The Adaptation Game — Russia and Climate Change



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Abstract

Russia is an outlier in the international consensus on climate change. On the one hand, it formally recognizes that global warming poses a threat to the planet and to Russia in particular. On the other hand, there is no sign of any serious commitment to reduce carbon emissions or develop renewable sources of energy. Fossil fuels remain at the heart of the Kremlin's vision of Russia as a global economic actor and great power.

Events are intruding to disturb official complacency—the thawing of the permafrost, more frequent extreme weather events, heightened public consciousness, and moves toward decarbonization in Europe and Asia. Nevertheless, the Russian government continues to hold the line. Its climate "adaptation policy" is largely intended for show, and denies the need for substantive change or hard choices.

Russia's transition to a post-carbon economy seems improbable today. However, it should not be discounted entirely. Faced with the threat of being left behind by the 21st century energy revolution, decision-makers may eventually be forced to recognize that Russian climate policy is unsustainable—environmentally, economically and, above all, strategically. If and when change comes, it is unlikely to be smooth or coherent.

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Introduction

Climate change is one of the great challenges of our time, affecting democratic and authoritarian regimes alike, developed as well as developing economies. For a long time ignored by governments, the reality of global warming has become one of the few international issues where there is some degree of consensus. Barring a handful of exceptions, most governments now acknowledge there is a major problem, whose consequences can no longer be ignored.

Russia, however, remains somewhat of an outlier. On the one hand, Moscow formally recognizes the threat climate change poses to the world, and to Russia in particular. In September 2019, the government finally ratified the 2015 Paris agreement, and it has since formulated a climate action plan. On the other hand, President Vladimir Putin continues to express doubt about the human causes of global warming, and there has been no serious effort to reduce carbon emissions or develop sources of renewable energy such as solar and wind.

While much of the developed world is expanding the use of renewables,² Russia is doubling down on fossil fuels development. The government's Energy Strategy-2035 envisages their continued growth as the spearhead of Russia's future as a global economic player.³ Gas production, in particular, is expected to reach 1 trillion tonnes a year by 2035—a 50 percent increase from the 2019 figure of nearly 680 billion tonnes.⁴ Moscow speaks of climate 'adaptation'—as in pursuing measures to adapt to the effects of climate change—but has shown no interest in taking action to slow global warming. Its position is one of climate denialism in all but name.

^{1.} Article 7 of the Paris agreement "requires all Parties ... to engage in adaptation planning and implementation through e.g. national adaptation plans, vulnerability assessments, monitoring and evaluation, and economic diversification", United Nations Climate Change, available at: https://unfccc.int.

^{2.} In 2020, renewables accounted for 90 percent of new energy generation capacity installed worldwide, and by 2025 will displace coal as the biggest source of power. See F. Harvey, "The Paris Agreement Five Years on: Is It Strong Enough to Avert Climate Catastrophe?", *The Guardian*, 8 December 2020, available at: www.theguardian.com.

^{3. &}quot;Energeticheskaia strategiia Rossijsskoj Federatsii na period do 2035" (Energy Strategy of the Russian Federation for the period up to 2035, henceforth referred to here as Energy Strategy-2035), 9 June 2020.

^{4.} Interview with Russian Energy Minister Alexander Novak in Jillian Ambrose, "Russia Rules Out Cutting Fossil Fuel Production in Next Few Decades", *The Guardian*, 1 November 2020, available at: www.theguardian.com.



How did Moscow arrive at this point? After all, few countries have suffered more environmental damage than Russia has over the past century. Today the melting of the permafrost threatens to inflict enormous financial as well as environmental losses. There is also a strong tradition of public environmentalism. In the 1960s, the Soviet dissident movement originated in the opposition to a polluting cellulose plant on Lake Baikal, and there has been a series of high-profile environmental protests in recent years. With its pedigree in scientific research and a highly educated population, Russia has the potential to become a world leader in various forms of renewable energy, from hydro to wind and solar. But despite all this Russia ranks among the worst-performing countries in addressing climate change environmental problems. The latest Climate Change Performance Index (CCPI) places it 52 out of 61 countries, worse even than any of the former Soviet republics except for Kazakhstan.5

This essay sets out to explain the context, drivers, and goals of Russian climate policy, and how it fits into the Kremlin's larger vision of Russia's place in the world. The story reveals apparent paradoxes and contradictions, but also several recurring themes—narrow national self-interest, strategic entitlement, a realpolitik defined by opportunism and transactionalism, and a profound conservatism hostile to almost any kind of change.

First Principles

Russian climate policy is based on a number of first principles. The most important is that it is subordinate to Moscow's larger strategic objectives at home and abroad. The Putin regime engages with the issue of climate change not out of an altruistic desire to "save the planet" or because it believes it poses an existential threat to Russia. The level of official attention is contingent on the extent to which climate policy is judged to serve other, higher priority goals. These include geopolitical and geoconomic power projection; ensuring economic growth; protecting the market position of energy majors such as Gazprom, Rosneft and Novatek; promoting Russia as a good international citizen; and managing popular anxieties about the degradation of Russia's natural environment.

Russian climate policy should also be understood against the backdrop of Moscow's deteriorating relations with the West. Parts of the ruling elite see climate change as an issue that has been instrumentalized in order to undermine Russia's competitive advantages in hydrocarbons.⁶ Just as the West has been accused of using the "rules-based order" as cover to advance its interests at Russia's expense, so today it is charged with climate "alarmism" as a means of attacking the economic foundation of Russian power.⁷ Viewed through this prism, European efforts to restrict carbon emissions and switch from fossil fuels to renewable energy have an ulterior motive: to weaken the commercial position of Russia's energy companies.⁸

Crucially, few in Moscow regard climate change as a clear and present danger. The permafrost is melting, the Arctic sea-ice is retreating, and there are more frequent extreme weather events than ever before. But these are problems that are seen to affect a relatively small number of Russians, or

^{6. &}quot;Natsional'nyj plan meropriiatij pervogo etapa adaptatsii k izmeneniiam klimata na period do 2022 goda" (National plan of measures in the first stage of adaptation to the changes in climate in the period up to 2022), Russian government directive No. 3183-r, 25 December 2019, p. 3; see also N. Tynkkynen, "A Great Ecological Power in Global Climate Policy? Framing Climate Change as a Policy Problem as a Policy Problem in Russian Public Discussion", *Environmental Politics*, Vol. 19, No. 2, March 2010, p. 190.

^{7.} See comments by A. Rodin, in "A Storm of Hype or a Wind of Hope? Russian Climate Expert Comments on Climate Change", *Newswise*, 15 October 2019, available at: www.newswise.com.

