

Hybrid Warfare in Ukraine and its Impact on Climate Politics

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ABSTRACT	The Russian invasions of Ukraine in 2014 and 2022 represented not only attempts to erase Ukrainian sovereignty but were also linked to a larger campaign by the Kremlin to undermine trust in democratic institutions, scientific data, and the resilience of Western societies. This form of hybrid warfare has long taken a particular focus on energy systems, both in attempts to maintain Russian oil and gas exports, and to target energy infrastructure in invaded states like Ukraine. This article briefly traces the origins of the Russian government's "assault on truth," revealing how the information battlespace has affected global climate politics. The disruption of climate politics has long been a goal of the Kremlin and its allies. We argue that the ongoing energy crisis must be approached carefully, with particular attention to countering anti-science and anti-climate efforts.
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INTRODUCTION

The 2022 escalation of the Russian invasion of Ukraine sparked a series of cascading impacts that overturned many people's assumptions about war and peace in Europe, with energy insecurity and price spikes being some of the most visible consequences for those outside of Ukraine. International sanctions against the Russian Federation have used its reliance on revenues from energy exports to the West as a form of punishment. As a result, energy prices skyrocketed and worries about gas shortages spread across Europe. Many analysts viewed this energy security disruption as an unintended consequence of the Russian aggression, as something to be weathered while actions are taken to reduce reliance on Russian oil and gas supplies (FLANAGAN ET AL. 2022). Yet, it is important to understand that energy insecurity is not simply a consequence of the war in Ukraine. The targeting of energy and climate security, most often through covert and unconventional means, has been central to Russian foreign policy objectives for decades. If the international community is to respond effectively to the Kremlin's actions, we must understand the larger context within which the Russian invasion represents an end game for climate security, not merely a bump in the road.

For decades prior to the war, the Kremlin had been actively working to undermine climate and energy politics in the West. From attempts to maintain its dominance in the global oil and gas market to targeting energy infrastructure in invaded states like Ukraine, the Russian government has repeatedly demonstrated its willingness to use energy as a tool for political gain. Through a combination of state-sponsored propaganda, information operations, cyber-attacks, and covert operations, the Kremlin has sought to sow discord and confusion in Western energy markets, all the while working to maintain its own exports and influence (BLANK 2016).

Partly these actions were motivated by financial gains. Oil and gas exports accounted for 68 percent of Russia's total export revenue in 2013, the year before its illegal annexation of Crimea (EIA 2014). Even as successive sanctions have hit the Kremlin and its related companies, this reliance remained an existential vulnerability for Russian national security. Yet maintaining market access to the West was only part of the larger set of objectives for Vladimir Putin and the Russian government. As others have

pointed out, Russia's broader foreign policy objectives include undermining Western institutions, trust, and concepts of objectivity upon which actions could be taken against Moscow, either as a form of active defense, or as a reflection of Putin's visions of Moscow's role in Eurasia (BUGAJSKI 2009: 9–13; GALEOTTI 2019; HILL – STENT 2022; KOFMAN – ROJANSKY 2015). This is not a new phenomenon (certainly not for those familiar with earlier Soviet information and censorship policies), but such efforts not only continued after the fall of the Soviet Union, but became more covert, distributed, and effectively asymmetrical (RATSIBORYNSKA 2018).

As we discuss below, such “hybrid” tactics target and exploit vulnerabilities and undermine society's resilience. Resilience targeting involves, among other things, undermining trust in democratic institutions, scientific research and the idea of objectivity as well as breaking down the reliability of key institutions such as healthcare and energy systems (DANYK – BRIGGS 2023). While not the original target of hybrid warfare, climate change has been made into a cultural touchstone and a long-term way to disrupt societies. The invasion of Ukraine reveals these vulnerabilities in terms of reliance on fossil fuels (e.g., German imports from Russia), institutionalized distrust in energy transitions, and anti-science attacks that both allow continued Russian exports and impose costs on the West.

