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# The Impact of Climate Policies on Russia's Global Competitiveness in the Context of Sanctions[1]

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## Abstract

*The expansion of climate change measures on decarbonization and adaptation are implemented by countries in national legislation, including obligations to reduce greenhouse gases (GHGs) by nationally determined contributions that have an impact on integration processes, as climate obligations are primarily linked to the realization of collective actions by the international community. For example, WTO in its report on the interaction of climate and trade issues [Trade and Climate Change, 2022] was pointed to 4,355 trade measures in agreements that are aimed to achieve the climate goals. The topic of climate change particularly affects the energy and metals sectors, in which Russia is currently a key exporter. For example, climate change has brought into focus the issue of ensuring stable supplies of critical raw materials that is needed for the energy transition. Since Russia is currently a key exporter of certain goods, it seems relevant to consider how climate action by Russian importers will affect Russia's positioning in foreign trade under international sanctions. As a result of the study, the authors formulate proposals for Russia to take national measures, taking into account the exports changes.*

**Keywords:** climate policies, international trade, main Russian exports destinations, sanctions, energy resources, renewable energy sources, nationally determined contributions, energy and food security, climate obligations

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## Introduction

The international community has united in collective efforts in the global dialogue on climate change since the first United Nations World Climate Conference in 1979. In 1988, within the framework of the UN General Assembly Resolution (A/RES/43/53), "climate change" had been recognised as a global problem of mankind [United Nations General Assembly, 1988]. Over the next 35 years, the issue of climate change has become one of the central themes of international cooperation and for that reason the range of substantial agreements have been concluded.

It should be noted that climate action is not just a humanitarian task for countries, especially developed ones. Now the context of the climate change is used by countries as a key tool to ensure their own competitiveness in trade and investment and to provide the required resources. Moreover, the climate issue is closely related to countries' objectives to ensure energy and food security. For example, the EU's REPowerEU plan has adopted in 2022 to reduce dependence on Russian energy resources and propose measures to accelerate the transition to clean energy. This includes increasing the target to 46% of electricity from renewable sources by 2030 [European Commission, 2022].

In addition, the impact of countries' climate policies on international trade is considered in WTO and World Bank reports [World Trade Organisation, 2022]. According to the European Commission's 2024 report on global greenhouse gas emissions (JRC Science for policy report "GHG emissions of all world countries"), in 2023 the main greenhouse gas emissions were from fossil fuels (73.7% of total emissions), while CH4 (methane) accounted for 18.9%, N2O (nitrogen oxide) for 4.7% and fluorinated gases for 2.7% [Crippa et al., 2024].

Meanwhile, greenhouse gas emissions by sector are as follows: energy (gas, oil, coal) -34 %, industrial production - 24 %, agriculture - 22 %, transport - 15 % and buildings - 6 %. Thus, the energy sector accounts for the largest share of harmful emissions: 41% for coal, 32% for oil and 21% for gas [Global Carbon Project, 2023]. Global consumption of oil, gas and coal is therefore the key factor in climate change. But it is not the only one.

The vast majority of countries take action to tackle climate change in two main areas: the decarbonisation of the economy (including the reduction or elimination of energy consumption) and adaptation to climate change. The European Union is now the unquestioned leader in implementing the climate change measures. This is reflected both in the adopted strategic documents of the EU itself and in the volume of international commitments on climate change [EU NDC, 2023]. At the same time, the EU's climate measures included phasing out the hydrocarbons in favour of clean energy, as well as encouraging other states to implement a similar policy. The introduction of the Carbon Border Adjustment Mechanism (CBAM) in the EU in 2023 is a vivid example of the implementation of such a policy. Initially, during the transition period, the mechanism will be only applied to importers of seven products (cement, iron, steel, aluminum, fertilisers, electricity and hydrogen). This is linked to the fact that the production of these poses the highest risk of carbon leakage.

