



LONDON POLITICA

Providing for the Peninsula

Logistical Challenges for the Supply of Water,
Fuel and Military Equipment to Crimea

October 2022

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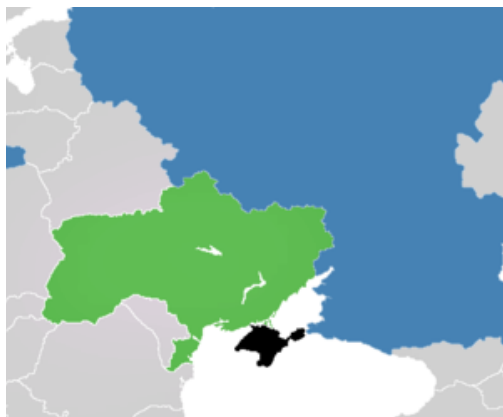


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Introduction



Crimea shown in Black (Credit: Crosswords, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons)

This report focuses on the pertinent logistical challenges for the goods and resources through the Crimea. The Crimean Peninsula has a long history of invasion and annexation dating back to [ancient times](#), due to the Peninsula's strategic location at the northern extremity of the Black Sea. Crimea is a strategic [economic and military asset](#) because of its modern infrastructure, access to rivers and sophisticated ports. Crucially, however, Crimea acts as a land bridge to Russia thanks to the recently built Crimean Bridge on the Kerch Strait.

The above map, [adapted from Wikimedia Commons](#), demonstrates Crimea's location on the Black Sea whilst showing Ukraine (green) and Russia (blue).

The Russian Empire conquered Crimea in 1768 and the Peninsula was part of Russian and Soviet territory. This changed in early 1954, the Supreme Soviet Presidium handed Crimea to the Ukrainian SSR – the motivation for which still remains unclear, despite the [publication of declassified files](#) following the collapse of the USSR. Crimea remained a *de facto* and *de jure* part of the sovereign Ukrainian state until the territory was [annexed by Moscow](#) in 2014. The annexation of Crimea marked the end of an agreement which saw Ukraine return its nuclear arsenal to Russia under the guarantee that Ukraine's status as a sovereign state. This commitment was affirmed in the [Budapest Memorandum of 1994](#), which the United States and the United Kingdom are also party to.

Since the Russian annexation, entering Crimea has been more difficult. To enter from Ukraine, it is necessary to obtain a special document known as a [dozvil](#) which is issued by the State Migration Service of Ukraine (SMS). The SMS limits [access for foreigners](#) to Crimea generally for necessary work functions, human rights missions, journalism, and for other special circumstances, such as bereavement. More information is made available by [Zalizniak & Associates](#), a Ukrainian migration law consultant. Entering on the Russian side is slightly easier with multiple air, land, and sea routes available from Russian territory. All that non-residents require is a Russian visa, which for citizens of 'unfriendly countries' has



become [harder to obtain](#) since Western sanctions have proliferated since Russia's invasion of Ukraine.

At present, the territory remains occupied by the Russian Federation. In the current Russo-Ukrainian War, Crimea allows Russia to access Ukraine's southernmost cities and ports in Mykolaiv, Kherson, and Odesa; effectively creating a [third front](#) from which Russian forces can attack Ukrainian territory. The geostrategic advantage Moscow enjoys from its *de facto* occupation and control over Crimea is not overlooked by Ukrainian forces. Since the start of the war in February, Crimea has been the host of crucial Ukrainian counter-offensives and military successes, namely the [sinking of the Moskva](#), a Russian Slava-class Cruiser, some 200km from Sevastopol and the [bombing of the Crimean Bridge](#) in early October. This has created logistical challenges for the supply of fuel, military supplies, and water to and through Crimea in the context of the ongoing Russian invasion of Ukraine, which will be the focus of this report.



Section 1: Military Supplies

For both sides, the supply of military resources is crucial for the respective war efforts. Russia's *de facto* control over the Crimean Peninsula gives Moscow unmatched infrastructural advantages over the Ukrainian Armed Forces (UAF) in Crimea and the Southern theatre of operations. Whereas Ukraine **must import** most of its military supplies from the West and then shimmy the merchandise from unmarked border posts to battle hotspots; Russia enjoys its national air, rail, road, and sea transport networks to send military supplies into Crimea, the **windpipe for Russian operations** in the Southern theatre of its invasion.

