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Russo-Ukrainian War and Energy Security in the Visegrad 4

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Executive Summary

Eva Kristinova

Energy security has been a concern of modern policy-making for decades, yet its increasing importance has been thrust into greater spotlight by more recent events, namely the invasion of Ukraine by Russia in February 2022. Grappling with the fallout of the conflict, the European Union (EU) suddenly had to face new and re-emerging challenges, including disrupted supply chains and the weaponization of energy by Russia, both in Ukraine and against EU Member States. With strong political will and a collective desire to end the first major conflict on the continent since the Second World War, Member States individually, as well as the supranational body as a whole raced to secure their own energy supply through policy and diversification. Nevertheless, challenges remain, especially for states with some of the closest ties to Russia, Ukraine, and their energy supplies.

Central and Eastern European (CEE) countries have been at the forefront of direct and indirect consequences stemming from the conflict, and have accordingly been some of the most fervent contributors to Ukraine's own defence and security. At the same time, their historically disproportionate ties to, and therefore reliance on Russia have put them in relatively more precarious positions. Key transit and receiving countries, notably the Czech Republic, Hungary, Poland, and Slovakia, are in danger of sustaining some of the heaviest blows in Russia's weaponization of energy. On the other hand, these countries also have an additional cooperative platform at their disposal, creating the potential for greater security and resilience: the Visegrad Group.

In order to understand the magnitude of impact of the ongoing conflict in Ukraine on the energy security of the Visegrad 4 (V4), the present analysis seeks to outline the latter's prior state of, and subsequent change in energy security, including the extent of the response and diversification measures that have been put in place in the time since the start of the conflict. It does so in the two following sections:

- **Section 1:** provides a comprehensive overview of the energy sector, including sources, infrastructure and composition of trade in natural gas, oil, and renewable energy. It further identifies and assesses the key actors and decision-makers involved, with special focus on external influence from Russia. Each of the V4 states is then analysed in terms of the impact of the conflict on the energy sector, and real and potential response and diversification measures available.

- **Section 2:** provides an analysis of key areas and platforms for cooperation, notably through the V4 framework. The section focuses on the potential joint action on energy, including the dynamic interplay of such cooperation within the existing EU structure. Subsequently, it looks at a prominent regional alternative platform of cooperation, the Three Seas Initiative, outlining further potential for action.

Key Findings

- Outside of Poland, the V4 countries have been heavily dependent on Russian energy supplies before the start of the conflict, and for the most part have a continuous need for it today. Nevertheless, existing infrastructure and individual cooperation initiatives contribute to sizable differences in resilience, for example, between the Czech Republic and Slovakia.
- In terms of diversification, only Hungary and Poland have thus far outlined concrete policy strategies for decreasing their dependence on Russian energy supplies, with the Czech Republic and Slovakia lacking such national policy.
- Effective cooperation through the V4 framework is limited, but possible, if the comparative advantage of the framework is leveraged correctly. Namely, cooperation needs to happen at all available levels, including government bodies, civil society institutions, and the research front.
- Within the EU, a unified V4 voice is currently lacking, and differences pertaining to the war in Ukraine continue to stifle effective cooperation. In order to regain a firm standing and influence in policy-making on energy security, it is necessary for the V4 to reach common ground on these more fundamental issues first.
- Regarding regional alternatives for securing supplies and resilience in their energy sectors, the V4 also have the Three Seas Initiative at their disposal, which further helps foster economic growth and spurs greater effectiveness in attempts to diversify and reduce reliance on Russian energy sources.

Section 1: The Visegrad 4

1.1 Czech Republic

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Energy background

Oil:

For the [Czech Republic](#)¹, Damborice is one of the major oil fields in the country, producing 4,700 barrels per day (bpd). The country also has numerous oil storage facilities, with Nelahozeves being the largest. Litvínov is the largest of the three oil refineries in the country. The transport of oil is conducted via pipelines, totaling 536 and 94 kilometres (km), while the gas pipelines total 7,160 km, linking major compressor stations and gas storage stations.

Natural gas:

The Czech Republic is a significant [gas transportation](#)² centre in the CEE region as a result of its geographical location. Its extensive gas storage capacity and several interconnectors with reversible capacity account for its efficient gas system, with 3.3 billion cubic metres (bcm) of gas storage capacity. The Czech Republic has two [nuclear power plants](#)³ that produce electricity from hydrocarbons, the Temelín and Dukovany plants. The largest pumped storage power plant is Dlouhé Stráně, while the largest hydropower station is Orlik, even though the Czech Republic recorded more than one thousand small-scale hydropower stations in 2016.

