Introduction

The Nord Stream gas pipelines have been a source of significant geopolitical tension within Europe. These pipelines, which directly connect Russia to Germany via the Baltic Sea, have historically been seen as tools of Russian influence over European energy markets. This aspect has particularly been brought to the fore in the run-up to and following Russia's full-scale invasion of Ukraine in February 2022.

Nord Stream 1 was opened in 2011 and had the capacity to transport 550 TWh (or 55 billion cubic meters (bcm)) of gas per year. It thus represented roughly a third of all gas exported by Russia to Europe in 2021 (1550 TWh; the Yamal-Europe pipeline amounted to 300 TWh) and was the biggest single source of Russian gas imports to Europe at the time (representing, for example, 67% of Germany's total gas imports in 2021)[1].

Nord Stream 1 was eventually shut down in August 2022 by Gazprom. Nord Stream 2, meanwhile, was never commissioned due to the German government's refusal to approve its certification in the aftermath of Russia's invasion. Both were subsequently damaged in a series of explosions undertaken in September 2022 by unidentified suspects.

Poland, with its long and complex history with Russia and its growing role in the European

energy landscape, has a vested interest in the potential recommissioning of these pipelines. This article explores whether recommissioning the Nord Stream pipelines is beneficial from Poland's perspective and what measures should be taken if it is not.

The Strategic Risks of Recommissioning Nord Stream

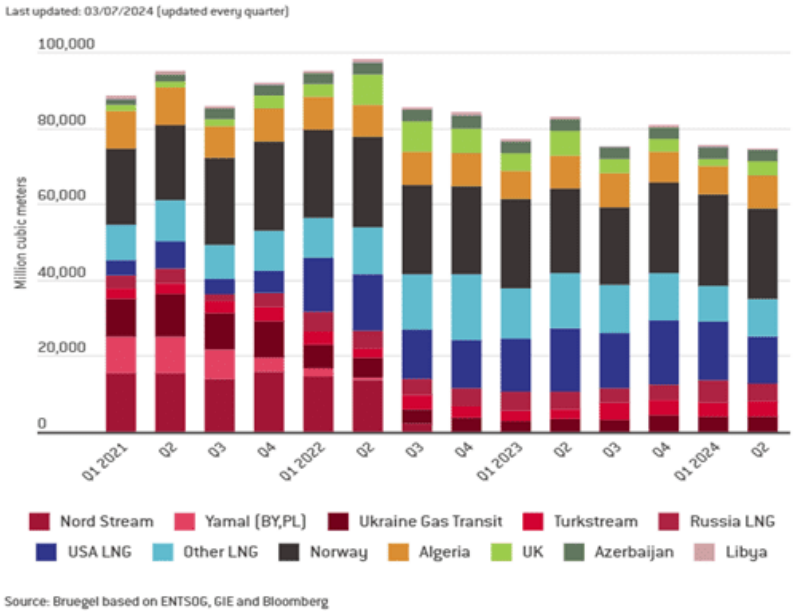
Poland has long opposed the Nord Stream projects, viewing them as a threat to both its energy security and broader European stability. The recommissioning of Nord Stream pipelines would allow Russia to reinstate its leverage over Europe's energy supply, a situation that has been effectively diminished since the start of the war in Ukraine and the subsequent EU sanctions.

Poland's opposition is based on several strategic considerations:

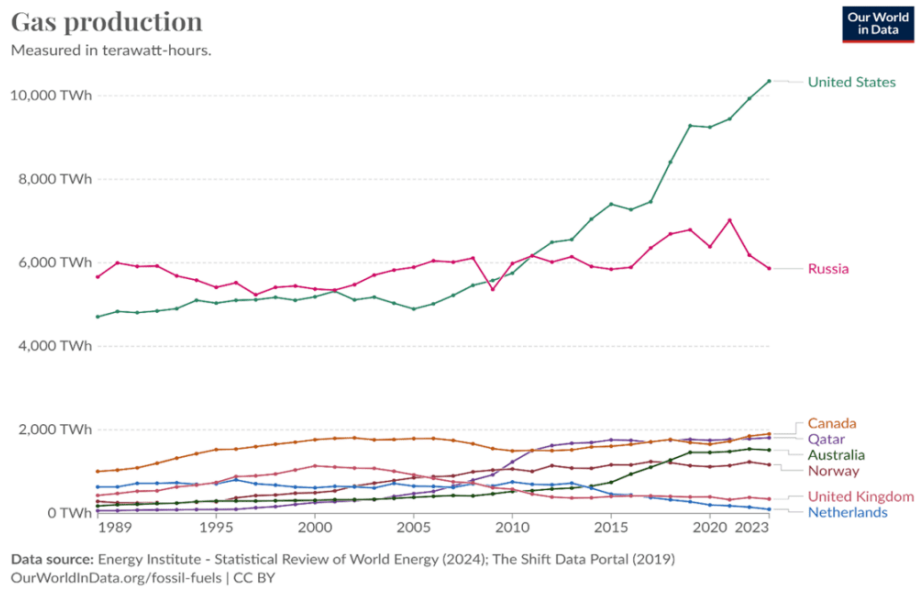
1. Energy Dependency and Political Leverage: Prior to the 2022 invasion of Ukraine, Russia supplied over 40% of the EU's and 55% of Germany's natural gas, with Nord Stream 1 being a central conduit. Recommissioning Nord Stream 1 and certifying Nord Stream 2 could potentially re-establish Russia's dominance in the European gas market, allowing it to use energy supply as a political tool (which it had done successfully prior to 2022)[1]. Poland has been particularly vocal about not allowing Russia to regain this leverage, as it could lead to renewed attempts at dividing the EU member-states by manipulating gas supply and prices, reminiscent of the energy blackmail tactics used by Russia prior to and in the first months following the 2022 invasion of Ukraine.

In other words, the EU will fail to manage effectively its energy trilemma of security, affordability and sustainability if it allows Russia to divide and rule the EU energy market yet again. As the post-February 2022 energy crisis in Europe has clearly demonstrated, what is required is more collaboration and interconnection within the EU as well as more diversification in terms of supplies.

When it comes to the last point, part of the answer to the gas deficit that the EU found itself in 2022 were increased imports from alternative sources such as piped gas from Norway (which displaced Russia as the biggest exporter of gas to the EU) and LNG from the United States as well as other countries.



The crisis coincided with an increase in gas production and LNG export capacity in the United States which meant that US exporters were able to capitalise on the increased demand from Europe. Considering the depressed demand from China at the time, LNG found its way into Europe in volumes never seen before. Given that most of that new gas was purchased on the spot market, it was significantly more expensive than, for example, what Germany used to pay for Nord Stream gas. At the time, however, ensuring security of gas supplies from actors who would not (i) use those supplies as a political weapon to destabilise the region; and (ii) use the proceeds from the sales to fund their war machine, was of paramount importance.



The United States have since become a strategic supplier of LNG to the EU (more than doubling their exports between 2021 and 2022) thus strengthening the economic ties underpinning our transatlantic alliance.