HYBRID WARFARE, ENERGY, AND CLIMATE SECURITY: THE RUSSIAN PERSPECTIVE

While its exact meaning is subject to continuing academic discussion, hybrid warfare usually employs a wide spectrum of military and non-military tools and actions in pursuit of strategic objectives, somewhat akin to Chinese doctrines of “unrestricted warfare” (E.G., COMMINS – FILIOL 2015). Many hybrid warfare tactics are not new; for example, both Americans and the Soviets have used them during the Cold War. At the time, the Kremlin considered itself already at war with the West and free to take whatever actions could help reach its objectives, short of sparking Western military responses. In recent years, the repertoire of hybrid warfare tactics has expanded in scope with new cyber and information technologies. As with most unconventional warfare, a state or other political actor can resort to hybrid tactics as part of a broader effort to destabilize governments, sow uncertainty and mistrust among allies, and hinder military operations, all

while denying involvement in such activities (LANOSZKA 2016). A lack of clear attribution is thus an important component of hybrid strategies, as it allows for sidestepping assumptions that one must have proof of deliberate action before a response is warranted.

Some scholars and analysts believe that the concept of hybrid warfare is not unique, others criticize it for being too broad, and yet others believe that hybrid warfare is only about tactics and not strategic objectives (SEE FRIDMAN 2017; WIGELL 2019). The objectives and tactics we discuss below perhaps fit best under the label of ‘hybrid interference’ proposed by Wigell (2019). In this understanding, hybrid interference is a ‘wedge strategy’ that relies on a number of “*state-controlled, non-kinetic means that are concealed in order to provide the divider with official deniability and manipulate targeted actors without elevating their threat perceptions*” (WIGELL 2019: 256). The targets are often liberal democracies as liberal democratic values are perceived as exploitable vulnerabilities. Hybrid interference relies on covert means to exploit specific vulnerabilities, including cyber operations, disinformation, political corruption, and the use of economic inducements.

Hybrid and unconventional warfare (UW)¹ strategies have been central to Russian foreign policy, intertwined with Russia’s military doctrine of *maskirovka* that relies on the use of various tools for deception, including concealment, imitation, denial, and disinformation (BARTKOWSKI 2015). The Russian view of security differs from Western understandings – at the core of this view is not a mere protection from potential threats but their removal from the world (HILL 2022). From the Russian perspective, hybrid warfare is about Western efforts to destabilize Russia and other adversaries – for example, through disinformation and subversive politics (KORYBKO 2015). The Russian *gibridnaya voyna* is a broader concept than Western hybrid warfare; it reaches beyond military activities and into political, economic, and social public spheres (FRIDMAN 2017). For this reason, it is difficult to clearly delineate an assertive Russian foreign-policy behaviour, different types of influence operations, and hybrid warfare.

US analysts, for example, tend to frame Russian cyber and information operations in terms of election interference, partly due to the high-profile nature of the 2016 presidential election. This is also a reflection of US social sciences that often favour rational actor approaches to politics and

rational choice influences centered on campaigns and elections. The RAND Corporation concept of “virtual societal warfare,” while valuable, reflects this limitation in only examining how exposure to disinformation might change election or direct policy preferences (MAZARR ET AL. 2019). The Russian view of information and cognitive warfare is far more expansive, as it aims not only to shape elections and policy in accordance with Russia’s long-term goals, but, at a deeper level, to shape perceptions of the world and limit what options one thinks are possible (CUNNINGHAM 2020). This concept, known as reflexive control in Soviet and Russian military doctrine, works to narrow the field of view on critical issues, so that an adversary acts in a way desired by Moscow, leaving the opponent to think it was their own choice (JAITNER – KANTOLA 2016).

