

Green Course on Greening and Decarbonization of the Economy of Russia and the World

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Abstract: The global transition to low-carbon development is a response to global climate change caused by anthropogenic greenhouse gas (GHG) emissions into the atmosphere. The goal of decarbonization is to reduce, and ideally eliminate, these emissions, in order to thereby mitigate (slow down) climate change and minimize the damage they cause. The implementation of this goal will have the most serious impact on the world economy and Russia. The changes will affect the energy sector, transport, construction, industry and agriculture. The requirements for land and forest management will become more stringent. One outcome of the transition to low-carbon development will be a reduction in demand for fossil fuels and an increase in the role of renewable and other green energy sources. In the recently adopted Strategy for Russia's Economic Security, the change in the structure of world demand for energy resources, the development of energy-saving and green technologies are classified as the main challenges and threats to the country's economic security. However, these trends are considered in the strategy without linking to global actions to mitigate climate change and with the achievement of established goals to limit the increase in average temperature within limits that exclude catastrophic consequences for nature and humans. This creates the danger of misinterpreting these trends as harmful or even malicious, directed against the interests of Russia, while in fact they are objective and reflect the desire for the common good. The purpose of this paper is to trace the evolution of the global climate agenda and international climate agreements, provide an overview of the actions taken at the national and subnational levels to mitigate climate change and transition to low-carbon development, and assess the impact of these actions on the Russian economy.


1 INTRODUCTION

In recent years, even before the pandemic, in some countries of the world, in particular in the USA, Great Britain, Australia and Canada, the ideas of the so-called Green New Deal, similar to the New Deal of US President F. Roosevelt, which was used to restore the American economy after the Great Depression, began to develop in the 1930s Roosevelt's New Deal included investment in infrastructure and job creation, as well as institutional changes such as the Glass-Steagall Act, which separated commercial and investment banking. This program had purely economic goals (Babina, 2020). As sustainable development has taken root as a key development

concept, ideas have begun to emerge that emphasize economic growth while improving social performance and reducing environmental damage. The concept of the Green New Deal included stimulating the economy through investments in green industries such as renewable energy and energy efficiency, sustainable transportation systems, sustainable agriculture, sustainable forest management, minimizing the use of primary resources, waste prevention and recycling, etc., and also the institutional changes necessary for the development of these sectors of the economy (Lapaeva, 2019).

In the United States, the ideas of the Green New Deal have been discussed since the 2000s. One of his

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first mentions was made in The New York Times by journalist Thomas Friedman in January 2007 (Gakaev, 2019): "If you put a wind turbine in your yard or install solar panels on your roof, then this is worthy of gratitude. However, we can only green the world if we completely change the nature of the electricity grid and move from dirty coal or oil generation to renewable energy sources (Murtazova, 2021). And this is a huge industrial project - much larger than you can imagine. Finally, as with the New Deal, if we implement a green version of it, it will create an opportunity to build a new clean energy industry and boost the development of the 21st century economy." The Green New Deal was a key message in the 2012 and 2016 presidential campaigns of Green Party presidential candidate Jill Stein. Stein's program called for a national mobilization on a scale comparable to World War II to combat climate change, create 20 million new jobs through a transition to 100% renewable energy by 2030, invest in public transport, sustainable agriculture, and preserve and restore critical infrastructure including ecosystems. At the same time, emphasis was placed on a fair transformation, in which former workers in the traditional energy sectors were to move to alternative jobs with pay during the transition period. An important point of the Green New Deal by Jill Stein was the decommissioning of all nuclear and fossil fuel power plants, as well as the termination of all projects related to the extraction, processing and consumption of fossil fuels. Funding for Jill Stein's Green New Deal was planned to come from a 50% cut in defense spending, the return of the US military to the US (a move away from fossil fuels would make US military presence in many countries unnecessary), and a carbon tax (Gakaev, 2019; Murtazova, 2021).