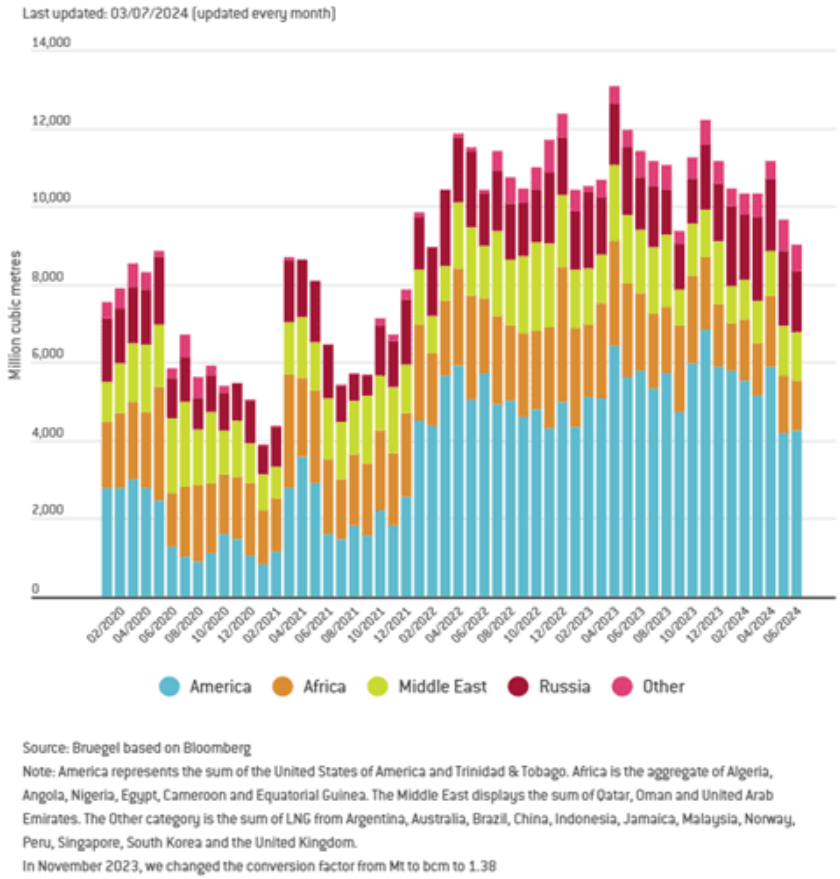


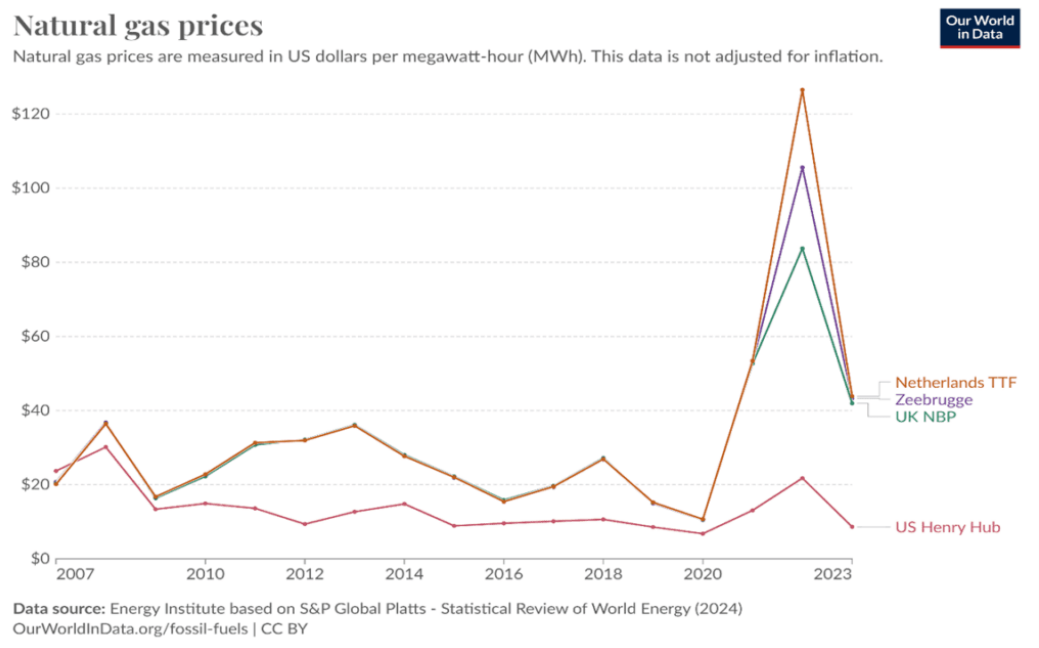
Figure – LNG supplies to the EU by source (Bruegel)[1]

It must be noted that when it comes to the diversification of supply, Poland was a trailblazer in the EU having successfully planned its decoupling from Russia years before the 2022 crisis. The Świnoujście LNG regasification terminal has been operational since 2015 while the Baltic Pipe project connecting Poland to gas reserves on the Norwegian continental shelf was in the works for many years prior to its opening in late 2022. As a result, Poland was well prepared for what caught many other EU member-states by surprise, namely Russia's weaponisation of energy.

1. Economic Impact: Starting in the summer of 2021, Russia began coercing EU into approving Nord Stream 2 by decreasing the volume of pipeline gas sent to Europe and refusing to replenish the storage levels at German facilities owned by Gazprom.

Figure – Gas flows through Nord Stream 1 declined already in the summer of 2021 (Goldman Sachs research)[2]

It was thereby able to influence the benchmark Title Transfer Facility (TTF) price[3] and make EU's energy system not only less secure but also less affordable.



It is estimated that since September 2021 EU member-states have spent over €650 billion to address the impact of the energy crisis caused by Russia's aggression[4].

The EU has invested considerable capital into developing and implementing its new energy strategy – REPowerEU, the central plank of which is reducing the dependence on Russia's fossil fuels. Nord Stream's comeback would undermine those significant investments made, on the one hand, to protect EU energy consumers from rapid price increases and, on the other hand, to ensure the EU energy system is more diversified and resilient.

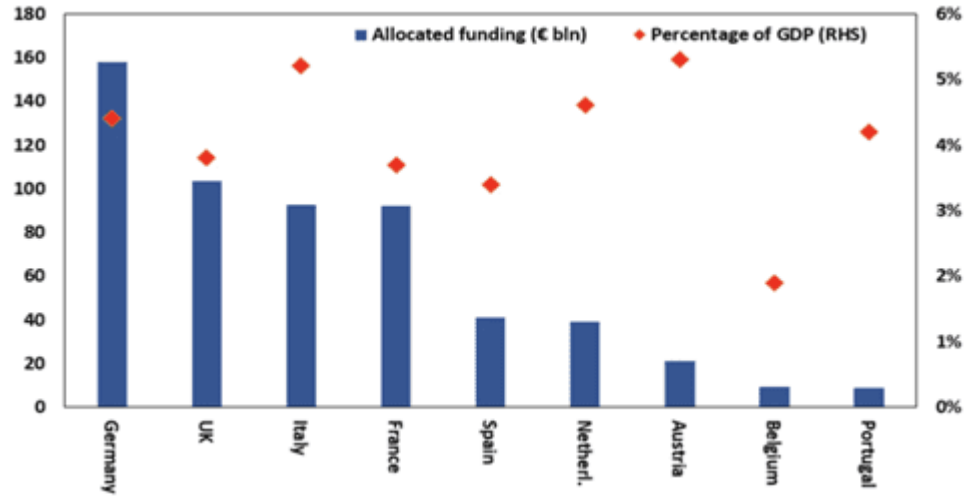


Figure – Government response to the energy crisis among selected European countries, September 2021 to January 2023[5]

As noted above, Poland has made significant investments to diversity its energy sources, be it through LNG infrastructure, such as the Świnoujście regasification terminal and the upcoming Floating Storage Regasification Unit (FSRU) in Gdańsk, or the Baltic Pipe project transporting Norwegian gas to Poland. All of these projects have been recognised by the EU as a Project of Common Interest. They are designed to reduce dependency on Russian gas and strengthen Poland's role as a regional energy hub.

Prior to February 2022, gas in Europe flowed from East to West. In response to Russia's invasion and the crackdown on Russian gas imports, the gas (in the form of LNG) started flowing in much greater volumes from West to East, as well as southbound from Norway. Given the number of the newly commissioned LNG regasification terminals (such as Wilhelmshaven in Germany) and those coming onstream shortly, the European gas network

in the last two years has undergone a comprehensive overhaul. There is now no place for Nord Stream in this new system, and for a malicious actor such as Russia to play a prominent and destructive role within it. Any decision that would re-establish Russia's influence over the EU energy market would in the end come back to bite Germany and other EU member-states. While in the short-term Russia could offer the EU a carrot in the form of cheaper gas, eventually it would return to its old tricks – making the 2022-24 infrastructure investments less economically viable, and the sacrifices endured worthless.

- Regional Security Concerns: The Nord Stream pipelines bypass Central and Eastern European (CEE) countries, which traditionally had served as transit states for Russian gas. Reopening these pipelines could weaken CEE countries economically and politically, increasing their vulnerability to Russian influence. For Poland, maintaining the current status quo, where Russia's ability to project power through energy supply is diminished, is crucial for regional stability.