However, when the mechanism finally comes into force in 2026, importers of goods into the EU will have financial obligations to purchase CBAM allowances. The price of the certificates will be calculated according to the weekly average auction price of EU ETS allowances, expressed in euros per tonne of CO2-e [European Parliament, 2023c]. Russian researchers have predicted that the introduction of a mechanism such as CBAM would reduce Russian exports to the EU by 7.1% by 2022 [Makarov, 2021]. Nevertheless, the sanctions imposed by unfriendly states, primarily the EU, substantially changed the potential burden on Russian businesses. In 2023, the EU set the legislative target to reduce energy consumption by 11.7% by 2030. [European Parliament, 2023a].

In addition, the EU integration has adopted sectoral policies that are aimed to accelerate the phasing out of traditional energy sources. The EU's abrupt withdrawal from Russian energy sources in 2022-2023 has triggered an unprecedented rise in the cost of fossil fuels, while ongoing programmes to switch to renewable energy sources (RES) have increased costs for businesses. In order to ensure its own energy security and remain competitive on international markets, the EU therefore pursues a policy of advancing the international climate agenda and acting in a way (both internationally and through bilateral engagement) that will lead to fossil fuel divestment in third countries as well. Proportional divestment from fossil fuels and the cost of renewable energy in other countries must allow EU producers to remain competitive. For example, the EU's Renewable Energy Directive, updated in 2023, states that Europe can ensure its leadership in the global energy market by implementing RES policies [European Parliament, 2023b]. In addition, the opinion on the possibility of achieving EU leadership in RES was expressed in the European Commission's 2021 report “EU's global leadership in renewables” [Hørman et al., 2022].

In this way, the climate change policy has an impact on investment and trade flows in the EU. One of the examples of its influence is the discussion among EU countries about withdrawing from the 1994 Energy Charter, which gives energy investors the right to protect their interests in international arbitration. The current EU policy shows that countries are willing to reduce investment protection for hydrocarbon suppliers in order to avoid the chilling effect, i.e. the inability to further strengthen climate requirements due to the threat of such policies being recognized as an act of indirect expropriation in international arbitration [European Parliament, 2024a].

Therefore, it is necessary to consider the key areas of Russian exports in the context of the development of climate regulation, as well as reorientation to new markets in the context of sanctions restrictions, in order to develop proposals for Russia's position on international commitments on climate issues, as well as in the context of the development of national measures.

For the purposes of this article, key sectors include the largest exported commodities for which cross-border carbon regulation measures are currently being introduced globally: cement, aluminum, iron and steel, energy resources (oil, coal, gas, hydrogen, and renewables). These industries are responsible for more than 40% of the world's harmful emissions into the atmosphere [C2ES, 2017].

The authors of this study assume that the development of the climate agenda at the international level and within the national legislation of the main BRICS and OECD countries, and the sanctions restrictions that are imposed on Russia, have affected or will affect the export competitiveness of Russian goods.

## Research methodology, literature review

There is already a sufficient scientific theoretical base on the impact of the climate change issue on economy and trade operations. For example, in 2024 the Institute of National Economic Forecasting of the Russian Academy of Sciences published a comprehensive study on the impact of climate change on the Russian economy “Economic Effects of Climate Change in Russia” [The Institute of Economic Forecasting of the Russian Academy of Sciences, 2024]. The experts concluded that climate change measures have different impacts on different sectors of the economy with cost increases in some sectors (e.g. fuel and energy sector) and demand increases in others (e.g. adaptation projects in the construction sector). At the same time, there is a positive effect on Russian GDP, as Russia can compensate for resource shortages in other countries that are affected by climate change.

In addition, some scientific aspects of the question on the impact of the climate agenda to the world economy have been developed by numerous scholars. For example, the development by countries of "climate clubs", intensified their refusal of Russian energy resources, further fragmenting the world climate regulation [Makarov, 2021]. Foreign researchers, also note that the climate change process affects the landscape of international trade [Gomes et al., 2024].

The study examined the regulatory acts of the EU, USA, UK, China, India, Brazil, Kazakhstan and EAEU. Data was also drawn from various analytical and statistical platforms, including Rosstat, CEMROS, IEA, ITC Trade Map, World Steel Federation, Centre for Climate and Energy Solutions (C2ES), Global Carbon Project (GCP), Global CCS Institute, Global Efficiency Intelligence, Trading Economics, TrendEconomy, US Energy Information Administration, and Climate Action Tracker.

Research methodology is based on applying logical, systemic and comparative analysis methods.

