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Research Report

The European gas market: Emancipating from Russia

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Policy Notes and Reports 91

The European gas market: Emancipating from Russia

Vasily Astrov and Doris Hanzl-Weiss



The European gas market: Emancipating from Russia

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The study was completed at the end of January 2025.

Abstract

Despite the formal absence of sanctions, gas trade between Russia and the EU has effectively collapsed over the past three and a half years. This has been the outcome of several factors: the EU strategy of reducing dependence on Russian gas, Russia's own supply cuts, physical damage to the crucial pipeline infrastructure and Ukraine's reluctance to prolong the gas transit contract. The resulting shock of reduced Russian supplies has primarily been absorbed via energy savings, while gas imports from other countries have increased only insignificantly. The case studies of three Central European EU member states: Slovakia, Czechia and Hungary – which had all been highly dependent on Russian gas before the start of the war in Ukraine but have adopted very different diversification strategies over the past few years – suggest that the negative effects from reduced Russian supplies could be minimised through the precautionary measures taken and also because of the interconnected nature of these countries' gas networks with those of other EU countries. Of the four main pipelines that used to bring Russian gas to Europe before the war, only TurkStream remains in operation, although its future is also potentially uncertain. Against this background, European countries would be well advised to expand their gas storage capacities in order to cushion themselves from any future supply shocks and reduce dependence on short-term price fluctuations.

Keywords: gas dependency, energy consumption, gas storage

JEL classification: Q4

CONTENTS

Abstract.....	5
1. Introduction.....	9
2. Russian gas largely exempted from sanctions.....	9
3. Why did EU imports of Russian gas plummet?.....	10
4. Making up for Russian gas: the pivotal role of energy savings	12
5. Ukraine gas transit stopped, but no imminent risk to EU supplies.....	16
6. Country case studies	18
7. Conclusions and policy recommendations	20
References	21

FIGURES

Figure 1 / Natural gas import dependency on Russia of selected European countries in 2020, in %.....	10
Figure 2 / Quarterly EU imports of Russian pipeline gas in million cm, by transit route.....	11
Figure 3 / Quarterly EU imports of natural gas, by source country	13
Figure 4 / EU's primary energy consumption in EJ (left panel) and primary energy consumption in EJ by fuel type (right panel)	14
Figure 5 / Natural gas prices in selected world regions (left panel) and the number of heating degree days in Europe (right panel).....	15
Figure 6 / EU final consumption of natural gas by selected industries, in terajoule (gross calorific value)	15
Figure 7 / Gas storage levels in TWh as of 17 November 2024, by EU country.....	16
Box 1 / A halt to Russian gas supplies pushes Moldova into a crisis.....	17

The European gas market: Emancipating from Russia

1. INTRODUCTION

Russia's full-scale invasion of Ukraine in February 2022 led to the disruption of many economic ties between the EU and Russia, as a consequence of Western sanctions and the withdrawal of many European companies from Russia, as well as Russia's own export restrictions. Among the sectors worst affected by these developments has been Russian gas exports. Prior to the war, some 90% of EU gas needs were imported, and Russia accounted for up to 40% of the imports. This has changed dramatically over the past three and a half years. Although Russian pipeline gas has never been formally sanctioned, its exports to the EU have declined by 70-80%, reducing Russia's share in total EU gas imports to low double digits. The impact of these developments on individual EU member states has been highly unequal. Although countries on the Western EU periphery have hardly been affected, others have faced an uneasy dilemma over whether to diversify gas supplies or stick to the status quo, potentially making them vulnerable to future Russian pressure.

This policy note analyses the dynamics of EU-Russia gas trade over the past three and a half years and explores the reasons for its collapse, as well as the role of alternative gas suppliers and other energy sources in mitigating the shock. It concludes with the case studies of the three Central European countries – Slovakia, Czechia and Hungary – which had all been highly dependent on Russian gas before the war and have taken very different diversification strategies over the past few years.

2. RUSSIAN GAS LARGELY EXEMPTED FROM SANCTIONS

By the time of writing, the EU had enacted in total 15 packages of sanctions on Russia. However, unlike oil, coal, steel or timber, for example, imports of Russian gas by the EU have not been formally sanctioned, at least so far. This stands in stark contrast to the US¹ and the UK,² which imposed import embargoes on Russian gas (LNG) soon after the beginning of the war. Nor was Russia's Gazprombank, which had been until recently handling all import payments for Russian gas, initially targeted by sanctions – unlike most other big Russian banks (such as Sberbank, VTB and Alfa-Bank). It was not until November 2024 that the US finally put Gazprombank on its sanction list.³

The lack of EU-wide consensus on gas sanctions can be partly explained by the great heterogeneity across individual EU member states with respect to their degree of dependence on Russian gas. Countries on the Western EU periphery, such as Portugal, Spain and Ireland, but also others, such as

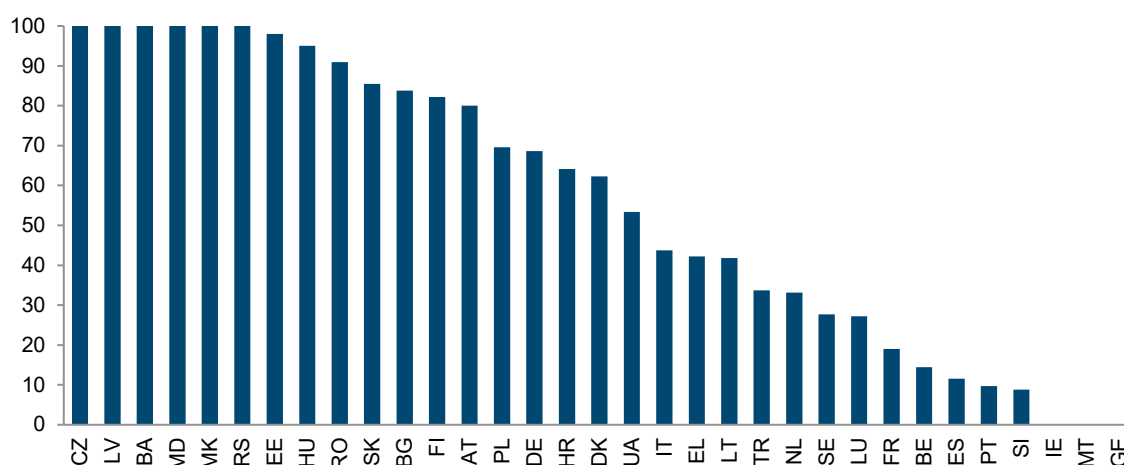
¹ <https://ofac.treasury.gov/media/919031/download?inline>