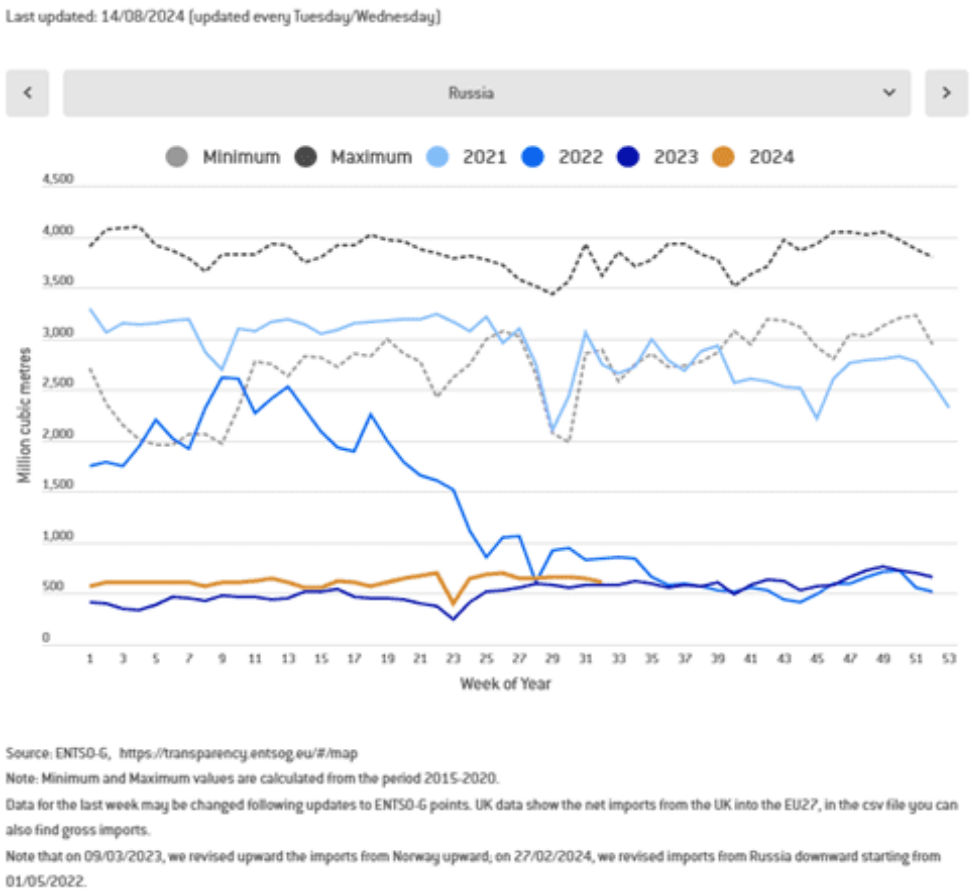


Figure – Natural Gas Imports from Russia over the years (Bruegel)[6]

Unlike with Russian oil exports which found alternative customers (primarily in Asia, with India now being the chief importer of Russian crude), Russian gas has limited alternative markets as most Russian pipeline investments were aimed at flooding Europe with molecules. Historically, sales of gas to the EU constituted a significant portion of Russia's budget. Reestablishing Nord Stream, and that source of revenue, means more money for Russia to project its power in Europe and engage in a kinetic conflict on EU's borders as well as hybrid warfare within the EU.

Alternatives to Recommissioning Nord Stream

Given the strategic risks, reopening the Nord Stream pipelines is not in Poland's, and EU's, best interest. Instead, several measures can be taken to block these pipelines from being recommissioned and thereby further ensure energy security:

1. Strengthening EU Energy Solidarity: Poland should continue advocating for a unified European energy policy that prioritises diversification and reduces reliance on Russian energy. Initiatives like REPowerEU, which aims to end dependency on Russian fossil fuels by 2027, are crucial. Poland can play a key role in pushing for the acceleration of these policies, ensuring that Europe does not backtrack on its commitments under pressure from short-term economic considerations.

A true energy union also makes sense from the point of view of member-states such as The Netherlands which nowadays heavily relies on imports for its gas consumption (up to 75%). In light of the decommissioning of the Groningen field and overall declining domestic production, this dependence will only increase[7]. A such, The Netherlands would be one of the beneficiaries of a well-functioning European internal gas market with robust interconnection and storage facilities that would allow customers, traders and governments to respond adequately to global price signals.

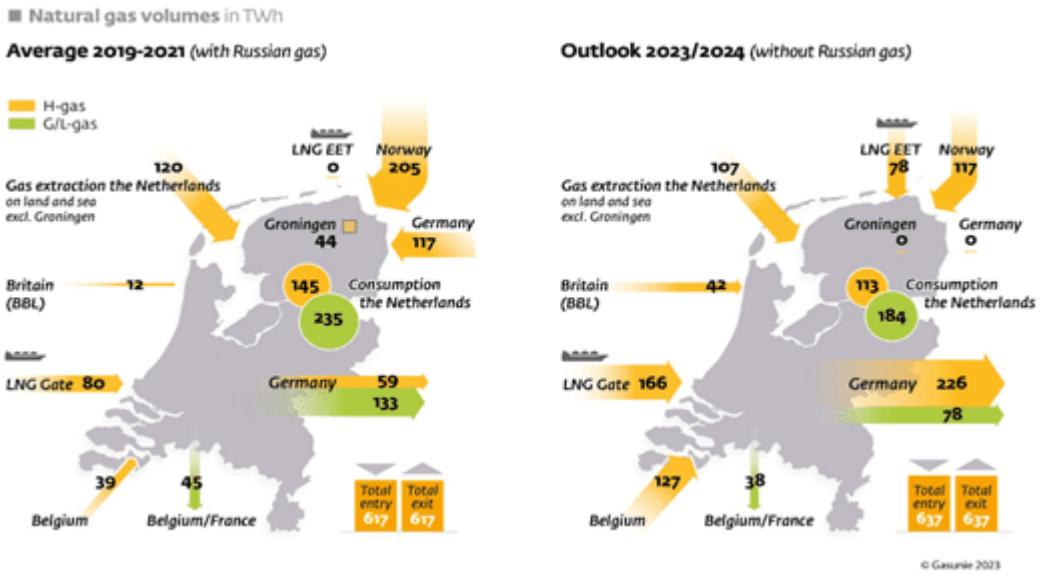


Figure – Natural gas volumes (in TWh) in The Netherlands (Gasunie)

Energy solidarity between, for example, Germany and CEE also makes sense from an economic perspective. In the first half of 2022, Germany's trade with the V4[8] totalled €187 billion (2021: €167 billion). This exceeds the €148.9 billion in trade with China for the equivalent period, making V4 Germany's biggest trading partner and signalling considerable economic interdependence[9]. In other words, what is good for Poland and V4 in terms of energy supplies is bound to be good for Germany as well.

- Enhancing Infrastructure and Interconnections: Investing in infrastructure that supports alternative gas sources is essential. Poland's expansion of LNG facilities and the Baltic Pipe, which delivers Norwegian gas to Poland, are critical components of this strategy. Additionally, enhancing interconnections with neighbouring countries will create a more resilient and integrated European energy network, reducing the need for Russian gas altogether.

Figure – Map of the European natural gas pipeline network as of 2018[10]

In 2022, imports through Norway's pipeline infrastructure exceeded 1170 TWh while the total LNG imports amounted to 1500 TWh. With the replacement of Russian gas with diversified LNG and gas from Norway, the importance of Poland (as well as Germany) as the gas security hubs for its landlocked neighbours has only increased.

Poland, via the Baltic Pipe, can import up to 100 TWh of Norwegian gas. Interconnectors between Poland and Lithuania and between Poland and Slovakia have now been operational for a couple of years. The Polish-Slovak interconnector provides greater flexibility to Slovakia and, utilising the Slovakian transmission system, has the ability to supply gas to Hungary and Ukraine.

The Polish-Lithuanian interconnector has the potential to play an important role as part of the European Commission's Baltic Energy Market Interconnection Plan[11] which has the objective of creating open and integrated energy markets in the region.

Such gas interconnections enable more efficient gas storage across borders. High gas

storage, in turn, enables any price volatility on the LNG spot market to be mitigated.

Low gas storage levels prior to 2023, were one of the cardinal sins of the EU energy policy. As has been often the case prior to the pandemic with many industries, the system was skewed toward “just in time” deliveries, with little regard for contingency and resilience. This has now changed dramatically with storage levels rising to unprecedented levels.

