

Climate Policy of the European Union: Reduction of Greenhouse Gas Emissions from Industrial Enterprises

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Abstract. The global climate is determined by the global average temperature, which depends on the concentration of greenhouse gases (GHGs) in the atmosphere, which continue to rise. The key to addressing climate change is to reduce emissions and reduce GHG concentrations through removals. As part of the global climate agenda, a goal has been developed: to reach net-zero emissions in the second half of the 21st century (anthropogenic emissions should be equal to GHG removals). Currently, the climate policy of developed countries is undergoing a stage of major changes, and new energy technologies play the main role in this process. At the same time, the future of global energy and climate is increasingly dependent on decisions made in emerging market and developing countries. Emerging market and developing economies now account for more than two-thirds of global CO₂ emissions, while emissions in advanced economies are declining structurally. On a per capita basis, emissions are a quarter of those of advanced economies, but economic growth and rising incomes create potential for demand and emissions growth. The challenge for developing countries is to find new models of economic development that avoid high levels of emissions, rather than repeating the path traveled by developed countries. Lowering the cost of key clean energy technologies opens up opportunities for lower-emission economic growth, addressing climate change and achieving sustainable development goals.

1 Introduction

Appeared in the middle of the XX century. ideas of corporate social responsibility eventually transformed into the concept of sustainable development. In this aspect, 2015 became a landmark year for the formation and implementation of international policy in the field of sustainable development, since the Sustainable Development Goals (SDGs) were formulated and documented. From this moment on, the SDGs are beginning to be actively integrated into the development strategies of both states and the corporate sector. In addition, they are increasingly being adopted and applied in financial markets as environmental, social and

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governance (ESG) and impact investments become more popular [1]. The desire of states and corporations to achieve these goals is beginning to act as an integral element of their policies, due to which a market for “sustainable” investments is being formed. Changes in international politics in recent years have given impetus to the link between investment and the achievement of the SDGs in global capital markets. The overall goal of the sustainable bond market is for CIs to play a role in solving environmental and social problems through responsible investing – by locking in social and environmentally friendly projects to which investors’ financial investment returns are allocated, and thereby financing social and environmental investments. According to RBC Global Asset Management, the volume of sustainable investment assets (responsible investment capital) is increasing annually - for 2016-2020, it grew by 55% and reached \$35.3 trillion [2]. Despite the rudimentary stage of development of responsible investment in Russia, this approach to raising capital to finance environmental and social projects can also be applied in domestic practice.

The growing scale of environmental problems in the world makes it vital to find an acceptable solution to the problem of how to combine global economic growth and sustainable human development, of which the preservation of the environment is a part [3]. The world’s population is growing rapidly, and so is the degree of economic inequality. According to UN estimates, by 2050 the world population will increase by 26% to 9.7 billion people [4]. At the same time, the population of sub-Saharan Africa will double, while that of Europe will remain at the same level. In 2018, 26.4% of the world’s population, or about 2 billion people, suffered from moderate or severe food insecurity, and 3 billion had no home, no water, no soap. From the very beginning, international trade was designed to build bridges between developed countries (Global North) and developing countries (Global South) [5]. Being the engine of globalization, it helps smooth out disproportions between countries and regions, promotes commodity and technological exchange, and the spread of institutions and norms. The sustainable development of mankind, enshrined in the UN policy documents, is becoming not just a trend, but an urgent need for the survival of mankind. The essence of this concept is expressed in a simple formula: meeting the needs of the present day without undermining the capabilities of future generations [6]. The concept of sustainable development is broader than ecology, but its very appearance speaks of the inextricable interdependence between socio-economic development and environmental protection. Starting December 29, 1970, we take a loan from nature for two days: then, for the first time, the World Ecological Debt Day was calculated, which is calculated by the Global Ecological Footprint Network (GFN) using the formula: $(\text{global biocapacity} / \text{global ecological footprint}) \times 365$. All remaining days until the end of the year after the calculated date, we live “on loan”, consume reserves that the planet does not have time to restore, and accumulate carbon dioxide in the atmosphere. Eco-debt is growing every year. However, the economic downturn caused by the coronavirus pandemic has led to a reduction in the ecological footprint by almost 10%. In 2019, World Ecological Debt Day fell on July 29, and in 2020 on August 22, and amounted to 128 days [7]. The environmental agenda permeates every area of life, and international trade is no exception. However, growing protectionism and trade wars have a negative impact on this area. In 2019, global trade in goods fell by 3%, while growth in trade in services slowed to 2.1% (from 8.4% a year earlier). In 2020, due to the pandemic and the recession in the global economy, the negative trend has apparently continued [8]. The rise of new centers of power, the crisis of international regulation, such as the World Trade Organization, makes a coordinated global response impossible. In the absence of a global solution, the initiative spills over to the regional level.