² <https://investmentpolicy.unctad.org/investment-policy-monitor/measures/4148/united-kingdom-bans-the-import-of-liquefied-natural-gas-from-the-russian-federation-and-related-funds-and-services>

³ <https://home.treasury.gov/news/press-releases/jy2725>. In response, some countries still heavily dependent on the imports of Russian gas, such as Hungary and Turkey, asked for – and were granted – exemptions to the US Gazprombank sanctions.

Slovenia, were hardly dependent on it even before the start of the war. In contrast, certain other countries, mostly those in Central and Eastern Europe, recorded very high dependency levels. In 2020, two EU member states – Czechia and Latvia – were 100% dependent on Russian gas supplies (along with Bosnia and Herzegovina, Moldova, Serbia, and North Macedonia), while another three EU member states – Estonia, Hungary and Romania – were more than 90% dependent (Figure 1).⁴

Figure 1 / Natural gas import dependency on Russia of selected European countries in 2020, in %



Note: 2020 is the latest available year for this indicator from Eurostat.

Sources: Eurostat, https://doi.org/10.2908/NRG_IND_IDOGAS; Austria: European Commission (2022), Austria Energy Snapshot.

3. WHY DID EU IMPORTS OF RUSSIAN GAS PLUMMET?

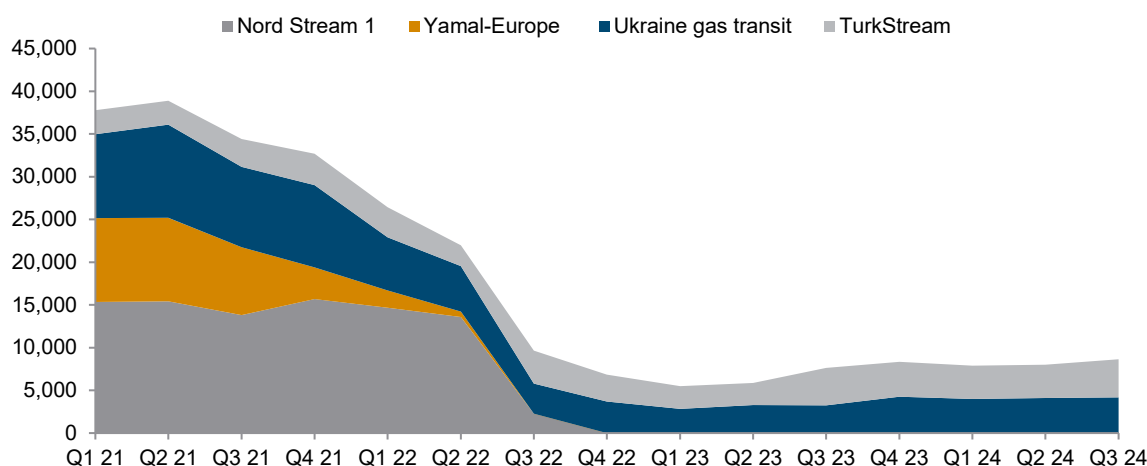
Even in the absence of formal sanctions, imports of Russian gas into the EU have plummeted sharply over the past three and a half years. In the summer of 2021, well before the war, Russia started to reduce gas supplies to the EU (probably in an attempt to gain political leverage over the bloc). However, the decline in gas flows accelerated sharply following the start of the war. Between Q1 and Q3 2022, they dropped by up to 75% and, despite having slightly rebounded subsequently, have stayed at a low level ever since (Figure 2). What have been the reasons for this?

EU strategy of reducing gas dependence on Russia. In May 2022, the EU unveiled the REPowerEU Plan, which set the non-binding targets of reducing imports of Russian gas (via pipeline) by two-thirds by the end of 2022 and ending them completely by 2027. The resulting shortfall was supposed to be offset by drawing on other gas suppliers, energy savings and advancing the role of renewables. In that sense, the REPowerEU Plan ‘built on the full implementation of the Fit for 55 proposals without modifying the ambition of achieving at least -55% net GHG emissions by 2030 and climate neutrality by 2050 in line with the European Green Deal’ (European Commission, 2022). As subsequent developments have

⁴ Note, however, that the Eurostat data used as the source for Figure 1 are not flawless. For instance, they suggest that Austria’s dependence on Russian gas (not shown in the chart) in 2020 was zero. This contradicts other data sources, such as E-Control, according to which Austria was predominantly dependent on Russian gas supplies.

shown, the near-term EU target of reducing Russian gas imports by two-thirds by the end of 2022 was not only met, but in fact overshoot (albeit at the expense of a steep rise in gas and electricity prices, which dealt a particularly heavy blow to energy-intensive industries).

Figure 2 / Quarterly EU imports of Russian pipeline gas in million cm, by transit route



Source: Bruegel, <https://www.bruegel.org/dataset/european-natural-gas-imports>.

