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**War, Sanctions and Russia's
Energy and Climate Policy:**

A HIGHLY UNCERTAIN FUTURE

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LibMod Analysis

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Executive Summary

Russia's shocking invasion of Ukraine in February 2022 has changed the geopolitical realities in Europe, spelling the end to Russia's position as Europe's most important energy supplier. Western countries have imposed an unprecedented number of sanctions on Russia, with its energy sector being one of the prime targets. In addition, the EU has vowed to fully phase out the imports of all Russian fossil fuels by 2027; over 1,000 international companies have severely curtailed operations in Russia; and the G7, the EU and Australia have recently introduced a 60 USD price cap on Russian crude oil. In 2022, high hydrocarbon prices have temporarily softened the impact of the sanctions on the Russian economy. However, as the war continues, Russia's energy sector and its entire economy will be increasingly affected by the lack of access to technology, international capital, and the progressive loss of the lucrative European markets, resulting in the fall in budget revenues. Despite efforts at sourcing technologies by means of parallel imports or by finding alternative suppliers, Russia has already had to postpone modernization plans in the oil and gas processing sector, scale down its LNG and hydrogen development ambitions, and search for alternatives to the Western-made gas turbines that its power and heat generation sector is heavily dependent on. The Russian government is pinning its hopes on import substitution projects in the energy sector, which will benefit some domestic companies like Rosatom, but delivering on them will be difficult, and the risks of corruption and mismanagement are high. The flight of hundreds of thousands of skilled workers, the loss of the innovation potential, and the emerging shift to the "war economy" are further undermining the development prospects of the Russian economy.

The rupture of ties with the West has also weakened the main driver of Russia's fledgling climate and decarbonization policy, where a flurry of regulatory and business activity took place in 2021. While Russia continues to officially subscribe to its climate commitments – also as part of its strategy to pivot to new markets in Asia and the MENA region, which are developing their own climate regulations – sustaining the pre-war momentum will hardly be possible. As the domestic economic and political situation deteriorates and resources are shifted to the defence sector, the issues of climate and decarbonization will inevitably slide down the list of priorities. Russia's ESG frontrunners – mainly consisting of large export-oriented companies with their main markets (formerly) in Europe – are likely to continue some efforts in this direction but will have to reduce capital-intensive investment in clean technologies. Companies catering to the domestic market, however, will have different priorities. Russia is hoping to reorient its energy flows to new markets in Asia; however, infrastructural constraints make this difficult, and Russia has already had to sell energy to its customers in China and India at a significant discount. As a result, Russia is increasing the domestic consumption of natural gas and coal, further entrenching the carbon lock-in. As the war continues, Russia, already a latecomer to the global energy transition, will continue to fall further behind. Even in the event of a future regime change, this gap will be difficult to close.



Introduction

Russia's shocking invasion of Ukraine on 24 February 2022 has ushered in a new geopolitical reality in Europe. With its initial plans to quickly overwhelm and subdue Ukraine foiled, Russia has been mired in a costly and lengthy war with no clear end in sight. The West has consolidated around supporting Ukraine politically, economically, and militarily, imposing an unprecedented barrage of sanctions on Russia. The sanctions have targeted Russia's financial industry, the central bank, and Russia's exports of fossil fuels and other goods, such as iron and steel, gold, wood, or cement. They have also constrained Russia's access to a wide range of advanced technologies. As a result, today Russia has the dubious distinction of being the most sanctioned nation in the world's history, subject to [12,379 restrictive measures](#) in total, far in excess of Iran.

With the mounting evidence of war crimes, the unlawful annexation of Ukrainian territories, and the deliberate destruction of Ukraine's energy infrastructure, Russia's isolation from the West is deepening as time goes on. In the meantime, the global climate crisis shows no signs of abating, and time to act is running short. As the world's fourth-largest greenhouse gas emitter, Russia's participation remains important for addressing this global issue but channels for cooperation are vanishingly small. Russia's nascent climate and ESG policy, which started developing in 2020-2021, was driven by the need to access the increasingly climate-conscious Western markets, from which it is now increasingly isolated. This paper will discuss the impact of energy and technology sanctions on Russia's energy sector and its energy and climate policy and address the key uncertainties moving ahead.

Western Sanctions and Russia's Energy Sector

Restrictive measures

Russia's revenues from oil and gas exports have been a central source of funding for its war in Ukraine, so the country's energy sector has become a prime target of the sanctions early on. In March 2022, [the US introduced an embargo](#) on imports of Russian coal, oil and liquefied natural gas (LNG) and banned American entities from financing or assisting foreign companies investing in energy production in Russia. The European Union, Russia's most important trade partner, has adopted eight sanctions packages since February 2022. The sanctions [prevent](#) the exports to Russia of goods and technology needed for oil refining, as well as of "energy industry equipment, technology, and services". They also introduce progressive bans on imports of Russian fossil fuels: since August 2022, on coal; since December 5, 2022, on seaborne crude oil, and from February 5, 2023, on

Russian refined oil products (e.g. diesel, fuel oil and gasoline). Although Russian piped oil and natural gas are not officially sanctioned, the EU's strategic direction is to achieve full energy independence from Russia. In May 2022, the European Commission presented its ambitious REPowerEU proposal, aimed at fully phasing out imports of Russian gas, oil and coal by 2027. This is to be achieved through a three-pillar approach: demand reduction through greater efficiency and energy conservation; diversification of (fossil fuel) suppliers; and accelerating the clean energy transition (including massive renewable energy deployment and a focus on renewable gases like clean hydrogen and biomethane). In 2022, the EU has already strongly reduced its consumption of Russian gas (see Fig. 1), aided by Russia's own drastic reduction of piped gas flows to Europe (although Russian LNG exports to the EU have risen).