## Overview of national approaches to the climate change

The climate measures of countries are mainly translated into national legislation by fulfilling their international commitments under the 1992 Framework Convention on Climate Change, the 1997 Kyoto Protocol and the 2015 Paris Agreement. These are primarily energy-related (for example, reducing coal production), but also include developing measures to increase renewable energy in electricity production. For example, according to Climate Tracker, 135 countries have national renewable energy targets.

In terms of countries' commitments to the climate agenda, OECD countries (mainly the EU and the US) have traditionally been the most active in implementing this agenda. At the same time, an analysis of national targets for achieving carbon neutrality shows that only 6 countries have achieved this goal today (Bhutan, Suriname, Sao Tome and Principe, Guyana, Gabon, Vanuatu). Another 5 countries plan to reach the target by 2030, mainly island states (such as the Maldives and Barbados).

Among the developed countries, Finland (2035), Iceland, Austria (2040), Germany, Portugal and Sweden are closest to the target of carbon neutrality, which they plan to achieve by 2045. The BRICS countries - Brazil, South Africa, Argentina and United Arab Emirates plan to achieve it earliest - by 2050. China and Russia - by 2060 and India by 2070. For Iran, Egypt and Ethiopia, there is no data available.

It is worth noting that if we look at the volume of NDC commitments in absolute terms, the largest reductions have been made by the US, European countries and China. Notably, India, Brazil, and South Africa do not plan to reduce their emissions under the pledges but are projected to increase them. Their contribution is to slow the growth of harmful emissions in the context of economic development. As a result, developing countries tend to be more cautious in their implementation of the climate change measures. The governments of these countries point out that implementing such policy should not conflict with their domestic socio-economic development objectives.

It is also worth noting that geopolitical sanctions against Russia are also affecting the willingness of the BRICS countries to move away from fossil fuels. The reorientation of the Russian energy resources supplies towards the markets of friendly countries increases the attractiveness of traditional energy sources for developing countries due to the cost of such raw materials.

Regarding the structure of Russian exports, Russia is a world leader in the energy resources market, as well as in the sale of metals and commodities. For example, in 2023 it ranked 6th among the countries that are major coal producers and was the leader in coal production among the CIS countries. Also in 2023 Russia ranked second in the world volume of oil production [The Energy Institute, 2024]. According to the World Steel Association, Russia ranked 5th in steel production in August 2024 [Worldsteel Association, 2024]. According to ITC Trade Map, the main destinations of Russian exports in 2023 were China (31.5%), India (16.4%), Turkey (11.2%), Kazakhstan (4%), Brazil (2.5%), Korea (2.2%) and Japan (1.8%).

In this article, we will examine Russia and its exports to the world, and how the climate change agenda and sanction restrictions have affected Russia`s participation in international trade.

### *Cement*

The cement market accounts for 3% of global greenhouse gas emissions, making it one of the dirtiest industries in the world [Ritchie, 2020].

According to the Federal Customs Service, the main importers of Russian cement in 2018-2021 were Kazakhstan ($78m, 2021), Belarus ($52m), Georgia, Ukraine and Finland ($2m each) (CEMROS, 2024). After 2022, countries such as Ukraine, Finland and Latvia were completely excluded from exporting structure. In addition, according to ITC Trade, Belarus has almost completely reduced its exports in 2023. Thus, the largest markets for Russian cement in 2023, according to the ITC Trade map, were Kazakhstan, which accounted for 96.9% of exports. Other export destinations in 2023 were Azerbaijan (2.7%), Tajikistan (0.3%) and Kyrgyzstan (0.1%).

Notably, EU sanctions have been imposed on these products. According to Annexes 21 and 23 of the list of goods subject to the restrictions of Council Regulation (EU) 833/2014, cement products fall into two categories: as “goods which may contribute, in particular, to the strengthening of Russian industrial capacities” and as “goods from the sale of which the Russian Federation derives significant income” [EU Council, 2014]. However, such sanctions cannot significantly affect Russian producers: in the period from 2018 to 2022, unfriendly countries accounted for less than 10% of Russian exports.