2 Research methodology

Electricity companies will apply to connect to the grid by reducing the cost of new projects or deducting accumulated subsidies from existing projects, the winners of the tenders will be given a commitment to purchase the electricity they produce, which will provide them with revenue. Additional capacity above the target size is allowed, but with a much lower grid connection priority. This fact means that energy companies need to find their own buyers for the generated energy [9]. The advisory paper highlights the Chinese government's strategy to promote renewable energy while reducing subsidies. China is set to phase out renewable energy subsidies as the country's growing deficit in the country's renewable energy fund reached 249.7 billion yuan by the end of 2019. Taxonomy of green finance ESG investing is characterized by considering the environmental, social and governance aspects of an investment asset (such as a company or project) in addition to its financial performance [10]. Investment strategies can take many forms, the application of ESG is aimed at incorporating ESG factors into traditional investment activities. ESG investing and green finance are closely related.

The Climate and Energy Plan 2030 includes pan-European goals and targets for the period 2021-2030. Current key targets for 2030 [11]: – reduction of greenhouse gas emissions by at least 40% (compared to 1990 levels); – Achievement of 32% share of renewable energy sources; – increase in energy efficiency by at least 32.5%. The target of 40% greenhouse gas emissions is being met through the EU Emissions Trading Scheme, the Emission Sharing Efforts Regulation and the Land Use, Land-Use Change and Forestry Regulation. Thus, all industries contribute to the achievement of the goal both by reducing emissions and by increasing absorption of gases. CO2 Emission Accounting, Emissions Trading (ETS) In line with the Energy Union Governance and Climate Action Regulation, the EU has adopted common rules to ensure planning, monitoring and reporting on progress towards climate and energy targets for 2030 and its international obligations under the Paris Agreement.

3 Results and Discussions

The EU ETS covers energy-intensive industries, commercial aviation in the European Economic Area and some other industries. In terms of greenhouse gases, it focuses on emissions that can be measured and verified with a high degree of accuracy, mainly carbon dioxide (CO₂) from electricity and heat generation. Participation in the EU ETS is mandatory for companies in these industries. The legal framework for the European carbon market is formulated in the ETS Directive [12]. The ESG taxonomy and green finance The EU taxonomy is a classification system that establishes a list of environmentally sustainable economic activities. The EU taxonomy will provide companies, investors and policy makers with the appropriate definitions by which economic activity can be considered environmentally sustainable. Thus, the taxonomy will ensure the safety of investors, protect against a “green slip”, facilitate the movement of investments where they are most needed. In order to meet the EU climate and energy targets for 2030 and achieve the goals of the European Green Deal, it is important to direct investment towards sustainable projects and activities [13]. This requires a common language and a clear definition of what is “sustainable”, which is why the 2018 Sustainable Growth Financing Action Plan²⁴ called for a common classification system for sustainable economic activity or an “EU taxonomy”. In July 2021, the European Commission published a “Sustainable Economy Transition Financing Strategy”, which is based on the 2018 Sustainable Growth Financing Action Plan and the reports of the Sustainable Finance Technical Expert Group. The consultations sought the views of individuals, public authorities and companies both within and outside the EU. The strategy proposes the development of the EU taxonomy, standards and terminology of sustainable finance [11]. The need to ensure the resilience of the financial system to the risks

associated with climate change is emphasized. Finally, the strategy presents the Commission’s international approach, including work on global convergence of standards such as taxonomy and disclosure. The European Green Bond Standard (EUGBS) is a voluntary standard. Setting the standard was part of the European Commission’s 2018 Sustainable Growth Financing Action Plan and is part of the European Green Deal. The new EUGBS will be open to any green bond issuer, including companies, public authorities, issuers located outside the EU [12]. The standard includes four key requirements: – compliance with the EU taxonomy; – transparency in reporting the distribution of proceeds from bonds; – independent expertise; – oversight by the European Securities Markets Authority (ESMA) of reviewers. Union and national targets for carbon neutrality The EU Emissions Trading System (EU ETS), such as transport, buildings, agriculture and waste. The 2009 European Parliament and Council decision on the distribution of efforts has become part of the EU climate and energy policy for 2020. The decision set national emission targets for 2020, expressed as a percentage of 2005 levels.