Russian views of energy security, too, differ from Western understandings. In Western countries, energy security has different meanings, depending on the country’s or group’s point of view. The UN Sustainable Development Goals, for example, define energy security as a combination of concerns like access to resources, and affordability and sustainability of resource use (WU – WU 2015). The multiple dimensions of energy security, however, often lead to disagreements and widely divergent policy responses to energy insecurity – like it was in the case of the 2022 energy crisis. Climate change as a security risk is a much newer concept which also suffers from sharp disagreements over how the term should be defined and what policy responses are suitable. Some see climate change as a harbinger of violent conflict, some focus on forced migration across borders, and others on ecological or human security risks (KOUBI 2019; MCMICHAEL – BARNETT – MCMICHAEL 2012).

In Russia, energy and climate security tend to be more narrowly defined and more highly prioritized in the context of national security. While the Kremlin considers how energy trades and deals influence foreign policy, its main priority has often been to maximize export markets for Russian fossil fuels. As a country with larger fuel reserves than domestic consumption, for Moscow, access to resources has not meant ensuring access to those fuels but securing export markets. With the oil and gas company profits linked to Vladimir Putin’s own finances, such considerations took on significance in recent decades (E.G., HARDING 2007). Without oil and gas exports, both Putin and the Russian government would lose

crucial sources of revenue. From this perspective, global climate politics has served as a threat to Russian state security. If Russia's export markets turned to renewable energy sources and concepts of net-zero emissions, the state's budget revenues could quickly dwindle, with no alternative Asian markets that would provide for easy energy transportation being established.²

Undermining climate discussions and negotiations has become an effective tactic to keep some countries, particularly in Central and Western Europe, dependent on fossil fuels as alternatives would seem too risky. The Western actions against the Russian Federation after 2014 heightened fears in Moscow that its energy security was at risk in an existential sense. Without access to Western technology and capital from companies like Exxon-Mobil, the Kremlin-associated companies like Rosneft, Lukoil, and Gazprom could not access increasingly difficult oil and gas fields, particularly offshore and Arctic deposits (MADDOW 2019: 337–338). With many of the easier-to-access fields depleted and with the already substantial pipeline loss due to permafrost melt and disrepair, the Kremlin had to establish an alternate reality to increasingly strident warnings against climate change risks.

RUSSIAN ANTI-CLIMATE STRATEGIES

The Russian government's approach to climate change partly mirrors its authoritarian politics. A common strategy since the Soviet times has been undercutting concepts of objective reality in the Soviet/Russian space, tightly controlling environmental sciences, and generally viewing such experts as de facto dissidents (WEINER 1999). Such policies continued and even accelerated under the leadership of Vladimir Putin, with Kremlin actions extending far beyond Russian borders (POMERANTSEV 2015). As we elaborate below, these actions have implications for sustainable responses to climate change both in general and within the context of the ongoing war in Ukraine. The Russian anti-climate actions take two main forms: fossil fuel reliance and resilience targeting. They work symbiotically, have been strengthened by the use of cyber technologies, and overlap with political ends desired by other, non-Russian actors.

Fossil fuel reliance

Fossil fuel reliance refers to a set of activities, from bribery and corruption to overt military action, designed to keep Russian export markets tied to the expectation of continued oil and gas from the Russian Federation (BLANK – KIM 2016). Gas and oil were long exported from the Soviet Union to the West as an alternative to what was framed as unreliable sources in the Middle East, leveraging Western European experiences from the OPEC oil crisis of the 1970s (BALMACEDA 2007). By 2021, the European Union was annually importing 155 billion cubic meters of natural gas from Russia, or around 45% of its total imports (KARDAS 2023). Due to the nature of pipeline infrastructure and politics, some countries were more reliant on Russian sources than others, with Germany and Italy being the largest consumers.

