy efficiency;
- assistance through the Fund's structures;
- guarantees and risk distribution through the system of recrediting;
- industry guarantees;
- the provision of external expertise.

The Bank's investment activities are mainly carried out through the provision of concessional loans to local financial institutions. For large projects, KfW provides direct lending at market rates, closing the market gap (Hubert, 2013).

KfW Bank is funded by private and public funds. But the most important sources of financing for the Bank are international capital and money markets. More than 90 percent of the Bank's capital is in the capital markets and in 2010 it raised more than 76 billion euros from international capital markets (Dolphin, 2012).

KfW Bank uses "green" bonds as one of the tools for attracting financing to "green" projects. The first "green" bonds were issued by the Bank in 2014 for a total amount of 2.7 billion euros.

A separate measure of state support for investment in "green" projects in Germany can also be identified as a Preferential tariff program (Feed in Tariff), which encourages investment in renewable energy sources. This program in Germany was first established by the law "Stromeinspeisungsgesetz (StrEG) "(law on electricity supply) in 1990, and in 2000 - "Erneuerbare Energien Gesetz" (EEG) (law on renewable energy sources). According to this program, it is essential to connect electricity producers from renewable sources and to buy this electricity. This program is funded by distributing costs to all consumers, which guarantees a low cost of electricity (Mendonça, 2009).

In addition to the state investment Bank in Germany, there are a number of financial organizations that provide "ethical financial products" (environmentally and socially oriented) or "ethical banking": GLS bank; Triodos Bank; Umwelt bank; Ethik Bank.

### **"Green" investments - a direction that is formed in the process of forming and developing the process of socially responsible investment**

Socially responsible investing: how it all started. Putting forward by investors the requirement to ensure not only a certain rate of return, but also the compliance of the investment object with a number of social, environmental, ethical criteria, compliance with certain corporate governance standards — a process that was developed in the 1960s in Europe and North America. There are various reasons that have made investors change their approach to investing, namely, to abandon the idea of exclusively obtaining a certain income and arm themselves with the idea of responsible investment, which involves choosing an investment object by taking into account Environmental, Social and corporate Governance Factors. A certain role in this process was played by the complex political situation of those years (regional military conflicts, the struggle for the abolition of the apartheid regime in South Africa and racial discrimination, the difficult environmental situation in the world caused by the rapid growth of industry, etc.), the growing globalization of the world economy and Finance, which demonstrated the close relationship between financial investment and the tasks of ensuring humanity, which caused increased attention of investors to the goals for which the invested money is spent.

Thus, socially responsible investment has emerged as a result of the awareness of the impact of business on the environment and society, as well as the awareness that this impact must be responsible. Understanding the consequences of such influence, business should make the transition to responsible accounting of social, environmental, and managerial factors in investment projects.

Responsible behavior and investment: the impact of the system on the business. As such a worldview has become more widespread in society, institutions have been formed with the goal of spreading the understanding of the consequences of the transition to responsible consideration of social, environmental, ethical and managerial factors in investment strategies among participants in the investment market. Organizations that represent the interests of responsible investors and ensure their effective interaction with governments, regulatory structures, and the public are formed both at the level of individual countries and at the global level. Today we can talk about "the existence of a multi-level system that affects the behavior of companies in the financial and

non-financial sector, motivating them to implement standards of corporate environmental and social responsibility, developed by a particular regulatory structure."

At the global level, it is an Account Ability organization (1995), whose goal is to create transparency in the business activities of companies and their accountability to users who are other participants in business activities; the Global Reporting Initiative (GRI) (1997) is a non – profit organization that aims to develop and disseminate global recommendations on sustainable development reporting to help reporting organizations and stakeholders identify and understand their contribution to sustainable development; The UN global compact is an international initiative in the sphere of sustainable development aimed at introducing 10 universal principles of social and economic responsibility (such as human rights, labor relations, environmental protection and anti corruption) into the activities of organizations around the world.

For the financial sector, standards developed by international financial institutions are significant, such as the equator Principles, which are used to assess environmental and social risks when providing project financing with a total capital expenditure of \$ 10 million or more. By accepting the obligations provided for in this standard, financial institutions undertake to take responsibility for the sustainability of the projects they Finance, since they must ensure that they are developed on the basis of social responsibility and in accordance with sound environmental management practices.

It is also worth nothing that the UN Financial Initiative (FI UNEP) is a set of voluntary principles that implement responsible investment, developed and adopted by financial organizations at the initiative and with the support of the UN environment and sustainable development Program.

The role of the Principles of the international investment Association (Principles Responsible Investment - PRI), formed in 2006, also with the support of the UN environment and sustainable development Program, is growing. They are a set of voluntary principles for responsible investment developed and adopted by institutional investors in order to minimize the risks of long term investment by including ESG factors in investment strategies.

It should also be borne in mind that the leading countries of the world are developing and implementing national regulatory packages that encourage businesses to engage in socially responsible behavior and implement socially responsible management in practice.

Types of responsible investments and categories of investors. In a broad sense, socially responsible investment — from the English Social Responsible Investing – SRI) is an investment in a project, the implementation of which will not only provide the investor with a certain return on invested funds, but will also contribute to solving social problems, ensuring ecological safety and economic growth of the territory where the investment project is being implemented. Since such investments contribute to solving a complex of problems of social economic development of communities living within the borders of a particular territory, and are aimed at achieving sustainable development, these investments also have the following names: sustainable, responsible, impact.

Figuratively speaking, socially responsible investment is the result that is obtained in the process of finding a balance of financial performance for business and public benefit.

At the moment, there is no single approach to defining such investments and a complete description of their structure. The type of investment is determined depending on which factors (from the ESG system) the investor considers most important.

In addition, the process is constantly developing, which leads to the emergence of new types of responsible investments. Investors in the responsible investment market include both institutional investors and retail investors. The investments can be directed both through the financial market and directly to the real sector of the economy. Accordingly, the practice of responsible investment has a diverse range of strategies and investment products, since it covers money market instruments, equity and venture capital, and real investment objects. Thus, the market for responsible investment includes a certain part of the securities market, just like a part of the market for real investment objects.