Russia's changed rules for gas supplies to 'unfriendly' countries. On 31 March 2022, Russia's president, Vladimir Putin, issued a decree forcing buyers of Russian gas from 'unfriendly countries' to pay for deliveries exclusively via Russia's Gazprombank and in Russian roubles.⁵ Prior to that, 58% of gas payments were made in euros and 39% in US dollars (Mihailov, 2022). As the newly imposed condition contravened the terms of existing supply contracts, the energy companies of several EU countries did not accept it (partly because the European Commission's guidelines on whether accepting the Russian demand would represent a breach of sanctions were very confusing⁶), Russia stopped supplying gas to them. Among the EU countries affected were Bulgaria, Poland, Finland, the Netherlands and Denmark. Furthermore, in May 2022 Russia imposed sanctions on EuRoPol Gaz, the operator of the Yamal-Europe pipeline (which crosses Belarus and enters the EU in Poland), one of the four main transportation routes for Russian gas to Europe, which led to its de facto shutdown. Most recently, on 16 November 2024 Gazprom cut gas supplies to Austria's OMV in the wake of a legal dispute between the two companies,⁷ which led OMV on 11 December to terminate its long-term supply contract with Gazprom.

Unilateral gas supply cuts by Russia to European customers have arguably been motivated by the country's implicit strategy to use gas supplies as a weapon in the evolving geopolitical stand-off. If so, this strategy has essentially backfired. Russia has suffered economic losses as a result (infrastructural

⁵ <http://en.kremlin.ru/catalog/keywords/128/events/68094>. This decree was revoked only in December 2024, after Gazprombank had been sanctioned by the US.

⁶ <https://www.politico.eu/article/ruble-gas-paid-russia-eu/>

⁷ OMV has won the case against Gazprom in the Paris-based arbitration court, but Russia has forbidden Russian entities from abiding by the decisions of foreign courts in this case. https://www.kommersant.ru/doc/7364998?from=top_main_2

bottlenecks have meant that gas could be only partly redirected to other markets) and its political gains have been at best questionable.

Physical damage to the pipeline infrastructure. In September 2022, another major gas export pipeline – Nord Stream 1 (which stretches from Russia to Germany under the Baltic Sea) – fell victim to a mysterious explosion, which proved to be a deadly blow. Although nobody has ever taken official responsibility, some investigative media have claimed to have obtained evidence that Ukraine was behind the blast.⁸

Ukraine's reluctance to prolong the gas transit contract with Russia. Against all odds, the transit of Russian gas via Ukraine via the so-called 'Brotherhood' pipeline (also known as 'Urengoy-Pomary-Uzhhorod') continued until very recently, although it has more than halved since the war began (Figure 2). It survived even the August 2024 capture by Ukrainian armed forces of parts of Russia's Kursk region and the town of Sudzha, site of the only metering station for the entry of Russian gas to Ukraine. However, the long-term transit contract expired on 31 December 2024, halting all transit of Russian gas via Ukraine to EU countries and Moldova (for fuller details, see Section 5).

As a result of these developments, TurkStream (which stretches from Russia to Turkey under the Black Sea, and further on to Bulgaria, Serbia and Hungary) is the only one of the four main transportation routes for Russian pipeline gas destined for Europe that remains in operation. Transit via this route has even increased since the war began (Figure 2), not least in order to make up for declines elsewhere.

4. MAKING UP FOR RUSSIAN GAS: THE PIVOTAL ROLE OF ENERGY SAVINGS

How has the EU made up for the dramatic decline in Russian gas imports over the past three years? Figure 3a demonstrates that the reduction in gas imports from Russia via pipelines (24.1bn cubic metres (bcm)) between Q4 2021 and Q3 2024 was almost fully matched by the decline in total EU gas imports (-23.2 bcm).⁹ This means that combined gas supplies from other countries played only a minor role in offsetting the shock of sharply reduced Russian supplies. The main source of additional gas supplies to the EU was liquefied natural gas (LNG) from the US (+3.6 bcm), although gas imports from the UK went up as well (+1.7 bcm).

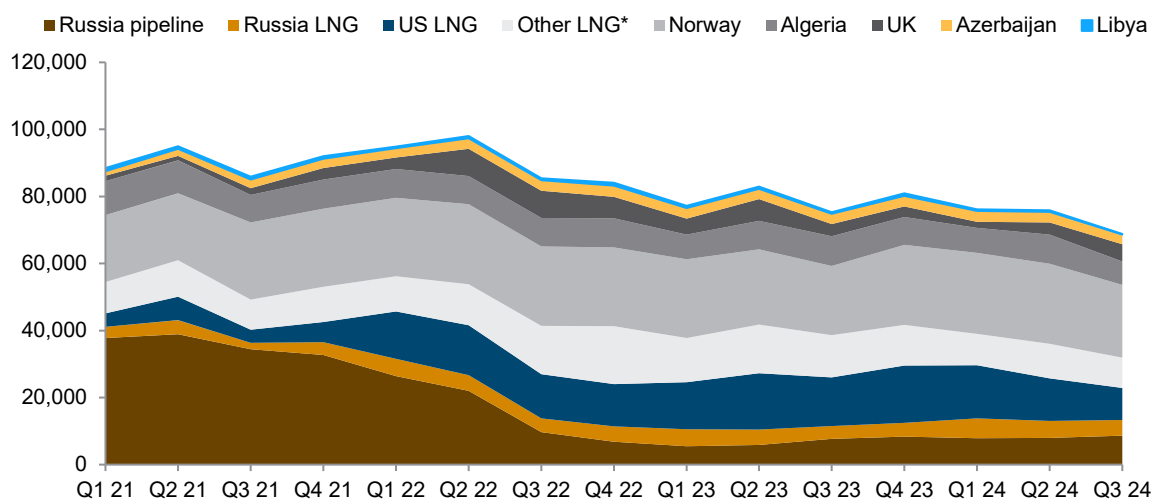
Interestingly, EU imports of Russian LNG increased during this period (+800m cm (mcm)), with France, Belgium and Spain the main importing countries. As with pipeline gas, imports of Russian LNG to the EU are largely not sanctioned – although the 14th EU sanctions package adopted in June 2024 banned (i) the transshipment of Russian LNG through EU ports to non-EU countries; (ii) its imports through terminals not connected to the EU natural gas system; and (iii) providing goods, technology or services for the completion of Russian LNG projects (Yafimava et al., 2024).