Of course, Russia's size equalises this advantage. A substantial amount of Russian military supplies must come from various regions across the Russian Federation and its broader sphere of influence. For example, Sukhoi, the famous aerospace manufacturer produces its fifth generation Su-57 Felon fighter jet in a facility in **Komsomolsk-on-Amur**, situated in the Khabarovsk Krai in Far East Russia. Additionally, Russia's largest armed tank manufacturer – **Uralvagonzavod** – is based out of Nizhny Tagil, near Yekaterinburg in the Sverdlovsk Oblast, and the **JSC United Shipbuilding Corporation** has its primary facilities in St. Petersburg, with no direct access to the Black Sea.

Long distances between production facilities and the front lines are just one symptom of Russia's chronic and historic **supply-chain issues**, which have limited the Russian Army's ability to carry out mass coordinated attacks since the start of their invasion of Ukraine. The primary problem is how to transport the military supplies Russia can get into Crimea, as well as other theatres of war. As Michael Hugos, co-founder of **Supply Chain Management Globe**, explains, the supply-chain problems in the Ukrainian war is related to supply routes, supply tactics and how much **ought to be sent** to the front lines: “the Russians can send a few big convoys every couple of days, or many smaller convoys every day. Big convoys are big targets. But many small convoys are hard to protect”. However, in Crimea, Russia enjoys relative safety and support due to **the substantial and historic** pro-Russian sentiment and large amounts of ethnic Russians, as well as a lack of substantial military activity on the Peninsula.

The most prominent anti-Russian movement on the Peninsula – the **Yellow Ribbon resistance movement** – has fairly limited military operations. The movement is an independent citizen initiative, and therefore their undertakings involve spreading flyers in



[major cities](#), and sporadic episodes of direct activism such as hanging or spray painting [Ukrainian flags](#) in occupied territories and distributing [pro-Ukrainian newspapers](#). As such, there are limited significant challenges to Russia's military logistics in Crimea. Certainly, the bombing of the Crimean Bridge is a warning to Moscow, but it is of similar nature to other infrequent Ukrainian strikes on Russian soil which have not caused substantial setbacks to Russia's war effort—namely the [missile strikes](#) on an airfield in Millerovo or drone strikes on a [Russian oil refinery](#) in Novoshakhtinsk in February. Perhaps a less symbolic, but more worrisome strike for the Russian war effort came in August when Ukrainian forces [raided a key railway](#) connecting Crimea to Kherson. The rail from Armansk to Kherson is an important freight route, and any attempt at a successful occupation and campaign in Southern Ukraine would rely on secure supply chains out of Crimea into Kherson.

On the Ukrainian side, key supply lines originate at Ukraine's [land border with Poland](#), which has proven to be an indispensable lifeline for the Ukrainian military in general. There are also facilities which are used to receive and process foreign military supplies, including non-lethal equipment. However, these facilities are prone to air strikes and shelling by Russian forces as they are far closer to the active theatre of operations. For example, in early May, Moscow hit a military [airfield near Odesa](#) which had been used to receive, process, and distribute military supplies coming from abroad. This reflects a problem for Ukraine's own supply lines; primarily the [lack of air superiority](#) on either side. Whilst this does allow for Ukraine to resupply crucial front lines, it also exposes supply hubs closer to the front lines to Russian strikes and sabotage – especially in the Southern theatre of operations. This is because the Ukrainian Air Force, despite employing [successful aerial guerrilla](#) tactics, is fighting with [dated equipment](#).

This highlights another significant logistical challenge for Ukraine: foreign supplies are largely limited to defensive weaponry. In other words, Ukraine does not and most probably will not receive state-of-the-art offensive military equipment like modern fighter jets and tanks as the risk of these technologies falling into Russian hands or further escalating tensions with Moscow is a risk that does not fit the bill for Western governments. Notwithstanding, Ukraine has been receiving a great deal of man-portable air-defence systems (MANPADs) such as [Lockheed Martin's javelin missile](#) and [Saab Bofors Dynamics' NLAW](#). Ukraine has also received some modern artillery systems, such as [Lockheed Martin's high mobility artillery rocket system](#) (HIMARS) and [BAE Systems' M777](#) howitzer towed gun. The [main donors](#) to Ukraine's war effort are the United States, Poland, the United Kingdom, and other post-Soviet states in Eastern Europe. Poland, in particular, has donated upgraded versions of the [T-72 Soviet-era tank](#) to Ukraine.

