

Commitment to Carbon Neutrality

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Abstract. The economic and political processes taking place at the global level, aimed at reducing the negative impact of the anthropogenic factor on the environment, have a significant impact on the foreign and domestic policy of the Russian Federation and can serve both as a basis for strengthening the country's international political influence and global competitiveness, and as a source of serious conflicts. in the international arena and within the Russian political elite. As a turning point that marked the beginning of a new stage in global climate policy, one can consider the so-called Paris Agreement under the UN Framework Convention on Climate Change, prepared to replace the Kyoto Protocol during the Climate Conference in Paris, adopted by consensus on December 12, 2015 and signed on April 22 2016. The agreement calls for all countries to commit themselves to reducing their emissions and work together to adapt to the impacts of climate change, and encourages countries to strengthen their commitments over time.

1 Introduction

The Paris Agreement noted the desire of countries to reach the global peak of GHG emissions as soon as possible, as well as to subsequently achieve their reductions in order to achieve a balance between anthropogenic emissions from sources and removals by GHG sinks in the second half of the 21st century. In 2019, the “Climate Ambition Alliance: Net Zero 2050” emerged, which included countries, cities, companies and investors committed to achieving carbon neutrality by 2050 [1]. Since the Conference of the Parties to the UNFCCC in Madrid, the number of alliance countries has reached 120, but they account for less than 25% of global GHG emissions, and the number of countries that have legislated such obligations is much smaller. The Race to Zero campaign followed in 2020, complementing the Climate Ambition Alliance and featuring 23 regions, 454 cities, 1,397 companies, 569 universities and 74 investors committed to achieving zero net emissions by 2050 and strengthening actions to combat climate change in light of the spread of the coronavirus. In November 2020, UN Secretary-General A. Guterres said that 2021 should be the year of the “big leap” towards carbon neutrality [2]. According to the UNEP GHG Emissions Gap report, in 2020 the gap between observed GHG emissions and GHG emissions in line with the Paris Agreement targets, despite the expected decline in GHG emissions, continued to widen. The current targets for 2030 under the Paris Agreement will

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result in a 3.2°C rise in global temperatures by the end of the 21st century. According to the Climate Action Tracker, with the implementation of all national measures announced as of November 2020, warming by the end of the century will amount to 2.9°C (against 3.6°C in 2015) [3]. At the same time, Russia's goal is seen as corresponding to a warming of more than 4°C (assuming that all countries would make similar efforts), that is, as "critically insufficient" to achieve the goals of the Paris Agreement - along with countries such as the United States, Saudi Arabia, Turkey, Argentina, Vietnam and Ukraine.

There is a growing number of countries, regions and companies around the world supporting the shift away from fossil fuels for climate reasons [4]: from coal generation in the electric power industry - as the most carbon-intensive one - and from internal combustion engines in transport, as well as their exploration and production. So far, this trend is most typical for Europe and for countries with relatively low energy consumption and a relatively "clean" energy balance.

2 Research Methodology

To assess the possible consequences of a significant increase in climate policy in the world and the widespread adoption of plans to phase out fossil fuels for potential exporters of traditional energy resources, one can use, for example, the long-term forecasts of the IEA in 2020: the Stated Policies Scenario and the Sustainable Development scenario. Scenario) [5]. The declared policy scenario takes into account the measures and targets approved and announced by countries as of the second half of 2020 and assumes that the spread of coronavirus can be brought under control during 2021 [6]. The sustainable development scenario is based on the economic assumptions of the stated policy scenario, but aims to achieve climate (Paris Agreement), clean air and increased access to energy goals. The reduction in world hydrocarbon consumption in physical terms in a hypothetical sustainable development scenario relative to the declared policy scenario by 2040 can be estimated at 32% for gas, 36% for oil and 61% for coal [7]. At the same time, the carbon intensity of Russian fuels will be one of the main factors determining the future dynamics of domestic exports, including relative to benchmarks in the form of declining global demand, in the face of tougher cross-country and inter-fuel competition.

3 Results and Discussions

The International Civil Aviation Organization, in order to minimize the adverse impact of civil aviation on the climate, formulates policies, develops and updates Standards and Recommended Practices (SARPs) regarding GHG emissions from international air travel. The following ICAO targets were approved in 2010 (reaffirmed in 2019): Achieve an average annual improvement in fuel efficiency of 2% by 2020, with a target of 2% per year in 2021-2050; it is desirable to keep the net CO₂ emissions of international aviation from 2020 at the same level through CO₂ neutrality. One way to achieve these goals is through a market-based mechanism, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), approved by ICAO in 2016 [8]. The system provides for a baseline monitoring phase in 2019-2020, a voluntary pilot (experimental) phase in 2021-2023 and a first voluntary phase in 2024-2026, from 2027 CORSIA will be mandatory for most countries (except for the least developed countries, small island developing countries and inland developing countries) [9]. This mechanism provides for additional costs (emission charges) for airlines when carbon emissions exceed the 2019 baseline. However, as an alternative to a fee, aircraft operators can use low-carbon aviation fuel or green fuel that meets the CORSIA sustainability criteria [10]. As of November 30, 2020, 88 countries