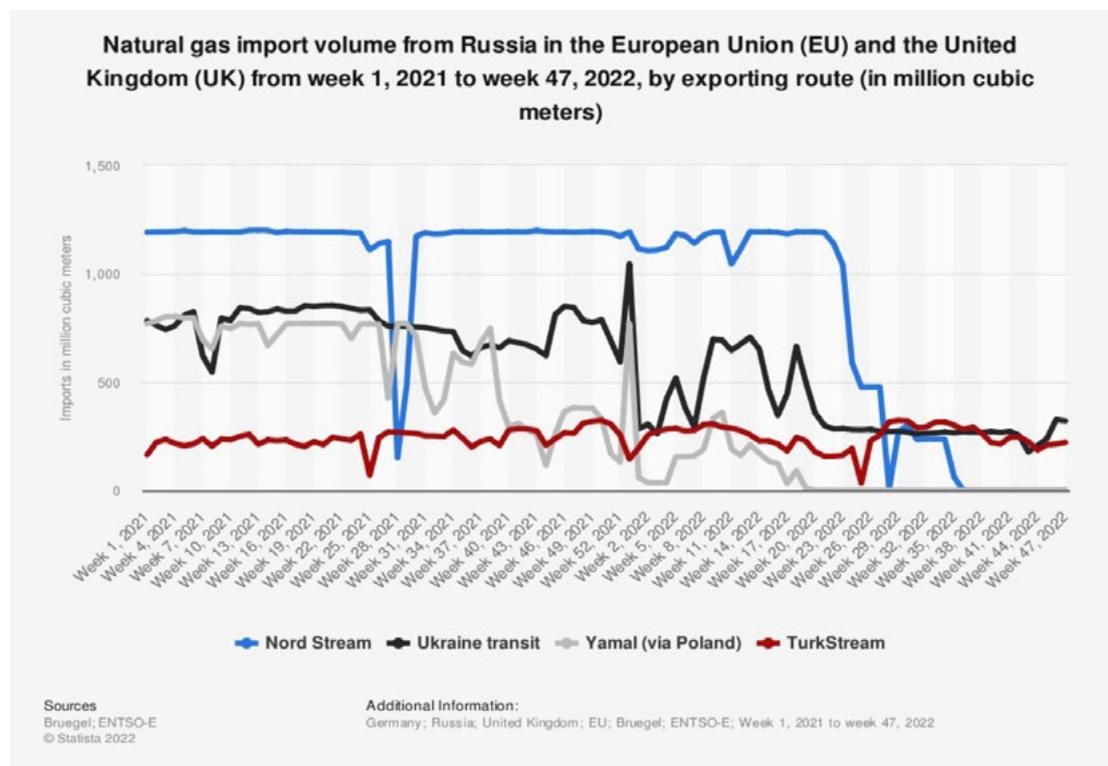


Fig. 1

After prolonged negotiations, on December 5, 2022, the G7 countries, the EU and Australia introduced a 60 USD per barrel price cap on Russian crude oil, in a bid to further limit Russian revenues while at the same time keeping Russian oil flowing to global markets. According to this measure, European shippers will be allowed to transport Russian oil to third countries, but only at the price below this cap. In response, Russia has announced it would not sell oil to any countries implementing the price cap.

“Russia’s energy sector is already beginning to feel the impact of Western technology sanctions.”

For now, the EU has replaced missing volumes of Russian gas through a combination of LNG imports from the US, demand reduction, and increased coal power generation. However, in the longer term perspective, the war in Ukraine is likely to prove one of the key accelerators of energy transition in Europe, with renewables viewed as indispensable not only for decarbonization but also for energy security.

Beyond the sanctions, a very significant blow to the Russian economy and its energy sector has come from corporate “self-sanctioning”. Since February 2022, over 1,000 international companies have voluntarily [either withdrawn from Russia completely or severely curtailed their operations there](#); this list includes major energy companies and technology suppliers, such as Siemens Energy, Vestas, Air Liquide, Total Energies, Shell, Fortum, Enel, and others. In combination, the developments described above are resulting into a progressive loss of lucrative European markets for Russia’s energy and into major disruptions of supply chains for leading Russian companies.