⁸ <https://www.wsj.com/world/europe/nord-stream-pipeline-explosion-real-story-da24839c?page=1>

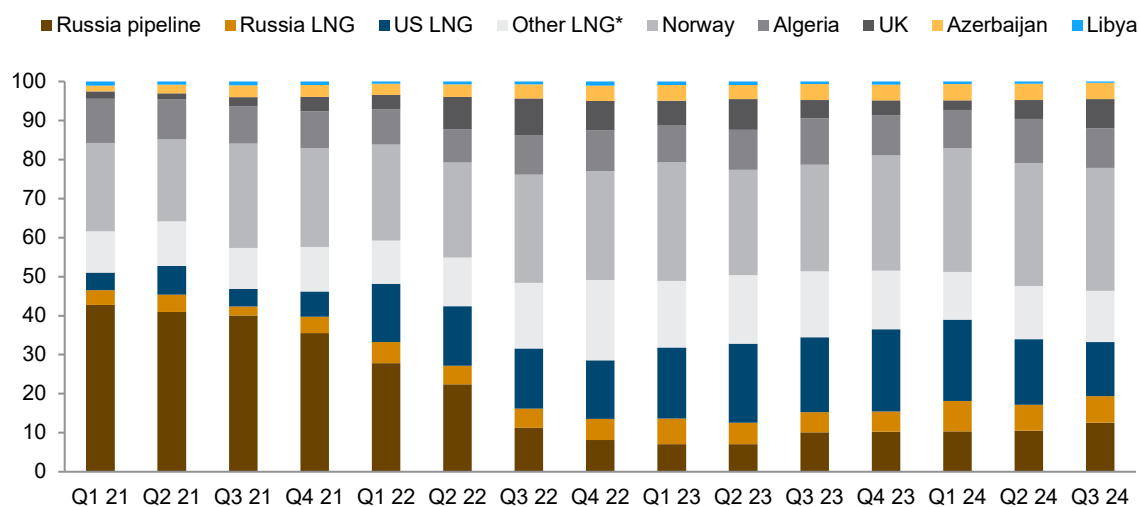
⁹ In relative terms, EU gas imports declined by 25% during this period.

Figure 3 / Quarterly EU imports of natural gas, by source country

a) In million cm



b) As % of total imports

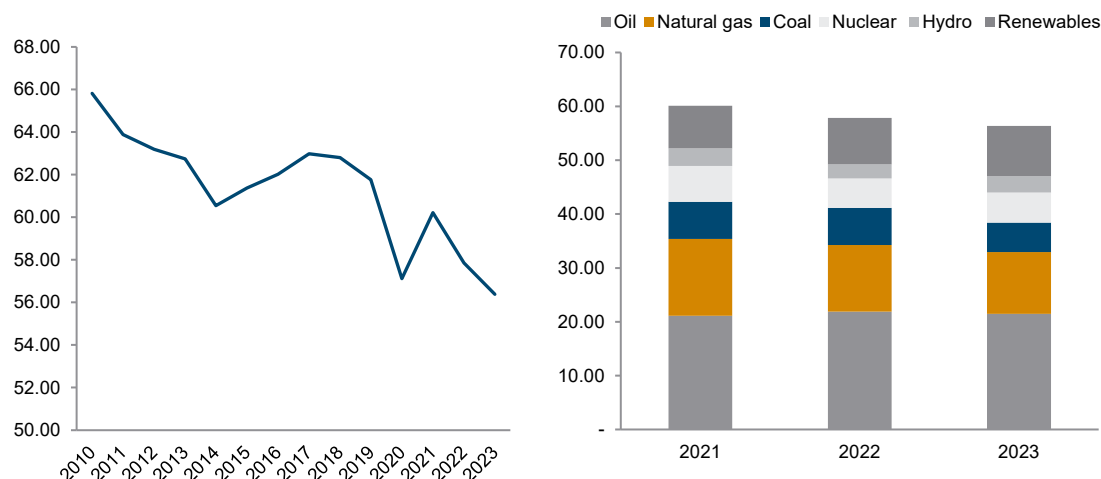


*Non-Russian and non-US LNG.

Source: Bruegel, <https://www.bruegel.org/dataset/european-natural-gas-imports>, own calculations.

As a result of the sharp reduction in Russian supplies, the geographic structure of EU gas imports has changed fundamentally (Figure 3b). Russia's share plummeted from 36% in Q4 2021 to a mere 13% in Q3 2024, while that of Norway – the second biggest gas supplier before the war – increased from 25% to 32%. The share of US LNG in total gas imports doubled to 14%, while that of Russian LNG rose from 4% to 7%. EU gas imports have become more diversified, which should improve the EU's bargaining power in the global gas market. In Q3 2024, the main supplier – Norway – commanded a lower share than Russia had before the war, while the share of the second-largest supplier – Russia – went down dramatically and is now similar to that of the US (14%) and Algeria (10%).

Figure 4 / EU's primary energy consumption in EJ (left panel) and primary energy consumption in EJ by fuel type (right panel)



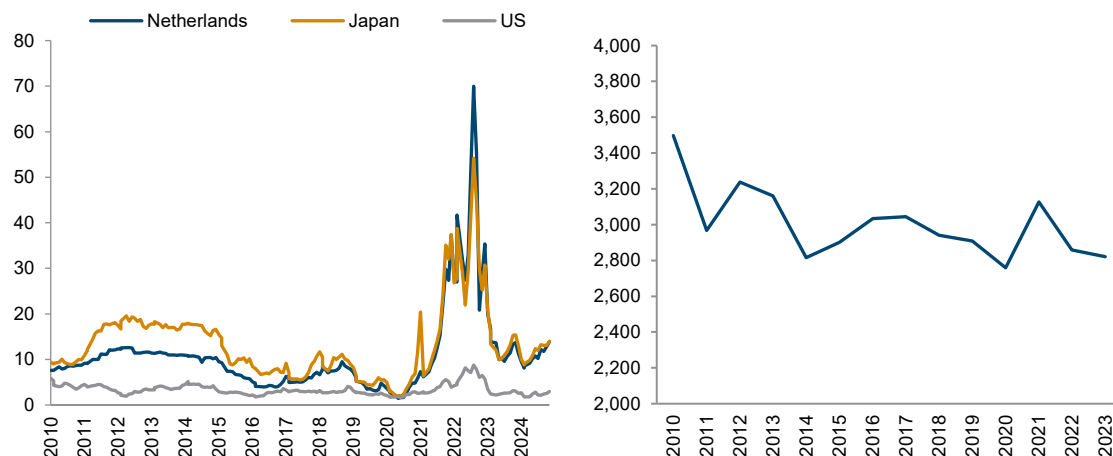
Source: Energy Institute, Statistical Review of World Energy 2024, <https://www.energyinst.org/statistical-review>.