Regulatory analysis in Kazakhstan and Belarus shows that they currently have no specific climate requirements for these industries. At the same time, at a strategic level, Kazakhstan recognises the significant environmental impact of local producers [Ministry of Justice of the Republic of Kazakhstan, 2021]. To encourage industry to reduce harmful emissions, the country launched a government quota trading system in 2013, which also applies to cement products. The system works in a similar way to the EU ETS, i.e. it applies only to local producers and does not cover imported emissions. However, further development of the system in Kazakhstan is expected in the near future, taking into account the introduction of the EU CBAM, which will allow the country to level the playing field for local companies and increase the cost of imports of Russian products. It should be noted that in accordance with the National Plan of Emission Allowances, the volume of available quotas will be gradually reduced: from 1.5% annually to 2.25% in 2024 and 2.26% in 2025 [Prikaz Respubliki Kazakhstan, 2022].

Notably, there is currently no discussion in the EEU on regulating carbon as a tool of the climate agenda. In 2023, the EAEU have noted that it was preparing recommendations for countries to harmonise approaches to carbon regulation, but these have not yet been adopted [EAEU, 2023]. The lack of common approaches in the EAEU, as well as the influence of the EU on the implementation of the agenda, will be an obstacle to the development of mutual trade. It is worth noting that analyses of legislation in other friendly countries show that a quota trading system for cement products has also been introduced or is planned in Brazil [GFL, 2024] and India [Global CCS Institute, 2023]. No such plans have been identified in other EAEU countries or in China. At present, China's ETS focuses only on emission quotas in the fuel and energy sector, while from 2025 it is planned to extend the requirements to more sectors, including cement products [Ministry of Ecology and Environment of China, 2021].

*Table 1.* Experts' assessment of the impact of the climate agenda and sanctions on Russian cement exports

| Sanctions restrictions impact | Climate agenda's projected impact | Recommendations |
|---|---|---|
| **Minimal**<br>A significant portion of production before and after 2022 was sent to friendly countries, while some unfriendly countries have stopped its imports. | **Medium**<br>There are currently no specific climate restrictions in Russia's main export markets, but the Russian Federation has introduced a customs control system (CCS) that could have an impact if Kazakhstan's TUR is introduced. | Developing common approaches to the introduction of CCSs on the EAEU platform in terms of: defining a single list of goods, approach to the provision of quotas and offset projects, etc. |

*Source:* prepared by the authors

### *Aluminum, iron and steel*

The aluminum market currently accounts for 3% of all harmful emissions into the atmosphere, while iron and steel account for 11% of global emissions [CAP, 2023].

Examining the export structure of these materials more closely, we find the following. According to UN Comtrade, the main importers of Russian aluminium in 2021 were Turkey ($1.28b), Japan ($1.24b), Germany ($914m), China ($811m), Norway ($572m), Japan ($657m) and Norway ($572m). At the same time, the export structure in 2023 had changed. The volume of shipments to China has increased significantly ($2.9b), making the country the main importer of this metal in 2023. The volume of shipments to Turkey remained almost unchanged ($1.3 billion). At the same time, the volume of imports from Japan ($332 million), Germany ($420 million) and the United States ($50 million) decreased significantly.

In addition, the US introduced an outright ban on Russian aluminum imports in April 2024 [US Department of the Treasury, 2024] - the same ban is in force in the UK, [Department for Business & Trade UK, 2024]. At the same time, the EU, which remains the second largest importer of the product after China, has not imposed any sanctions so far [Vedomosti, 2024].

Russia's steel exports in 2023, according to ITC Trade, were to Turkey (21.8%), Kazakhstan (9.3%) and Italy (8.4%). Steel shipments to India also increased in 2023, with exports of 686,000 tonnes valued at $429 million last year, up 34% from 2022 (361,000 tonnes valued at $320 million). Steel shipments also increased to Azerbaijan (2023 - 384,000 tonnes for

$260m), mainly rolled steel and steel products [Atlantic company, 2024].

The European Union banned imports of Russian steel products under the 4th sanctions package [European Com- mission, 2022b]. The UK also imposed sanctions [UK Secretary of State, 2023]. In 2023, the US raised tariffs on ferrous metals from 35% to 70% [Welt, 2024].