The supply of weapons to the UAF is impeding Russia's war effort by giving Kyiv a leg to



stand on. However, the limited offensive weapons in the hands of the UAF means that the logistics of military equipment in Crimea and the wider Southern theatre of operations are not likely to change substantially in the foreseeable future – Russia will still be able to use its *de facto* control over Crimea to maintain relatively healthy supplies of military equipment in the region. Of course, recent supply chain disruptions, such as bombings on the Crimean Bridge and important railways into Kherson demonstrate that Russia must think twice about how to dispatch its supplies, but, in general, there are no substantial logistical risks as the UAF lack the means to do serious damage to Russian logistics in Crimea.



Section 2: Water Supply

In terms of natural climate conditions, Crimea is an arid region with little rain and snowfall every year. The region mainly features plains and lakes, rivers and other water bodies account for only [8%](#) of the region, meaning that it relies on outside resources for its water supply.

In order to provide consistent access to drinking water in Crimea Soviet authorities began to build the Crimean Canal bringing water from the Kakhovka Reservoir in southern Ukraine, filled by the Dnipro river in 1957 – three years after the region was transferred from Russia to Ukraine. Completed in 1971, the canal supplied up to [85%](#) of the region's water needs.

A water crisis emerged in Crimea when Ukraine blocked the canal by building a dam in response to the Russian annexation of the region in 2014. The blockage of the canal can be seen as leverage for Ukraine to pressure Russia, raising the costs of managing the region. As a consequence of the blockage, the region's once-thriving agriculture sector was seriously affected as people had to abandon water-intensive rice cultivation. More importantly, following the blockage people in the region simply struggled to access drinking water, which jeopardised President Putin's promise of a better life for Crimeans under Russian rule. This was prescient for Putin's government as keeping the local population in Crimea satisfied and prosperous has been important for its public image and its wider geopolitics. Russia would not be able to 'sell itself' to Russophone Ukrainians if it were evident that it could not care for the regions it sought to annex.

As tensions rose over the water supply to Crimea between Russia and Ukraine, the "[water war](#)" opened a new front in the Russia-Ukraine conflict. Because of the importance of the issue, Putin has sought ways to solve it even by taking Ukraine to [the European Court of Human Rights](#) on the basis of violations of Crimea's residents' rights. Domestically, Russian media doubled down on the issue of water supply to Crimea accusing Kyiv of "genocide" which was aimed at facilitating justification for the full-scale invasion was necessary. Interestingly, it is argued that [restoring the water supply to Crimea](#) was one of the several motivations behind Russia's launch of the full-scale war on Ukraine on 24 February. As a matter of fact, one of the first acts of the Russian army was to explode the dam and restore the water flow to the North Crimea canal. On the first day of the invasion, Russia officially [announced](#) the restoration of water flow to the canal which signals the high priority of the issue for Moscow.

The importance of water supply to Crimea for Russia is not only restricted to the development of agriculture and access to drinking water for civilians, but it is also critical for military purposes. Since the annexation in 2014, the peninsula has been heavily militarised



with the expansion of Russian military facilities and a substantial increase in the number of military personnel. Considering the water needs of military personnel and their families as well as water needed for cleaning and cooling military engines, it is all the more important for Moscow to ensure a continuous water flow to Crimea. Given the vital transit and support role of Crimea for Russia's ongoing military operations in Ukraine, ensuring constant water supply to the peninsula has become even more significant.