### **Financing of "green" investments: the Union of the state and the market**

The successful transition to a green economy is facilitated by a number of measures taken by countries at the national and international levels. Among the most important are domestic financial measures taken by an individual country, as well as international cooperation through trade, finance, and market infrastructure.

In general, the positive impact is summarized in five key areas where national governments can achieve the greatest success in the short and medium term in order to introduce innovative and transformational changes by developing green economy activities in various sectors. These include:

- public investment and expenditure (cost optimization in areas that stimulate the green economy);
- use of environmental taxes and other market instruments that minimize the external impact on the environment and compensate for market weakness;
- reform of environmentally harmful budget subsidies (limiting state support for industries that Deplete natural capital);
- improvement of legislative regulation;
- international collaboration development in the sphere of ecology and management of resources.

The idea of financing models for green growth and its supporting foundations were formed gradually, in process of accumulation of experience of countries and development co-operation. The key role in this process was played by international conferences and, first of all, by United Nation conferences, in which the exchange of experience and development of the global action plans for "greening" the economy and finance were carried out, which eventually led to the formation of a modern view of financing, a new model of development of society – sustainable economic development.

### **GREEN BONDS AS A NEW FINANCIAL INSTRUMENT**

To combat global warming, as well as for other environmental projects, billions of dollars of investments are needed, which are attracted, including through green bonds. The green bond market has been around for more than ten years, but investors started

talking about their attractiveness relatively recently when the boom in investment in these securities began.

Mostly, the sphere of green bond investments covers both new and long existing projects in the sphere of energy, transport, waste management, building construction, water supply and land use, less often - communication and information technologies.

The orientation of many states towards the implementation of environmental programs contributed to the successful establishment and the beginning of the accelerated development of this segment, and the presence of socially responsible investors generated an increased demand for such financial instruments. It may be noted that, *ceteris paribus*, such bonds may be more preferable for investors, therefore, certain benefits from their issue exist both for issuers and for market agents themselves. In this paper, the main features of "green bonds" are considered.

According to publications, until 2010 - 2011, the main concerns for the potential investors in green bonds were related not so much to the issues of their profitability and pricing, but to the lack of internationally recognized standards and an effective mechanism for controlling the direction of the cash flows. The first issues of "green" bonds or their analogues were marked by the issuers themselves and the expenditure of funds for the purposes stated in the issue prospectuses was not transparent. The existence of standards and certification mechanisms for green bonds, as well as special criteria for evaluating and monitoring the use of funds from the placement of bonds, should, in the opinion of investors, provide a guarantee that these funds are actually spent in accordance with the declared environmental goals of the project. Standards and special marking procedures could give a clear response to the question of how exactly "green" bonds differ from the usual, long-known debt instruments on the market.

There was also a significant number of outspoken skeptics who said that the issue of "green" bonds is a good PR move for issuers and investors who seek to use the "fashionable" theme of environmental protection and climate change to earn additional reputation points.

From the economic viewpoint of issuing such bonds, there is no difference from ordinary bonds. "Green" bonds also guarantee repayment of the debt in a timely manner, plus the payment of a fixed or floating interest rate. The only difference is the marking that indicates the direction of funds from the issue to "green" projects. Currently, labeling is carried out on the basis of international rules and procedures contained in the Principles of "green" bonds and the standard of climate bonds adopted by international organizations.

Certification provides disclosure of information about the expenditure of issue funds, which is necessary for two reasons. First, the investor is convinced that the funds provided to them are actually spent on "climate" purposes. Second, public authorities are able to support the green bond market both from the demand side for borrowed funds (the Issuer) and the supply side (investors in securities).

According to analysts (Climate Bonds Initiative, 2016), the active demand for "green" bonds is confirmed by the following facts:



- placement of "green" bonds is very fast, just a few hours after the official start of bond sales;
- it is not uncommon for the actual amount of subscription to "green" bonds to exceed the originally planned amount of the issue;
- conducted surveys of major institutional investors clearly indicate an increased demand for various types of "green" bonds. In the meantime, many investors note the expansion of the set of issued "green" bonds, in particular, the more active participation of the corporate sector in the issuance of such bonds;
- numerous specialized "green" funds have appeared on the market, established by all major groups of institutional investors to invest in "green" bonds.

What are these securities for? Green bonds can serve as a tool for the transition to an environmentally sustainable economy at a time when global governments are stepping up their efforts to combat global warming, especially after the Paris climate agreement was signed in December 2015. The benefits of issuing such bonds exist for both issuers and investors. By financing environmental, energy efficient and low carbon projects, the Issuer creates an image of a progressive organization focused on long-term and sustainable development. It is reasonable to assume that investors, especially those who position themselves as socially responsible, may prefer such issuers. In addition, these bonds may attract fundamentally new investors who were previously not ready to place their funds in the bonds, but may start to do so in order to support new environmental projects.

This circumstance is supported by the fact that the popularity of "green bonds" is growing every year. For comparison, if in 2015 such securities were issued for \$ 36.7 billion, in 2019 total green bond issue was already for USD257.7bn, which is 51% higher than the previous year 2018 (Green Bond Highlights, 2019).

Today, issuers of "green" debt securities are a wide variety of supranational organizations (European investment Bank, world Bank), municipal / provincial / national governments. banks, large corporations, target companies, and various government agencies.

Who invests in green bonds and why? Recall that this bond is based on the most common debt instrument, which is characterized in the eyes of the investor primarily by relative security in comparison with other portfolio instruments (VanEck, 2017). So investors can be any investors in bond securities. Nevertheless, institutional investors are the leaders in this area, and they are trying to integrate socially responsible investments into their portfolios.