The main channel through which the shock from reduced Russian gas supplies has been absorbed has been energy savings. Between 2021 and 2023, total primary energy consumption in the EU plunged by a combined 3.7 exajoules (EJ), a 6% decline, to below even the level of 2020, at the peak of the COVID pandemic (Figure 4, left panel), suggesting a marked improvement in EU energy efficiency. In absolute terms, this exceeded the 2.8 EJ reduction in gas consumption over the same period. This means that the reduced EU imports of Russian gas – and gas in general – could have been fully offset by energy saving rather than by switching towards alternative energy sources. EU consumption of renewables (not including hydro power) did increase in 2021-2023 by a combined 1.5 EJ, but this was only about enough to offset the decline in the use of coal (Figure 4, right panel). The use of other energy sources was more stable.

The 19% decline in EU gas consumption between 2021 and 2023 is to be seen against the background of two factors: the sharp spike in gas prices (Figure 5, left panel) and relatively warm winters (Figure 5, right panel). The increase in gas prices in Europe in the first year of the war and sanctions (on average by 136%, year on year) was much more dramatic than either in the US or Japan (by 75% and 79%, respectively), which can be largely attributed to the decoupling from Russian gas supplies. Industrial gas consumption in the EU fell by a combined 18% between 2021 and 2023, almost matching the decline in total gas consumption. Non-surprisingly, energy-intensive industries were generally worst affected, with the wood industry recording a particularly large 27% drop (Figure 6).

All in all, between 2021 and 2023 the share of gas in the EU fuel mix dropped from 23.8% to 20.4%, and that of renewables picked up from 13.2% to 16.6%. However, it is important to stress once again that these shifts took place against the background of an overall decline in EU energy consumption.

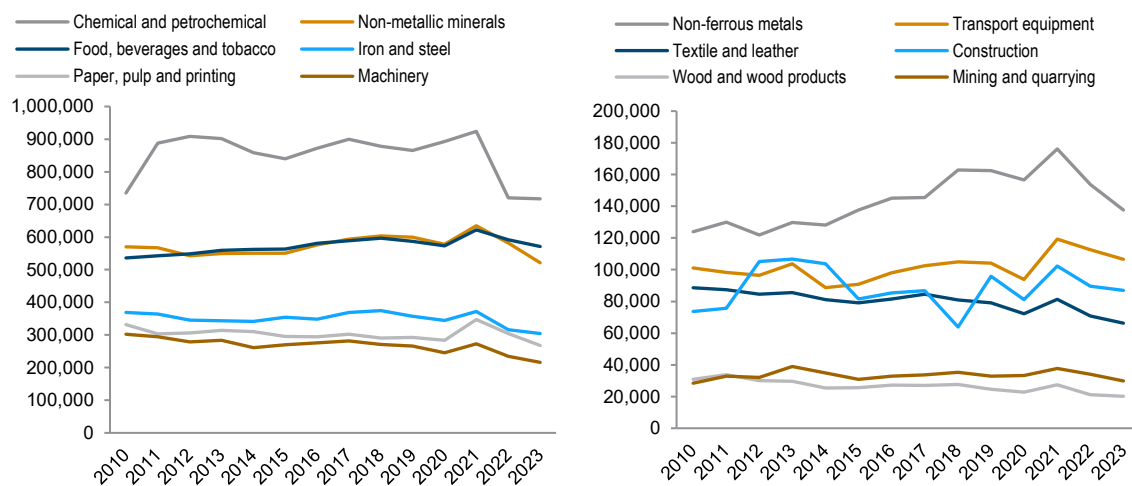
Figure 5 / Natural gas prices in selected world regions (left panel) and the number of heating degree days in Europe (right panel)



Note: Natural gas prices in USD per million metric British Thermal Units (Btu). Netherlands: TTF natural gas forward day ahead, Japan: Indonesian LNG, US: natural gas spot price at the Henry Hub terminal in Louisiana.

Sources: natural gas prices: IMF; number of heating degree days: Eurostat.

Figure 6 / EU final consumption of natural gas by selected industries, in terajoule (gross calorific value)



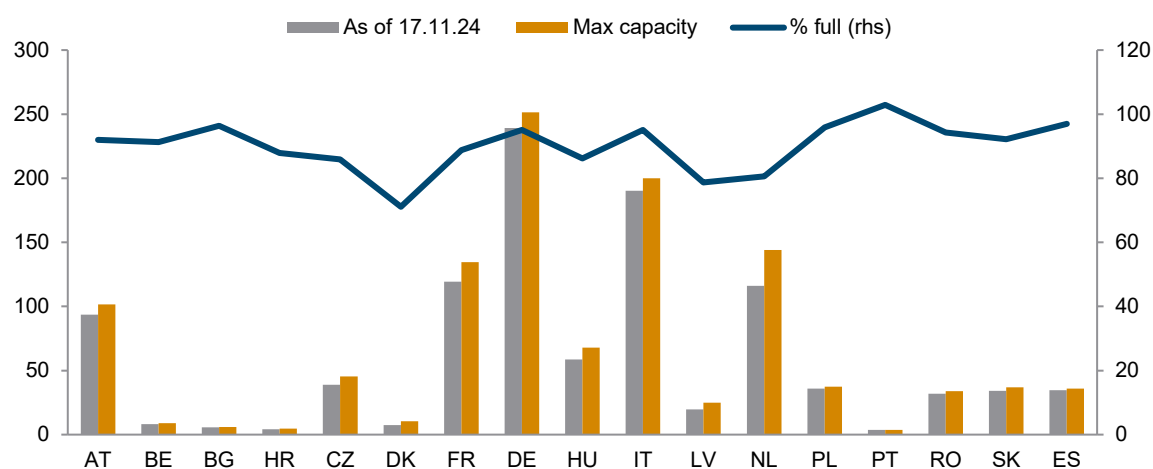
Source: Eurostat.