Establishing such pipeline conduits and long-term reliance works to the advantage of Moscow, as pipelines are expensive and time-consuming to build, rerouting oil and gas is not easy, and alternative import pathways often suffer from capacity restrictions. In 2022, for example, European countries could not simply replace their gas imports from Russia by those from another exporter like Norway, as existing pipelines from Norway only allowed around a 10% increase in gas flow before reaching capacity (ZHOU ET AL. 2023). This situation arose due to Moscow's foreign policy strong-arm tactics, promotion of internal corruption, bribery and co-option of key political leaders, and periodic threats (such as the shutting off gas supplies to Central Europe in the winter of 2006) (ORENSTEIN 2019: 67).

The Kremlin well understood that a coherent European energy security policy could be undermined by a divide-and-conquer policy of bilateral deals, economic incentives backed up by geopolitical threats, and blocking of alternative pipelines from regions like the Caspian and the Middle East/North Africa (GENS 2019). For example, the construction of the Nord Stream 2 pipeline sparked disunity among European states, and between Germany and the USA, which viewed the project as a dangerous increase in dependence on Russian supplies (E.G., DE JONG – DE GRAAF – HAESEBROUCK 2020). The new infrastructure was to bypass traditional Ukrainian routes and deliver gas directly from Russian territory to Germany even though the existing pipelines were sufficient to carry gas from Russia to Central and Western Europe. From the Russian perspective, the military actions

against Ukraine in 2014 (and later in 2022) made such a project desirable as it allowed the bypassing of Ukrainian territory and the related transit payments. The European disunity surrounding the project was in part a product of Russian foreign policy. The development of Nord Stream 2 also contributed to further disagreements on European climate policy (E.G., WENDLER 2021). At the same time, Europe's energy dependence plays large in the growing call for energy transitions away from fossil fuels. Such efforts, however, have been targeted through the second strategy used by the Kremlin and its allies: resilience targeting.

Resilience targeting

Resilience targeting refers to actions that deliberately reduce or undercut the resilience of communities or systems, intending to make them more vulnerable to outside shocks, or unable to reconstitute societies following a conflict (BRIGGS 2020; LE MASSON ET AL. 2019). The Kremlin's hybrid warfare playbook uses resilience targeting across a wide spectrum of activities, many of which intersect with climate policies or climate-related risks. Although these activities may be vastly different, they serve the same strategic objectives in the context of resilience targeting.

The first category concerns attacks on physical infrastructure, with the Russian invasion of Ukraine highlighting some of the most severe examples. Beginning in October 2022, Russian military forces greatly increased their precision standoff targeting of energy infrastructure in Ukraine, often with the use of cruise missiles or drones. Within several months, Ukraine's energy minister reported that half the energy infrastructure in the country had been damaged or destroyed, from electrical substations to physical damage of nuclear power stations (RAMSARAN 2023). While attacks on energy infrastructure are nothing new in warfare, the scale and pattern of the Russian attacks indicate that this targeting is not related to the military activity in the east of Ukraine so much as it is intended to wear down the resilience of the Ukrainian people, and significantly increase the costs associated with reconstruction.

Destruction of energy systems presents opportunities for a greater attention to green energy transitions in Europe and, in particular, Ukraine, but it is here that the second (and perhaps less obvious) form of resilience

targeting makes this task more difficult to achieve. In the context of climate and energy security, undermining climate science and harassing scientists amplifies uncertainty and distrust among the public, which complicates the enactment of effective policy measures. Attacks on the fundamentals behind understanding climate change have been occurring for decades, and these attacks have been carried out in conjunction with other key actors around the world. For example, recent court cases in the USA have shown deliberate obfuscation and funding of climate denial institutes by fossil fuel companies going back to the 1970s (E.G., HIGHAM – KERRY 2022). But since at least the 2000s, Russian foreign policy has deliberately and systematically attacked climate scientists, activists, and negotiations around concepts of sustainability, even while officially issuing lukewarm domestic climate mitigation targets (KOCHTCHEEVA 2022). As noted earlier, these foreign actions are partly motivated by the hope to maintain fossil fuel export markets, but the psychological and policy impacts go far beyond the sale of natural gas to Western Europe.