Institutional investors, which primarily include pension and insurance funds, are traditional investors in fixed income financial debt instruments. Research on the motivations of institutional investors to buy "green" bonds indicates certain changes in the nature of these motives. In the first years of issuing green and climate bonds, investors were motivated by a desire to diversify their portfolios by purchasing low risk instruments, as well as by image (reputation) factors. However, in the current decade,

awareness of the importance of moving to a low carbon and climate resilient economy is becoming increasingly important.

## **DEVELOPMENT OF GREEN FINANCE IN RUSSIA: PROBLEMS AND PROSPECTS**

### **Industry structure of "green" investments in Russia**

Russia currently does not occupy any significant place in the global process of "greening" the economy. Comparing the overall volume of investments in fixed assets with the volume of investments aimed at environmental protection and rational use of natural resources, it should be noted that "green" investments occupy a relatively small share in the overall volume of investments in fixed assets (less than one percent).

Nevertheless, it is possible to distinguish the types of economic activities in which green investments are concentrated. It is traditional for our country's economy related to dirty: mining, which accounts on average twenty three percent of "green" investment; manufacturing, which occupies an average of forty four percent of the total "green" investments, where the leaders are such kinds of economic activities, as production of coke, petroleum products, metallurgical production and production of finished metal products; production and distribution of electricity, gas and water (on average, about twenty six percent).

In comparison with the whole volume of investments in fixed assets, the share of "green" investments is small and these types of economic activities are leaders in terms of investments aimed at protecting the environment and rational use of natural resources. On average, it was: mining 1.23%; manufacturing 2.16%; production and distribution of electricity, gas and water 2.24%.

The existing frankly low results in the sphere of "green" investments in Russia have a sufficient number of reasons, the main ones being the lack of development of the institutional investment environment and national financial markets. Let's look at the problems in attracting "green" investments in more detail.

### **Problems in attracting investment in "green" projects**

The movement towards a "green" economy was stated as a development priority in the concept of long term social economical development of the Russian Federation up to 2020. In this document, the direction of transition to an innovative socially oriented type of economic development associated with "green finance" was formulated as follows: gaining a dominant position in developing renewable energy sources and the integration of eco friendly energy production technologies on an industrial scale.

By now, Russia has already laid the legal hypothesis for the transition to the so called "green" economy. The principles of state politics in the field of environmental development of Russia up to the 2030 were approved on April 30, 2012, where the strategic target of government policy on environmental development stated, the decision social economic problems, providing ecologically oriented economic growth, preservation of favorable environment, biological diversity and natural resources to satisfy the needs of present and future generations, the realization of the right of everyone to favorable environment, strengthening the rule of law in the sphere of

protection and ensuring safety of the environment. According to this document, this goal is achieved by solving the following main tasks:

- ensuring environmentally oriented economic growth and implementation of environmentally efficient innovative technologies;
- preventing and reducing the current negative impact on the environment;
- restoration of violated natural ecological systems;
- ensuring environmentally safe waste management;
- development of economic regulation and market instruments for environmental protection and environmental safety;
- improving the system of state environmental monitoring and forecasting of natural and man made emergencies, as well as climate change;
- scientific and informational analytical support of environmental protection and environmental safety, etc.

Subsequently, the Government of the Russian Federation adopted an action plan for the execution of the Fundamentals of state policy in the area of the environment development of the RF for accounting period up to 2030, including a series of measures:

- preparation of proposals on the development of voluntary mechanisms for environmental responsibility of organizations with the participation of the state and the transition of state corporations to mandatory non financial reporting in the sphere of environmental protection and environmental safety in compliance with international standards;
- the inclusion of non financial reports of organizations contains the indicators (groups of indicators) in the area of environmental protection in the annual state reports on the condition and environment of Russia, same as its placement on the official website of the Ministry of mineral resources (implementation period 2015 - 2030; responsible executors - Ministry of natural resources of Russia, concerned Federal Executive bodies), etc.

The urgent task of implementing environmentally efficient innovative technologies has been repeatedly emphasized by the President of the Russian Federation in his messages to the Federal Assembly.

A set of measures focused on eliminating the use of outdated and inefficient technologies, switching to the principles of the best available technologies and implementing modern technologies was adopted by the decree of the Government of Russia dated March 19, 2014.

Thus, the problem of developing the concept and mechanism for implementing a new model of innovative growth was raised at the level of the country's top management. It is necessary to take further actions in the specified direction.

Russia has stepped up its activities in the sphere of green regulation since 2007 a number of documents have been adopted aimed at implementing measures in the sphere of climate change mitigation and adaptation, both conceptual and applied. The measures taken by the Russian government recently demonstrate the importance and priority of

developing a new low carbon economy, just like increasing its resilience to projected climate changes at the national level.

However, the attention is drawn to the fact that the focus is primarily on organizational, technical and scientific problems in the sphere of ecology and environmental protection, while economic and financial issues that ensure their adequate accounting, effective implementation and successful implementation in practice are not given sufficient attention.

At the conceptual level, we can say that there are no approaches to the formation of financial and economic levers for "green" economic growth.

For example, the concept of development of the securities market in Russia and the development Strategy of financial market of the RF for accounting period till 2020 do not contain provisions providing for the formation of the role of institutional investors and the stock market in the promotion of responsible investment, promoting international initiatives in the area of responsible investment approaches to formation of indicators, or statements characterizing the performance of social and environmental activities of both investors and investees.

The main activities of the Government of the Russian Federation up to 2018 also do not contain clear instructions on the need to present global, international, industry specific and individual corporate initiatives in the sphere of responsible investment into national practice.

In addition to conceptual level analysis of the Russian approach to the execution in practice of state regulation of the financial and economic relations the concept of "green" economic growth identifies problems of the current stage of development and approaches to their solution, can become the starting point in this task, located on the operating level (the level of interaction of economic entities, government and business).

First, financial organizations operating on the Russian market use different approaches to integrating social and environmental responsibility mechanisms into their activities. Some choose to develop and implement their own internal mechanisms and accountability systems in relative isolation. Others can develop activities in the area of environment, society and corporate governance, focusing on membership in horizontal international networks such as the Equator Principles and the UN principles of responsible investment.