^{8. &}quot;Russia is extremely concerned by attempts to use the climate agenda to create new barriers ... the [EU's] Carbon Adjustment Mechanism ... could essentially turn into new duties ... [such] mechanisms ... contravene WTO rules"—comments by Economic Development Minister Maxim Reshetnikov, in "Russia Believes Carbon Tax Will Contravene WTO Rules—Minister", *Interfax*, 24 July 2020, available at: https://interfax.com.



that appear manageable (or ignorable), or whose outcomes may even turn out to be advantageous. The government has consistently acted on the implicit premise that the "cure" to climate change is worse than the "disease". Thus, decarbonization presents a greater threat to Russian interests than global warming, while environmental activism is seen as anti-development—impractical and self-indulgent. Even those policy-makers who accept the reality of anthropogenic climate change treat it as much less important than pulling the economy out of recession, arresting the decline in living standards, consolidating political stability, or asserting Russia as an independent center of global power. At best, mitigating climate change is a long-term, almost futuristic aspiration.

This complacency is reinforced by the feeling that climate change is not really a global concern, but one that is up to each country to address as it sees fit. Moscow could hardly care less about the deforestation of the Amazon or the submerging of Pacific Island states. It attaches far greater value to preserving its own sovereign prerogatives. So, while Russia participates in international climate negotiations, it has resolutely resisted attempts to establish binding targets. It has adopted a minimalist approach, whereby it abides by the letter of its treaty commitments, but not more.

This attitude reflects the view that Russia has already done its fair share and, if anything, should be compensated for past contributions and sacrifices. ¹⁰ Its forests act as a vast carbon "sink", while its low emissions targets—calculated from a 1990 baseline—are seen as tacit quid pro quo for the collapse of Russian industrial production in the 1990s. Accordingly, Moscow has talked up the fall in national carbon emissions since 1990; highlighted the much larger carbon footprint of the United States and China; ¹¹ and resisted external pressure on Russia to meet more ambitious targets.

^{9.} A recent Valdai Club report emphasizes two aspects of sovereignty in relation to climate policy: "a state's sovereign right to exploit its natural resources" and the importance of upholding "the sovereign interests of all states" in multilateral cooperation on the environment. See "Climate Policy in a Global Risk Society", Valdai Discussion Club Report, December 2020, p. 11, available at: https://valdaiclub.com.

^{10.} T. Mitrova et al., Global Climatic Threat and Russian Economy: Searching for The Way (Skolkovo Energy Centre, May 2020), p. 56. See also Tynkkynen, "A Great Ecological Power in Global Climate Policy?", p. 183.

^{11.} Putin end-of-year news conference, 19 December 2019, available at: www.en.kremlin.ru.

From Rio to Paris via Kyoto— The Art of Standing Still

It is tempting to see Russian climate policy as a natural progression from outright denialism at the beginning of the post-Soviet era to today's acknowledgment of the reality of anthropogenic global warming. Yet that would be misleading. The most striking feature of Russian climate policy over three decades is its *consistency*. Moscow's position has barely evolved from the 1992 Rio de Janeiro climate conference which established the United Nations Framework Convention on Climate Change (UNFCCC), through the Kyoto Protocol of 1997, to the Paris Climate agreement of 2015. The first principles described in the previous section have held firm throughout this period.

Institutionally, Russian decision-making has followed a recognizable pattern. Moscow took two years to ratify the UNFCCC, seven years to ratify the Kyoto protocol, and four years to ratify the Paris agreement. In all these cases, Russia's treaty obligations were minimal. Yet each time it dragged out the ratification process, less because of substantive concerns than because the Kremlin believed it could leverage ratification for other ends.

Its approach to the Kyoto Protocol exemplified a nakedly transactional mindset. Initially, when the United States was still a party to the Protocol, Russia aimed to profit from the sale of surplus emissions to the world's largest and most industrialized economy. Pollowing America's withdrawal from Kyoto in 2001, the Russian interest changed from narrowly financial to geoeconomic. The emissions market had lost its allure with the main prospective buyer out of the game. So Putin sought returns of a different kind. Exploiting the fact that the Kyoto Protocol could only enter into force



if Moscow ratified the agreement,¹³ he effectively made this contingent on securing Russia's accession to the World Trade Organization (WTO).¹⁴

Throughout the Kyoto process—from negotiations to signature to belated ratification—Russian climate policy had little to do with environmentalism. ¹⁵ Instead, the threat of global warming, and rising international concerns about it, provided a context in which Moscow could maneuver to advantage. The desperation of the United Nations and many signatory countries to see the Kyoto Protocol enter into force left Russia with all the high cards. ¹⁶ Time was on its side; it could wait out developments until it got what it wanted.

Moscow's transactionalism was less overt in relation to the Paris agreement. There were no financial or geoeconomic inducements to facilitate Russian ratification. However, as before Russian policy was driven less by concerns about global warming than by cold-blooded calculation of the costs and benefits. At a time when the moral and political authority of the United States was at a historic low, the case for Russia joining the international consensus on climate change became compelling. Ratification assisted in promoting it as a good international citizen yet imposed no significant obligations. It was a no-lose proposition.¹⁷

The theme of continuity is underlined by Moscow's intention to carry over emissions credits from the Kyoto period. Its insistence that 1990 remain the benchmark by which future Russian emissions reductions should be assessed renders the commitment to achieve a 25-30 percent cut by 2030 worthless. Carbon emissions are already far below Soviet levels (as of 2017, emissions were 32 percent lower than in 1990.)¹⁸ The government can follow through on ambitious plans to expand fossil fuels production while still meeting its treaty commitments.¹⁹

^{13.} N. Paton Walsh, "Russian Vote Saves Kyoto Protocol", *The Guardian*, 23 October 2004, available at: www.theguardian.com. In order to enter into force, the Kyoto Protocol had to be signed by a minimum of 55 countries, representing 55 percent of the world's greenhouse gas emissions. Although the "double-threshold" was applied to the Paris agreement as well, it was reached within a month—largely because the United States immediately ratified the agreement by executive order. 14. A. Korppoo, J. Karas and M. Grubb (eds), *Russia and the Kyoto Protocol: Opportunities and Challenges*, London: Chatham House, 2006, pp. 19-20.

^{16.} A. Gusev, "Evolution of Russian Climate Policy: From the Kyoto Protocol to the Paris Agreement", *L'Europe en Formation*, Vol. 380, No. 2, 2016, p. 40.

^{17.} O. Smirnov, "Melting Russia in Zero-Cost Climate-Change Pledge", *Asia Times*, 1 October 2019, available at: https://asiatimes.com.

^{18.} Ibid.

^{19.} Natalia Paramonova notes the absence of incentives "to take even elementary measures, such as protecting against forest fires, soil conservation, and modernizing industry"—in "Will EU Green Deal Force Russia to Clean up Its Act?", Carnegie Moscow Center, 13 July 2020, available at: https://carnegie.ru.