So far, Russia has weathered the sanctions better than expected, aided by the high prices for hydrocarbons. The latter had been on the rise even before the war due to a combination of the lack of investment in fossil fuels in recent years and the post-pandemic growth in the global energy demand. Together with a significant decline in imports, Russia’s high energy revenues have led to a very strong current account surplus in 2022: in the period from January to September 2022, it stood at a record high [198 billion EUR](#). However, the relative calm is temporary. Russia’s federal government’s balance already turned negative in June to August 2022, economic activity has been slowing down, and stocks of imported goods accumulated before the war are dwindling. The situation will become only graver with the entry into force of the EU oil embargo and with the further decline of gas exports to Europe. The impact of the sanctions on the economy has also been greatly amplified by Russia’s mounting military expenses and the massive exodus of highly qualified specialists, especially in the IT sector, who have either been relocated abroad by their companies, left independently for political reasons or fled the draft of September 2022. Russian companies have also had their staff sent to fight in Ukraine, and many have had difficulties in replacing these specialists with alternative candidates.

Impact of technology sanctions

Russia’s energy sector is already beginning to feel the impact of Western technology sanctions, which are far more extensive than those introduced in 2014 after Russia’s annexation of Crimea. Despite some efforts at import substitution undertaken over the past years, Russia’s dependence on foreign-made technologies remains high, especially when it comes to more complex ones, such as intelligent pump systems or rotary tables used for drilling oil wells. Modernization plans at Russian oil processing plants have been put on hold. Another important vulnerability in the oil and gas sector is the overwhelming dependence on imported software and IT solutions, to the

tune of some 90 percent. While Russia has a large pool of skilled IT labour, developing national software for the energy industry is both time- and cost-intensive.

[Western sanctions are also seriously undermining Russia's LNG development plans in the Arctic](#). In 2021, Russia was the [fourth-largest exporter of LNG](#), supplying some 8% of the world's total and having major growth plans (the LNG development strategy adopted in March 2021 envisioned a near tripling of Russia's LNG production capacity to 160 million tons by 2035). Today, access to technical knowhow, services and financing is interrupted. Such key partners as France's Total, Germany's Linde and Japan's Mitsui have exited Russian projects, while South Korea's Daewoo Heavy Industries has cancelled its plans to deliver icebreaker LNG tankers capable of working in Arctic temperatures. Finding alternative technology suppliers is a major challenge. Currently, Russia's largest LNG producer [Novatek is in talks](#) with a newly-established United Arab Emirates Company called Green Energy Solutions to help procure the necessary technology. There are also hopes that Russia's largest shipbuilding company, Zvezda, would be able to supply the required LNG carriers; construction on them began already in November 2020.

As for Russia's power and heat generation sector, where natural gas is the leading fuel source with a share of 46%, it is heavily reliant on Western-manufactured large combined cycle gas turbines

(CCGTs). As part of the costly power sector modernization program, between 2010 and 2020, some 30 GW of modern gas-fired generation was built in Russia using such turbines. Currently, Russian power generating companies are experiencing difficulties with servicing their equipment and procuring spare parts, which is a challenge to the stable functioning of the national energy system. Modernization plans have been [postponed due to the lack of equipment or supply delays](#); the situation is likely to aggravate in the future. For example, the Tatenergo power generation company has been [unable to secure the delivery](#) of the General Electric gas turbine to Russia which was purchased for its flagship Zainskaya GRES (850 MW) modernization project in Tatarstan.

The renewables sector, which has been developing slowly in Russia, has not been spared either. In the wind sector, the departure of the few key suppliers – the Danish wind turbine manufacturer Vestas (expected to pull out of Russia completely by the end of 2022) and Siemens Gamesa has left Rosatom's wind power division Novavind as the monopolistic technology supplier. The situation is somewhat different in the solar sector, where Russia's cells-to-module PV manufacturer Hevel Solar and Solar Systems, a subsidiary of China's Amur Sirius, control a large share of the market; yet sanctions-related supply chain disruptions are affecting all market players.

Russia's Climate and Energy Policy before and after February 2022

In the years 2020 and 2021, Russia experienced an unprecedented rise of attention to the issues of decarbonization and climate policy. The key driver for this was external, rooted in the need to access Western markets with their increasingly more stringent climate regulations and, more concretely, the looming introduction of a carbon border adjustment mechanism (CBAM) by the EU, which would apply to several categories of Russia's exports to Europe.¹ Despite its strong initial opposition to the CBAM, the powerful hydrocarbon lobby and widespread climate scepticism, Russia reluctantly began developing its own policies. In 2021 alone, Russia adopted the federal law on limiting greenhouse gas emissions, albeit in a watered-down form (July), the [Hydrogen Development Concept](#) (August), a sustainable financing ([green](#)) [taxonomy](#) drawing on the EU's example (September) and announced a 2060 net zero target and published a revised low-carbon development strategy (October). It also laid the regulatory groundwork for a pilot project on emissions trading in the Sakhalin region in the Far East – its first-ever attempt at carbon regulation – with the bill adopted by the Duma in the first reading in December 2021.

“Today, the official government stance is that Russia remains committed to all its policies in the area of climate and decarbonization.”