5. UKRAINE GAS TRANSIT STOPPED, BUT NO IMMINENT RISK TO EU SUPPLIES

January 2025 brought new challenges for EU gas supplies. Transit and interconnector contracts between Ukraine's Naftohaz and Russia's Gazprom expired on 31 December 2024. As a result, the Ukrainian transit – one of the two remaining routes for Russian pipeline gas exports to the EU – ceased to operate. Ukraine had repeatedly indicated that it had no plans to prolong the contract with Gazprom. The EU had shown little interest in prolonging it either, probably viewing this as another important milestone in reducing gas dependence on Russia. Although the Ukrainian gas transit accounted for only 4% of the EU's total gas imports, it remained a major supply route for several Central European EU countries, such as Slovakia and Hungary (as well as Moldova).

For both Russia and Ukraine, there were good economic arguments to preserve the Ukrainian gas transit. For Russia, the closure of this route will entail losses of USD 6.5bn per year – unless the gas in question can be fully redirected to other pipelines and LNG terminals, which is unlikely. Ukraine, in turn, will lose some 0.5% of GDP in transit fees as well as its strategic role as an energy partner for the EU (Keliauskaite and Zachmann, 2024).¹⁰

Figure 7 / Gas storage levels in TWh as of 17 November 2024, by EU country



Note: TWh = Terawatt-hour.

Source: Bruegel, <https://www.bruegel.org/dataset/european-natural-gas-imports>.

How well prepared were EU countries to cope with the halt to Ukrainian gas transit? Looking at gas storage data (Figure 7), the answer appears to have been 'quite well'. As of 1 November 2024, EU gas storage facilities were, on average, 95% full, surpassing the 90% target set in the Gas Storage Regulation.¹¹ In addition, Central European countries that were dependent on Ukrainian transit had taken precautionary measures, seeking out alternatives such as LNG; this helped to prevent negative effects on their economies, although it involved additional costs and led to higher prices. Germany and Italy have become particularly important for these landlocked countries, which cannot import LNG

¹⁰ Ukraine's revenue from gas transit reached USD 1.2bn in 2022 and USD 0.8bn in 2023.

¹¹ https://energy.ec.europa.eu/news/eu-gas-storages-95-full-ahead-1-november-surpassing-90-target-gas-storage-regulation-2024-10-31_en

directly and rely on the Italian and German gas pipeline networks. Unlike EU countries, Moldova – and particularly its breakaway region of Transnistria – have been hit hard by the halt to Russian supplies, with soaring electricity prices and severe rationing of heating and electricity (see Box 1).

BOX 1 / A HALT TO RUSSIAN GAS SUPPLIES PUSHES MOLDOVA INTO A CRISIS¹²

Over the past few years, Moldova has made significant progress in reducing its dependence on Russian gas. Since 2022, the larger part of the country located on the right bank of the Dniester river (including the capital, Chisinau) has been importing gas exclusively from Western sources.¹³ However, until recently, its breakaway region of Transnistria was receiving gas from Russia, which was paid for by Moldova and used for heating and electricity generation. Importantly, much of Moldova's electricity depended on a power plant located in Transnistria.

As of 1 January 2025, Transnistria was no longer receiving Russian gas. This is partly because the transit contract between Russia's Gazprom and Ukraine's Naftohaz had expired, and partly because of a debt dispute between Gazprom and Moldovagaz. Gazprom claimed that Moldova had accumulated debt worth USD 709m, which was not recognised by the Moldovan side, and warned that it would cut supplies unless the debt is settled.¹⁴

The halt to Russian gas supplies proved a major blow to Transnistria, which has been facing severe heating shortages and widespread blackouts. The rest of Moldova has been affected as well, because of its reliance on electricity supplies from the Transnistrian gas-powered plant (which can only partially convert to coal). Romania has stepped in to increase exports of electricity to Moldova, but these are much more expensive. As a result, electricity tariffs have surged by 80%, which will lead to a marked acceleration of inflation in the country.

At the time of writing, the final solution to the energy crisis in Transnistria is not yet in sight. In the meantime, Moldova's government has agreed to provide 3m cm of gas to the breakaway republic to maintain the pressure in the transport and distribution network and avoid accidents. This is being financed by a EUR 30m EU grant and should suffice until 10 February. In the longer term, a support plan will be reportedly designed soon by the European Commission, possibly including coal from Ukraine and the transport of gas through the Trans-Balkan pipeline through Bulgaria and Romania.¹⁵ There are also reportedly ongoing talks on additional gas purchases between Moldova and two Hungarian companies, MOL and MVM.¹⁶

¹² The authors are grateful to Gábor Hunya, wiiw, for contributing to the text in this box.

¹³ <https://infomarket.md/en/analitics/362759>

¹⁴ <https://www.kommersant.ru/doc/7459359>

¹⁵ <https://www.romania-insider.com/eu-support-moldova-energy-january-2025>

¹⁶ <https://www.kommersant.ru/doc/7460021>

6. COUNTRY CASE STUDIES

Figure 1 above demonstrates that before the start of the war in Ukraine, the dependence of most CESEE countries on Russian gas was very high. This reflected both geographic and historical reasons: most of these countries were part of the Soviet-led Council for Mutual Economic Assistance (CMEA) and enjoyed supplies of Soviet gas on preferential terms. Indeed, the CESEE countries with the lowest levels of gas dependence on Russia were Croatia and Slovenia, both parts of former Yugoslavia, which was not a CMEA member.