Renewable energy:

In terms of [renewable energy](#)⁴ infrastructure, there are eleven sizable wind parks with elevated wind activity. There are also several solar power plants due to efficient global horizontal solar irradiation in parts of the country, with the largest solar plant being the Ralsko Ra-1. As the country expands [hydrogen](#)⁵ as a source of energy for vehicles, it has invested in a hydrogen filling station called the Central Bohemia, which has a 125 kilograms (kg) of storage capacity.

¹ Advanced Energy Technologies. “Energy Industry in the Czech Republic.” *Advanced Energy Technologies*, Nov. 15, 2022. <https://aenert.com/countries/europe/energy-industry-in-czech-republic/>.

² International Energy Agency. “Czech Republic 2021: Energy Policy Review.” *IEA*, Sep., 2021.

<https://iea.blob.core.windows.net/assets/301b7295-c0aa-4a3e-be6b-2d79aba3680e/CzechRepublic2021.pdf>.

³ Advanced Energy Technologies. “Energy Industry in the Czech Republic.”

⁴ Ibid.

⁵ Ibid.

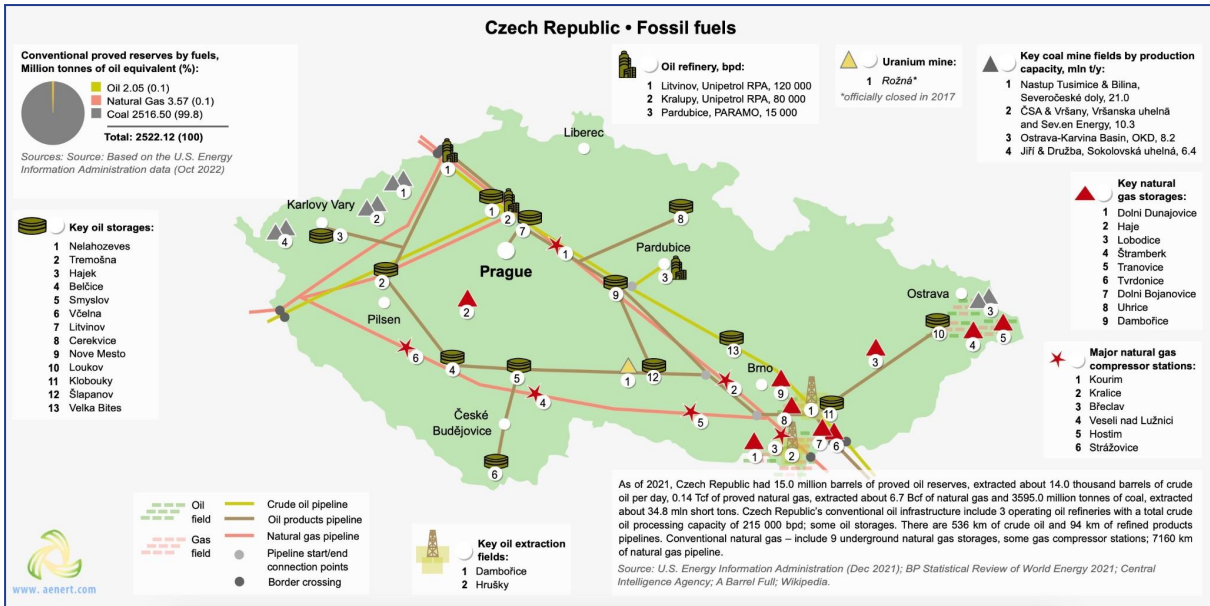


Figure 1: Infrastructure facilities of the fossil fuel sector in the Czech Republic, 19 August 2023, [Source:](#) Advanced Energy Technologies.