As with the Kyoto Protocol, Moscow's agenda with the Paris agreement has little to do with realizing environmental goals, such as taking action to slow global warming, improve air quality, or preserve the permafrost. Its real priority is to ensure that the pursuit of global climate goals does not get in the way of Russian national interests as identified by the ruling elite. As Russia's Deputy Energy Minister Anastasia Bondarenko has explicitly noted, "implementation of international climate policy should not infringe on the interests of energy-producing countries." The unsurprising outcome of such thinking is less a climate policy than an "anti-policy"—preventative, opportunistic, and unabashedly self-centered.

The Who and Why of Russian Policy-Making

Russian climate policy is the product of several elements: the individual attitudes of key players; the dominance of special interests; the logic of comparative advantages; and political and strategic culture.

Key players, interests, and motivations

Certain individuals exert a decisive influence, most obviously President Vladimir Putin. This is not to suggest that he is all-powerful, or that he is involved at every stage of decision-making. But his skeptical attitude toward anthropogenic climate change has been critical in shaping Russian policy over the past 20 years. At the same time, Putin is the product of an elite that tends to regard the climate emergency as a liberal fad and a far lesser threat than, say, economic recession, American "hegemonism", or liberal values.

Putin's mark is evident not just in the substance of Russian climate policy but also in its presentation. He has been careful to maintain flexibility throughout. His approach has not been doctrinaire but pragmatic. He has neither foreclosed options nor accepted potentially burdensome commitments. He has tailored Russian tactics to particular circumstances—as highlighted by his success in obtaining a very generous deal under the Kyoto Protocol. Putin's tough transactional approach may not have endeared Russia to others, but he grasped early on that popularity for its own sake was irrelevant.

Russian climate policy reflects the influence of powerful vested interests. The most important of these is the energy sector, which is the foundation of the national economy. In 2018, hydrocarbons provided 46 percent of federal budget revenue, 65 percent of total export revenue and 25 percent of Russia's Gross Domestic Product (GDP).²¹ These figures, impressive in themselves, translate into considerable policy heft for the energy majors. Their influence extends across many areas of government but is especially felt in blocking any moves toward a post-industrial, post-carbon economy.



It helps that the agenda of the energy companies aligns closely with the broader strategic ambitions of the Putin regime. Alongside military might, it is energy that makes the world take notice of Russia.²² The alternative of a post-carbon economy, by contrast, promises an extended and difficult transition, economic disruption, and the possibility of Russia's marginalization in the short to medium term. Set against these risks, the long-term gains of a reduced-carbon or zero-carbon economy appear speculative.

What might be called the carbon consensus in Russia is not limited to energy interests. Other influential groups include the Russian Union of Industrialists and Entrepreneurs (RSPP) and the agricultural sector. The power of the RSPP was illustrated in the course of drafting the Russian government's climate adaptation plan in late 2019. Earlier versions had envisaged a carbon tax and fines for companies that exceeded their carbon emission caps. But these by no means demanding measures were later scuppered in favor of a toothless five-year "climate audit." No less revealing was the reason the RSPP gave for diluting the plan's provisions: "we have to maximize our sales of gas, oil and coal as much as we can without stopping while there is still a buyer for it [sic.]." A similar mindset is evident in the agricultural sector, which has shown no inclination to modify intensive farming methods in order to reduce greenhouse gas emissions (GHGs). What matters above all else is to maximize production and exports.²⁴

Political and strategic culture

Such views reflect an opportunistic, short-termist mindset and an instinctive conservatism that seeks refuge in the familiar. We should remember, too, that Putin and his generation grew up in Soviet times, when success was judged almost entirely according to quantitative indicators. And although qualitative criteria have since grown in importance, the Putin elite still subscribes to the principle of "the more, the better". The maximization of economic production is driven not just by economic motivations, but also by wider reasons of state—such as promoting Russia as an "energy superpower", "food superpower", and so on.

^{22.} T. Mitrova and V. Yermakov, "Russia's Energy Strategy-2035: Struggling to Remain Relevant", op. cit., p. 17.

^{23.} Comments by David Iakobachvili, chairman of the RSPP's corporate social responsibility and sustainable development committee, cited in E. Gershkovich, "How Does a Powerful Russian Lobby Plan to Halt Climate Change? With Coal, Oil and Gas", *The Moscow Times*, 15 November 2019, available at: www.themoscowtimes.com.

^{24. &}quot;Russia Reluctant to Adapt Farming to Climate Change", Oxford Analytica, 20 March 2020.



Decision-making on climate issues, as in other areas of public policy, points to an appreciation of Russia's comparative advantages and weaknesses. Moscow prioritizes fossil fuels production because that is where Russia's strengths lie. It has little faith in its capacity to develop a post-industrial, high-tech, and low-carbon economy to replace the current industrial, carbon-intensive model. In theory, such a shift may be possible—by investing in renewable sources of energy, expanding the nuclear industry, and developing the hydrogen market (see below). But Moscow's default mode is to choose the path of least resistance and most obvious benefit. That means sticking to what it knows.

This mentality feeds, and feeds off, a view of the world as an intensely competitive arena, in which the single-minded pursuit of national interests is the prime directive of government. Notions of the larger global good are seen as either naïve or hypocritical.²⁵ Moscow regards calls by others for Russia to commit to more ambitious carbon reductions as attempts to weaken its competitive position and international influence. "Decarbonization" in this context is not a noble aspiration, but a label that disguises the self-serving ends of others.²⁶

^{25.} As Fyodor Lukyanov notes, "the liberal world order discourse—a positive-sum game which honors interdependence instead of competition, economy above security—has never been taken seriously in Moscow"—in "Trump's Defense Strategy is Perfect for Russia", *Russia in Global Affairs*, 24 January 2018, available at: https://eng.globalaffairs.ru.

A New Realization? Feeling the Impact of Climate Change

All that said, it has become evident that climate and environmental issues are intruding on Russian elite and public consciousness as never before. The impact of climate change is no longer confined to the occasional high-profile disaster or freak weather event, but now extends across a wide landscape. We are seeing record high temperatures and temperature variability; accelerated melting of the Arctic sea ice; unprecedented damage to the permafrost that comprises 60-65 percent of the territory of the Russian Federation; much more frequent extreme-weather events (wildfires, droughts, and floods); and major accidents, such as the large-scale discharge of diesel fuel from a Nornickel storage tank in May 2020. If Russian policymakers thought previously that climate change was somebody else's problem, and international climate negotiations an irritating distraction, then environmental developments in Russia in the past two years alone should have led them to reconsider.