It is worth noting that aluminum, iron and steel are some of the most common materials in the world and are used in a wide range of industries. For example, aluminum is used in the production of lithium-ion batteries, fuel cells, photovoltaic cells and wind turbines (generators). This makes them an important part of the energy transition agenda. In this context, aluminum is included in the list of critical materials that are essential for the transition to a low-carbon economy. The OECD points out that the production of critical raw materials is concentrated in a small number of producing countries. Some of these countries account for a significant share of the production of more than one type of critical raw material. For example, the dependence of OECD countries on imports of critical raw materials from Russia is 10% [OECD, Trade Policy Papers, 2023]. Remarkably, the system of state subsidies allows Chinese companies to reduce the cost of products on global markets and displace EU and US producers.

At the same time, these products are produced with emissions that are twice as high as those in the United States and 25 percent higher than those in Russia and the EU [Hasanbeigi, Springer, She, 2022]. This situation prompted OECD countries, led by the EU and the US, to launch a dialogue on the conclusion of the Global Arrangement on Sustainable Steel and Aluminum (GSA) [Sutton, Williams, 2023]. The agreement provides for the establishment of harmonised requirements for permissible emissions in steel and aluminum production, the promotion of energy conversion by companies, and an increase in tariffs for countries and companies that use “non-market” practices and exceed the defined threshold of emissions in production [Rimini et al., 2023]. The draft agreement, which is currently being discussed by countries, also provides the possibility of excluding companies from member states of the agreement from the EU CBAM, as well as the possibility of joining the agreement of other states that have similar approaches.

In this way, developed countries made a “climate club” of aluminum and steel producers and restrict access to companies from third countries. It is important to note that the EU CBAM Regulations allow for the regulation of carbon charges not at EU level, but within the framework of bilateral and multilateral agreements (paragraphs 71-72 of the preamble of the Regulation). Furthermore, the possibility of creating such a club, both within one or more product categories, is also mentioned in the Regulation (paragraph 72). It is also interesting to note that the initiative to create a climate club was taken up within the G7 and in December 2022 the countries announced the creation of such a club [G7, 2022].

It appears that Russian exports of Aluminum and Steel could face additional restrictions and competition if the Agreement is adopted, with the EU and Russia likely to continue to oppose the Agreement. Currently, Global Efficiency Intelligence (GEI) estimates that the level of $CO_2$ emissions from the production of a tonne of aluminum in Russia (6 tonnes $CO_2e$) is higher than in the EU (4 tonnes $CO_2e$), but significantly lower than in India (12 tonnes $CO_2e$) and China (10 tonnes $CO_2e$) [Hasanbeigi, Springer, She, 2022]. Thus, for geopolitical reasons, including the US administration's classification of Russia as a non-market economy, which increases the cost of importing Russian products into the US, Russia may lose the European market for aluminum products, which is not yet restricted by sanctions. In addition, the loss of access to the US and EU markets by Chinese producers will lead to a search for new markets for aluminum and iron, including markets currently dominated by the Russian Federation, in particular the EAEU market.

Even though China and India are also implementing carbon reduction programs, Russia's interests do not coincide with those of its main BRICS partners: China and India. The development of investment programs by Russian companies in projects to reduce CO2 emissions may, firstly, allow them to retain their markets, if Russia stimulates the development of environmental requirements in these markets. Secondly, given the demand for materials, especially aluminum, for the energy transition, as well as the EU's introduction of requirements to assess the carbon intensity of the production of equipment for RES, Russian products may maintain their demand and increase their share in the global market, including by supplying raw materials for RES projects to the EU and the US via third countries, even under sanctions restrictions.