Following the start of the war in Ukraine, CESEE countries have taken very different routes to diversify their sources of gas supply and reduce dependence on Russia. Three case studies – Slovakia, Czechia and Hungary – are analysed in detail below, highlighting the major differences in gas supply diversification strategies.

Slovakia: Sticking to the Ukrainian transit

Historically, Slovakia has not only been strongly dependent on Russian gas itself but also a major transit country for Russian gas heading for Europe, connecting to Austria, Czechia, Hungary and Poland. Slovakia's gas transit capacity amounts to 90 bcm per year. However, significant decreases in gas transit have already occurred in the past: for example, after the opening of the Nord Stream pipeline, the transit fell from 80 bcm to 60 bcm in 2016 (IEA, 2018). Since the start of the war, the transit of Russian gas via Slovakia has declined further, and last year stood at only 15 bcm.¹⁷

On several occasions, gas price disputes between Gazprom and Naftohaz put Slovakia and other countries under pressure. In early 2009, this led to the most serious gas crisis, when gas flows from Russia to the EU via Ukraine were interrupted between 6 and 20 January. Slovakia was one of the hardest-hit EU countries because of its total dependence on Russian gas. Immediate response measures taken by the government included using gas from storage, fuel switching and calls for industrial gas consumption to be reduced. As around 1,000 Slovak companies were forced to reduce their gas consumption to the minimum for almost two weeks, the country's industrial production plummeted.¹⁸ It was not until 19 January that a new ten-year agreement between Gazprom and Naftogaz was finally signed, with normal gas transit restored on 20 January.

In 2014, Russia's annexation of Crimea and the consequent Western sanctions on Russia put the issue of gas supplies back on the European policy agenda. However, on that occasion it was primarily Ukraine that was affected. In response, a Memorandum of Understanding (MoU) on reverse gas flows was signed between the Slovak gas pipeline operator Eustream and the Ukrainian operator Ukrtransgaz, envisaging supplies to Ukraine through an unused gas pipeline. The required investment amounted to EUR 21m.¹⁹

¹⁷ <https://spectator.sme.sk/business/c/expiring-gas-transit-agreement-poses-a-challenge-for-slovakia>

¹⁸ In other EU countries such as Bulgaria, Romania, Hungary and Poland, gas supplies to large industrial plants were even cut off (European Commission, 2009, 8). Immediate European measures included 'making Russian gas available to Czechia via the Yamal pipeline, Czech gas storage available to Slovakia, and Austrian gas storage available to Slovenia' (European Commission, 2009, 8).

¹⁹ <https://spectator.sme.sk/politics-and-society/c/slovakia-and-ukraine-sign-memorandum-on-reverse-gas-flow-updated;>
<https://spectator.sme.sk/business/c/better-diverse-gas-grid-connections-a-priority>

Several lessons have been learned from the 2009 gas crisis and the measures taken in its aftermath. It was recognised that there was a lack of technical information and that alternative supplies (e.g. from Norway) could not reach Central Europe owing to a lack of interconnectors (European Commission, 2009). In Slovakia, several measures were taken to improve the security of supply, including:

- (i) projects to enable and increase reverse gas flows from west to east (from Austria, increasing reverse flows from Czechia);
- (ii) the expansion of gas storage capacities;
- (iii) the opening in 2015 of the Slovakia-Hungary gas interconnector as part of the European North-South Corridor, connecting to the Polish LNG terminal Świnoujście and the Croatian LNG terminal on Krk island; and
- (iv) the opening in August 2022 of the Poland-Slovakia gas interconnector, which was an EU Project of Common Interest for the period 2013-2021, with around 40% of the cost (more than EUR 100m) financed by the Connecting Europe Facility.²⁰

But although Slovakia's gas supply routes have been diversified over the past ten years, its sources have not. In 2022, when Russia invaded Ukraine, Slovakia was still 85% dependent on Russian gas, similar to the share recorded in 2020 (see Figure 1).²¹ Following the Russian invasion, Slovakia tried to find alternative gas sources. It signed contracts for Norwegian gas, as well as gas from LNG terminals (through various contracts, LNG seems to be primarily sourced from the United States²², Oravcová, 2023; IEA, 2024). In order to increase the security of supply and enable alternative gas supplies, the Solidarity Ring project was initiated, which aims to upgrade the transmission network systems of Bulgaria, Romania, Hungary and Slovakia. An MoU on this was signed in April 2023.²³ More recently – in anticipation of the halt to Ukrainian gas transit – Slovakia has signed a short-term pilot contract for gas supplies with SOCAR, an Azerbaijani company. In addition, it has contracted various transport routes,²⁴ and a new project is under way to expand the Slovakia-Hungary gas interconnector.

Czechia: Almost full emancipation from Russia

Czechia was fully dependent on Russian gas at the start of the 2020s (Figure 1). However, following the Russian invasion of Ukraine, it was able to find alternative gas supplies and almost completely wean itself off Russian gas: from 97% at the beginning of 2022, the share of Russian gas imports fell to 3-4% within just eight months. This was achieved by increasing imports of gas from Norway as well as LNG. A key step in this transition was the acquisition of a stake at the LNG terminal in the Netherlands (EemsEnergyTerminal in Eemshaven). Also helpful was a significant decline in Czechia's gas consumption (by 19% in 2022).²⁵

²⁰ https://commission.europa.eu/news/inauguration-gas-interconnector-between-poland-and-slovakia-2022-08-26_en

²¹ <https://spectator.sme.sk/business/c/highly-dependent-slovakia-looks-for-alternatives-to-russian-gas>

²² <https://spectator.sme.sk/politics-and-society/c/news-digest-is-fico-about-to-shoot-himself-in-the-foot>