Fig. 1. EU Green Deal

National targets were based on GDP per capita. Less affluent countries set less ambitious targets due to the fact that their relatively low investment potential and high economic growth are likely to be a strong emission factor [13]. National emission targets for 2020 ranged from a 20% reduction for the wealthiest Member States to a 20% increase for Bulgaria. Croatia, which joined the EU on 1 July 2013, is allowed to increase emissions by 11%. The 2018 Effort Sharing Regulation is part of the Energy Union strategy and the European Union’s implementation of the Paris Agreement. It has set national emission reduction targets for 2030 for all member states ranging from 0% to -40% of 2005 levels. The European Green Deal or “Green Deal” is a European strategic initiative to achieve carbon neutrality by 2050, which covers all sectors of the economy, in particular energy, transport, agriculture, buildings, as well as industry [14]. To legislate the ambition, the European Commission is publishing policy papers and draft regulations in stages: the first European climate law, the Biodiversity Strategy 2030, the Industrial Strategy, the Hydrogen Strategy, the Clean Mobility Strategy, the Circular Economy Action Plan, the Farm to Fork Strategy for sustainable food production and proposals to clean up pollution in Europe.

“Ready for 55” package (and June 2021, December 2021) contains draft regulations to achieve an interim target to reduce emissions by 2030.

The European Union is gearing up for another major overhaul of climate, energy, transport, building and forestry regulations to achieve a Green Deal for carbon neutrality by 2050. The previous EU target of reducing greenhouse gas emissions by 40% by 2030 compared to 1990 levels was approved by the European Council in 2014, and targets for the share of renewable energy in final energy consumption and for energy efficiency improvements were set by the “fourth energy package” in 2018 [11]. The Green Deal, announced in December 2019, outlined plans to make Europe the “first carbon-neutral continent” by 2050. In this regard, a number of subsequent documents, including the European Climate Law, set an interim goal of reducing emissions by up to 55% by 2030. Targets for renewable energy, energy efficiency and transport for the implementation of the Green Deal and the Climate Act are contained in the “Fit for 55” proposal package published in July 2021. The European Commission claims that its July legislative initiative is the most comprehensive of all that have been adopted in the field climate and energy. According to the European Commission, the chosen package of measures represents “a careful balance between pricing (emissions trading system, carbon tax), targets (directive on RES, energy efficiency, land and forest use), standards and support measures”. The package includes both drafts of new regulatory legal acts and amendments to existing ones. Together they should create a regulatory framework for a comprehensive restructuring of the entire EU economy. The second part of the package will be presented by the European Commission in December 2021 [12]. It will include projects to revise the Energy Efficiency in Buildings Directive, the Third Gas Energy Package to regulate competitive decarbonized gas markets, and a project to reduce methane emissions in the energy sector.

Prior to publication in July 2021, the paper concepts went through several rounds of public comment and received an independent impact assessment. The European Parliament, for example, has already had the opportunity to speak on the topic of cross-border carbon regulation (TCR) and other projects. On July 14, 2021, the European Commission published a package of 18 documents, of which 15 were draft regulations, three were communiqués, and sent them to the European Parliament and Council for consideration. An explanatory note, an assessment of the possible impact and related calculations are attached to each draft normative act.

4 Conclusions

The Russian Federation takes an active part in the processes of the Climate Agenda, an impetus has been given at the federal level, discussions have been launched at the level of the Government of the Russian Federation, the State Duma and at the level of economic sectors. Today, most of the global climate policy instruments, such as carbon regulation, renewable energy incentives, green financing mechanisms, the green certificate market, and the ESG taxonomy, have been implemented in Russia or are under development. In this situation, it is important to analyze international experience, global challenges and trends, take into account the changing legislation of trading partners, the experience of stimulating the transformation of the economy and energy. International cooperation is certainly an important component in the technological and financial fields. The current international financial architecture provides some support for sustainable development, but financing strategies and mechanisms are not yet up to the challenge of fundamentally transforming the energy sector in emerging and developing economies. The main areas on which the environmental component is based include reducing greenhouse gas emissions, as well as a general reduction in environmental damage caused by human activities, maintaining the availability of drinking water for the population, reducing water and air pollution (in

particular, sulfur and nitrogen oxides) , as well as the reduction of municipal solid waste and the transition to a circular economy.

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