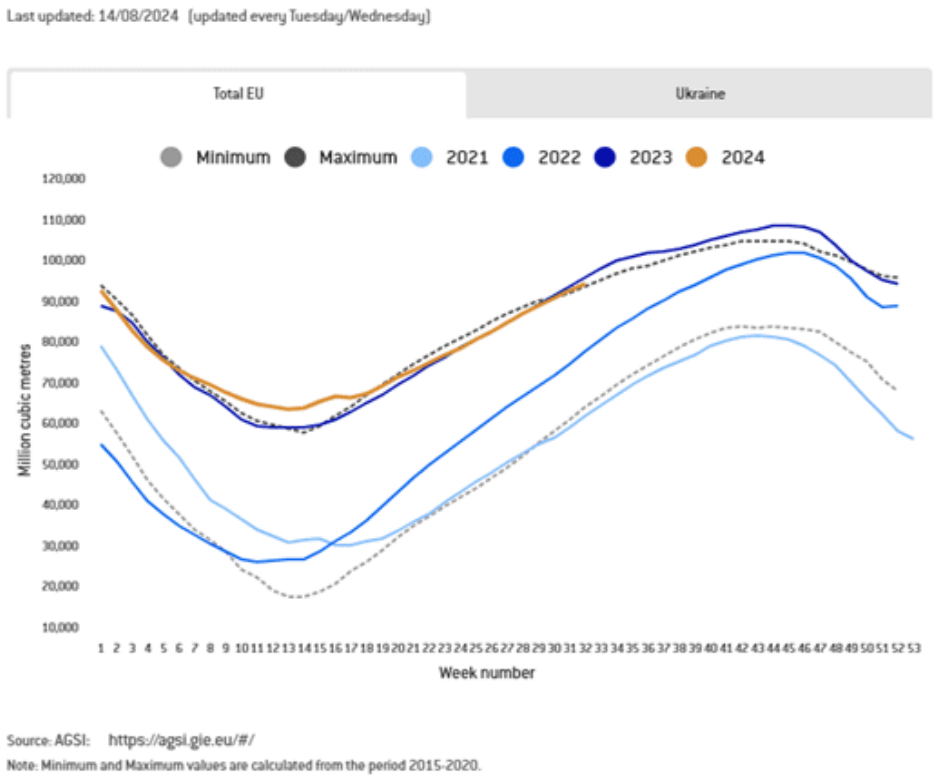
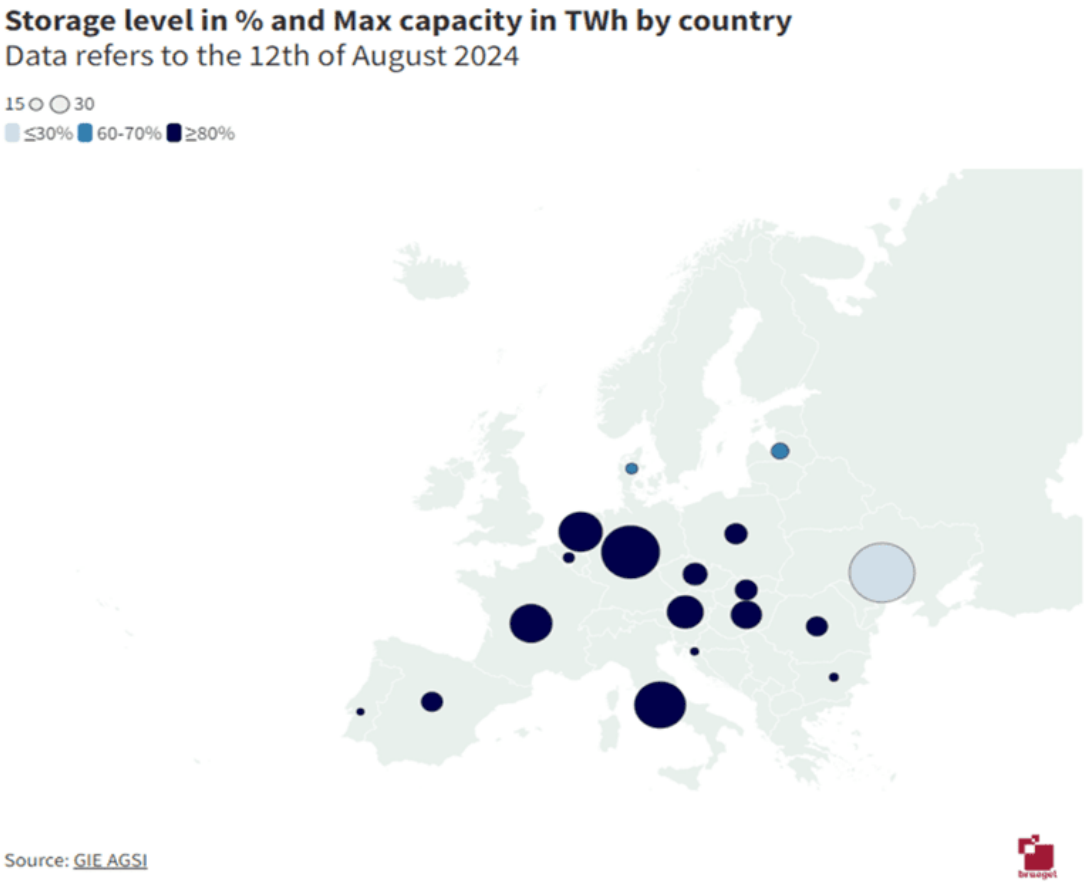


Figure – EU gas storage levels over the years



As of August 2024, Poland's storage facilities are 92% (with a capacity of 38TWh), Hungary's are 86% full (capacity: 70TWh), Germany's are 92% full (capacity: 255TWh), while the Dutch storage stands at 83% out of a total of 143 TWh.

- Legal and Diplomatic Measures: Poland, along with its EU allies, should support legal and regulatory actions that would keep the risk of Nord Stream being recommissioned to a minimum. This includes leveraging EU competition law, as Poland's Office of Competition and Consumer Protection (UOKiK) did when it imposed fines on Gazprom for Nord Stream 2's implementation without proper approval.

Diplomatically, Poland should continue to build alliances within the EU to maintain a strong opposition to any potential reopening of the pipelines as well as build coalitions to not only expand interconnections (as discussed above), but also enhance the mandate for joint gas purchases (thereby strengthening EU member-states bargaining position vis-à-vis LNG suppliers).

When it comes to gas imports from Russia, there is still more work to be done as Russian

LNG has not been impacted by any of the sanctions. In fact, Russian LNG imports to the EU keep rising. In 2023 alone, Russia sold 20 bcm of LNG worth €8.2 billion to the EU[12].

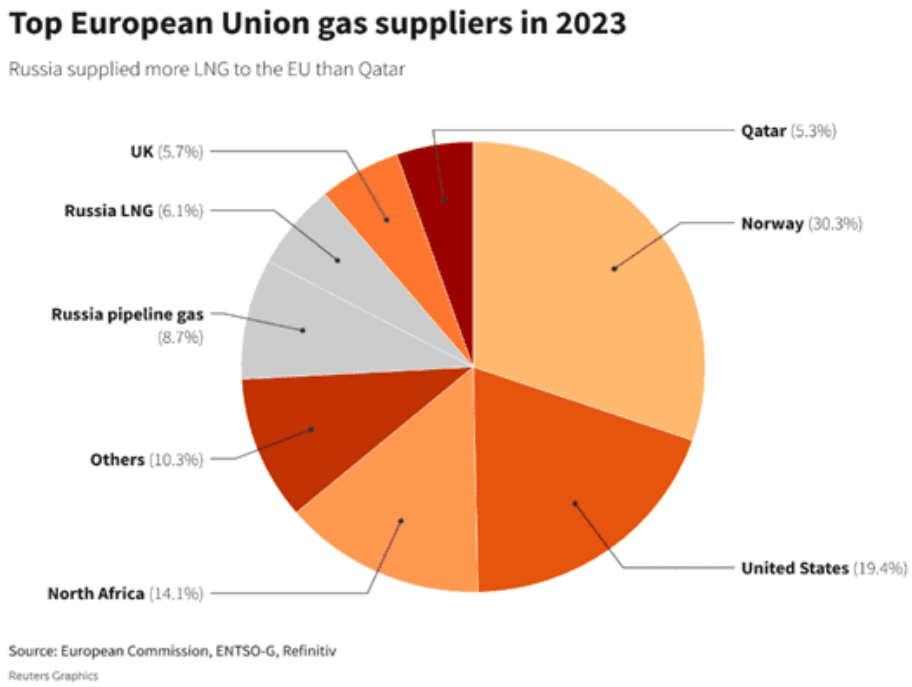
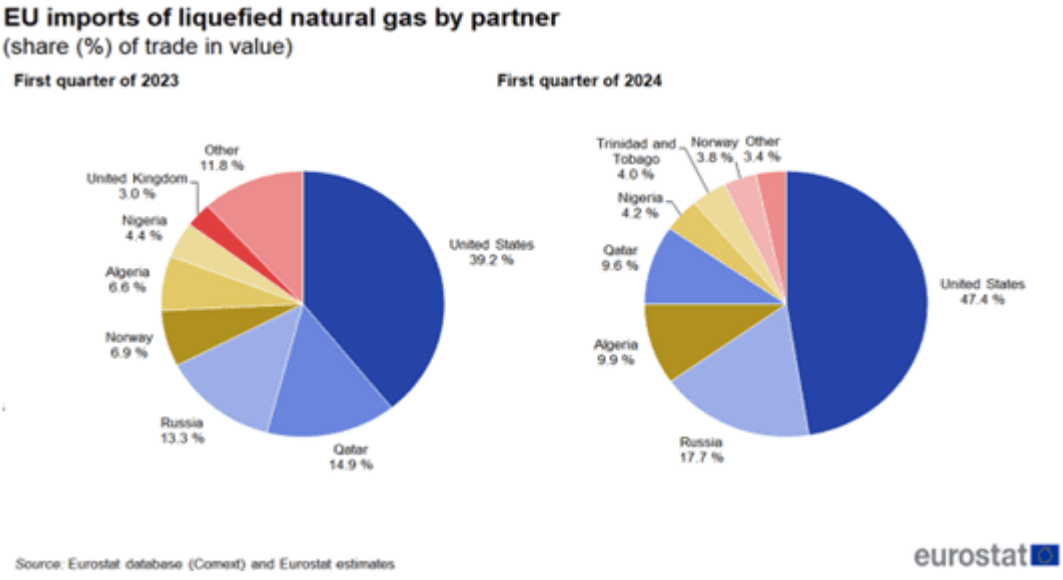