The scale of the damage

2020 proved a landmark year in Russia's climate. The Siberian town of Verkhoyansk recorded the highest ever temperature in the Arctic Circle—38 degrees centigrade—in June, while several other towns exceeded previous records by double digits. According to the head of the Russian weather service, the first six months of the year were the warmest in Russia since records began.²⁷ Even more visibly, the number of wildfires still burning in July 2020 far exceeded that in previous years: 600, compared to 400 in 2019, and an annual average of 100 in the period 2013-2018. Covering an area the size of Greece, the wildfires released 245 megatons of carbon dioxide up to August, compared to 181 megatons during the whole of 2019.²⁸ The rate of Arctic melt was also much greater than anticipated, with polar ice cover being reduced to its second lowest extent in four

^{27. &}quot;Russia Breaks Heat Records in First Half of 2020", *The Moscow Times*, 6 July 2020, available at: www.themoscowtimes.com.

^{28. &}quot;2020 Arctic Wildfires Emissions So Far Surpass All of 2019", *The Moscow Times*, 31 August 2020, available at: www.themoscowtimes.com.



decades.²⁹ More critically still, the permafrost is melting faster than ever; the Russian Academy of Sciences estimates it will shrink 25 percent by 2080.³⁰ The whole country is warming at two-and-a-half times the global average.³¹

Such figures, shocking as they are, do not tell the full story. They highlight the enormous damage to Russia's physical environment, but only hint at the economic consequences. The Russian Academy of Sciences believes that the shrinkage of the permafrost threatens USD 250 billion worth of physical infrastructure, including energy pipelines, transport arteries, and buildings.³² According to Alexander Kislov of Moscow State University, the thawing of the permafrost could cut 8.5% from Russia's GDP by 2050,³³ while the Audit Chamber estimates that climate change could take 2-3% off GDP as early as 2030.³⁴ At a more micro level, a recent Morgan Stanley report suggests that the cash flows of Gazprom and Nornickel could be more than halved in 2022.³⁵

The weakening of the permafrost has already resulted in one of the worst fuel spills in history. The Nornickel accident in May 2020 leaked some 21,000 tonnes of diesel fuel into the Ambarnaya river and surrounding land—a spillage over half the size of the 1989 ExxonMobil disaster in Alaska. Both government and non-government sources attributed the accident to the holding tank's support pillars sinking into the once solid, but now thawed permafrost.³⁶ Nor was this an isolated incident. A month later, there was a further spill of jet fuel at another Nornickel site, although on this occasion the damage was relatively contained.³⁷ Such accidents will become more common as the melting of the permafrost accelerates, in line with most scientific forecasts.³⁸

^{29. &}quot;Rising Temperatures Shrink Arctic Sea Ice to Second-Lowest Level on Record", *The Guardian*, 21 September 2020, available at: www.theguardian.com

^{30.} O. Smirnov, "Melting Russia in Zero-Cost Climate-Change Pledge", op. cit.

^{31.} The global temperature has risen by 0.18 C in the past decade. Over the same period, the average temperature in Russia has increased by 0.47 C, and by 0.81 C in the Arctic. See T. Mitrova *et al.*, *Global Climatic Threat and Russian Economy*, *op. cit.*, p. 37.

^{32.} O. Smirnov, "Melting Russia in Zero-Cost Climate-Change Pledge", op. cit.

^{33.} A. Davydova, "Siberia Swelters in the Age of Climate Change", *The Moscow Times*, 8 July 2020, available at: www.themoscowtimes.com.

^{34.} D. Kozin, "Is Russia Finally Waking up to Climate Change?", *The Moscow Times*, 9 March 2020, available at: www.themoscowtimes.com.

^{35. &}quot;Melting Arctic Permafrost Threatens Russian Energy Firms' Bottom Line—Morgan Stanley", *The Moscow Times*, 23 July 2020, available at: www.themoscowtimes.com.

^{36.} E. Gershkovich, "In Siberian Fuel Spill, Climate Change Is Seen as Major Factor", *The Moscow Times*, 5 June 2020, available at: www.themoscowtimes.com.

^{37.} The leak lasted only 15 minutes, and is estimated to have leaked 45 tonnes of aviation fuel—"New Fuel Leak Hits Russia's Arctic Weeks After Disastrous Diesel Spill", *The Moscow Times*, 13 July 2020, available at: www.themoscowtimes.com.

^{38.} D. Kozin, "Russia's Leading Climate Change Expert Gives Sober Prognosis", *The Moscow Times*, 4 April 2020, available at: www.themoscowtimes.com.



Evolving public attitudes

Until recently, it was assumed that the Russian public was not especially exercised about global warming. Environmental activism focused almost entirely on local issues: protests against a sawmill on Lake Baikal in 2010; opposition to a new motorway through the Khimki forest in northwest Moscow the same year; complaints about levels of industrial pollution in Chelyabinsk in 2018; and sustained demonstrations against a new landfill site in the village of Shies (Arkhangelsk oblast).³⁹ As one commentator put it, "people are still struggling to make the connection between their direct environmental concerns and global climate change."⁴⁰ NGOs such as the World Wildlife Fund and Greenpeace have found it hard to raise public consciousness, let alone influence government policy.

However, popular attitudes may be changing, as revealed by a Levada poll from December 2019. In response to the question, "which of the following global threats facing humanity in the 21st century are the most dangerous", respondents came up with some surprising answers. "Environmental pollution" came top of the list with 48 percent, ahead of many of the usual candidates—"international terrorism" (42 percent), "armed conflicts, wars" (37 percent), "nuclear weapons proliferation and the threat of their use" (31 percent), and "global economic crisis" (25 percent). Interestingly, "climate change, global warming" ranked fourth in the list of global threats with 34 percent. Even allowing that respondents could select multiple answers, this nevertheless pointed to a larger environmental awareness. No less noteworthy was the connection the Levada respondents made between temperature increases and "pollution caused by human activities". 67 percent of those surveyed believed in anthropogenic climate change as opposed to only 25 percent who did not.

That said, we should not overstate the shift in public attitudes. Environmentalism is still predominantly localist. When asked to identify the single "most serious" environmental problem facing Russia, "air pollution" (26 percent) topped the list. "Household waste management" (17 percent), nuclear waste (11 percent), natural resource exhaustion (9 percent), genetically modified food products (9 percent), and water pollution

^{39. &}quot;Protests Rally Against Lake Baikal's Mill Operations", *Reuters*, 27 March 2010, available at: www.reuters.com; Y. Chirikova, "The Battle for Khimki Forest", Open Democracy, 23 August 2010, available at: www.opendemocracy.net; "Residents of Russian City Protest 'Black Sky' Air Pollution", *Associated Press*, 24 December 2018, available at: https://abcnews.go.com; C. Digges, "Russia's Garbage Protests Raise Central Questions about the Right to a Clean Environment", *Bellona*, 12 June 2019, available at: https://bellona.org.