Section 3: Fuel Supply and Energy Markets

Fuel, and more generally, energy supplies in Crimea have been a hot topic since the Russian annexation of Crimea in 2014. Fuel and energy supplies, on the whole, are Russia's realm of dominance in the region. Following the annexation, Russia's supremacy reached leviathan levels; Crimea's exclusive economic zone (EEZ) on the Black Sea – naturally, under *de facto* Russian control – held **80%** of Ukraine's natural gas reserves. In addition to this, Ukraine like many other European nations had a substantial reliance on Russian hydrocarbons; before the Russian invasion, Ukraine was **importing** some \$1.36 billion worth of refined petroleum and \$275 million worth of petroleum gas, amongst other petroleum, gas, and coal commodities. Since the annexation of Crimea the energy company **Chernomorneftegaz**, *de jure* owned by the Ukrainian state-owned Naftogaz energy company, has worked with the Kremlin to improve the **Russian gas supply** into Crimea. Politically, gas supplies between Russia and Europe, including Ukraine, have been the deterrent for harsher sanctions on Russia from the West. When Russia annexed Crimea in 2014, Russia's **crucial role** as an energy and fuel supplier to the rest of Europe was the pretext that led to effective appeasement from the West.

Following Russia's outright invasion of Ukraine, this has changed. Western **sanctions were imposed** on Moscow, including on Russian gas and energy companies. Initially, amongst other sanctions, this had a profound **impact on the Russian rouble**; shortly before the outbreak of war a single US dollar was worth 85 roubles, and at time of writing one US dollar is worth 61 roubles. This, among a wider energy crisis in Europe and Moscow's **rouble-only policy** for purchasing Russian gas, has led to the rouble's stabilisation and some commentators are claiming that sanctions **may not be working** in the short term. For Crimea, this matters little as Russia continues to supply the peninsula with gas and fuel, but if in the medium and long-term sanctions do not start hurting Moscow again, Kyiv's first responders may start having to choose between foreign aid or defending their national interests. Therefore, the potential ramifications for the outcome of the war and Europe, in general, are not insignificant.

As for battlefield fuel supplies, Russia's military logistics have held back its progress in achieving key military goals, as is explained in the 'Military Supplies' subsection of this report. Since the start of Russia's invasion, media outlets have been reporting that the Russian Army has been facing chronic supply chain problems, specifically food and fuel. The 40-mile (64-kilometre) column which had been spotted by satellite images that were supposedly heading to Kyiv in March this year, was **taken out** by the UAF amid rumours that the armed vehicles in the column did not have the necessary **fuel to continue** their journey. This account seems to corroborate primary sources on the ground posted on social media at the



start of the war, such as videos of [Ukrainian farmers](#) towing Russian tanks and a [Ukrainian motorist](#) not-so-kindly telling Russian soldiers standing outside their broken-down armoured car to return to Russia. Additionally, Russian diesel and jet fuel producers are already [struggling to meet domestic demand](#) because of the war and the prospect of further sanctions from the European Union in 2023 might increase pressure on military supplies.

Paradoxically, then, it would appear that whilst Russia is able to provide energy and fuel for commercial and civilian purposes in Crimea the inability of the Russian Army to secure steady fuel supply lines, coupled with falling export revenues for Russian petroleum refineries and increasing sabotage in key logistical sites in Crimea, are seemingly hindering Russia's invasion of Ukraine. However, the economic challenges sweeping through the West may also challenge Western countries' commitment to backing Kyiv in the war. What this means for fuel supplies in Crimea and the energy market, in general, remains to be seen, but it is difficult to determine who the winners and losers will be.



Conclusions and Forecasts

The Crimea Peninsula holds significant political, economic, and military value. For this reason, it is a key element and point of focus in the ongoing Russian invasion of Ukraine. This is reflected not only by recent and historical political developments but also by the ongoing harassment of Russian supply lines by the UAF into and out of the Crimean Peninsula, which otherwise has seen limited armed conflict compared to mainland Ukraine. The fate of Crimea will have substantial impacts on the relations between Russia and Ukraine, long after the ongoing war is over. For Moscow, successfully utilising Crimea to open a third front for the invasion of Ukraine (and by extension, enacting the desired regime change) will strengthen Russian territorial claims not only over Crimea, but in the contested oblasts of Donetsk and Luhansk. Should Ukraine exit the war making concessions to Russia, any post-war regime will have to contend with this—regardless if a post-war regime will be Russophile or not. This combined forecast will first focus on the history of water and energy supplies in Crimea, before delving into the military realm and how the war can change the future of water and energy supplies in Crimea.