To maintain and increase their competitiveness, major Russian banks such as Sberbank of Russia and VTB have adopted and implemented environmental policies as part of their corporate social responsibility. They not only provide financial support to projects that contribute to the preservation of the natural environment, but also improve the management of their own resource and energy consumption, promote environmental awareness in the business environment and, importantly, have transparent procedures for disclosure of non financial information in the form of corporate social responsibility reports.

Despite the active incorporation of the principles of environmental responsibility by Russian financial organizations into their business practices and the development of

"green" financing, "green" banking in Russia is still at the stage of its formation. Therefore, there are currently no generally accepted and legally established definitions of "green" investments, criteria for classifying projects as "green" and an effective system for monitoring compliance by financial organizations with social and environmental standards in practice.

Secondly, Russia is still at the very beginning of building a system of inspection control over institutions that check investments for compliance with "green" standards. The system as such has not yet been defined, but there are a number of government initiatives that could form the basis of a future inspection system. We are referring to the following initiatives that do not, at first glance, relate to the inspection of investments that meet the "green" standards, but can become a starting point in solving this task.

### **Promising areas for attracting financing to "green" projects**

Russia has already set a trend for ecologization. Yet, the concept of "green" economic growth is gradually being introduced into the practice of state regulation of financial and economic relations. The following key elements can be identified in this process today.

1. Formation of approaches to integrating the principles of environmental responsibility in the corporate policy of financial organizations.

Financial organizations are recognized as a key element in the process of "restarting" the economic growth model, since they provide financial support to investment projects implemented by businesses. Today, financial organizations operating on the Russian market use different approaches to integrating social and environmental responsibility mechanisms into their activities. Some choose to develop and implement their own internal mechanisms and accountability systems in relative isolation. Others are developing activities in the sphere of environment, society and corporate governance, focusing on membership in horizontal international networks such as the Equator Principles and the UN principles of responsible investment.

Despite the intensive incorporation of the principles of environmental responsibility by Russian financial organizations into their business practices and the development of "green" financing, green banking in Russia is still in its infancy. Therefore, at the moment there are no generally accepted and legally established definitions of "green" investments, criteria for classifying investment projects as "green" and an effective system for monitoring compliance by financial organizations with social and environmental standards in practice.

2. Building the structure of inspection institutions that check investments for compliance with "green" standards.

Today, Russia is going through the stage of forming a system of supervision over "green" technologies, which creates prospects for the creation of a system of supervision over "green" investments, among other things.

As the first system element, in our opinion, we should recognize the totality of state authorities and management bodies and organizations created under them with certain powers in the field of ecology and resource conservation. This:

- The Ministry of Energy of the Russian Federation in terms of powers to enhance the effectiveness of the usage of fuel and energy resources and the functioning of the fuel and energy complex of Russia;
- The Ministry of Economic Development of the Russian Federation, which develops the policy of the state and legal regulation in the area of investment activities and public investment, improving the energy effectiveness of the country's economy;
- Federal Agency for technical regulation and Metrology in terms of competence for the implementation of programs for the national standards development and approval of these programs.

The second element of the emerging system should recognize a non - commercial partnership "Center of ecological certification - Green standards", which is engaged in the design and development of "Green standards" (Green building).

The third element of the emerging system is other organizations that work to improve the environment. This includes various voluntary certification organizations and testing laboratories (centers).

In the future, there is also the possibility of using credit rating agencies as third-party inspection institutions, which, in turn, check financial market instruments for compliance with "green" standards.

3. The need for reforms of the national financial market. In some parts of Russia, attempts are already being made to form a mechanism for state financing of "green" investments.

First, it is possible to provide state guarantees for investment projects related to energy conservation and energy efficiency in the housing and utilities sector and in industry. Second, the Russian industrial development Fund has been established to provide loans for the development of new high-tech products, technical re-equipment and the creation of competitive production facilities based on the best available technologies. Rules have been developed that allow the Fund to direct funds within the framework of public-private partnerships to implement the best available technologies.

But this is not enough to involve the resources of the national and, especially, the global financial market in the process of "greening" the domestic economy on a larger scale. There is a need to implement reforms in the financial market and create mechanisms for state financing and guaranteeing "green" investments.

Perspective:

- it is essential to integrate the principles of green economic growth policy into the emerging vertical of state financial planning, and decentralize this policy, ensuring the active and interested participation of the sub-Federal level of management;
- there is a need to fill the existing gaps in the system of regulation of green growth, special measures to support investors in green projects, develop and

implement public - private partnership mechanisms, and create a financial market infrastructure that supports green investments;

- allocation of budget funds for "green" growth.

In accordance with the selected key elements of the process of "green" growth of the country's economy, formulated the following perspective directions of raising Finance in green investment projects, which will provide access to financial resources that are traded in the global financial market through projects supported by the World Bank and will enhance the consolidation of financial resources for green investments in the national market.

In Russia, there is currently a situation where, on the one hand, both the state and big business are aware of the need to transfer the national economy to a low carbon, climate resilient path of development, but on the other hand, there are clearly not enough sources of funding for this transfer (largely due to the fall in Russian budget revenues and the current crisis). Naturally, there is a question of attracting extra budgetary sources. And here it was logical to use the mechanism of "green" bonds to overcome the problems of "green" growth.

Russian investors also have high expectations in connection with the draft Federal law "on the specifics of investing in infrastructure using infrastructure bonds" that has been prepared and submitted to the State Duma. According to experts, this law will facilitate the financing of infrastructure projects not only through budget investments and other budget funds, but also through the use of mechanisms and instruments of the public debt market, namely infrastructure bonds. The draft law defines infrastructure bonds as bonds issued by a specialized project organization for the purpose of raising funds intended to finance the creation and (or) reconstruction of infrastructure. The document regulates the relations of the parties arising from the issue and circulation of infrastructure bonds, establishes guarantees of the rights and legitimate interests of investors, regulates the monitoring of the intended use of financial resources received by the Issuer, etc.