Figure – 2023 EU gas imports by source[13]

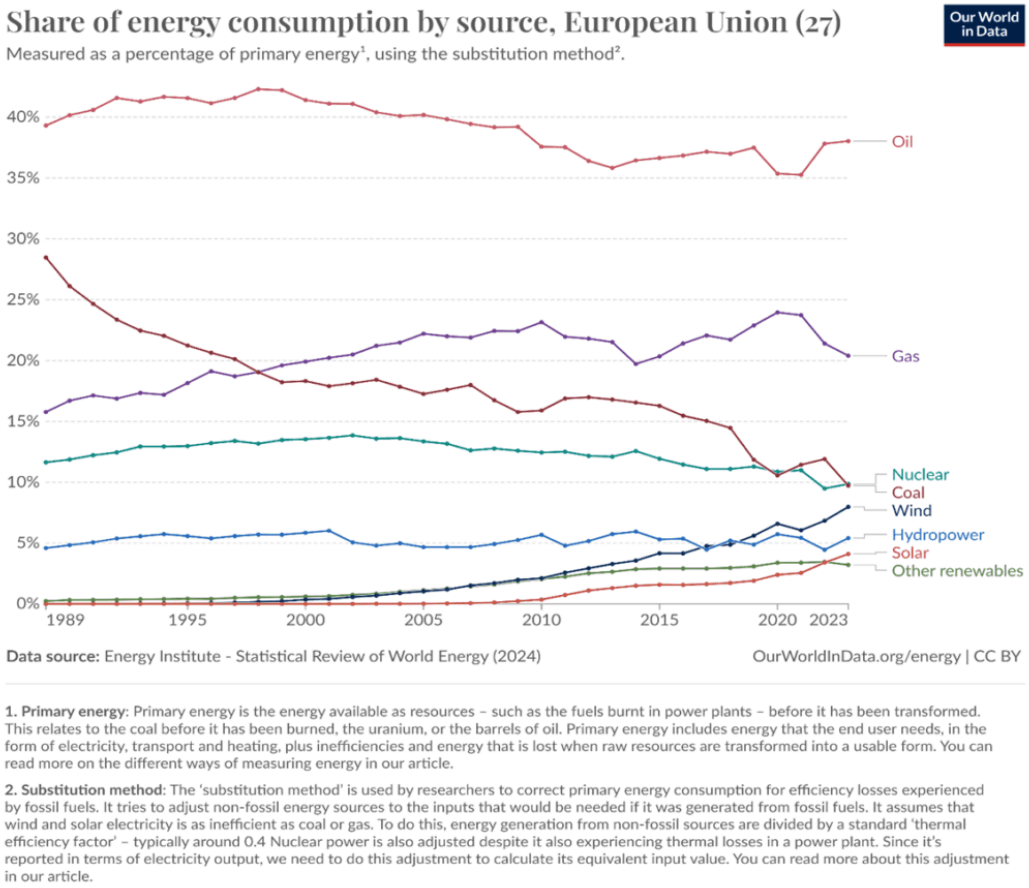


In June 2024, the EU announced the 14th set of sanctions against Russia which will ban the re-export of Russian LNG to other countries but will not prevent member states from buying Russian LNG. The EU should help the buyers of Russian LNG by enabling them to trigger force majeure clauses in their long-term supply contracts.

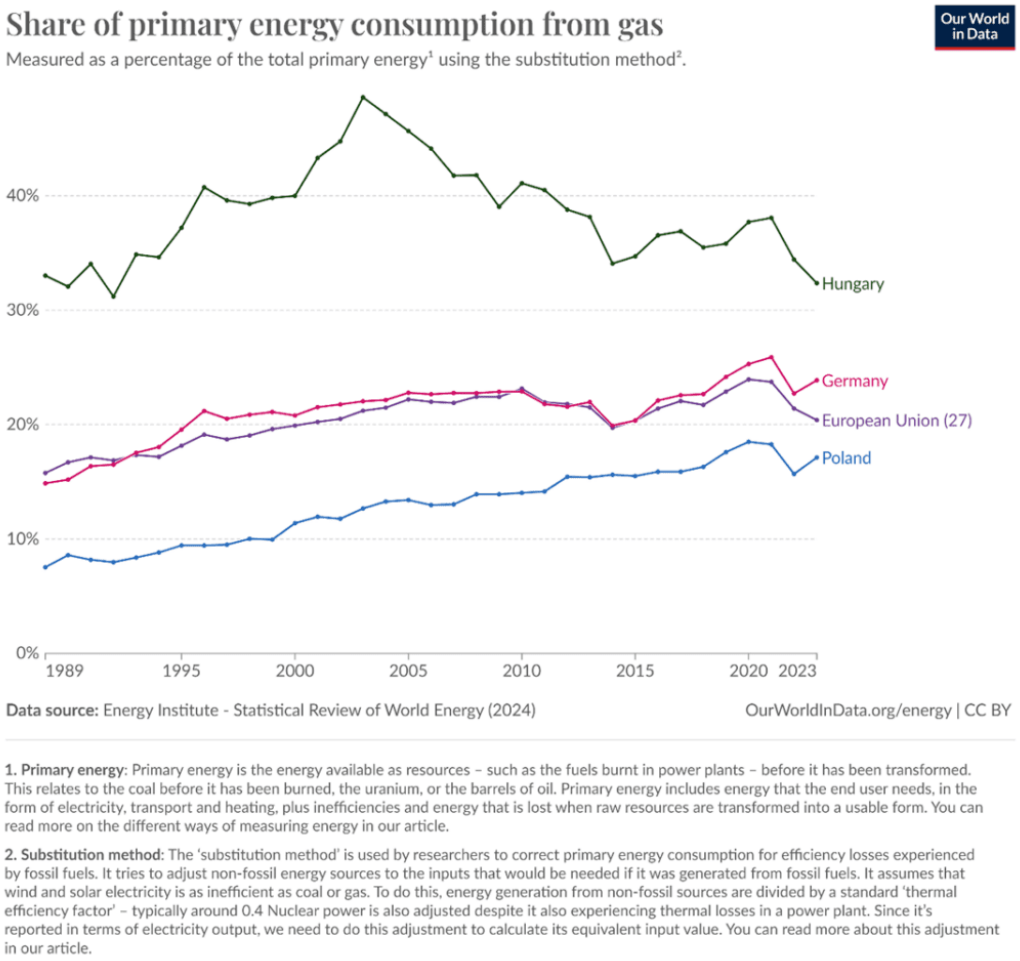
Finally, while the Groningen field may be now closed, the EU should not actively discourage member-states with proven reserves to increase domestic gas production. Poland, in particular, should look at increasing the output of its existing fields, so that these reserves can be utilised while gas still forms an important part of the country's energy mix.

- Promotion of Low Carbon Energy and Innovation: In line with the REPowerEU objectives, Poland should continue its transition to low carbon energy sources. Pending the adoption of commercial scale battery storage, further integration of renewables (happening across the EU) into the electricity system is dependent on reliable and agile back-up generation that provides adequate flexibility during peak demand. Gas-fired power plants are the optimal providers of such flexibility and, with adequate storage levels and interconnections, would be best placed to underpin a viable capacity mechanism.