The ideas of the Green New Deal were used in the electoral Bernie Sanders campaign in 2016 when he ran for the Democratic presidential nomination. In particular, during the 2016 presidential campaign, Sanders called for a reduction in fossil fuel subsidies, a high carbon tax that would make exports of natural gas and crude oil unprofitable, a moratorium on nuclear power, as well as investment in renewable energy, energy efficiency technologies, modernizing buildings and infrastructure. At the same time, Sanders' program was not called the Green New Deal (Gakaev, 2018).

In February 2019, members of the Democratic Party, Congresswoman Alexandria Ocasio-Cortez and Senator Ed Markey, introduced a resolution in the US Congress demanding a radical transformation of the American economy called the Green New Deal. The program aims to reduce net greenhouse gas

emissions to zero in creating new high-paying jobs in the clean energy sector, creating unprecedented economic prosperity for all, and countering systemic social injustice. Alexandria Ocasio-Cortez and Ed Markey's New Green Deal contains a long list of measures that are expected to achieve this goal (Gakaev, 2018; Vladimirov, 2019):

- adaptation to climate change;
- modernization of infrastructure;
- Ensuring 100% of demand for electricity from renewable energy sources;
- improving the efficiency of resource consumption in existing and new buildings;
- promotion of cleaner production;
- reduction of emissions of pollutants and greenhouse gases in agriculture;
- investment in clean transport, including public transport;
- managing the long-term negative impacts of environmental pollution and climate change on public health and the economy;
- absorption of greenhouse gases from the atmosphere and reduction
- environmental pollution through the restoration of natural ecosystems;
- restoration and protection of fragile and endangered ecosystems;
- removal of hazardous waste and dismantling of abandoned sites;
- Identification of other sources of emissions and pollution and development of measures to neutralize them;
- support for the international exchange of technologies, expertise, products, funding and services in order to ensuring US international leadership in climate action; and supporting other countries in the implementation of the Green New Deal (Vladimirov, 2019).

Alexandria Ocasio-Cortez and Ed Markey's resolution was voted down. There is no estimate of the cost of implementing the resolution, and the sources from which the corresponding costs will be covered are also not proposed. At the same time, the green agenda is gaining popularity in US politics. Elected in November 2020, US President Joe Biden, as part of his election program, made ambitious proposals for the development of clean energy and the fight against climate change. The proposals include a transition to carbon-free energy by 2035. The priorities are (Molchanova, 2019):

- infrastructure development, including power grids;
- development of the automotive industry;

- development of public transport with zero greenhouse gas emissions;
- development of clean electric power industry;
- improving the energy efficiency of buildings;
- development of energy innovations (energy storage technologies, hydrogen energy, next generation building materials, nuclear energy);
- agriculture and environmental protection;
- environmental justice.

The plan has a number of significant shortcomings. Carbon-free energy does not preclude the use of nuclear energy, and the proposals do not ban coal and gas burning, as well as shale gas mining. The cost of implementing the Joe Biden plan is estimated at \$2 trillion over a four-year period (2021-2025). Despite the significant green component, Joe Biden's program does not have the name "Green New Deal" and does not contain any mention of this concept (Egorova, 2020).

2 RESULTS AND DISCUSSIONS

In December 2019, the European Commission published a large-scale action program called the European Green Deal, which involves a radical transformation of economic development in Europe. The goal of the program is to make Europe the world's first climate-neutral continent by 2050. Those emissions that cannot be avoided in 2050 will be offset by natural carbon sinks such as forests and carbon capture and storage technologies. In essence, the European Green Deal is a new EU development strategy that aims to reduce harmful emissions while creating new jobs and new economic opportunities, decoupling economic growth from resource use, and adhering to the principle of inclusion (Molchanova, 2019; Egorova, 2020).