At that time, the existing legislative framework, even with the amendments adopted, is not sufficient to organize the green bond market in Russia. It is a need to develop a legal and methodological framework that is directly "sharpened" to address the problems of "green" project financing, primarily the standardization of "green" bonds (the introduction of standards for collateral assets, requirements for their structure, rules for responsible lending, standards of statutory documents, standard agreements on transactions, etc.).

It will also be necessary to amend legislation to protect the rights of institutional investors in green bonds, as well as the ability of the Russian Pension Fund and non-state pension funds to invest in such bonds.

"Green" bonds can become a reliable tool for investing people's savings, which are characterized by a relatively high rate and growth rate. From the very beginning, green bonds were positioned not just as a new type of bond, but as one of the most effective

tools for financing the transition of global and national economies to a low carbon, climate resilient path of development. This is a long-term goal, and it is certainly up to the state to determine the directions and ways to solve it, both in countries with a high level of economic development, and in countries with developing and transition economies. Accordingly, the definition of tools to achieve this goal can also not be carried out without the participation of the state.

First of all, it is important for the state to ensure the launch of the green bond market, creating favorable conditions for all stakeholders and market participants and balancing their economic interests. But in strategic terms, it is even more important for the state to coordinate the development of this market with the solution of macroeconomic problems related to the stabilization of the financial system and "green" growth.

The stage of formation of the green bond market is of exceptional importance for all stakeholders, since it is at this stage that the vector of market development and the mechanism of its interaction with those sectors and parts of the economy that will primarily depend on green investments, including green bonds, is set by joint efforts.

At the stage of development of the "green" market, the state actively supports its growth, in particular, because many green investment projects are implemented on the principles of public-private partnership. It is not uncommon for the state to initiate large issues or guarantee green bonds.

For the development of the green bond market, both on a national and global scale, international cooperation is crucial, primarily in order to develop international standards that would be recognized by participants in national green bond markets.

For issuers of "green" bonds, the presence of generally accepted standards means reducing the costs of preparing the issue and placing the bonds, in particular, confirming the "green" nature of the bonds. In addition, compliance with generally accepted standards allows issuers to expect higher bond credit ratings and cheaper borrowing.

For investors, compliance of green bonds with international standards significantly reduces the risk of non-payment. It is noteworthy that it was institutional investors (large insurance and pension funds, various investment companies) who were most active in forming international working bodies to develop standards for "green" bonds.

Within the G20 group, the Russian Federation actively cooperates with other participants in finding solutions to issues of private capital mobilization for green investments, including through the organization and development of the green bond market.<sup>27</sup> To date, the conditions for the "launch" of this market have been largely formed.

First, it is the formation of institutional and organizational prerequisites for the green bond market. Russia has adopted and is implementing the main strategic documents that set priorities for state policy and define the role of the financial market and its instruments in the transition of the economy to green growth. Thus, the concept of long term social economical development of Russia over the period up to 2020 lists the



following fields of change to an innovative socially oriented type of economical development, related to "green" financing:

- development of the human potential of Russia (one of the results is called improvement of the quality of the environment and environmental conditions of life);
- consolidation and expansion of Russia's global competitive advantages in traditional areas (energy, transport, agriculture, processing of natural resources), including gaining a domineering position in developing renewable energy sources and the integration of eco friendly energy production technologies on an industrial scale.

The Concept also includes a section "Environmental security of the economy and human ecology", which identifies three areas of ensuring environmental security of economic development and improving the environmental environment of human life.

The first direction is the ecology of production - a gradual reduction in the levels of environmental impact of all anthropogenic sources.

The second direction is human ecology-creating an environmentally safe and comfortable environment in places where people live, work and rest.

The third direction is environmental business-creating an effective environmental sector of the economy.

The document notes that ensuring the environmental efficiency of the economy is not only a special area of business and economic policy, but also a General characteristic of the innovative development of the economy, which is closely related to improving the efficiency of resource consumption.

In the framework of the state policy in the sphere of environment development of the Russian Federation up to 2030 as a strategic aim of state politics in the area of the environment development of the inventive solution of social economic problems, providing ecologically oriented economic growth, preservation of favorable environment, biological diversity and natural wealth to fulfill the needs of present and future generations, the realization of the right of everyone to favorable environment, strengthening the rule of law in the sphere of protecting and ensuring safety of the environment. According to this document, this goal is achieved, in particular, through the introduction of ecological effective innovative technologies, the development of economic regulation and market instruments for environmental protection.

In the meantime, the strategy for the development of the financial market of Russia up to 2020 identified as one of the tasks the development of market instruments for mobilizing private capital to Finance infrastructure projects for the development of transport, energy, housing and communal and social infrastructure. It is proposed to introduce measures directed at stimulating investment in infrastructure bonds, protecting the rights of holders of infrastructure bonds and the possibility of investing in such bonds amounts because of credit institutions, pension savings, including accruing to the Pension Fund of

the Russian Federation, pension reserves of private pension funds and mutual fund assets. As noted in the strategy, this measure will attract investment to finance infrastructure projects and meanwhile expand the list of objects for investment of pension savings and placement of pension reserves of non-state pension funds.

In accordance with the adopted strategic documents, significant amendments were made to the legislative and methodological framework aimed at encouraging enterprises to implement the so-called best available technologies and the introduction of strict environmental standards, the development of bond financing instruments, as well as the system for monitoring, reporting and verifying the volume of greenhouse gas emissions.

Of course, all these regulatory measures are important for the transition to green growth and the mobilization of private capital for this purpose. However, they are fragmented, insufficient and do not focus on the goals and mechanisms of "green" financing. "Green" financing in Russia is still at the stage of its formation. Currently, there are no generally accepted and legally established definitions of "green" investments, criteria for classifying projects as "green", and an effective system for monitoring compliance by financial organizations with social and environmental standards in practice.