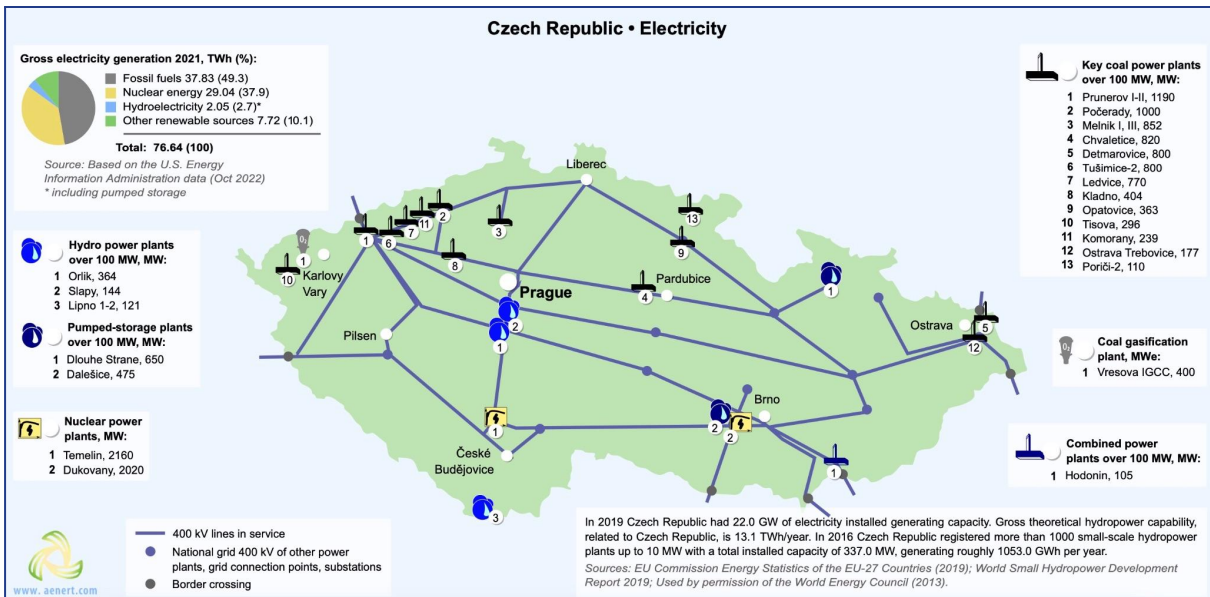


Figure 2: Electricity production and renewable energy in the Czech Republic, 19 August 2023, [Source:](#) Advanced Energy Technologies.

Energy sources:

The Czech Republic is almost entirely [dependent](#)⁶ on imports as it produces very little natural gas or oil of its own. Only 3% of the crude oil and 1% of the natural gas used in the

⁶ U.S. Department of Commerce, “Czech Republic - Country Commercial Guide.” *International Trade Administration*, Sep. 8, 2023. <https://www.trade.gov/country-commercial-guides/czech-republic-energy>.

Czech Republic are [produced domestically](#)⁷. In 2021, the country [consumed](#)⁸ 1.68 exajoules of primary energy in total, where 32.1% came from coal, 24.4% from oil, 19.6% from natural gas, 16.7% from nuclear energy, 5.9% from other renewables, and 1.2% from hydropower. Oil output between 2003 and 2021 was constant, reaching 11,000 bpd in 2021. Oil [consumption](#)⁹ also began to increase, with a small decrease between 2008 and 2013. Consumption increased again, reaching 219 thousand bpd by 2019 before declining once more to 212 thousand bpd in 2021. The Czech Republic [imported](#)¹⁰ 150,200 bpd of oil in 2018. Between 2001 and 2020, the nation's natural gas production did not rise above 9.3 billion cubic feet (bcf) and in 2020, it was 6.7, where in 2021, the nation consumed 9.1 billion m³ of gas. In 2018, the nation's [natural gas consumption](#)¹¹ totaled 6 819 kilotonnes of oil equivalent (ktoe). The country brought in about 7.590 bcm of natural gas in 2020, while generating 65.64 terawatt-hours (TWh) of electricity in 2021, with fossil fuels accounting for 49.3% of the output, nuclear power for 37.9%, hydropower for 2.7%, and other renewable energy for 10.1%.