*Table 2.* Expert`s assessment of the impact of the climate agenda and sanctions on Russian exports of aluminium, steel and pig iron

| Sanctions restrictions impact | Climate agenda's projected impact | Recommendations |
|---|---|---|
| **Medium**<br>The EU has not yet imposed sanctions on Russian products, but US sanctions could have a negative effect. | **Significant**<br>The implementation of EU and US climate policies will reduce the access of BRICS countries to OECD markets. This will lead to competition among BRICS countries for markets in developing countries (SEA, South America, Persian Gulf, etc.). | Promote the sustainable steel and aluminum agenda within the EEU and BRICS, in the framework of standards and trade agreements to maintain Russian position in developing country markets. |

*Source*: prepared by the authors

### *Energy resources*

By 2022, the leading importers of Russian oil were China (70.1 million tons), the Netherlands (37.4 million tons), Germany (19.2 million tons), Belarus (14.9 million tons), the Republic of Korea (13.5 million tons), Poland (11.2 million tons), Italy (8.9 million tons), the USA (7.4 million tons) and Finland (6.3 million tons) [TASS, 2022]. However, oil supply has shifted in 2022-2023: oil exports from Russia to India is increased by 1780% (from 0.1m b/d to 1.9m b/d). Exports to China is raised by 44%. Exports to countries in the African region has increased by 300%. At the same time, exports to the EU fell by 82% (from 3.3 million b/d to 0.6 million b/d) [IEA, 2024b].

Thus, in 2023, China was the largest buyer of Russian crude oil, accounting for 45% of the total market (2.3 million b/d). This is followed by India (33%), the EU (7%) and Turkey (5%) [The Energy Institute, 2024]. Notably, the EU countries have no outright prohibition on crude oil from Russia after 5 December 2022, with imports continuing by sea to Bulgaria and by pipeline to the Czech Republic, Slovakia and Hungary [IEA, 2024b].

In 2023, deliveries amounted to 92 million tons. It was compensated for 80% of the lost exports to Europe after the sanctions. In addition, Russia is currently establishing supplies to Sri Lanka, Egypt, the UAE, Cuba, etc. [Vedomosti, 2022].

By 2022, Russian coal was delivered to the markets of China (62.8 million tons), the Republic of Korea (24.2 million tons), Germany (22.3 million tons), Japan (21.6 million tons), the Netherlands (15.9 million tons), Turkey (15.7 million tons), and Ukraine (14.6 million tons) [U.S. Energy Information Administration, 2022]. In 2023, exports increase slightly by 1% compared to 2022. Growth is mainly driven by increased exports to China (up 52%), and India (up 43%). Turkey also buys Russian coal - the share of Russian imports in the structure of Turkish coal imports rose sharply to 46% in 2022 and to 58% in 2023 [Budris, 2024].

Meanwhile, in 2022 the fifth package of EU sanctions against Russia [European Commission, 2022b] introduced an EU ban on the sale, import or transit of Russian coal. Even though the EU expected that Russian economy would have lost export earnings each year, in fact the Russian market was largely unaffected as Russia redirected its supplies to the Asian-Pacific countries. This is also because Russia started to supply more coal to the countries that are the most active consumers - China and India. Coal exports to China increased by almost 52% and to India by 43%. The share of exports to the BRICS countries increased by 46% [Novak, 2024].

As for Russian gas exports, according to UN Comtrade, the main destinations in 2021 were Italy ($12b), China ($4b), the Czech Republic ($3.5b), Japan ($3.4b), Slovakia ($3b) and France ($2b).Meanwhile, China was the main importer in 2023, with a significant increase in shipments ($11.8b), while Italy's imports fell to $1.6b. Japan and EU countries (Hungary, Spain, Slovakia, France, Belgium) remained the other export destinations in 2023.

The EU has not sanctioned Russian gas, while the United Kingdom, the United States and Canada have sanctioned LNG imports [Interfax, 2024; OFAC, 2022; Government of Canada, 2024].

The analysis shows that there are currently no significant climate requirements that could affect product supply in the medium term in Russia's main markets for listed hydrocarbons, mainly China and India. China has a target to reduce coal and oil consumption by 2030 as part of its 14-year plan, but no specific measures or quantitative targets have been approved.

The GMP Energy Pathway initiative, which aims to reduce methane emissions in various sectors, including energy, has been announced by the EU, the US and several other countries for 2022. In particular, the initiative aims to reduce methane emissions by imposing requirements on importers of fossil energy, in particular possible bans on methane flaring and venting, as well as requirements to reduce methane and CO2 emissions throughout the fossil fuel supply chain [US Department of State, 2024].