Russia has a successful experience in developing industry-specific "green" performance standards (for example, in the area of energy saving and energy efficiency, construction, where the system of facultative certification of real estate objects "Green standards" operates). This experience can help in preparing national standards for green bonds. It is highly desirable that these standards comply with current international standards developed by the Climate Bonds Initiative and Green Bond Principles.

In Russia, there are also a number of state organizations that can become the basis of a system of certification, verification and confirmation of authenticity of bonds: the Russian energy Agency, which can verify programs and projects in the area of energy saving and power efficiency, various voluntary certification systems, and other organizations that exercise their activities so as to enhance the environment.

It is possible to apply the experience of a number of foreign countries in terms of attracting credit rating agencies to verify that the issue of bonds meets the standards of "green" bonds.

We should also not forget that the bond market in the Russian Federation has already been formed and is successfully functioning. There is an appropriate regulatory framework, a defined range of participants, and mechanisms for monitoring and supervising the market.

Meanwhile, as foreign practice shows, the formation of the green bond market (given its special role in solving strategic tasks of green economic growth) requires coordination of actions and maintaining a balance of interests of a wider range of stakeholders than in the conventional bond market. The successful development of the green bond market directly depends on the success of projects that are implemented in green industries and parts of the economy. Therefore, the number of stakeholders, as well as the state bodies

that will act as a coordinator of the development of the green bond market in Russia, should include the bodies that manage these "green" sectors and representatives of companies working in these industries.

Secondly, it is the formation of tools for state stimulation of the green bond market. Russia has a system of tax incentives for organizations that invest in innovations. Yet, the question of the extent to which it will cover the sphere of "green" financing and whether they will be sufficient for the development of the green bond market requires further study.

It must also be pointed out that Russia uses the mechanism of state guarantees for bond loans, which can also be applied to "green" bonds.

Third, we are studying the issue of conducting a strategic issue of green bonds by Vnesheconombank

As foreign experience shows, strategic bond issues carried out by multilateral or national development banks are of great importance in launching the green bond market. In Russia, this role could be played by Vnesheconombank, a leader among Russian banks in applying responsible financing practices designed to minimize the environmental and social risks of funded projects.

In accordance with the best international practices in the sphere of sustainable development, Vnesheconombank consistently integrates the principles of responsible financing in its activities, focused at improving the effectiveness of the environmental and social risk management system for investment projects, so as at effectively promoting environmental protection.

Thus, to date, Russia has created General conditions for the formation of a green bond market. A number of strategic documents have been adopted and are in effect, defining the goals and objectives for the transition of the economy to the path of "green" growth and the role of the financial market in this process. Amendments have been made to regulatory legal acts regarding the regulation of the securities market, in particular in the securitization and asset aggregation, which is important for the issuance of structured types of "green" bonds. We have accumulated some experience in developing industry standards in the "green" spheres of the economy, which can help in the development and implementation of "green" bond standards. There are institutions that have the necessary capacity to issue green bonds. However, the organization and development of the green bond market requires a comprehensive approach and a long term policy of state support for this market.

During the last years, green bonds have become one of very popular instruments for financing green growth as in developed and developing countries. The green bond program of the World Bank is focused at ensuring sustainable economic growth and reducing the level of negative human impact on the environment in developing countries.

The participation of Russia in the World Bank Group's green bond Program allows us to solve a wide variety of tasks related to the development of a climate resilient national economy. Russia, owing to its unique geographical location, size and natural resources, has a special mission for the whole world: if its nature and ecology become bad, it will be bad for everyone. In the context of ESG, this is our advantage. The environmental and climate agenda allows Russia to show its attractiveness, and we must use it.

The use of "green" bonds in comparison with other financial instruments has a number of advantages related to the high rating of such bonds, their long maturity, high demand from investors, the targeted nature of investments (transparency), the availability of international standards and procedures for selecting projects for investment, rules for evaluating the effectiveness and efficiency of "green" projects. The importance of green bonds as a tool for financing green growth and ensuring sustainable development of national and global economies in the coming decades is evidenced by the fact that the topic of green investment is regularly included in the agenda of major international summits.

## **CONCLUSION**

The working hypothesis of this study suggested that significant investment in the Russian economy can be carried out by an effective method, which implies not only production investment in high tech solutions, but also an effective financing mechanism that can redirect both internal and external financial resources and financing technologies to "green" projects.

This hypothesis was confirmed throughout the study and thus the second goal of the thesis has been achieved, which is revealed by the results formed in the course of solving the problems of the study. Let's give a brief description of these results:

We have studied the concepts used to justify the economic efficiency of reorienting investment flows from projects and industries that contribute to environmental pollution to "green" projects and industries, as well as to restore the environment.

The study of theoretical approaches has allowed us to identify three main directions in economic theory, within which the concepts of solving environmental issues and problems are formed:

- a neoclassical school whose representatives view environmental problems as externalities that can be eliminated through taxes, permit trading, and so on.;

- the school of environmental Economics, whose representatives see the problem in economic growth itself, since the economy is part of the ecosystem, and it is limited. The solution to the problem in this area is seen as limiting economic growth, which is very difficult to implement in a capitalist economy;
- the Post Keynesian school, whose proponents consider a number of problems that constrain "green" growth, highlighting as the main fundamental uncertainties and low flow of investment in "green" projects, and offering a set of measures to address them.

The obstacles and advantages of the transition to "green" economic growth formulated in the framework of the described theoretical approaches can be structured depending on the level of impact on macroeconomic and microeconomic ones.

The general conclusion drawn from the study of this issue is that in order to transition to a new ("green", resource efficient) model of economic growth, it is essential to "restart" the country's economic growth model chosen by the ruling elites. This will eliminate the contradiction between the development model and the tools for its implementation and ensure a path of sustainable social economic development.