At the moment, the European Green Deal is a framework program that is only being filled with concrete content and measures. The key blocks of this program are:

- decarbonization of the energy sector;
- renovation of buildings, reduction of energy consumption and energy costs;
- development of green economy sectors;
- development of clean and affordable private and public transport;
- transition to sustainable agriculture;
- transition to sustainable food supply systems;
- conservation of ecosystems and biodiversity;
- fight against environmental pollution;
- climate action.

As part of these areas, it is planned to reduce environmental pollution by large industrial facilities, abandon toxic chemicals, raise standards air quality. By 2030, measures will be taken to prioritize waste prevention and to fully switch to reusable and recyclable packaging (Egorova, 2020). Measures will be implemented to decarbonize and modernize steel and cement production. By 2030, 3 billion trees will be planted. It is also planned to abandon fossil fuel subsidies, tighten regulation of emissions from road transport and take measures aimed at the development of modern energy infrastructure, energy innovation and the integration of renewable energy into the grid.

To implement the European Green Deal in the next 10 years, at least 1 trillion euros of public and private investments (279 billion euros), as well as funds from the EU budget (503 billion euros) and national budgets will be attracted. This amount also takes into account the funds of the Just Transition Mechanism (at least 100 billion euros), which will be intended to provide targeted support to regions, workers and sectors in need of a transition to green economy. The European Green Deal is still in the process of formation, and many of its details are unclear, but it is often criticized. For example, the costs of its implementation are estimated as insufficient - only 100 billion euros per year. The European Commission estimates that reducing greenhouse gas emissions by 2030 by at least 40% from 1990 levels will require an investment of 260 billion euros per year over 10 years. In September 2020 European.

The Commission came up with a proposal to make this goal more ambitious and to reduce greenhouse gas emissions by 2030 by at least 55% of 1990 levels. Such a goal would require additional costs. Accordingly, the costs of implementing the European Green Deal should be significantly higher (Meckling, 2020).

In a number of other countries, such as the UK, Canada, Australia, discussions have also been held in recent years about the development and implementation of the Green New Deal, but so far mainly within academic and activist circles. The pandemic has given new impetus to these discussions. For example, in 2020, the Australian Green Party called on communities and all stakeholders to work on a Green New Deal in order to overcome the COVID-19 crisis, as well as to increase the fairness and inclusiveness of the Australian economic system. As part of the ongoing Green New Deal program, a 100% transition to renewable energy by 2030 is proposed, as well as improving the quality of waste collection and sorting, developing high-speed

railways and public transport, creating a green industry sector, and investing in healthcare, education and R&D. It should be noted that the Australian Green Party's Green New Deal does not have a carbon neutrality goal, with a significant emphasis on the social aspects of development (Vladimirov, 2019). The required investment is estimated by the Australian Green Party at 198 billion Australian dollars (145 billion US dollars), of which 30% is proposed to be directed to the development of green infrastructure, which refers to renewable energy, clean transport, affordable housing and waste management. The implementation of the program will create 870,000 new jobs, 30% of which will be in the green infrastructure sector (Gakaev, 2018).

In South Korea, after the victory of the Democratic Party in the elections to the National Assembly, the country's leadership began promoting the Green New Deal. It also includes achieving carbon neutrality by 2050. This goal is planned to be achieved by eliminating fossil fuel subsidies, introducing a carbon tax, investing in renewable energy sources, and creating low-carbon industrial complexes. A special center will be created to support workers who are switching from coal to renewable energy.

3 CONCLUSIONS

In general, from the analysis of the international context of the formation and implementation of the New Green Deal the following conclusions follow (Gakaev, 2018):

1. The existing programs, including the officially adopted European Green Deal, are still of a framework nature, and they need to be developed and specified.
2. A key element of most of the Green New Deal programs in the world at the moment is the transition to carbon neutrality by 2050.
3. The sectors of the economy that will receive support in all programs of the Green New Deal are renewable energy and energy efficiency, low-carbon transport, low-carbon manufacturing, sustainable agriculture, biodiversity restoration and the protection of natural ecosystems.
4. As a result of the implementation of the Green New Deal programs, the economy will change dramatically, new industries and new business models will appear, and the link between economic growth, on the one hand, and resource consumption, environmental

pollution, and greenhouse gas emissions, on the other hand, will be destroyed.