EU legislation also reflects measures to reduce methane emissions. The EU Regulation on reducing methane emissions from the energy sector was adopted in 2024 and will apply to importers in the EU. The main objective is to collect information and reporting from importers and create incentives to reduce methane emissions associated with fossil energy imports into the EU, as the European Commission believes that most methane emissions associated with fossil energy consumption in the EU originate outside the EU. It is proposed to establish rules to accurately measure, report and verify methane emissions in the energy sector and to reduce emissions through leak detection and repair, including through restrictions on ventilation and methane flaring [EU Parliament, 2024b].

Notably, the initiative has been reflected in Chinese legislation. For example, in 2023 China launched a National Action Plan to Limit Methane Emissions [Ministry of Ecology and Environment, 2023], which aims to establish a system for monitoring methane emissions, including the establishment of an accounting, reporting and verification system for methane emissions, including coal mines, oil and gas fields, aquaculture farms, landfills and wastewater treatment plants. It is worth noting that this plan largely mirrors the draft Regulation on the reduction of methane emissions from the energy sector in the EU, which will require importers to report methane emissions, including Russian importers. Thus, although the initiative does not impose a ban on imports to the China and the EU, it shows the direction of the agenda of the largest economies that are consumers of Russian resources. It is worth noting that the US is now the largest source of methane emissions from oil and gas operations, and Russia is in the second place. At the same time, China is the largest source of emissions from the coal sector (Global Methane Initiative [GMI, n.d.]).

In addition, the IEA has identified the reduction of methane emissions from fossil fuel industries as one of the best and cheapest ways to reduce greenhouse gas emissions [IEA, 2024a]. The technologies and measures to reduce emissions are well known and have been successfully implemented around the world. About 40% of the 120 million tonnes of methane emissions from fossil fuels could be avoided at no significant cost, based on average energy prices in 2023. This is because the required cost of methane mitigation measures is lower than that of capture and use technologies. At the same time, the cost of capturing methane is higher for oil and gas than for coal [IEA, 2024a].

For example, Russian energy companies are already required to disclose information on methane emissions. In the future, as investment in projects to reduce methane emissions into the atmosphere increases in China and OECD countries, we can expect to see bans and restrictions on companies that do not implement such projects.

Turning to the development of the market for hydrogen energy and renewable energy sources, it is worth noting that at the moment Russia does not play a significant role in the international market. Although there are no sanctions on these types of products, there are no joint projects with the EU or other unfriendly countries. At the same time, it should be noted that the European Union is actively cooperating with other countries in the context of energy transition, implementing hydrogen energy and renewable energy projects in the former Soviet Union`s countries, Africa, the Balkans and other countries.

It should also be noted that the actively developing market of alternative energy sources, including RES, is already facing barriers created by both unfriendly and friendly countries, especially China. The stimulation of the creation of new renewable energy sources in the world is accompanied by the introduction of certification systems that confirm the clarity of such energy. Such confirmation is achieved both by concluding agreements between countries (in the case of the EU in the field of RES) and by providing proof of the source's compliance with standards (in the case of China in the field of bioenergy). Thus, market access becomes controlled by the largest energy consumers. A vivid example in this area is the production of bioenergy from wood pellets.  This method is significantly limited by EU standards, whilst at the same time for the Russian Federation wood pellets are one of the main export directions in the field of biofuels.

So, while new energy markets today are unrestricted by sanctions, climate change regulations are already shaping them, potentially limiting access for Russian companies.

*Table 3.* Experts' assessment of the impact of the climate agenda and sanctions on Russian energy exports

| Sanctions restrictions impact | Climate agenda's projected impact | Recommendations |
|---|---|---|
| **Significant**<br>There are bans on the purchase of oil and coal, and restrictions on access to the alternative energy market. | **Significant**<br>The hydrocarbon phase-out agenda promoted by the developed countries is reflected in the measures taken by the BRICS countries; in addition, access to the market for RES and biofuels is being restricted by the introduction of certification schemes in the markets that are the largest consumers of energy resources. | Developing methane control policies on the BRICS platform to ensure access for Russian raw materials to the Indian and Chinese markets, establishing certification systems at the EAEU and BRICS level to remove barriers to access to new markets. |

*Source:* prepared by the authors.