As mentioned in the report Crimea's water supply infrastructure has its roots in the late 1950s, when Russia and Ukraine were both part of the Soviet Union. After the collapse of the Soviet Union, the territory of Crimea was administered by Kyiv and so the supply of water remained stable until the Russian annexation of Crimea in 2014. Following the annexation, Ukraine's desire to cooperate with the Russian administrators, naturally, was not at its highest level. As such, the water supply, which came from the Dnipro River, was dammed. Similarly, following the Russian annexation of Crimea, civilian and commercial energy supplies coming from Ukraine often ground to a halt—either because of supposed **faults** in the power grid or **damage** to physical infrastructure. The reason why energy supplies could not really be suspended from the Ukrainian mainland to Crimea was that the two power grids were interconnected. However, as mentioned in earlier sections, the energy supply rapidly became more formally administered by Moscow. Notwithstanding, having Crimea dependent on Ukrainian water and energy supplies, as well as being exposed to soft power plays, motivated Russia to build the Crimean Bridge—cutting off the port of Mariupol from the Black Sea. The Crimean Bridge neutralised Crimea's infrastructural links to Ukraine in the realm of energy supply and trade. However, Crimea is not known for having large aquifers and the aridity of the region meant that Russia was not able to fully establish an effective water supply.

From a military perspective, the Crimean Bridge on the Kerch Strait provides Moscow with direct access to Crimea. This means Russian authorities, law enforcement, and businesses can easily access Crimea. Of course, when Russia began its invasion in February this year, the



Crimean Bridge conveniently allowed Russia's army to set up defensive positions in Crimea and crucially, access to Ukraine from a third front on the Southern theatre of operations for offensive operations. Limited only by Russia's chronic supply chain issues, Crimea has been an effective base for the Russian invasion. Land bridges between Crimea, Kherson, and Mykolaiv have allowed Russia to solidify its progress on the Eastern theatre of operations. This is unlikely to change because, as discussed, the UAF does not have as direct a supply line to the Southern theatre as Russia does and the UAF lacks substantial offensive military equipment to launch a counter-offensive and take Crimea from Russia. Therefore, it is very difficult to theorise that there will be a change in the logistic situation in Crimea that favours Ukraine. For these reasons, the forecast for the short term is rather unpredictable as they hinge on the day-to-day evolution of the war.

On the one hand, the ongoing political and economic instability in the West grants Russia the opportunity of pulling the plug completely on [Europe's energy supplies](#) to increase the cost of supporting Ukraine's war effort. The impact of this outcome, should it unfold favourably to Russia, could well limit the supply of military into Ukraine in a worst-case scenario. This would limit the UAF's ability to target key supply routes in and out of Crimea, at least during the winter, although the extent to which supply line sabotage would be impacted remains to be seen as limited resources may just simply result in more intensified guerilla tactics, as history has shown numerous times. Additionally, energy supplies may also limit the UAF's ability to raid Russian supply lines in Crimea, as Ukraine is at war with its [largest supplier](#) of natural gas. However, as winter rolls in, there are two realities that might thwart Russia's trump card; the European Union's gas reserves on 29 October 2022 were virtually full at [93.4%](#) capacity and temperatures in Europe are [abnormally high](#) this autumn, suggestive of a warm or delayed winter. Thus, unless temperatures drop, demand for natural gas in Europe is unlikely to surge compared to previous years. This means that as the UAF gains more guerilla experience and if the military equipment into Ukraine does not drop off, raids on key Crimean supply lines are likely to continue.

In the longer-term Russia's military capabilities are, [on paper](#), more likely to outlast the Ukrainian defence in a long-term war of attrition—crucially because Russia has a more favourable supply of hydrocarbons than Ukraine and its allies. Therefore, unless there is a watershed moment that changes the dynamics of the ongoing war, Russia is likely to strengthen its Crimean claims and potentially use any gains in Ukraine to detach any residual infrastructural links between Ukraine and Crimea, such as the water supply. The implications for the integrity of Ukrainian borders and territories at large, however, remain unknown. ◆