5. In implementing the New Economic Policy, the inclusiveness of new economic development measures, reducing social injustice and ensuring a just transition will play a particularly important role.

The main official documents of Russia that relate to decarbonization currently include (Murtazova, 2021; Gakaev, 2018):

- The Climate Doctrine of the Russian Federation of 2009;
- a system of national projects approved by Decree of the President of the Russian Federation of May 7, 2018 No. 204 "On the national goals and strategic objectives of the development of the Russian Federation for the period up to 2024" and adjusted by Decree of the President of the Russian Federation of July 21, 2020 No. 474 "On the national goals of the development of the Russian Federation for the period up to 2030";
- Energy Strategy of the Russian Federation for the period up to 2035 (hereinafter referred to as Energy Strategy-2035);
- the state program "Energy Development" (formerly the state program "Energy Efficiency and Energy Development");
- A comprehensive plan to improve the energy efficiency of the Russian economy;
- Draft Strategy for the Long-term Development of Russia with Low Greenhouse Gas Emissions until 2050 (hereinafter referred to as the Draft Low-Carbon Strategy until 2050);
- Decree of the President of the Russian Federation of November 4, 2020 No. 666 "On the reduction of greenhouse gas emissions";
- Draft federal law "On State Regulation of Greenhouse Gas Emissions and Amendments to Certain Legislative Acts of the Russian Federation"

Also related to the reduction of greenhouse gas emissions are the list of instructions of the President of the Russian Federation following the meeting of the State Council on the issue "On the environmental development of the Russian Federation in the interests of future generations", held on December 27, 2016, the program for the development of the Russian coal industry for the period up to 2035, approved in October 2020 The Action Plan ("road map") for the development of hydrogen energy in Russia until 2024, adopted in October 2020, the Strategy for the Development of the Arctic Zone of Russia and Ensuring National Security until 2035. The climate

doctrine is the basis for the formation and implementation of Russia's climate policy. The document acknowledges that climate change and especially its acceleration are the most important problems of the 21st century, and a significant part of the territory of Russia is in the area of maximum climate change. The doctrine provides for the concentration of Russia's efforts on reducing anthropogenic emissions of greenhouse gases and increasing their absorption by sinks and reservoirs. To do this, it is planned to improve energy efficiency, introduce renewable energy sources, implement financial and tax policy measures that stimulate the reduction of greenhouse gas emissions, as well as protect and improve the quality of greenhouse gas sinks and accumulators, including rational forestry.

However, the other documents listed above are conservative, differ in their focus on maintaining Russia's position in the global markets for natural resources and, in particular, fossil fuels, and contradict both the key modern global development documents — the Paris Climate Agreement and the 2030 Agenda — and the Russian Climate Doctrine. Thus, the Energy Strategy-2035 assumes that by 2035 oil production will remain at the same level or decrease by 12%, gas production will increase by 18-38%, coal production will increase by 10-52%. Renewable energy sources, except for hydropower, are practically not given attention in the strategy, the only task in the field of renewable energy sources, excluding hydropower plants, is to improve the efficiency of energy supply to remote and isolated territories. Too much attention has been paid to hydropower, despite the fact that in the world this renewable energy source is not promising either for environmental or economic reasons. The Energy Strategy-2035 provides for the development of hydrogen energy, but it is planned to be carried out through the "production of hydrogen from natural gas, including using renewable energy sources, nuclear energy." At the same time, the production of hydrogen based on fossil fuels and at the expense of nuclear energy does not make sense, since in the near future the world will demand green hydrogen produced from renewable energy sources (Reynard, 2020).

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