Based on the study of foreign experience, the factors and reasons that ensure the preservation of "dirty" economic activities and support the flow of investment in projects that contribute to environmental pollution and, accordingly, the factors and reasons that impede the development of "green" economic sectors and the flow of investment in "green" economy projects are identified.

As factors supporting the inflow of investments in "dirty" projects and hampering the inflow of investments into projects of green economy should be highlighted: the high level of conservatism of economic development because of institutional inertia and technological base; significant differences between countries and between different spheres of the economy in the level of development of green economy, the nature and magnitude of the effect of green investment on economic growth; ambiguity of the impact of investments in the development of a "green" economy on the growth of production and employment in various sectors of the production and non-production sphere of activity.

As a result, today national governments operate in conditions that are designed to encourage them to take active actions to modernize the economy at a qualitatively new level, which is the basis of the principle of "greening" production and technology. Insufficient consideration of this fact reduces the effectiveness of integrating the national economy into the international system of division of labor and restricts the ability of

national businesses to connect to financial resources that are formed in foreign financial markets in order to expand sources of financing for productive investments.

A comparative analysis of market mechanisms for financing investments in "dirty" and "green" projects and a comparative analysis of state support mechanisms is conducted.

The main conclusions are as follows:

- financing mechanisms for "green" investment projects do not differ in principle and are implemented in the same environment in which traditional investment projects are financed, which cannot but cause competition between them;
- due to the novelty of technologies and the limited knowledge of the markets that "green" products are aimed at, investment projects are more expensive and less predictable, which requires an additional incentive to encourage investors to take risks on investment;
- government intervention allows us to stimulate the process of moving private capital from "dirty" to "green" investments in adequate volumes to meet the challenges of sustainable growth, in an acceptable time frame. Meanwhile, the state should play the role of a catalyst, not an alternative source of financing for "green" projects;
- overcoming barriers to "green" investment, governments around the world form flexible mechanisms for state support of "green" projects.

Although it is possible to include certain specific elements generated by national characteristics and development problems in General, state support covers the following range of methods: targeted budget funding from the budget of the Central (local) government, extra-budgetary funding from attracted sources, direct use of revenues from environmental pollution charges and environmental compensation systems.

The experience of foreign countries also presents various combinations of these options for direct subsidies, combined with tax incentives, low interest loans, issuance of debt securities under government guarantees, and other measures that stimulate demand for environmentally friendly products and technologies:

- A special focus is the government's efforts to create market mechanisms for financing "green" investment projects. First of all, we are talking about reforms in the banking sector that encourage credit organizations to develop "green" commercial lending; the formation of a market for carbon Finance (trade between enterprises with quotas for carbon emissions into the atmosphere); leasing financing (leasing of resource and energy efficient equipment, transport and

technologies); encouraging the investment of venture and private equity capital in new technologies.

Thus, during the operation resulted in extensive information and analytical base, revealing the theoretical foundations of the concept of "green" economic growth that describe the structure and principles of the organization of the global system management of this process, the volume of financial resources concentrated in the "green" investment, the structure and principles of the organization's financial instruments are marked as "green", a detailed review of foreign experience "green" financing and emerging national best practice of "green" investments. This information forms the basis of the proposals being formulated, which are aimed at adapting the best foreign experience and substantiates the sequence of actions for state support of the national investor in terms of attracting resources from international financial markets to finance investment projects.

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## References

Act, C. C. (2008). Crown copyright.

Ajour El Zein, S., Consolacion-Segura, C., & Huertas-Garcia, R. (2020). The Role of Sustainability in Brand Equity Value in the Financial Sector. *Sustainability*, 12(1), 254.

Alliance, G. S. I. (2018). Global Sustainable Investment Review (2016) [http://www.gsi-alliance.org/wp-content/uploads/2017/03/GSIR\\_Review2016.F.pdf](http://www.gsi-alliance.org/wp-content/uploads/2017/03/GSIR_Review2016.F.pdf). Accessed, 9.

Assembly, U. G. (2015). Resolution adopted by the General Assembly on 25 September 2015: 70/1. *Transforming our world: the, 2030*.

Boulding, K. E. (1956). *The image: Knowledge in life and society* (Vol. 47). University of Michigan Press.

CavalCanti, C. (2010). Conceptions of ecological economics: Its relationship with mainstream and environmental economics. *estudos avançados*, 24(68), 53-67.

Climate Bonds Initiative. (2016). *Scaling up green bond markets for sustainable development*. Retrieved on 11th Aug.

Colander, D., Holt, R., & Rosser Jr, B. (2004). The changing face of mainstream economics. *Review of Political Economy*, 16(4), 485-499.

Costanza, R., d'Arge, R., De Groot, R., Farber, S., Grasso, M., Hannon, B., ... & Raskin, R. G. (1997). The value of the world's ecosystem services and natural capital. *nature*, 387(6630), 253-260.