²³ <https://www.eustream.sk/en/about-us/press/news/medzinarodne-memorandum-projekty-solidarity-ring.html>

²⁴ <https://www.energie-portal.sk/Dokument/spp-plyn-azberbajdzan-111219.aspx>

²⁵ <https://www.euractiv.com/section/politics/news/czechia-decreases-russian-gas-dependence-over-eight-months/>

However, from the end of 2023 Czechia's imports of gas from Slovakia (i.e. effectively Russian gas) started to rise. This was driven by the lower price of Russian gas; the German transit fee increased transport costs and hence the price of gas coming from non-Russian sources.²⁶ At the end of 2024, the German parliament decided to end the gas storage levy, and so the transit fee was abolished from 1 January 2025.²⁷ Further efforts have been made to diversify gas supplies, and in October 2024 the Czech company ČEZ signed a contract for gas supplies from Algeria.²⁸ The gas will be delivered from Algeria via Tunisia, an underwater pipeline to Italy and further on to Czechia.

Hungary: Switching to TurkStream

Hungary has taken a very different approach to securing its gas supply. In September 2021, a new 15-year agreement was signed between the Hungarian government and Gazprom for the supply of 4.5 bcm of natural gas per year. It was agreed that the bulk of this (3.5 bcm) would be delivered through the TurkStream pipeline and further on via Bulgaria and Serbia, while the remainder would come through Austria. The Hungary-Serbia interconnector had been completed by the end of 2021.

Thus, although Hungary retained its high dependence on Russian gas, it had already largely shifted from the Ukrainian gas transit route to TurkStream before the war. In October 2024, an MoU was signed between the Hungarian energy group MVM and Gazprom, with the possibility of higher gas imports in the future.²⁹ In addition, since 2021 imports of LNG via the Krk terminal in Croatia have become possible.³⁰

7. CONCLUSIONS AND POLICY RECOMMENDATIONS

Despite the formal absence of sanctions, gas trade between Russia and the EU has effectively collapsed over the past three and a half years. This has been the outcome of the EU strategy of reducing dependence on Russian gas, Russia's own supply cuts, physical damage to the crucial pipeline infrastructure, and – most recently – Ukraine's reluctance to prolong the gas transit contract with Russia. The shock of reduced supplies of Russian gas has primarily been absorbed via unprecedented (and often painful) energy savings. Gas imports from other countries have increased only insignificantly, while the increased role of renewables has been only enough to offset the decline in the use of coal.

The end of gas transit through Ukraine on 1 January 2025 represented the most recent blow to gas trade between Russia and Europe. Central European EU member states that were at risk of being cut off from Russian supplies had made contingency plans and secured alternative transportation capacity and supplies to prevent energy shortages (although there is considerable uncertainty over the energy price increases that may result from supply diversification). However, Moldova – and particularly its breakaway region of Transnistria – has suffered, with no final solution to the acute energy crisis in sight at the time of writing.

²⁶ <https://www.bnnbloomberg.ca/investing/2024/11/15/czechs-return-to-russian-gas-as-cost-of-alternatives-bites/>

²⁷ <https://www.sn.at/wirtschaft/oesterreich/deutsche-gasspeicherumlage-170418607>

²⁸ <https://www.mpo.gov.cz/en/guidepost/for-the-media/press-releases/cez-enhances-energy-security-by-entering-into-a-contract-for-gas-supplies-from-algeria---284012/>

²⁹ <https://www.intellinews.com/gazprom-signs-mou-on-boosting-gas-supply-to-hungary-347717/?source=hungary>

³⁰ <https://www.iea.org/articles/hungary-natural-gas-security-policy>

Of the four main gas pipelines from Russia to Europe – Nord Stream 1, Yamal-Europe, the Ukrainian transit and TurkStream – only TurkStream remains in operation. However, its future is potentially uncertain, as illustrated by the alleged recent attack on the pipeline infrastructure.³¹ In addition, Russian gas supplies to European (and other) customers may be jeopardised by the ongoing threat that new Western (especially US) sanctions may target payment channels and/or companies from third countries dealing with Russia. The recent US sanctions imposed on Russia's Gazprombank serve as a powerful reminder of the non-negligible risks inherent in the remaining Russian gas imports. Against this background, European countries would be well advised to expand their gas storage capacities, to cushion themselves from any future supply shocks and reduce dependence on short-term price fluctuations.

REFERENCES

- European Commission (2009). The January 2009 gas supply disruption to the EU: An assessment. COM(2009), 363.
- European Commission (2022). REPowerEU Plan. SWD(2022) 230 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52022DC0230>
- IEA (2018). Slovak Republic 2018, Energy policy review. November.
- IEA (2024). Slovak Republic 2024, Energy policy review. November.
- Keliauskaite, U. & Zachmann, G. (2024). The end of Russian gas transit via Ukraine and options for the EU. Bruegel Analysis, 17 October. <https://www.bruegel.org/analysis/end-russian-gas-transit-ukraine-and-options-eu>
- Mihailov, A. (2022). Why paying in roubles for Russian gas and oil might matter. CEPR, VoxEU, 29 March. <https://cepr.org/voxeu/columns/why-paying-roubles-russian-gas-and-oil-might-matter>
- Oravcová, V. (2023). Energy without Russia: The consequences of the Ukraine war and the EU sanctions on the energy sector in Europe. Friedrich Ebert Stiftung.
- Yafimava, K., Ason, A., Sharples, J. & Stern, J. (2024). EU sanctions on Russian LNG: Choices and consequences. Energy Insight No. 156. The Oxford Institute for Energy Studies, July. <https://www.oxfordenergy.org/publications/eu-sanctions-on-russian-lng-choices-and-consequences/>

³¹ 'Ukraine tried to attack TurkStream infrastructure in Russia, Moscow says', <https://www.euractiv.com/section/politics/news/ukraine-tried-to-attack-turkstream-infrastructure-in-russia-moscow-says/>

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