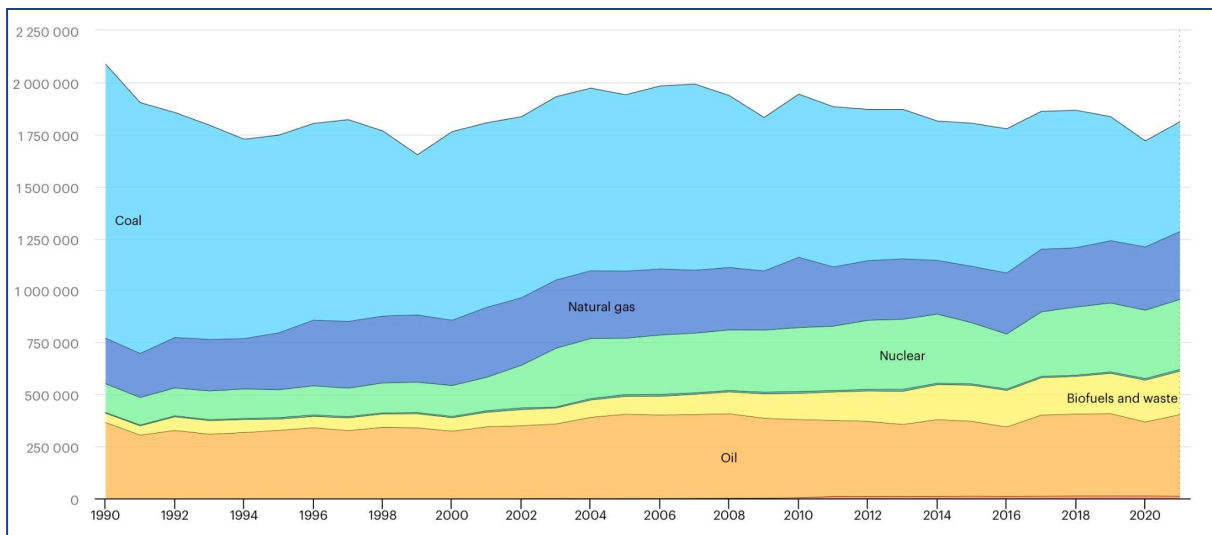


Figure 3: Total energy supply (TES) by source in the Czech Republic (1990-2021), 4 September 2023, [Source:](#) International Energy Agency (IEA).

⁷ IEA, “Czech Republic 2021: Energy Policy Review.”

⁸ Advanced Energy Technologies, “Energy Industry in the Czech Republic.”

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

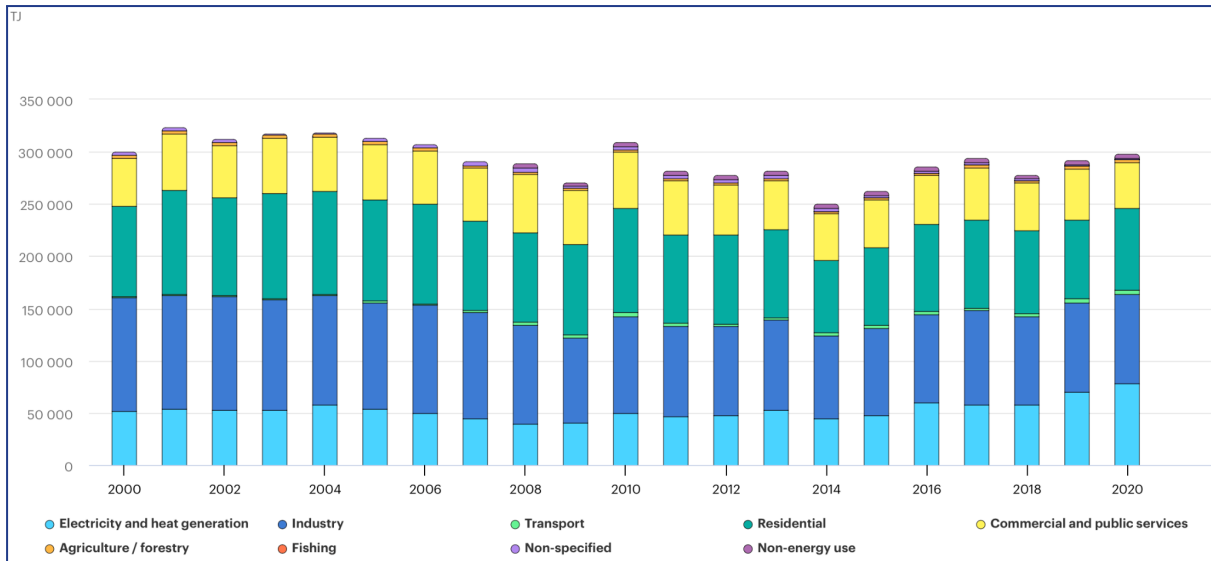


Figure 4: Natural gas consumption by sector in the Czech Republic (2000-2020), 19 August 2023, [Source:](#) IEA.