The attacks on climate science follow specific patterns, with the attackers looking to undermine trust in scientists and media, and constrain discussions of climate politics in ways that do not allow alternative narratives to take root. In information spaces, this means that only certain dominant narratives are allowed, and other, dissenting voices are attacked and drowned out. Social media users are harassed, Twitter feeds are flooded, and media discussions are filled with “authoritative” denials (SEE ORESKES – CONWAY 2011; BRIGGS 2020). In the Russian context, the intention is to direct policy alternatives into narrowly defined, pro-Kremlin choices.

The 2009 “Climategate” email scandal³ is instructive in this regard, as it not only set a precedent for information attacks on climate science and politics, but it was also often repeated in the following years (E.G., GARDU – GEHAMN – KARUNAKARAN 2014). Russian actors have been blamed for Climategate, but their involvement was never decisively proven (HUDSON 2009; MANN 2022: 36–42). The attack had two major components which illustrate how coordinated actions could undermine climate resilience in the long term. First, specific attacks were carried out on scientists associated with climate research. This included not only hacking into their email accounts but also constructing narratives around their intentions and actions. Typically, the most senior scientists were avoided, with the attackers instead targeting

mid-level researchers and professors who were not accustomed to attacks and had few to no political protections. Known as “cyber aggression,” such targeting is well identified in the cyber warfare literature (DUGGAN 2015); in those cases, the targets lack protection, can be slow to react, and are maligned through the second ingredient in the coordinated attacks – media packaging.

When the emails were released in 2009, the exposure was rolled out in a coordinated fashion among media sites friendly to fossil fuel interests and the Kremlin, in particular, groups like WikiLeaks. Rather than wait for others to sift through thousands of emails and complex scientific data, these data bundlers amplified the malign intents ascribed to the targeted scientists, including through easy-to-digest and easy-to-replicate narratives that could be easily spread through the Internet. These frames had been cultivated for some time by various actors, and in the USA they drew upon anchors of skepticism of science and scientists (BOWE ET AL. 2014). The attacks drew upon long-standing conspiracy theories, many of them anti-Semitic, to anchor the scientists’ “evil intentions” and fit the narratives into larger contexts for those who were already receptive. Broad brush-stroke illustrations of scientists manipulating data for easy money to extend the political control of “global elites,” fit the exercise into a historical and nefarious plot, since the actual emails showed little more than typical academic discussions over how to handle data uncertainties (BRICKER 2013).

The 2009 Climategate events set out a pattern for attacks on climate science and beliefs in the urgency of the transition to renewable energy sources, including questioning of anthropogenic climate change by Putin and other world leaders (TYNKKYNNEN – TYNKKYNNEN 2018), harassment of climate scientists (e.g., frequent open records requests, uncertainty amplification) (BIDDLE – KIDD – LEUSCHNER 2017), promotion of analyses that claim that Western Europe cannot survive without Russian oil and gas (RBC 2022), corruption of key government officials (GRASSO 2017), and cyber-attacks and threats against energy infrastructure (COOPER 2023). At the same time the Russian government engaged with United Nations negotiations and promised greenhouse gas reductions (though without any mechanisms for achieving such promises), giving Moscow plausible deniability against allegations that they were ever against policies for sustainable energy transitions (BROWN ET AL. 2023).

As the Kremlin benefits from status quo policies of fossil fuel use, all that needs to be accomplished is to amplify uncertainty over climate science, energy alternatives, and sustainability. The resulting policy delay and paralysis (e.g., “let’s wait for more information,” “let’s stick with what we know for energy sources”) works to the advantage of Moscow and its allies. This approach also fits with what Consentino (2020) refers to as “Surkovian politics” – rather than creating a well-rounded propaganda narrative, the Kremlin pushes for a bewildering array of conflicting narratives, some of them partly real, some based on conspiracies, but in total difficult to fact-check against a firehouse of disinformation (E.G., BORT 2022; HUNT 2021; PAUL – MATTHEWS 2016). This type of tactics aims for *“not necessarily military success but rather a process of constant disorientation and destabilization that could be exploited for geopolitical ends”* (CONSENTINO 2020: 47).