- Daly, H. E. (2007). Ecological economics: the concept of scale and its relation to allocation, distribution, and uneconomic growth. H. Daly. *Ecological Economics and Sustainable Development: Selected Essays of Herman Daly*. Cheltenham, UK: Edward Elgar, 82-103.
- Daly, H. E. (2007). *Ecological economics and sustainable development*. Edward Elgar Publishing.
- de Steiguer, J. E. (1995). Three theories from economics about the environment. *Bioscience*, 45(8), 552-557.
- Dolphin, T., & Nash, D. (2012). *Investing for the future: Why we need a British Investment Bank*. IPPR.
- Drucker, P. F. (2009). *Managing in a time of great change*. Harvard Business Press.
- Falkner, R. (2013). The crisis of environmental multilateralism: A liberal response.
- Fontana, G., & Sawyer, M. (2016). Towards post-Keynesian ecological macroeconomics. *Ecological Economics*, 121, 186-195.
- Geels, F. W. (2013). The impact of the financial–economic crisis on sustainability transitions: Financial investment, governance and public discourse. *Environmental Innovation and Societal Transitions*, 6, 67-95.
- Giroux, H. (1983). Theories of reproduction and resistance in the new sociology of education: A critical analysis. *Harvard educational review*, 53(3), 257-293.
- Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., ... & Toulmin, C. (2010). Food security: the challenge of feeding 9 billion people. *science*, 327(5967), 812-818.
- Golden Growth: Restoring the Lustre of the European Economic Model. (n.d.). Retrieved from <https://www.worldbank.org/en/region/eca/publication/golden-growth>
- Gordon, H. S. (1954). The economic theory of a common-property resource: the fishery. In *Classic papers in natural resource economics* (pp. 178-203). Palgrave Macmillan, London.
- Gordon, S. (1991). *Welfare, property rights and economic policy: essays and tributes in Honour of H. Scott Gordon*. McGill-Queen's Press-MQUP.
- Green Bond Highlights 2019: Behind the Headline Numbers: Climate Bonds Market Analysis of a record year. (2020, February 06). Retrieved from <https://www.climatebonds.net/2020/02/green-bond-highlights-2019-behind-headline-numbers-climate-bonds-market-analysis-record-year>
- Green Investment Bank Commission. (2010). *Unlocking investment to deliver Britain's low carbon future*. Report. London: Green Investment Bank Commission.
- Haila, A. (1990). The theory of land rent at the crossroads. *Environment and Planning D: Society and Space*, 8(3), 275-296.
- Hands, D. W., & Mirowski, P. (1998). Harold Hotelling and the neoclassical dream.



- Hay, P. R. (2002). *Main currents in western environmental thought*. Indiana University Press.
- HM Government. 2011 Update on the design of the Green Investment Bank. Retrieved from [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/31825/11-917-update-design-green-investment-bank.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/31825/11-917-update-design-green-investment-bank.pdf)
- Hollander, S. (1973). *The Economics of Adam Smith*. University of Toronto Press.
- Holt, R. (2009). The relevance of Post-Keynesian economics to sustainable development. In *Environment and Employment* (pp. 166-180). Routledge.
- Holt, R. P., Pressman, S., & Spash, C. L. (Eds.). (2009). *Post Keynesian and Ecological Economics: Confronting Environmental Issues*. Edward Elgar Publishing.
- Hubert, R., & Cochran, I. (2013). *Public Finance Institutions & the Low-Carbon Transition Case Study: KfW Bankengruppe*. CDC Climat Research.
- Iannaccone, L. R. (1991). The consequences of religious market structure: Adam Smith and the economics of religion. *Rationality and society*, 3(2), 156-177.
- Ireland, F. (2014). *Annual report 2014*. Retrieved May, 10, 2016.
- Jacobs, M. (1993). *The green economy: Environment, sustainable development and the politics of the future*. UBC press.
- King, J. E. (Ed.). (2012). *The Elgar companion to post Keynesian economics*. Edward Elgar Publishing.
- Kronenberg, T. (2010). Finding common ground between ecological economics and post-Keynesian economics. *Ecological economics*, 69(7), 1488-1494.
- Kuznets, S., & Murphy, J. T. (1966). *Modern economic growth: Rate, structure, and spread* (Vol. 2). New Haven: Yale University Press.
- Lavoie, M. (1992). *Foundations of post-Keynesian economic analysis*. Books.
- Malthus, T. R., Winch, D., & James, P. (1992). *Malthus: 'An Essay on the Principle of Population'*. Cambridge University Press.
- Marr, S. (2014). Climate and Energy Policy in the eu and Germany at a cross roads. *Journal for European Environmental & Planning Law*, 11(2), 95-115.
- Martinez-Alier, J. (2003). *The Environmentalism of the poor: a study of ecological conflicts and valuation*. Edward Elgar Publishing.
- Mendonça, M., & Corre, J. (2009). Success story: Feed-In Tariffs Support renewable energy in Germany. online] < <http://www.climateparl.net/cpcontent/pdfs/080603%20FIT%20toolkit.pdf>> [date of reference: 7 December 2013].
- Naylor Association Management Software. (n.d.). Retrieved from <https://www.ussif.org/sribasics>
- Petty, W. (1899). *The Economic Writings of Sir William Petty* (Vol. 1). The University

Press.

Pigou, A. C. (2013). *The economics of welfare*. Palgrave Macmillan.

Reilly, J. M. (2012). Green growth and the efficient use of natural resources. *Energy Economics*, 34, S85-S93.

Rezai, A., Foley, D. K., & Taylor, L. (2012). Global warming and economic externalities. *Economic theory*, 49(2), 329-351.

Ringel, M., Schlomann, B., Krail, M., & Rohde, C. (2016). Towards a green economy in Germany? The role of energy efficiency policies. *Applied energy*, 179, 1293-1303.

Rogers, J. O. E. L., & Wright, E. (2010). *American society: How it really works*. New York: WW Norton.

Schröder, M., Ekins, P., Power, A., Zulauf, M., & Lowe, R. (2011). *The KfW experience in the reduction of energy use in and CO2 emissions from buildings: operation, impacts and lessons for the UK*. London: UCL Energy Institute, University College London and LSE Housing and Communities, London School of Economics.

Shen, B., Wang, J., Li, M., Li, J., Price, L., & Zeng, L. (2013). China's approaches to financing sustainable development: policies, practices, and issues. *Wiley Interdisciplinary Reviews: Energy and Environment*, 2(2), 178-198.

SOFA 2019 - *The State of Food and Agriculture in the World*. (2019).

Thompson, D. F. (2015). *John Stuart Mill and representative government*. Princeton University Press.

Turgot, A. R. J. (1793). *Reflections on the Formation and Distribution of Wealth*. McMaster University Archive for the History of Economic Thought.

VanEck. (2017, March 27). *The Investment Case For Green Bonds*. Retrieved from <https://seekingalpha.com/article/4058210-investment-case-for-green-bonds>

Wigley, C. J. (2013). Chapter 15. Revitalising the Green Investment Bank. *The Green Book: New Directions for Liberals in Government*/ed. D. Brack. London: Biteback Publishing.