Admittedly, Russia has not been pursuing any major transformation of its hydrocarbon-based economic model. Its unambitious Paris Agreement goals – the reduction of greenhouse gas emissions by 30% by 2030 compared to 1990 – have been fulfilled by default due to the deindustrialization of the 1990s. Rather, Russia has tried to find its place in the global energy transition by building on its perceived natural and technological advantages – developing nuclear power and hydropower, relying on the absorptive capacity of its vast forests, and deploying CCUS technologies, with only a minor role accorded to modern renewables like wind and solar.

After 24 February 2022, a period of disorientation ensued. There was avid speculation whether Russia would pull out of the Paris Agreement or abandon its 2060 net zero target, announced by President Putin only several months prior. Russia's most fervent and high-profile advocate of renewables and energy transition, the former head of Rusnano Anatoly Chubais resigned from his position and left the country. Investment tenders for wind and solar projects for 2022 were cancelled and moved to 2023. The commencement of the CO₂ emissions trading pilot project on the Sakhalin Island, the bill on which had been adopted by the State Duma in the second reading only days before the war, was postponed by six months, from 1st March to 1st September 2022.

Today, the official government stance is that Russia remains committed to all its policies in the area of climate and decarbonization. In practice, this has so far meant riding on the momentum accumulated in 2021 rather than introducing major novelties. In March 2022, President Putin signed the bill on the carbon emissions trading pilot project in Sakhalin into law, but the work in this area was done in the previous year. In June 2022, Sber launched

¹ For a more detailed analysis, see Yana Zabanova, “Navigating Uncharted Waters: Russia's Evolving Reactions to the CBAM and the European Green Deal”, Heinrich Böll Foundation, Berlin, November 2021. <https://www.boell.de/en/2021/11/12/navigating-uncharted-waters>

the [“Green Supply Chain” ESG instrument](#) developed in 2021, aimed at assisting companies in checking the ESG compliance of their suppliers. In September 2022, Dom.rf, a Russian financial institution for housing sector development, adopted a voluntary [national green building standard \(GOCT\)](#) for multi-apartment complexes. The [national carbon registry](#) was launched on 1st September, and the same month, the first climate project was registered in Russia featuring the construction of a 250 kW solar farm in the Sakhalin region aimed at reducing the consumption of diesel fuel. On 26th September 2022, Russia’s National Commodity Exchange (part of the Moscow Exchange, MoEx) [launched trade in carbon units](#)² (although so far, transactions have been rather marginal). Russia is also preparing to pass the law on national “green certificates” (guarantees of origin) for electricity – something that has been discussed for several years and has become more prominent after the departure of the voluntary scheme, I-REC.

Green financing is one of the areas still attracting a fair deal of attention, possibly due to the continued involvement of such important financial market players as Sber, VEB.RF (a development corporation), Gazprombank (the only leading Russian bank that is not subject to EU sanctions, due to its role in gas trade – and incidentally the leading institution financing renewable energy deployment in Russia), Promsvyazbank, and others. Among other issues that are likely to retain their relevance is the melting of Arctic permafrost. Most of Russia’s resource-extracting infrastructure is located in permafrost areas and is increasingly at the risk of damage due to climate impacts – something that large corporations like Norilsk Nickel have already experienced. As such, the Russian government has announced plans to launch a methane monitoring system in Arctic regions and will likely invest

in adaptation measures. Similarly, circular economy, through its promise of more effective material use and lowering dependence on imports, may receive an unexpected attention boost in the current geopolitical situation. Finally, with limited resources, Russia is most likely to prioritize measures which combine climate and economic benefits – e.g. promoting energy efficiency through reduced fuel consumption.

A number of strategic planning documents in Russia will have to be revised in the new geopolitical conditions. This includes the Hydrogen Development Concept, which was premised on the ambitious vision of making Russia a leading hydrogen exporting country, with Europe, Japan and South Korea identified as target markets. The current position of the government is that the Strategy should aim at developing hydrogen technologies and promote domestic demand for hydrogen, yet its emergence is very doubtful. As for the Low-Carbon Development Strategy, its plans to actively use carbon capture, utilisation and storage (CCUS) technologies to decrease Russia’s emissions have been put in question. On the one hand, Russia has a vast number of potential geological CO₂ storage sites. On the other hand, with technology export restrictions, access to CCUS technologies has become very difficult, and Russia’s cautious attempts to introduce some carbon pricing – to the tune of 1000 RUB (ca. 15 EUR) per ton of CO₂ in Sakhalin – are not strong enough to encourage investment projects in CCUS. Given the worsening economic situation in the country, it is highly unlikely that the government will be making carbon regulation more stringent or that the CO₂ prices will rise.