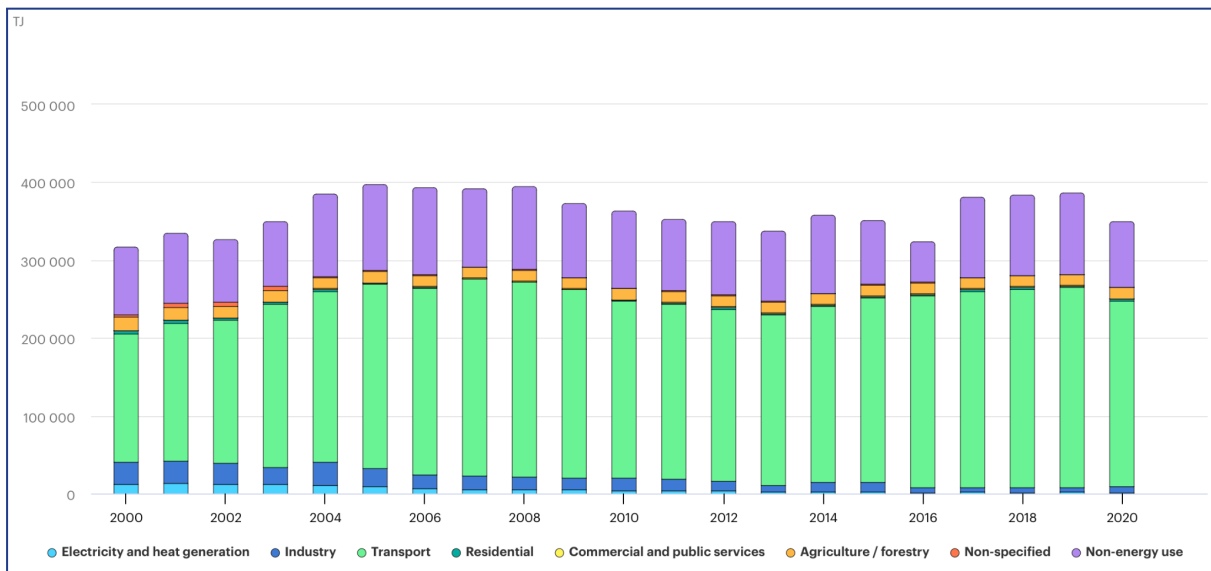


Figure 5: Oil products consumption by sector in the Czech Republic (2000-2020), 19 August 2023, [Source:](#) IEA.

ČEZ Group, Energetický a Průmyslový Holding a.s., Sev.en Energy AG, and Sokolovská uhelná, právní nástupce, a.s. are some of the [key players and decision makers](#)¹² in the Czech Republic’s energy market. The main driver of the country’s power transmission network is the state-owned ČEPS, which holds authority of all transmission-related tasks, such as connecting power plants to the grid, operating the grid network, and maintaining the

¹² GlobalData Plc. “Czech Republic Power Market Size And Trends By Installed Capacity, Generation, Transmission, Distribution, And Technology, Regulations, Key Players And Forecast, 2021-2030.” *Global Data*. Oct. 29, 2021. <https://www.globaldata.com/store/report/czech-republic-power-market-analysis/>.

infrastructure of the network. [ČEZ Distribuce, E.ON Distribuce, and PRE Distribuce](#)¹³, control the country's distribution and supply network.

At the same time, the Czech Republic has been heavily [dependent](#)¹⁴ on Russian energy imports. About 64% of the oil used in the Czech Republic came from Russia in [2010](#)¹⁵. The Druzhba pipeline, which was responsible for 59% of all oil imports, was mostly used for the transportation of Russian oil. The oil itself is purchased directly from the Russian oil mining firms, and the Czech Republic has had a transit contract with the state-owned Transneft corporation in Russia. Additionally, the Czech Republic has been heavily reliant on [Russian gas](#)¹⁶, delivered by the Soyuz and Brotherhood gas pipelines from reservoirs close to the Russian city of Orenburg. Up to 75% of the annual gas consumption in the Czech Republic has been met by these deliveries. Thus, the energy security of the Czech Republic was understandably impacted by the start of the conflict in Ukraine to a significant extent.