^{40.} P. Sauer, "11,000 Scientists Warn of 'Untold Suffering' from Climate Change. Only 4 of them Are Russian", *The Moscow Times*, 8 November 2019, available at: www.themoscowtimes.com.



(9 percent) all came in ahead of "climate change". There were similar answers to the question of which environmental problem most directly affected the respondents and their families: air pollution (25 percent), water pollution (15 percent), GM food products (12 percent), household waste (11 percent), and only then climate change (7 percent).⁴¹

The Levada poll also did not ask whether respondents would be prepared to accept limits on economic growth or modify their lifestyles in order to mitigate climate change. A VCIOM (Russia Public Opinion Research Center) survey in August 2020 suggests not. Most respondents believed it was the responsibility of government to take action to check climate change. More than half were unwilling to abandon air travel, stop using their cars, or change their diet from meat and dairy to plant-based products. These findings followed a study earlier in the year which found that more than two-thirds of Russians would oppose paying more for electricity and other public utilities as the price for developing renewables and improving energy efficiency.⁴²

Nevertheless, the long-time assumption that the Russian public is either too ignorant or uncaring about the link between environmental degradation and global climate change has become suspect. This has potentially major implications for Russian policy. If the government is unable to mitigate the effects of climate change, it could find that the environment becomes yet another source of popular discontent, along with sliding living standards, inadequate social welfare, and corruption. Although one cannot yet speak of a "Chernobyl moment", the official complacency of the past no longer appears sustainable. Matters have reached the point where the government has at least to be seen to be taking action.

"Adaptation"— and the Illusion of Change

The question, of course, is what action? The Kremlin's answer is "adaptation"—that is, adaptation to the effects of climate change. The use of the term itself is highly indicative. It suggests, first, that climate change is real. Russian scientists and policy-makers are no longer inclined to deny its existence, despite some lingering doubts about its human causes. Second, adaptation reflects a fatalistic conviction that climate change is irreversible; Russia will have to learn to live with it, rather than attempt to "solve" it. Third, the consequences of climate change are not necessarily all bad, especially for Russia. There are benefits as well as costs from global warming. Adaptation means taking measures to maximize the former and minimize the latter.

It is tempting to derive some encouragement from the Russian government's climate adaptation plan of 25 December 2019. This document unequivocally acknowledges the fact of climate change in Russia since the 1970s—an average increase of 0.47 centigrade every ten years. It highlights the impact of global warming on the country's economic development, living conditions, public health, and infrastructure. And it refers to the degradation of the permafrost, and the increased frequency of extreme weather events.

But if the adaptation plan recognizes that climate change presents serious challenges to Russia, its prescriptions are underwhelming. These fall into two categories: "preventive adaptation" to reduce the impact of climate change, for example through dikes and forest protection; and "post-crisis adaptation", which encompasses disaster and emergency relief. However, there is a striking lack of policy detail in the plan. Nearly all the 29 measures listed in its annex are institutional in character, relating to bureaucratic coordination, reporting, and the formal requirement to develop climate plans for individual economic sectors (fuel-energy complex, transport, housing and construction, fisheries, etc.). Compared to the Russian

^{43.} T. Mitrova et al., Global Climatic Threat and Russian Economy, op. cit., pp. 15-16. The scientific consensus includes the Yury Izrael Institute of Global Climate and Economy—ironic given Izrael's lifelong and vocal climate skepticism.

^{44. &#}x27;Natsional'nyj plan meropriiatij', p. 1.



government's 2009 Climate Doctrine, on which it is supposedly based, the 2019 plan is largely devoid of meaningful content.⁴⁵

There is no commitment to reduce Russia's carbon footprint. On the contrary. One of the few substantive parts of the climate plan emphasizes the need to protect Russian exporters from attempts "to reduce their competitiveness under the pretext of non-compliance with climate security requirements".⁴⁶ It refers in this context to "carbon protectionism"—the imposition of EU tariffs on high-carbon imports from Russia (and other countries). There is a single sentence on the implementation of Russia's obligations under the UNFCCC, but no mention of this under the implementation measures listed in the annex. The plan contains nothing about renewable sources of energy, industrial emissions, developing energy-saving technologies, or holding polluters to account.

The 2019 plan is, in short, almost all façade and no substance. It appears intended mainly to show that the Russian government takes climate change seriously and has a strategy for addressing it. It bears the mark of a lowest common denominator compromise, progressively emasculated under the pressure of vested interests.

The lack of content in the climate plan is symptomatic, though, of the government's priorities. This is not a blueprint for the environment, but an *economic* document—as underlined by the fact that the Ministry of Economic Development and Trade, and not the Ministry of Natural Resources and Environment, has primary carriage of it. It sends a clear message that the Kremlin will not permit any impediments to the expansion and modernization of the fuel and energy complex (FEC) as the "locomotive" of the Russian economy.⁴⁷

^{45.} The 2009 Climate Doctrine was a relatively progressive and enlightened document, possibly because it was drafted when Dmitry Medvedev was president. It recognized that "the interests of the Russian Federation concerning climate change are not limited to its territory and have a global nature." It envisaged measures to enhance energy efficiency across all economic sectors, the implementation of energy-saving technologies, expansion of renewable and alternative energy sources, and improving the fuel efficiency of motor vehicles. It specifically identified climate change as a threat to national security, and climate policy as a catalyst to technological modernization. It was also much more explicit than the 2019 plan on the need for improved accountability and the strict enforcement of legislation, while warning against "corrupt lobbying by particular interested groups." See Climate Doctrine of the Russian Federation, 17 December 2009, available at: http://en.kremlin.ru.

^{46. &}quot;Natsional'nyj plan meropriiatij", p. 3.

^{47.} S. Sukhankin, "Russia's Energy Strategy 2035: A Breakthrough or Another Impasse?", *Eurasia Daily Monitor*, Vol. 17, No. 78, 2 June 2020, available at: https://jamestown.org.