The future of the renewable energy support mechanism, which, after much controversy, had been prolonged in 2021 until 2035, is in limbo too, and there have been calls on the part of large energy consumers to discontinue it. The government never planned for renewables to play a central role in Russia’s decarbonization plans, and this perception has only been strengthened now. What is more likely is the niche

² In Russia, carbon unit, or carbon credit (углеродная единица) is defined as “the verified result of an already implemented climate project, expressed as a mass of greenhouse gases equivalent to 1 tonne of carbon dioxide.” <https://carbonreg.ru/en/>

developments of renewables – in distributed generation, in isolated areas, especially in the Arctic zones, where they can lower the consumption of expensive diesel, or by export-oriented companies either building their own renewable generation or concluding power purchase agreements with green energy producers. In addition, given that the prices of electricity and gas will rise significantly in Russia in 2023, in some regions (such as Krasnodar) renewables will be able to compete with traditional generation on price alone, [making solar panels more attractive](#) to households and small and medium business owners.

Despite the challenges, there is still a great deal of interest in Russia in discussing climate and decarbonization issues in the new geopolitical realities. A quick look into the agendas of key political and sectoral fora in 2022 – including the St Petersburg Economic Forum (April 2022), the Far Eastern Economic Forum (September 2022), and the Russian Energy Week (October 2022) - confirms this impression. For instance, at the Russian Energy Week in October 2022, the prospects of energy transition in Russia and worldwide were the focus of many sessions, including [“Creating Technologies for the Energy Transition: Current Challenges and How to Solve Them”](#), [“Energy Transformation in Russia: Opportunities and Challenges”](#), or [“Low-Carbon Energy Around the World: Crisis as a Time of Opportunity”](#) (the latter was sponsored by Rosatom). On 21st November 2022, the ESG Forum with the title “Green (Sustainable) Financing for Energy Transition” took place in Sochi. Among at least some circles of Russian elites, there is a belief that if any rapprochement with the West is to happen in the future, climate issues would likely be the easiest starting point. It is in this spirit, too, that Russia have been pushing for having low-carbon technologies exempt from Western sanctions.

Furthermore, there is a growing recognition in Russia that climate policies are a global phenomenon and are increasingly important in the markets Russia is planning to pivot to, such as in Asia-Pacific and the

MENA region. This is also the conclusion of [Sber’s survey](#) on ESG agendas in key economies in Asia and the Middle East, published in September 2022. At Asian stock exchanges, ESG reporting requirements are high; at the Hong Kong Stock Exchange they are even more stringent than in the West. Russia has also signalled its interest in developing a voluntary carbon market with Asia-Pacific countries. There is a steep learning curve ahead though: unlike the more harmonized and familiar EU approach, the rapidly developing plethora of climate-related regulations, policies, and strategies in Asian countries is staggering, representing a terra incognita for Russian stakeholders interested in these markets.

“The government never planned for renewables to play a central role in Russia’s decarbonization plans.”

At COP 27, which took place in November 2022 in Egypt, the Russian delegation [sought to cooperate with emerging economies](#) to bring its preferences to the agenda. One of these points, where it was supported by China and the UAE, is applying technological neutrality to climate solutions (in practice, for Russia, this means prioritizing low-carbon sources of energy other than renewables, mainly nuclear power, or introducing CCUS technologies), as well as promoting the acceptance and recognition of forest climate projects. Russia has also been pushing against strong statements on phasing out fossil fuels, preferring to concentrate on absorption of greenhouse gases instead. One of the main asks of the Russian delegation – making low-carbon technologies exempt from sanctions – however, remains unresolved, given that Western states do not wish to address this issue, at least until the end of the war.

In addition, Russia is also likely to pursue closer cooperation with Eurasian Union partners. In September 2021, the Eurasian Union Collegium set up a [High-Level Working Group](#) to facilitate bringing the climate policies of its member states closer together. After a prolonged pause following the invasion of Ukraine, the Eurasian Economic Commission announced in October 2022 that it was working on a climate roadmap in cooperation with Eurasian Union governments [along the following dimensions](#): analysis of climate regulations, proposals for shared mechanisms of carbon regulation, Eurasian low-carbon initiatives, and setting up a Bank for Climate Technologies and Digital Initiatives.

All in all, climate and decarbonization issues continue to be widely discussed in Russia, yet the outlook is highly uncertain. It is doubtful that facing an increasingly dire political and economic situation and dealing with restricted access to technologies and finance, Russia can preserve its momentum on climate policy and ESG. The [federal budget](#) adopted by the Russian Duma for 2023-2025 shows clearly where the government's priorities lie. Expenditures for the defence sector, as well as for domestic security forces and law enforcement (in effect, the repressive state apparatus) are slated to make up a third of total expenditures. By contrast, the budget for supporting the national economy will be slashed by 20%, for industrial development and competitiveness by 30%, and for innovation-led economic development by 18%. With falling exports and a growing focus on the domestic market, environmental and especially climate policies will be de-prioritized. This is [already happening](#). Timelines for complying with various environmental requirements, such as securing environmental permits for the most polluting enterprises, have been relaxed, and the Russian car manufacturer Kamaz has received the permission to produce internal combustion engines with the least environmentally friendly Euro 0 emissions standard. As for Russia's small and medium enterprises, they have never been particularly involved in sustainability initiatives to begin with.

“The outlook is highly uncertain.”