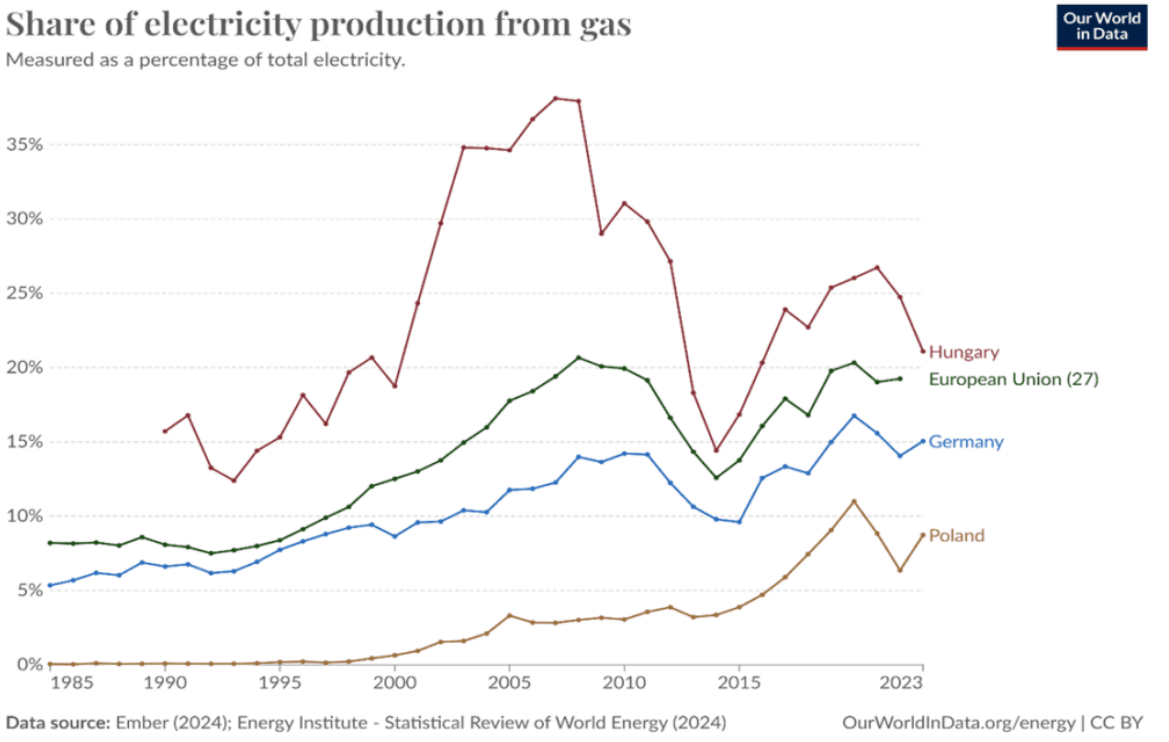
One of the reasons that the EU was able to withstand the 2022 energy crisis was significantly decreased consumption of gas across the continent and across different market verticals. While the LNG and Norwegian gas imports have increased considerably, the overall trend across the EU points toward a smaller role for gas in the European energy system in the future.



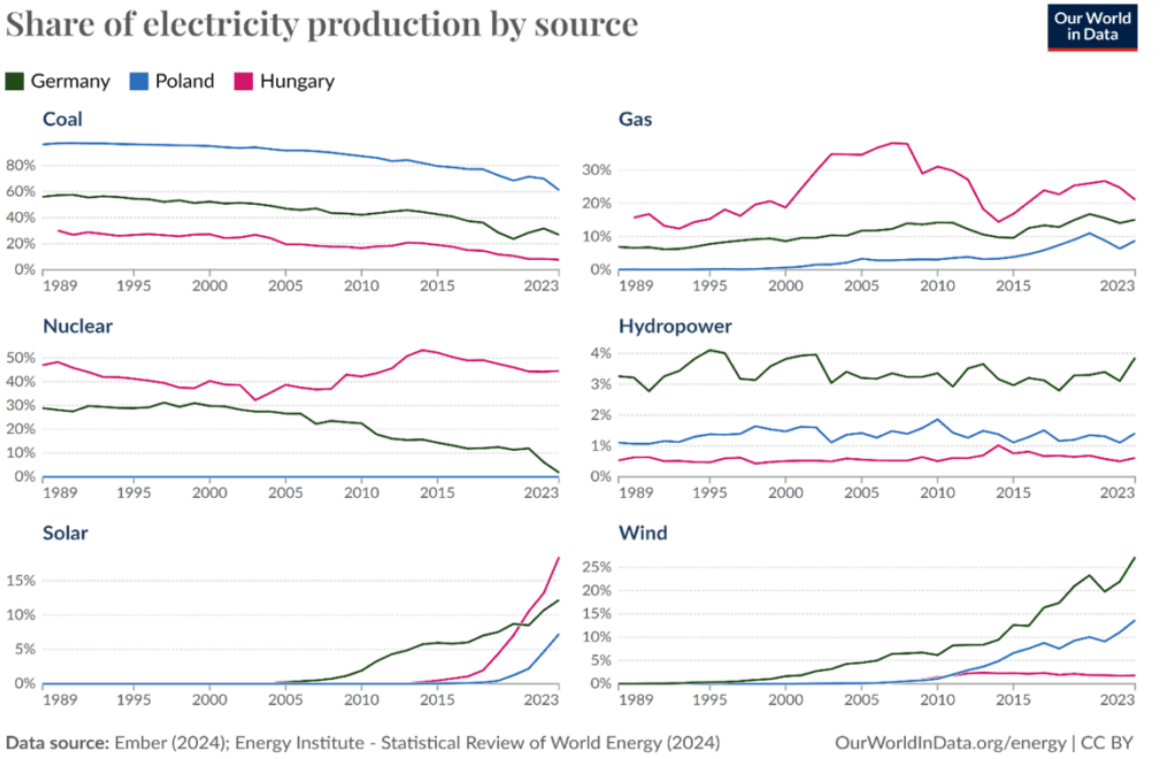
One of the countries that limited its gas consumption most steeply since 2022 was Hungary.



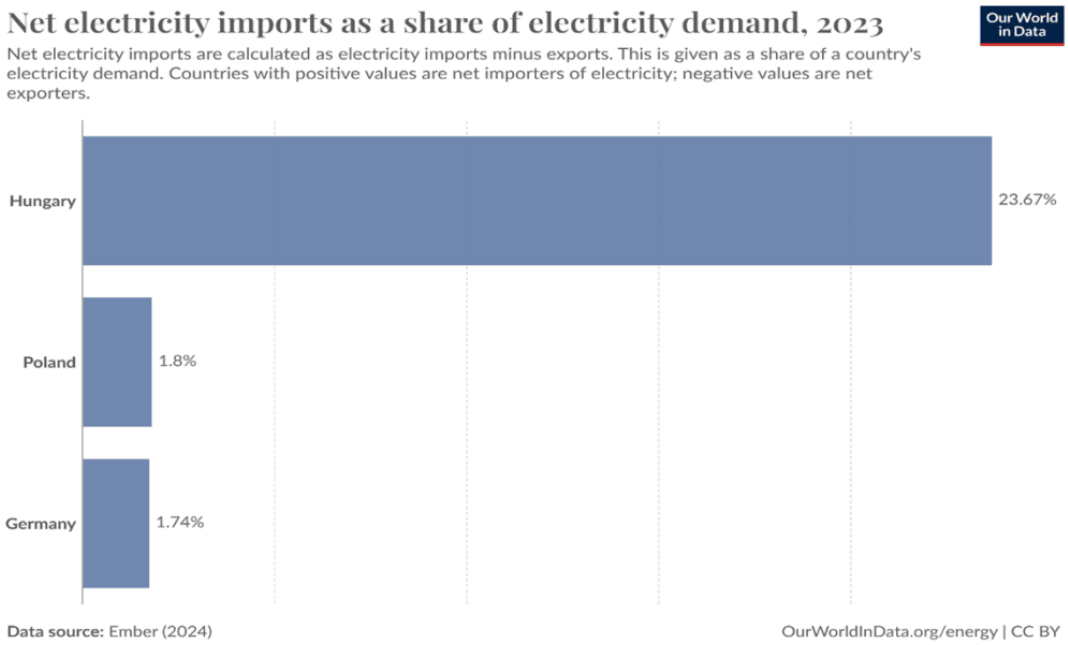
This trend of reduced gas consumption is highly visible when it comes to Hungary's gas-fuelled electricity generation.



Nonetheless, in 2023 Hungary still produced more than 20% of its electricity from gas – a noticeably higher proportion than is the case in Germany or Poland. On the other hand, Hungary has seen a rapid deployment and rise of solar PV in its electricity mix – an intermittent generation source that, until battery storage becomes widely available, needs to be balanced by either stand-by gas production or electricity imports.