Moscow is especially committed to promoting the production, export, and domestic consumption of gas as a relatively "clean" technology.⁴⁸ In this picture, LNG (liquefied natural gas) looms as one of the pillars not just of Russia's energy strategy but of its projection as a global actor. Having established the Yamal LNG project with Chinese funding, Novatek is thus planning several more projects on the Yamal and Gydan peninsulas.⁴⁹

The reverse side of the coin is the conspicuous failure to develop renewable energy. Whereas in other industrialized countries, including major fossil fuel exporters such as the United States, adapting to climate change involves expanding renewables, this is emphatically not the case in Russia. In 2018, solar and wind power accounted for only 0.02 percent of Russia's energy production. This share is expected to reach only 0.7 percent by 2035.⁵⁰ The contrast between Russia and other leading economies is highlighted by the figures for electricity generation. In 2019, only 0.16 percent of its electricity was powered by renewable sources excluding hydro; this compared to a global average of 10 percent, and a European average of 20 percent.⁵¹ Meanwhile, Moscow intends to significantly increase national coal production over the next 15 years, despite falling global demand.⁵²

The Russian government is not just slow to exploit alternative sources of energy, it is actively hostile to their expansion. In introducing the Energy Strategy-2035, Energy minister Alexander Novak identified the "global trend to advance the 'green' agenda" as one of the major challenges and threats to the Russian energy sector.⁵³ As one observer has remarked, "Russia perceives any type of external competition to its leading global

^{48.} See interview with Russian Energy Minister Alexander Novak, "Russia Rules Out Cutting Fossil Fuel Production in the Next Few Decades", *The Guardian*, 1 November 2020; available at: www.theguardian.com.

^{49.} T. Mitrova and V. Yermakov, "Russia's Energy Strategy-2035: Struggling to Remain Relevant", op. cit., p. 35.

^{50.} *Ibid.*, p. 37.

^{51.} J. Cordell, "Russia's Coronavirus Recovery Plan Has No Space for Renewables", *The Moscow Times*, 23 June 2020, available at: www.themoscowtimes.com.

^{52.} The 2035 Coal Strategy envisages coal production rising from 439 million tonnes in 2019—itself an 11-year high—to between 485 million and 668 million tonnes by 2035. Meanwhile, global consumption of coal is at a 16-year low, while the share of coal in power generation is expected to plummet over the next few years. See S. Sukhankin, "Coal Strategy 2035: Is Russia Preparing for the Last War?", *Eurasia Daily Monitor*, Vol. 17, No. 109, 27 July 2020, available at: https://jamestown.org; also E. Gerden, "Russia Eyes Big Plans for Coal Production and Exports", *Resource World*, May 2020, available at: https://resourceworld.com.

^{53.} The other challenges and threats included: the breakneck development of new technologies; globalization of the energy market, in particular of shale gas and oil; and tougher sanctions. See "Doklad Aleksandra Novaka na zasedanii Pravitel'stva Rossijskoj Federatsii po voprosu 'O proekte Energeticheskoj strategii na period do 2035" (Report of Alexander Novak at the session of the Russian Government on "The project Energy Strategy in the period up to 2035"), government.ru, available at: http://government.ru.



energy position ... as existential threats that must be mitigated/eliminated rather than as incentives or potential opportunities for adaptation/innovation."⁵⁴ Moscow has warned against "any impairment of resource-producing states' interests."⁵⁵ Accordingly, it has threatened to counter the EU's Green New Deal, and the introduction of a carbon border tax, by appealing to the WTO on the grounds that this would constitute unfair trade.⁵⁶

Adaptation, then, does not signify recognition of the need for change, but amounts instead to a containment policy. As a recent report from the Skolkovo Energy Centre notes, "adaptation seeks to moderate or avoid harm or exploit beneficial opportunities", unlike climate mitigation which "implies a proactive approach", including reduced energy consumption; "use of energy with a smaller carbon footprint"; and carbon capture, utilization and storage (CCUS).⁵⁷

True to this spirit, Moscow continues to talk up the "positive" aspects of global warming, rather than dwell on the negatives. Government pronouncements highlight three benefits in particular. First, the melting of the Arctic sea ice will speed up the opening of the Northern Sea Route (NSR), thereby enhancing Russia's strategic, economic, and commercial advantages. Second, the warming of Russia's northern regions will ease access to the abundant natural resources located there. And third, the melting of the permafrost will increase the amount of land available to agriculture, giving extra impetus to an already booming sector.⁵⁸

The Kremlin is also reverting to a watered-down version of climate skepticism. Although it no longer openly denies the science on anthropogenic climate change, it is still partial to casting doubt. At his end-of-year news conference in 2019 Putin claimed that "nobody really knows

^{54.} S. Sukhankin, "Russia's Energy Strategy 2035", op. cit.

^{55.} Cited in T. Mitrova et al., Global Climatic Threat and Russian Economy, op. cit., p. 44.

^{56.} A KMPG report estimates that the EU carbon border tax could cost Russian exporters up to EUR 50 billion in additional tariffs between 2022 and 2030—"Russia Will Both Contest and Adjust to EU Carbon Tax", *Oxford Analytica*, 12 October 2020; see also T. Mitrova *et al.*, *Global Climatic Threat and Russian Economy*, *op. cit.*, p. 49; and N. Paramonova, "Will EU Green Deal Force Russia to Clean up Its Act?".

^{57.} T. Mitrova et al., Global Climatic Threat and Russian Economy, op. cit., pp. 19-20.

^{58.} Comments by V. Kattsov, cited in D. Kozin, "Russia's Leading Climate Change Expert Gives Sober Prognosis". See also A. Lustgarten, "The Big Thaw: How Russia Could Dominate a Warming World", *New York Times* magazine and *Pro Publica*, 16 December 2020, available at: www.propublica.org. In fact, the alleged upsides of global warming are questionable. Developing the NSR will require massive infrastructural investment; any newly arable land will be far away from established agricultural centers; and existing arable land will be subject to more frequent droughts. See "Why Russia Is Ambivalent about Global Warming", *The Economist*, 19 September 2019, available at: www.economist.com; also M. Galeotti, "Putin Is Finally Waking Up to Russia's Climate Problem", *The Spectator*, 28 December 2020, available at: www.spectator.co.uk.



the causes of climate change, at least global climate change." He added that "in the history of the Earth there have been periods of warming and cooling" and that "it is very difficult, if not impossible, to work out exactly how humankind affects climate change." ⁵⁹ Separately, his patronizing comments about the young Swedish activist Greta Thunberg drew a distinction between the supposedly real and idealistic worlds: "nobody explained to Greta that the modern world is complicated and complex". ⁶⁰

Nevertheless, Putin is keen to keep Russia on the right side of the line when it comes to the international consensus on climate change. There is no suggestion that Russia will do anything other than faithfully fulfil its Paris commitments. Putin's address to the 75th annual session of the UN General Assembly contained only a couple of lines on climate change, but crucially they referenced internationalism and multilateralism: "the issues of both environmental protection and climate change should remain the focus of joint efforts" and "we are calling on all states to comply with [multilateral UN conventions, treaties and protocols], particularly in working to achieve the objectives of the Paris agreement."