Russia's corporate sector and ESG in times of war

Prior to the war, Russia's private sector began coming to terms with the challenges posed by the global energy transition and crafting its own responses. As part of their corporate decarbonization strategies, foreign companies operating in Russia generated a growing voluntary demand for renewable energy, be it through buying renewable energy certificates, concluding power purchase agreements, or constructing their own RE generation; some examples include Unilever, Efes Pilsner, or Leroy Merlin. Another group of ESG frontrunners has consisted mainly of Russian export-oriented companies, representing such sectors as metals and mining, oil and gas, wood processing, and fertilizer manufacturing. They began adopting climate strategies, producing ESG reporting, investing in green technologies, and in some cases even setting climate neutrality targets (e.g. Rusal, Tatneft, Lukoil, or Metalloinvest). The aluminium-producing giant Rusal began applying an internal carbon price already in 2017 and registered a low-carbon brand of aluminium, ALLOW, produced with the energy from company-owned hydropower plants in Siberia. NLMK, Russia's steel producer with its main market in Europe, announced plans to produce low-carbon steel. According to [a study](#) by the Higher School of Economics published in January 2022, 16 out of 25 (64%) largest Russian companies required their suppliers to comply with at least some ESG requirements, and 25% of them – including such leading players as Sber, Rosatom, Sibur, and Rusal - required ESG compliance along all indicators.

With the outbreak of war and the increasing isolation from the West, ambitions have been scaled down. One of the motivations for [ESG reporting in Russian companies](#) was the demand for information from international ESG rating agencies and from international investors. Since the war's outbreak, however, leading international agencies severely downgraded Russian entities' ratings or dropped Russian equities from their indices altogether, and foreign

investors have been unable to trade Russian stocks. An independent ESG rating agency RA-Expert, however, continues to issue rankings for companies and regions; in the [latest edition published in November 2022](#), the top three places belong to NLMK, Enel Russia, and Polymetal.

Asked about the key obstacles to their decarbonization plans in a 2022 survey, representatives of export-oriented Russian companies pointed to the lack of access to technology, economic uncertainty, having to shift resources to higher-priority areas, and narrowing access to financing. Supply chain disruptions, growing costs for logistics and insurance related to accessing new markets, as well as the strong rouble have all led to falling revenues for Russian exporters. The experience of Russia's steelmaking companies, such as Severstal, MMK, and Evraz, is a case in point: because of the EU steel embargo, they have been forced to transport steel over much longer distances to Asian markets, which has come at higher costs; as a result, they have faced nearly zero profitability (or even losses), forcing them to reduce output.

Many companies in Russia have de-prioritized ESG activities; this is more common in cases where ESG was mostly limited to greenwashing. However, the export-oriented core of the Russian economy has maintained the view that ESG will remain important in the longer-term perspective. Given the capacity built and the initiatives launched in the last two years, there is a reluctance on the part of the ESG frontrunners in Russia to simply abandon this. As corporate stakeholders recognize, it is important to maintain consistency, avoid lapses on releasing non-financial reporting, and make an effort not to squander the capacity developed up until this point. Finally, there is an understanding that with the globally growing emphasis on value chain sustainability and life-cycle emissions assessments, Russian products and inputs will be subject to scrutiny anyway.

In search of new markets and “friendly” partners? Russia’s pivot southeast

Reorienting energy flows

Confronted with the loss of its Western energy partners – classified as “[unfriendly countries](#)” per government’s resolution of March 5, 2022 (the list has been subsequently expanded), Russia has been trying to pivot to new markets, such as Asia Pacific, the Middle East and Turkey. (Importantly though, a number of leading Asian economies have joined in the sanctions, including Japan, South Korea, Taiwan, and Singapore.) These are viewed both as alternative export destinations for Russia’s energy and other raw materials and also as new potential sources of technology imports (whether directly, or by means of so-called parallel imports). The success of this strategy has been mixed so far.

India and China have indeed absorbed some of the hydrocarbons that Russia previously supplied to Europe, but at a deeply discounted price. India has jumped at the opportunity to snatch cheap Russian oil for its petrochemical industry, in order to export higher value-added products at a major profit. China has turned into a major importer of Russian coal, absorbing between 80 and 90% of Russia’s exports. This has put pressure on the Far Eastern railway link and represents a serious diversification risk for Russia, especially as other Asian importers like Japan, Taiwan, or South Korea are planning to gradually phase out Russian coal.

Compared to oil or coal, reorienting the flows of natural gas is a much more difficult undertaking. The pipeline infrastructure from Russia to Asia is limited, and any new buildout is both costly and time-consuming. The Power of Siberia gas pipeline to China, launched in 2019, is only capable of transporting some 16 bcm annually and will not reach its full 38 bcm capacity until 2025. There are plans for a second pipeline, the Power of Siberia 2, but it remains uncertain whether it would ever be built. As for LNG, which has the advantage of flexibility, Russia is constrained by its dependency on Western suppliers for technology and management expertise, which is already expected to postpone the launch of Novatek’s flagship Arctic LNG-2 project. The other ongoing project, Gazprom’s Baltic LNG, is at a less advanced stage. According to [Nikos Tsafos of the US-based CSIS think tank](#), Russia can at best transport 80 bcm of gas to Asia using the current infrastructure (in comparison, Russian gas exports to Europe in 2021 stood at 155 bcm). Under the most favourable conditions, this amount could grow to 100-120 bcm by 2030, but Russia would never be able to achieve in Asia anything similar to its former market power in Europe.