Of course, both Climategate and similar attacks on science were not solely or even directly attributable to the Russian government. They fit into a decades-long pattern of climate denial, obfuscation, and amplification of uncertainty, involving a number of oil-exporting countries, oil companies, and members of Western governments (ORESKEŠ – CONWAY 2011). What is crucial is that the Russian government was aligning its disinformation campaigns with both foreign policy and military actions, and it is this combination of disinformation and active measures around climate and energy that has distinguished the Kremlin roles in the current geopolitical energy landscape. Disinformation goes hand in hand with energy market coercion and manipulation (COLLINS 2017), even if Moscow’s latest attempts might end up backfiring and instead accelerate green transitions.

CONCLUSION

The 2022 invasion of Ukraine has shed light not only on Western energy vulnerabilities but also on the long-standing Russian hybrid warfare tactics in climate politics. In this article we discussed two anti-climate strategies pursued by the Kremlin for decades prior to the war: building reliance on fossil fuels (for example, through pipeline politics) and reducing climate resilience mainly through attacks on climate scientists and activists that involved discrediting or silencing dissenting voices. We argued that the energy and climate insecurity are intertwined and that such insecurity

is not simply a consequence of the war in Ukraine. However, the war will likely have implications for sustainable responses to climate change.

The groundwork for the response to an invasion of Ukraine was laid long ago. By dividing dependent states, Moscow hoped to prevent the kind of coordinated sanctions by Brussels and Washington, DC in the year following February 2022. If enough states received exemptions, and if Asian countries like India, China, and the Philippines increased their imports from Russia, the Paris Agreement commitments would still be left by the wayside. The war has provided impetus for countries to abandon fossil fuel dependence and accelerate the renewable energy transition, but the Kremlin bets on the long game. Long-term investments in political polarization, resilience targeting, and conspiracies to undermine support for Ukraine may ultimately fracture the Western support and resolve, and the larger global condemnation of the invasion may be tempered by whatever energy deals the Kremlin can broker abroad.

If the war is used as an excuse to increase oil and gas drilling (NEW YORK TIMES 2022), if concerns over supply chain disruptions justify investments in traditional energy production, and if questions over the veracity of climate science lessen the need for a concrete response, then the Kremlin's strategies will have borne fruit. Disruption of climate politics was not a military aim of the Russian invasion of Ukraine, but energy politics and impacts on global environmental politics cannot be removed from the context of the events since 2014. If the Russian Federation persists in its war against Ukraine, it will become increasingly difficult for the Western response to maintain its coordinated and biting sanctions, especially as the USA enters a contentious 2024 election season. The war presents Europe and the world with an opportunity to make a clean break from legacy energy infrastructure and dependence, but this can only be achieved with clear leadership and resolve, while addressing both sanctions and the hybrid attacks on climate politics, science, and trust between states.

ENDNOTES

- 1 This term refers to the use of other than conventional war strategies, including guerilla fighting and subversion.
- 2 This is mainly due to insufficient infrastructure like the lack of suitable gas pipeline connections and high costs of oil transport for Russian firms. See, for example, Trickett (2022).
- 3 In 2009, as the world leaders were preparing for a new round of climate negotiations in Copenhagen, outside groups hacked email servers at the Climatic Research Unit at the University of East Anglia in the UK, and at Pennsylvania State University in the USA. Thousands of emails and files of research on climate change were copied and uploaded on the Internet, spurring a conspiracy theory among climate denialists. Climate change, as they believed, was a scientific conspiracy where data had been manipulated and critics silenced.

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