Despite his skepticism about anthropogenic climate change, and refusal to compromise on Russia's comparative advantages, Putin recognizes that international climate policy is an area that can be usefully instrumentalized. Moscow's position may be unreconstructed when viewed on its own (de)merits,⁶² but next to the Trump administration's abrogation of the Paris agreement and systematic trashing of environmental safeguards it has looked a lot better.⁶³ Indeed, perhaps it is here that the full meaning of the Russian policy of "adaptation" emerges most clearly. It signifies adapting not just to the physical (environmental, economic) effects of climate change, but to an international strategic environment shaped by them.

^{59.} Putin end-of-year news conference, 19 December 2019.

^{60. &}quot;Vladimir Putin Criticises Greta Thunberg's UN Speech on Climate Change", *BBC News*, 3 October 2019, available at: www.bbc.com.

^{61.} Putin address to the 75th session of the UN General Assembly, 22 September 2020, available at: www.en.kremlin.ru.

^{62.} Russia is the fourth largest carbon emitter after China, the United States and India. Moreover, per capita emissions are far higher than those of China, India, and EU member states.

^{63.} That said, climate policy was one of the few areas of agreement between Washington and Moscow during the Trump years (2017-2021). At the Madrid climate summit in December 2019, Russia backed the United States in rejecting a proposal to increase compensation to developing countries for loss and damage from the effects of climate change. See M. Adow, "The Climate Debt", *Foreign Affairs*, May/June 2020, p. 67.

Future Climate Policy— Key Variables and Prospects

The question looking ahead is whether Russia can stretch the definition of "adaptation" to adjust to a post-industrial age, in which renewables play a central role, and climate factors increasingly shape government policy.⁶⁴ Or whether there are simply too many vested interests, and too much entrenched thinking, for such a shift to occur. What factors and pressures, domestic and external, might bring about an evolution of Russian climate policy? And what would be the strategic implications for Russia's place in the world if it stuck to its present course and continued to rely heavily on fossil fuels?

The future does not look promising for a step-change in Russian climate policy. The Energy Strategy-2035 and Coal Strategy-2035 indicate that the government is fully committed to expanding fossil fuel production and exports, and has no plan for transitioning—however gradually—to renewables. Russia numbers among those countries that "will inevitably resist change because they have so much at stake in the global fossil fuel economy." Similarly, there is little will to embrace even limited decarbonization in secondary industry and agriculture, where maximizing production is everything. The type of comprehensive reform required in these sectors would be difficult and expensive, and most likely yield results only in the longer term. 66

The coronavirus effect

The impact of coronavirus is a further obstacle to change. Today, all governments are preoccupied with the public health threat of the pandemic and the consequent global economic crisis, the most serious since the Great Depression of the 1930s. With the priorities being to manage the virus and restore economic growth, climate policy has been marginalized—and nowhere more so than in Russia. The public's attention, too, is understandably focused on immediate material needs. In a Levada poll from

^{64. &}quot;Daniel Yergin: China to Stand Atop New Global Energy Order", interview in *Nikkei Asia*, 6 October 2020, available at: https://asia.nikkei.com.

^{65.} J. Podesta and T. Stern, "A Foreign Policy for the Climate", *Foreign Affairs*, May/June 2020, p. 45.

^{66. &}quot;Russia Reluctant to Adapt Farming to Climate Change", Oxford Analytica, 20 March 2020.



August 2020 which asked respondents to list the issues that most worried them, "environmental degradation" (22 percent) came below a raft of socioeconomic concerns: "price increases" (61 percent), unemployment (44 percent), poverty (39 percent), corruption (38 percent), access to health care (29 percent), inequality (28 percent), and "economic crisis/decrease in industrial and agricultural production" (26 percent).⁶⁷

Pressure to take action to combat climate change is also reduced by the larger coronavirus effect on international politics. The pandemic has been a catalyst for great power tensions, particularly strategic confrontation between Washington and Beijing.⁶⁸ It has fostered a political environment in which most of the leading powers—the United States, China, Russia, India, Japan, France, Germany, and the United Kingdom—are more engaged with traditional security and geopolitical priorities than with non-traditional threats like climate change or global poverty.

While coronavirus has depressed global fossil fuel demand, there will likely be some bounce-back as governments seek economic recovery by all means possible, including lifting or loosening environmental safeguards. As the Director of the International Energy Agency (IEA) Fatih Birol has observed, "the world is far from doing enough to put emissions into a structural decline." Although the pandemic has boosted renewables, lack of funding will be a major constraint on the expansion of non-carbon sources of energy, in the short term at least. With governments piling up debt in order to support various recovery packages, few have the vision to finance a massive structural transition, or the courage to risk popular discontent by passing the inevitable (if temporary) increase in utilities costs to consumers. The gamble would be greater for Russia than most, since it would be starting so far behind other major economies in moving toward a post-carbon future.

A post-carbon future?

But if Russia's transition to a post-carbon economy seems improbable anytime soon, it should not be discounted entirely. Several trends will be important to monitor over coming decades. The first is the general shift in

^{67. &}quot;The Most Serious Problems", Levada Center, 30 September 2020, available at: www.levada.ru. 68. B. Lo, "Global Order in the Shadow of the Coronavirus: China, Russia and the West", Lowy Analysis, 28 July 2020, available at: www.lowyinstitute.org.

^{69.} Cited in J. Jolly, "Stop CO2 Emissions Bouncing Back After COVID Plunge, Says IEA", *The Guardian*, 13 October 2020, available at: www.theguardian.com.

^{70.} See D. Yergin, "How Will the Pandemic Affect the Sprint Away From Fossil Fuels?", *The Guardian*, 8 October 2020, available at: www.theguardian.com. According to Fatih Birol, global investment in renewables needs to increase from USD 300 bn to USD 1.6 trillion by 2030 if it is to have any success in tackling the climate crisis'—in J. Jolly, "Stop CO2 Emissions Bouncing Back After COVID Plunge, Says IEA", *op. cit*.



the global economy toward non-carbon energy sources, uneven though this may turn out to be. Interestingly, a 2016 Russian International Affairs Council publication predicted that "[t]he period ... up to 2100 will experience a radical restructuring of the structure of the global energy balance. Conventional sources of energy (oil, gas, coal) will no longer play a dominant role and will give way to non-carbon forms of energy ... For Russia this means the need to change priorities to [alternative] energy development in the near future."⁷¹

In this scenario, Russia threatens to be left behind by the 21st century energy revolution—increasingly uncompetitive relative to other leading actors as they shift to low- and zero-carbon technologies.72 There are already some signs of this happening. At the UN General Assembly in September 2020, President Xi Jinping announced that China would reach "peak carbon" before 2030, and would aim to achieve carbon neutrality by 2060.73 Regardless of whether Beijing achieves these targets, merely the attempt to do so will have significant implications for Russia. China is its largest oil customer, and Moscow is also relying on Chinese demand to absorb most of Russia's additional gas output (as envisaged in the Energy Strategy-2035). Even if China continues to import Russian oil and gas, the rapid development of non-carbon alternatives such as solar will considerably strengthen Beijing's negotiating position vis-à-vis Moscow.⁷⁴ Meanwhile, the increasing use of renewables in electricity generation worldwide is likely to depress international commodity prices—and Russia's share of global GDP.75

In circumstances where its main trading partners—China and the EU—are switching to non-carbon energy sources, the pressure on Russia to move in this direction will intensify.⁷⁶ Policymakers would face critical choices. They could remain in denial and hope that fossil fuels will continue to play a

^{71.} V. Likhachev, "Energy Revolution. XXI Century. Reset" in I. Ivanov and A. Kortunov (eds), *The World in 100 Years*, Russian International Affairs Council, 2016, p. 259.