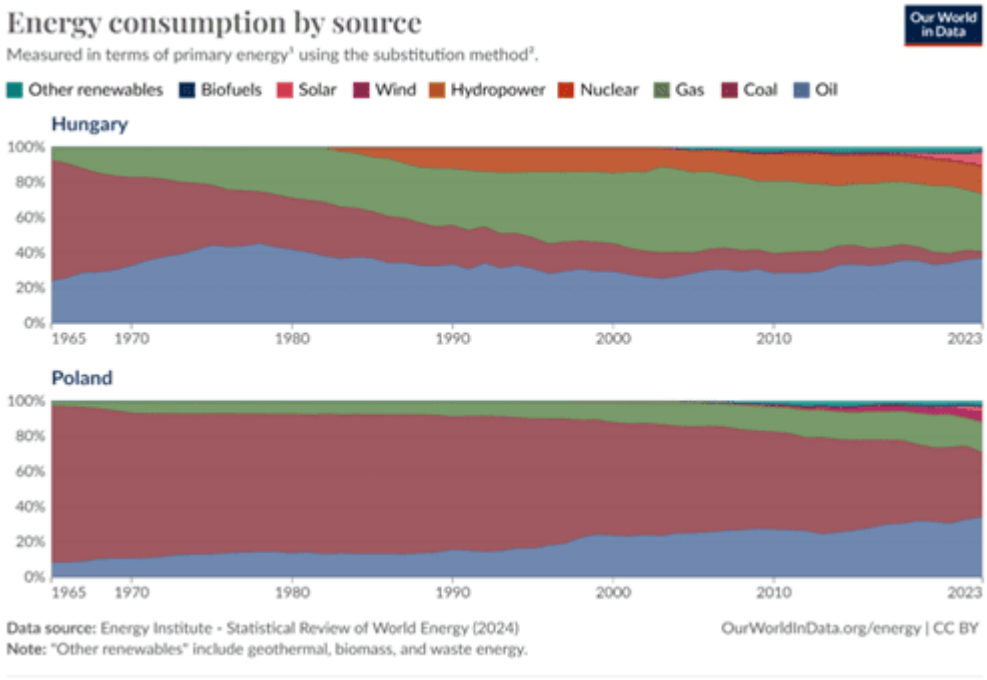


In comparison with Poland or Germany, Hungary imports a much higher percentage (almost a quarter) of its electricity demand.

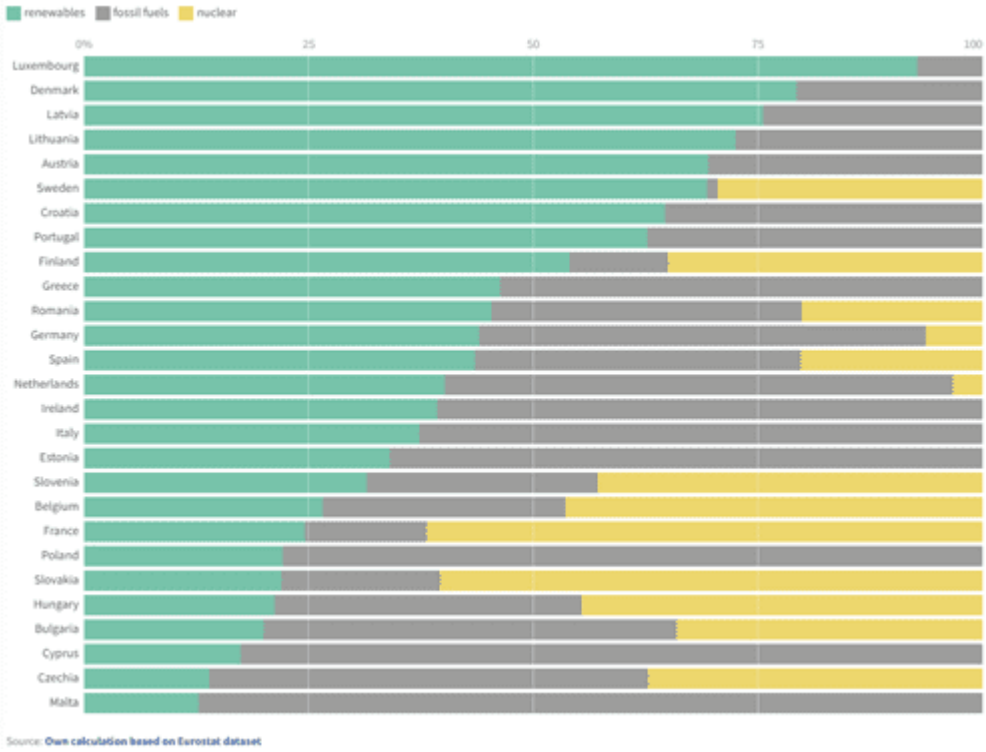


A big proportion of Hungarian electricity imports comes from Slovakia (with three new interconnectors coming online in 2021). As such, there is significant potential for cooperation within V4 not only when it comes to cross-border gas flows (as discussed above), but also electricity trading.

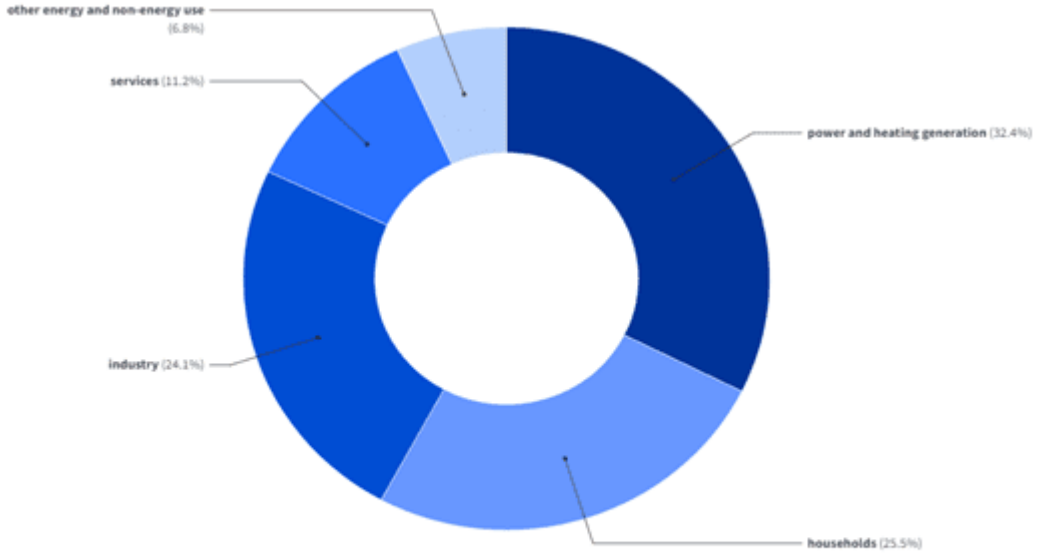
One aspect where Poland's electricity landscape differs markedly from Hungary's, and the rest of V4 for that matter, is the lack of any nuclear power generation. This is meant to change with the first generation of Polish nuclear new build projects (based on American, Korean as well as small modular reactor (SMR) technology) due to be connected to the grid by 2035. Around the same time Poland should have roughly 20GW of capacity coming from offshore wind farms operated on the Baltic Sea. All these projects are designed to replace Poland's coal-fired power plants that are already well past their original life expectancy. However, when combined with the rapidly growing renewable generation (backed-up by gas-fuelled power plants), Poland has the potential to become, for the first time, a major net electricity exporter.



On the other hand, Hungary (which currently produces over 40% of its electricity through nuclear power), is planning an expansion of its Russian designed Paks plant with additional two reactors of 1.2GW capacity each. With this investment, the Budapest aims to increase the share of nuclear in its electricity generation to 60%.



Apart from power generation, gas in the EU is used heavily to heat buildings. In fact, over 30% of households in the EU are heated using gas[14].



Source: Eurostat

* Households includes gas used in private dwellings (e.g. for heating and cooking). Power and heating generation includes power plants and central heating units.

The heating demand curve is highly seasonal with gas consumption in winter being roughly 2.5x the level it is in the summer. As such, it can be effectively managed with adequate storage and cross-border flows (as discussed above).

Given that major investments have been made since 2022 to accommodate and integrate alternative sources of gas, the reduction in the role of gas in the EU energy system should be gradual, so that the impact on EU consumers and EU's industrial competitiveness can be properly managed[15]. As case in point being the final version of the Energy Performance of Buildings Directive adopted in May 2024 (as part of the Fit for 55 package) which moderated the previously unrealistic targets that were being proposed in earlier drafts. A more phased approach when it comes to the adoption of heat pumps and biogas to replace natural gas in the EU heating system is essential to ensure the public opinion's support for the energy transition.