(accounting for 77% of international air travel) have joined the CORSIA pilot phase. Russia does not participate in this stage and, together with a number of other countries (China, India), criticizes it³². According to the Russian side, the system provides for the acquisition of emission units by airlines on open carbon markets outside the international civil aviation sector, which in fact is a mechanism for returning investments in projects in other industrial sectors and does not contribute to the development of technologies in the aviation industry. At the same time, regardless of participation in the pilot phase, all ICAO member states, starting from 2019, should put in place a system for monitoring, informing ICAO and auditing information on carbon dioxide emissions of air transport operators registered in these states in relation to international flights. It should be emphasized once again that within CORSIA, you need to pay for carbon dioxide emissions only if they exceed the base year, which restrains the increase in the volume of this type of international transportation, but is not a direct factor in their rise in price [11]. At the same time, since 2012, all air carriers flying to airports in the EU countries have been required to report on carbon dioxide emissions and, if the established limits are exceeded, purchase special certificates on the market (this measure for flights from third countries after its introduction was suspended until 2017 of the year).

In 2019, an expert estimate of the potential annual fee for carbon dioxide emissions by Russian companies engaged in international air transportation (if such a fee, following the example of the EU, is introduced for flights to all foreign countries), was 0.4-1 billion dollars, depending on the price of CO₂ on the international market (\$25–75 per ton)³³. The International Maritime Organization is adopting important guidelines to support the implementation of mandatory measures to improve energy efficiency and reduce GHG emissions from international shipping [12]. In 2018, the Initial Strategy for the Reduction of GHG Emissions from Ships was adopted, which set the following goals: to reach the peak of GHG emissions from international shipping as soon as possible, to reduce them by at least 50% by 2050 (relative to 2008) and to a trajectory consistent with the objectives of the Paris Agreement; reduce specific carbon dioxide emissions from maritime transport by at least 40% by 2030 and by 70% by 2050 (relative to 2008); extend the use of Energy Efficiency Design Factors for New Vessels – sets the acceptable level of carbon dioxide emissions (grams of CO₂ per ton-mile) for various types of ships and is valid until 2025. Since 2019, ships with a gross tonnage of 5000 reg. tons and more must begin collecting data on marine fuel consumption in accordance with mandatory fuel collection and reporting requirements that came into force in March 2018. In addition to IMO regulation on data collection, all maritime carriers are also subject to mandatory EU requirements on the evaluation of monitoring plans and verification of reports on carbon dioxide emissions from ships, introduced in 2015 [13]. The requirements apply to ships with a capacity of more than 5000 reg. t that make flights to or from a European Economic Area (EEA) port, including flights between EEA ports. The initial IMO Strategy sets out the overall vision for decarbonization and outlines the way forward for the adoption of the Refined Strategy to reduce GHG emissions from ships in 2023 [16]. To provide financial support for technical cooperation and activities of the Initial Strategy, the establishment of a voluntary multi-donor trust fund (GHG TC-Trust Fund) was agreed in May 2019, but so far there is no public information about its formation and activities [14]. As part of the implementation of the Initial Strategy, in November 2020, the IMO Marine Environment Protection Committee agreed to strengthen mandatory energy efficiency requirements for certain categories of new ships. Subject to their adoption at the next session of the Committee (in June 2021), they will enter into force on January 1, 2023 [15]. The Russian delegation, supporting the proposed draft amendments, noted the importance of promptly conducting a comprehensive assessment of the consequences of the measure before its adoption and the development of all necessary guidelines.

4 Conclusions

The introduction of mandatory carbon pricing systems is one of the most fundamental measures in terms of achieving GHG emission reduction targets. At the level of the Paris Agreement, the introduction of carbon pricing systems is not mandatory. Countries or associations independently make such a decision to achieve their climate goals. Nevertheless, in 2020, the EU has plans to introduce cross-border carbon regulation, which brings the issue of carbon pricing to the international level and creates risks for Russian exporters supplying products to the EU. In world practice, there are three main carbon pricing schemes: carbon tax, GHG emissions trading system and mixed schemes. GHG emission trading systems can be either mandatory or voluntary. According to the World Bank, as of November 2020, there were 64 carbon pricing initiatives in the world, of which 33 can be attributed to carbon taxes and 31 to TPCs. Such initiatives cover 46 countries (including EU countries) and 35 subnational jurisdictions (individual US states, provinces in Canada, regions in China, etc.). The current or planned to be introduced carbon pricing initiatives in the world cover about 12 billion tons of CO₂-eq. (about 22% of global GHG emissions).

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