^{72. &}quot;Russian Federation", *Climate Action Tracker*, 22 September 2020, available at: https://climateactiontracker.org.

^{73.} Xi Jinping speech at UNGA 75, 22 September 2020, available at: www.chinadaily.com.cn. More specifically, by 2060 China is looking to reduce its oil consumption by 65 percent and natural gas consumption by 75 percent – see S. Kapitonov and T. Umarov, "Does China Need More Gas from Russia and Central Asia?", Carnegie Moscow Center, 12 January 2021, available at: https://carnegie.ru

^{74.} D. Yergin, "China to Stand Atop New Global Energy Order", op. cit.

^{75.} T. Mitrova and V. Yermakov, "Russia's Energy Strategy-2035: Struggling to Remain Relevant", op. cit., pp. 20-21.

^{76.} T. Mitrova *et al.* suggest that under any future scenario Russian energy revenues will decline "drastically" by 2040, and GDP growth may be limited to less than one percent per annum—pp. 50-51.



leading role in the global economy.⁷⁷ They could opt to realize ambitious ideas such as converting Russian natural gas into "clean" hydrogen for the EU market—although no such market exists today, and conversion would be hugely expensive.⁷⁸ Or the Russian government could accept that the 21st century global economy will be post-industrial and digitalized,⁷⁹ and that it must therefore lose no time in catching up in zero-carbon and low-carbon development.⁸⁰

In this connection, nuclear energy could play an important part. Today, it accounts for nearly 20 percent of Russian domestic power generation. But the primary significance of nuclear in coming decades is likely to be international. Russia is already a global industry leader, with considerable experience of working with other countries; notably, it supplies advanced light-water reactors to China and India.⁸¹ That said, it is unclear whether Russia can retain its technological and market edge in the face of growing Chinese competition.⁸² And there is considerable resistance, including in Russia, to the idea of nuclear energy as environmentally safe.⁸³

Russia's changing climate will be another crucial variable. It is all very well for the government to underplay the threat of global warming, and the Arctic ice-melt, when fewer than 4 percent of the population live in the permafrost regions. But the accelerated warming of recent years suggests that many more Russians will be affected by climate change in the future,

77. Estimates of peak oil vary considerably. Daniel Yergin believes this will happen by the mid-2030s, although oil and gas will still be in heavy demand in 2050 (in "China to Stand Atop New Global Energy Order"). Unsurprisingly, OPEC projects a much later date for peak oil—2045. See J. Ambrose, "OPEC Rejects Projection That Global Demand for Oil Has Peaked", *The Guardian*, 8 October 2020, available at: www.theguardian.com. Conversely, others argue that coronavirus has brought forward the moment of peak oil—see T. Randall and H. Warren, "Peak Oil Is Suddenly Upon Us", *Bloomberg*, 1 December 2020, available at: www.bloomberg.com.

78. T. Diatel, "Vodorod u vorot: kak Rossiia pytaetsia vyjti na novyj rynok' [Hydrogen at the gates: how Russia is trying to enter the new market], *Kommersant*, 8 October 2020, available at: www.kommersant.ru; see also T. Mitrova et al., Global Climatic Threat and Russian Economy, op. cit., p. 54. Ideally from Moscow's perspective, Russia would continue to export gas using the existing pipeline system, leaving the process – and cost – of decarbonization (i.e., the generation of hydrogen) to be undertaken at the point of consumption in the EU.

79. Yergin observes in this connection that coronavirus has accelerated the digitalization of the world, compressing years into months—in "How Will the Pandemic Affect the Sprint Away From Fossil Fuels?".

80. V. Likhachev, "Energy Revolution. XXI Century. Reset", op. cit., p. 259; also T. Mitrova et al., Global Climatic Threat and Russian Economy, op. cit., p. 45.

81. Russia has supplied VVER-1000 light-water reactors to China's Tianwan nuclear power plant and India's Kudankulam plant.

82. S. Birch, "China Dominates Reactor Connections, Russia Leads Export Market", *Reuters*, 25 September 2019, available at: www.reutersevents.com.

83. See I. Nechepurenko and A. Higgins, "Coming to a Country Near You: A Russian Nuclear Power Plant", *New York Times*, 22 June 2020, available at: www.nytimes.com; also A. Davydova, "Fossil-Fuel Giant Russia Tiptoes Towards Low-Carbon Future", *Reuters*, 26 March 2020, available at: www.reuters.com.



and much more gravely. Environmental security could eventually loom as large in public consciousness as more conventional goals, such as economic well-being.

Future climate policy will also be affected by the international context. In a world riven by great power confrontation, Russia may be able to get away with a policy of climate inaction for some time. Equally, if coronavirus turns out to be a harbinger of further pandemics then we might expect decision-makers around the world to focus on tackling immediate emergencies rather than longer-term environmental challenges. However, to rely on such scenarios is to trust in luck rather than good judgement—the hope that other countries will continue to be as complacent (or otherwise distracted) as Russia about global warming and the outlook for fossil fuels, and as slow to embrace renewable technologies. Such assumptions are hardly safe given the growing magnitude and visibility of climate change and its ramifications for Russia's place in the world. In time, decision-makers may be forced into the realization that their current climate policy is unsustainable—environmentally, economically and, above all, strategically.

Clearly, though, they are some way from reaching this point. Farsightedness has not been a forte of Russian domestic and foreign policy, particularly under Putin. There is little reason to expect transformative change unless this is prompted by forces beyond the regime's control—technological innovation in other countries, a worldwide shift toward decarbonization, and growing opposition to (or the obsolescence of) traditional fossil fuels. Until that happens, the Russian government will continue to temporize, both out of natural inclination and under the influence of powerful vested interests. It will play the adaptation game, largely in the hope that it can avoid making tough choices. If a genuine climate policy is to emerge in Russia, then, the chances are that it will not be the outcome of a carefully conceived and implemented strategy, but a haphazard response to force majeure.

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