There may be another way to bring Russian gas to European markets though. In October 2022, Putin proposed reorienting gas flows from Nord Stream 1 to Turkey. This feeds into Turkey’s vision of becoming a European gas hub, sourcing gas from Azerbaijan and possibly Russia and Central Asia and re-selling it to European customers. However, creating such a hub would require some additional infrastructure, and whether it will be possible to find European buyers for “masked” Russian gas sold through the hub [remains an open question](#).

Sourcing technology

Russian enterprises have proved flexible in finding way around the 2014 sanctions, yet the current situation is significantly more serious, affecting all parts of industrial value chains. One of the more immediate ways to deal with technology sanctions is to engage in so-called “parallel imports” - that is, importing non-counterfeit goods from third countries without the agreement of the company that owns the rights to the product. In June 2022, Russia adopted a [special law](#) lifting any legal repercussions for parallel imports of a wide range of consumer and industrial goods ranging from weapons to luxury cars to clothing to e-goods to gas boilers, and many more. Dubai, Hong Kong and Turkey all play a role as hubs for parallel imports into Russia. Turkey in particular has emerged as the [main channel for technology imports into Russia](#) and a window for Russian entities and individuals doing business with Europe. However, parallel imports are not a silver bullet: transport companies may still refuse to transport such goods to Russia, fearing secondary sanctions. Furthermore, specialized industrial software for the oil and gas sector cannot be sourced in this manner.

When it comes to technology suppliers, Russia is betting on China to supply many of the technologies that Russia used to import from the West, and to join important industrial projects. Some examples of potential cooperation in the area of low-carbon transition include plans for enhanced cooperation on hydrogen. In May 2022, after losing AirLiquide, a leading French industrial gases company, as a partner in the Sakhalin hydrogen development plans, Rosatom’s subsidiary Rusatom Overseas signed a cooperation agreement on hydrogen production with the China Energy Engineering Group. However, any hydrogen export plans to China are questionable, as the latter, with its massive renewable energy capacity, may be able to produce enough on its own. Another example is the oil company Rosneft, which is planning to build a large-scale 200 MW wind park in Taymyr in partnership

with Chinese companies, with the planned launch in 2024. In general, however, working with Chinese companies may turn out to be more complicated than with Western partners; and China is traditionally less interested in technology transfer, especially given the small size of the Russian market. Aside from China, Iran may emerge as a technology supplier to Russia – not only of kamikaze drones used to strike Ukraine’s civilian infrastructure but also of the sorely needed power sector equipment. In October 2022, Iran reportedly signed a [contract for delivering 40 Iranian-manufactured gas turbines to Russia](#).

Supplying technology

Isolated from the West, Russia has intensified efforts to build geopolitical and economic influence [in the Global South](#), where it historically holds greater political clout, with high-profile diplomatic visits and large projects. One target in particular has been Africa, the engagement that began already in 2019 with the landmark Russia-Africa Summit held in Sochi. Trying to build on the strong Soviet-African ties, Russia is now attempting to position itself as a protagonist in the anti-colonial narrative and has accused the West of exploiting Africa for its resources and for undermining Africa’s food security in the wake of the war in Ukraine. The nuclear state corporation Rosatom has sought to position itself as a supplier of nuclear technologies to the continent that for now has only one nuclear power plant (in South Africa). Rosatom’s flagship project is the El Dabaa NPP in Egypt, where construction began in July 2022. It is currently in talks with Uganda about a similar project. African countries often view Russia as an attractive partner in the nuclear sector, since Russia offers a full package: providing loans, carrying out construction works, training local staff, assisting with plant maintenance, and supplying nuclear fuel for the plant’s entire life cycle. RusHydro, Russia’s state-controlled hydropower company, also has plans to construct new HPPs in Africa.

Focus on the domestic market

With so many economic ties and supply chains disrupted and export opportunities shrinking, Russia is increasingly forced to pay greater attention to the domestic market, both as a demand centre for energy supplies that cannot be exported to alternative markets, and for import substitution. The government expects the share of export-oriented industries in the GDP to [contract from 29.8% in 2021 to 22.6% in 2030](#). The fall in export revenues - expected to be pronounced already in 2023 - can deal a serious blow to the state budget. To help fill the budget, the government is currently planning to raise severance taxes for oil and gas companies and to increase energy tariffs for the industry.