The final piece of the puzzle is industrial use. Contrary to what was feared in the first months of 2022, significant reduction in industrial gas consumption has not resulted in a corresponding drop in the overall industrial output.

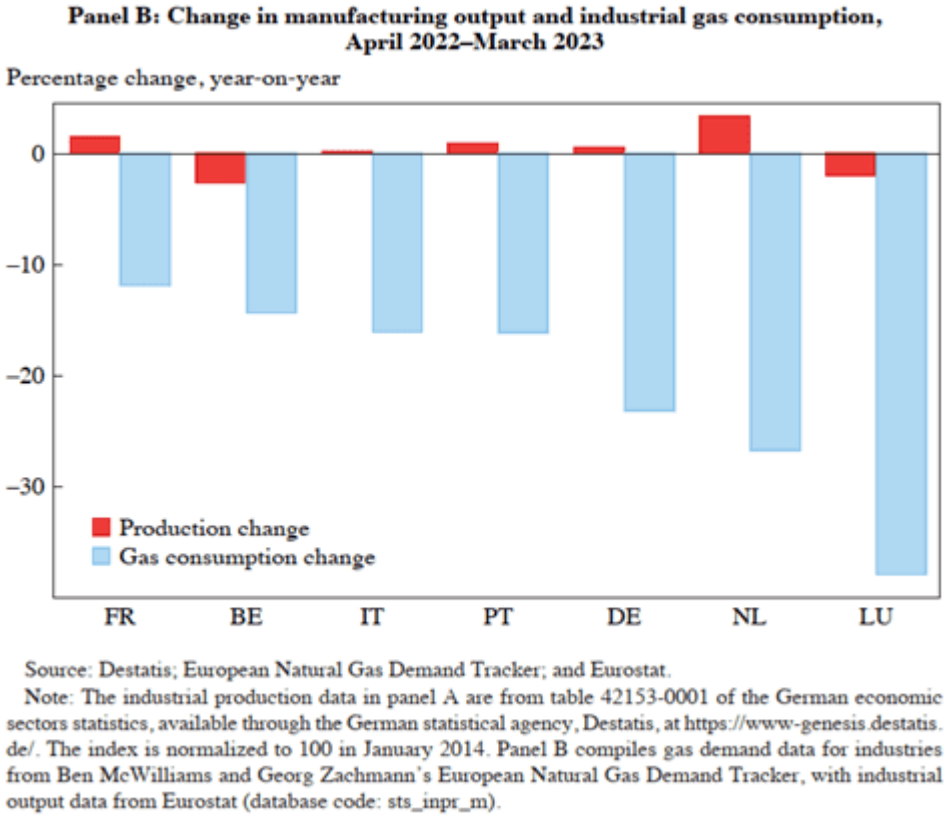


Figure – impact of reduced gas consumption in 2022/23 on industrial output[16]

There are, however, significant exceptions – the chemical, iron, and steel sectors. At one point up to 20% of EU's fertiliser production was put on hold. The CEE region is a major fertiliser hub with Poland accounting for 13% of the output[17]. In fact, roughly 35% of gas consumed in Poland is used by the industry, primarily by chemical and steel plants (Grupa Azoty is the single biggest consumer of natural gas in the country).

This is where hydrogen comes as a potential solution. While certain applications of hydrogen advocated by politicians are more of a 'pipe dream', according to Michael Liebreich, a leading expert on clean energy, fertiliser and chemical feedstock production is exactly where hydrogen could be a viable replacement for natural gas. These sectors should be prioritised by Poland and other EU member states when it comes to investment in hydrogen solutions.

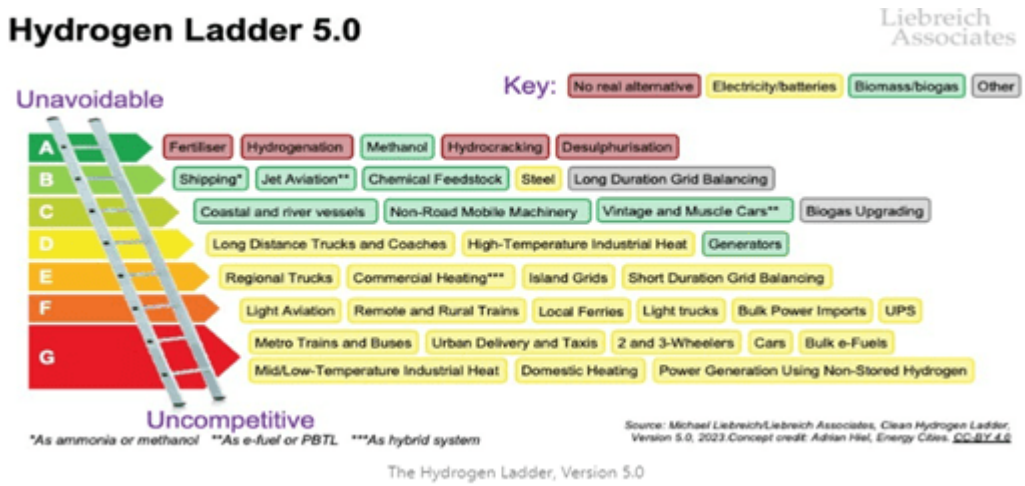


Figure Michael Liebreich, Hydrogen Ladder (October 2023)[18]

Conclusion

The recommissioning of the Nord Stream gas pipelines poses significant strategic risks that outweigh any potential short-term economic benefits. The pipelines represent a direct threat to Poland's energy security and the broader stability of the EU. Instead of reopening these pipelines, Poland and the EU should focus on enhancing its energy infrastructure, strengthening EU energy solidarity, and accelerating the transition to low carbon energy. By doing so, Poland can safeguard its interests and contribute to a more resilient European energy landscape.

We need a strategic vision for Poland's and the CEE's energy future with a long-term perspective that prioritises energy security, economic resilience, and environmental sustainability. We should therefore reject short-sighted solutions like Nord Stream in favour of building a diversified, innovative, and independent energy system that can withstand future geopolitical and economic challenges. While the permanent closure of Nord Stream may be bad for Russia, it is definitely good for Poland, good for Central and Eastern and good for the EU as a whole.

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[1] https://www.bruegel.org/dataset/european-natural-gas-imports

[2] https://www.goldmansachs.com/insights/articles/what-happens-if-russia-cuts-off-gas-to-euro

pe-index

[3] Dutch index that sets the market gas price in Europe

[4] How is EU electricity produced and sold? – Consilium (europa.eu)

[5] Source: Sgaravatti et al. (2023). Accessed via: https://cepr.org/voxeu/columns/european-energy-crisis-and-consequences-global-natural-gas-market#:~:text=The%202022%20Russian%20invasion%20of,focus%20shifted%20towards%20energy%20security (Germany adopted fiscal measures of €158 billion, Italy & France approx. €90 billion each)

[6] https://www.bruegel.org/dataset/european-natural-gas-imports

[7] https://www.gasunietransportservices.nl/en/news/advice-on-the-security-of-natural-gas-supply-following-closure-of-the-groningen-field

[8] Czechia, Hungary, Poland, Slovakia

[9] https://dgap.org/en/research/publications/gas-and-energy-security-germany-and-central-and-eastern-europe-0

[10] Source – DIW 2018, based on Kai-Olaf Lang and Kirsten Westphal, "Nord Stream 2 – Versuch einer politischen und wirtschaftlichen Einordnung," SWP Studie S21 (2016); ENTSO-G, Capacity Map (2017); https://www.cleanenergywire.org/factsheets/gas-pipeline-nord-stream-2-links-germany-russia-splits-europe

[11] Participating members: Denmark, Germany, Estonia, Latvia, Lithuania, Poland, Finland, and Sweden.

[12] https://www.ft.com/content/3398bbf1-747e-4d88-b948-e72bc14e9271

[13] https://www.reuters.com/business/energy/new-west-east-route-keeps-europe-hooked-russian-gas-2024-04-03/

[14] Where does the EU's gas come from? – Consilium (europa.eu)

[15] According to certain estimates, by achieving the Fit for 55 and REPowerEU objectives the EU could reduce gas consumption by 1550 TWh; https://dgap.org/en/research/publications/gas-and-energy-security-germany-and-central-and-eastern-europe-0

[16] https://www.brookings.edu/wp-content/uploads/2023/09/Moll-et-al_16820-BPEA-FA23_WEB.pdf

[17] https://dgap.org/en/research/publications/gas-and-energy-security-germany-and-central-and-eastern-europe-0

[18] https://www.linkedin.com/pulse/hydrogen-ladder-version-50-michael-liebreich/ under License: https://creativecommons.org/licenses/by/4.0/

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