## Conclusions and recommendations for Russia

The analysis shows that after 2022 many Russian companies have changed their markets by reorienting themselves towards the markets of friendly states. As a result, the immediate threat to Russian exports from the CBAM project has now diminished. The products that are subject to the current requirements of the Trans-Carbon Regulation (TCR) that are discussed in this article, only aluminum products have not fallen under the restrictions of the sanctions and are maintaining their position in the EU market.

But even without European trans-carbon regulation, the climate agenda will impact Russian export potential, particularly in the face of sanctions restrictions and reduced market access to OECD countries. This impact will be related to both market access opportunities and increased global competition. The following table summarize the experts' assessments of the impact of the climate agenda and sanctions in the near term.

*Table 4.* Experts' assessment of the impact of the climate agenda and sanctions on Russian exports

| **Industry** | **Expert assessment** |
|---|---|
| Cement | The sanctions restrictions do not affect Russian producers. However, in the medium term (after full implementation of the EU SBAM in 2026), the development of CCS in the EAEU countries and the possible introduction of TUR in Kazakhstan may reduce the competitiveness of Russian products. |
| Aluminum, steel | Sanctions restrictions do not currently affect the aluminum industry but limits steel supplies. However, U.S. and EU measures against China could lead to a reorientation of Chinese producers to other markets where Russia is present. This could reduce Russia's export share. Given the carbon intensity of industries in India, China and Russia, it is advantageous for national producers to promote the climate agenda in the EAEU and BRICS markets in order to maintain their own positions. |
| Energy resources (oil, gas, coal) | Sanctions restrictions have encouraged Russian producers to reorient themselves towards the BRICS market. There are currently no significant climate regulations in these countries, but the Methane Initiative requires Russian companies to disclose information on emissions it their products exports to both the EU and China. As a result, we can expect the introduction of restrictive measures in this market for major polluters. |
| Energy resources (Renewable energy, hydrogen, biofuels) | Sanctions have not been imposed, and OECD and BRICS countries are already developing their own certification systems that will limit future market access for potential Russian exporters. |

*Source:* prepared by the authors.

It appears that further development of the international climate agenda will assist in reducing emissions from products delivered to international markets. Such greening of goods can become a competitive advantage for Russian exporters if domestic companies introduce technologies that reduce emissions of harmful substances in their production processes.

At the same time, active participation in the international agenda will also contribute to maintaining and developing the representation of Russian products in foreign markets. For example, within the framework of the established mechanisms of EAEU economic cooperation, including the development of approaches to the development of industrial policy and product safety, it is necessary to initiate a dialogue at the level of the EAEU on the harmonisation of national quota trading systems (QTS), as well as the introduction of a system of transboundary carbon regulation (TCR). This will reduce the risks for the supply of cement products from the Russian Federation, as well as for other categories of goods that will be included in the national ETS. It is worth noting that Kazakhstan's legislation also includes aluminum, fertilisers, electricity, iron and steel in the CCS. It should be noted that the climate agenda is not currently part of the EAEU's supranational agenda. However, from 2021, the countries of the Union have been taking measures to consider the climate agenda in the context of its impact on trade. In 2022, the Eurasian Intergovernmental Council approved a roadmap with a list of measures for cooperation between EAEU member states within the framework of the climate agenda (EAEU Climate Policy) [EEC, 2023]. Further development of the climate agenda in the Union is expected in 2024 [EEC, n.d.].

BRICS could become another platform for developing the international climate agenda. The development of their own methodologies and tools for accounting for methane emissions, as well as the formation of common targets and deadlines for reduction, will reduce the reporting burden on suppliers of traditional energy resources, as well as the risks of restricting access to markets in friendly countries. It is also necessary to develop a system of standards and certification of alternative energy sources, including renewable energy sources, biofuels and hydrogen energy, within the BRICS platform, which brings together the world's major consumers of energy resources from friendly countries. This will help reduce the barriers for BRICS companies to enter the market and help compete with the European Certification System. In addition, at the BRICS level, countries can harmonise their approaches to reducing harmful emissions from steel and aluminum production. This will prevent the creation of the GASSA system, which could limit Russian companies' access to international markets, which are expanding in the context of energy transition and growing demand for aluminum and other metals for renewable energy projects.

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