Technology sovereignty and import substitution

Import substitution and technology sovereignty have officially been a policy priority for Russia for years, especially since the imposition of Western sanctions in 2014. However, tangible successes have been limited, and Russia remains technologically dependent on the West for a wide range of critically important technologies. In October 2022, the government proposed to include “[technological sovereignty](#)” as a legal concept in the Law on Industrial Policy. In the energy sector, the focus is on developing Russian technologies for the oil processing industries, IT solutions for Industry 4.0, gas liquefaction technologies and LNG carriers, as well as a Russian-made gas turbine.

The renewed focus on import substitution and technology sovereignty might benefit domestic stakeholders, including leading machine-building holdings. Rosatom, as a leading high-technology company in Russia, is poised to strengthen its position in three areas related to low-carbon technologies: as a wind equipment manufacturer and developer, as a hydrogen technology supplier, and as a prospective li-ion battery manufacturer for Russia’s fledgling electric vehicle market. In the wind power

sector, Rosatom has been left as the only localized wind turbine manufacturer and is now planning to branch into the production of permanent magnets for wind power stations as well. Rosatom has also been involved in hydrogen technology development and is planning to develop a hydrogen cluster in Sakhalin in cooperation with Chinese partners. Finally, Rosatom has also been interested in producing li-ion batteries and energy storage systems. In October 2022, Rosatom’s subsidiary Renera launched the construction of a factory with a 4 GWh capacity in the Kaliningrad Region, slated to open in 2025 or 2026. In April 2022, Rosatom and Nor Nickel announced plans to create a joint venture to [explore lithium mining in Murmansk Region](#), with plans to process lithium for li-ion batteries.

In general, however, existing constraints make the ambitious import substitution goals extremely difficult to achieve. Russia’s economy has been hit by a massive outflow of human capital, affecting both high-skilled industries and small and medium enterprises. Its innovation-led development prospects are undermined: as Sber’s Chairman of the Board German Gref openly [acknowledged in November 2022](#), the departure of foreign companies will lead to lower competition and a decreased innovation potential. Import substitution initiatives require large amounts of state funding, increasing the risks of corruption, inefficiency, and duplication of functions. At the very minimum, this would result in higher costs and lower quality for the consumer. Relying on Russian-made industrial technologies is likely to lower energy efficiency and result in rising CO₂ emissions, as companies catering to the domestic market have less of an interest in complying with stringent environmental requirements. Finally, as part of the [emerging “war” economy](#), Russia is likely to shift available resources – material, financial, and human - to the defence sector. As Russia moves to prioritize military supplies and technologies, such as drones, other sectors of the economy will find it difficult to compete.

Domestic demand

Struggling to reorient natural gas exports to new markets, Russia is trying, in parallel, to promote increased gas consumption at home, even though it comes at the cost of much lower revenues due to regulated prices. Russia's regional gasification program is aimed primarily at transitioning coal-powered generation to gas, especially in Western Siberia and Sakhalin. There has also been renewed interest in Gazprom's long-existing program of promoting gas-based vehicle fuels but the underdeveloped

refuelling infrastructure is an obstacle to these plans. In addition, it remains unclear to what extent the planned increased domestic consumption of gas could offset the simultaneous increase in the domestic use of coal (7.2 percent more in January to September 2022 compared to the same period in 2021). Russia can also try to use more oil and gas domestically by increasing the share of higher value-added activities, in particular in the petrochemical and gas chemical industry. Here, however, the problem of the limited access to technologies remains.

Conclusion

Russia's full-scale invasion of Ukraine in February 2022 has spelled the end of its status as Europe's most important energy supplier. The EU is now planning to fully phase out imports of Russian fossil fuels in the coming years, progressively depriving Russia of its most lucrative energy markets – and Russia's federal budget of its largest source of revenues. Western sanctions have seriously undermined the development prospects of Russia's energy sector and its entire economy by restricting access to key technologies and international finance; the situation has been further aggravated by the massive outflow of qualified labour and the departure of Western companies. With Russia's solidifying isolation from the West, its fledgling climate and decarbonization policy, too, has lost its most important driver. On the one hand, the Russian government has insisted that it remains committed to its policy course, not least because the

Asian and MENA markets that Russia is trying to pivot to are developing their own climate regulations. Likewise, Russia's export-oriented industries are likely to continue their ESG activities, albeit to a lesser extent due to economic constraints. On the other hand, Russia's economic situation is expected to worsen significantly, which would inevitably result in climate and decarbonization issues moving down on the priority ladder, especially as the government shifts resources to the defence sector in the increasingly protracted and costly war. The share of export-oriented industries in the GDP is forecast to decline too, and companies catering to the domestic market are unlikely to be as concerned with environmental requirements. Russia, which is already a latecomer to the global energy transformation, will fall even further behind, and this gap will continue growing as long as the war in Ukraine rages on.



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Russia's shocking invasion of Ukraine in February 2022 has changed the geopolitical realities in Europe, spelling the end to Russia's position as Europe's most important energy supplier. Western countries have imposed an unprecedented number of sanctions on Russia, with its energy sector being one of the prime targets. As the war continues, Russia's energy sector and its entire economy will be increasingly affected by the lack of access to technology, international capital, and the progressive loss of the lucrative European markets.

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