War in Ukraine - impact on the Czech energy sector

The conflict's bearing on the Czech Republic and its foreign and energy policy has been particularly significant from the beginning. Erupting during the [Czech Presidency of the EU Council](#)¹⁷, the conflict and the initial response by the European Union (EU) to it were chiefly managed by this Central European country. This included most of the negotiated measures on energy security, accompanied by five extraordinary meetings of the Energy Council convened by the presiding state. Nevertheless, the real impact on the Czech Republic has been much the same to the rest of Europe - surging energy prices and a demand for rapid diversification strategies. Notably, however, the Czech economy was severely hit, especially in the manufacturing, engineering, and industrial sectors. The latter, furthermore, represents [no less than 30%](#)¹⁸ of the country's GDP, a glaringly large portion, and the highest in Europe. The composition of this industry (e.g. marked concentration in highly [energy-intensive](#)¹⁹ automotive production) further exacerbates the impact of high energy prices, moreover, causing shortages of key materials manufactured using such processes. Despite the [relative](#)

¹³ Ibid.

¹⁴ Mazač, J., Tichý, L., Laryš, M., Godzimirski, J.M., and Dubský, Z. "Czech and Norwegian Perspectives on New Security Threats Concerning Russian War on Ukraine - Energy Security." *IIR*. Jun. 6, 2023. <https://www.iir.cz/en/czech-and-norwegian-perspectives-on-new-security-threats-concerning-russian-war-on-ukraine-energy-security#:~:text=Until%20the%20outbreak%20of%20the,the%20EU%2C%20next%20to%20Russia>.

¹⁵ Binhack, P., and Tichý, L. "Asymmetric interdependence in the Czech-Russian energy relations." *Energy Policy*, 45, Jun. 2012, 54-63, <https://www.sciencedirect.com/science/article/abs/pii/S0301421512000328>.

¹⁶ Ibid.

¹⁷ Mazač *et al.* "Czech and Norwegian Perspectives on New Security Threats Concerning Russian War on Ukraine - Energy Security."

¹⁸ Charrel, M. "Czech industrial model shaken by energy crisis." *Le Monde*, Jan. 4, 2023. https://www.lemonde.fr/en/european-union/article/2023/01/04/czech-industrial-model-shaken-by-energy-crisis_6010235_156.html.

¹⁹ Natrass, W. "Which Czech industries will feel the impact of the war in Ukraine?" *Expats.cz*, Mar. 28, 2022. <https://www.expats.cz/czech-news/article/which-czech-industries-will-feel-the-impacts-of-the-war-in-ukraine>.

[success](#)²⁰ of the Czech economic model among the V4, and a functioning energy market (resulting in some of the lowest prices regionally), domestic investment and modernisation of energy sources has also been among the lowest in Europe over the past decade. Indeed, the country's share of renewable energy sources is the [lowest among the V4](#)²¹, at around 6%. A particular attention to ameliorating this situation is thus required in the current geopolitical climate.

Fortunately, attention to the issue is not a lacking element in the Czech Republic. Energy security became a concern relatively early on in Czech politics, linked to an increased negative public perception of Russia. Just how crucial energy security is for Czech national security has been underscored by the Czech minister of industry, Jozef Síkela, when he [referred](#)²² to the energy crisis in Europe as an “energy war with Russia”. This concern that Russia may pose a threat, if an indirect one, to Czech (energy) security goes back to 2009, during the [Russo-Ukrainian gas disputes](#)²³, equally termed the gas crisis. Czech foreign policy has thus been partially adapted to phasing out Russian energy sources, and could be considered to have enjoyed a relatively higher energy security than its neighbours, excepting Poland.

²⁰ Nosko, A. and Lang, P. “Lessons from Prague: How the Czech Republic Has Enhanced Its Energy Security.” *Journal of Energy Security*, Jul. 26, 2010.

http://www.ensec.org/index.php?option=com_content&view=article&id=258:how-the-czech-republic-has-enhanced-its-energy-security&catid=108:energysecuritycontent&Itemid=365.

²¹ Dvořák, J. and Kaňák, L. “The energy crisis in Europe and its impact on the Czech Republic.” *Grant Thornton*, Jul. 21, 2022.

<https://www.gtnews.cz/en/articles/the-energy-crisis-in-europe-and-its-impact-on-the-czech-republic/>.

²² Reuters Staff. “EU seeks more urgent measures in energy war with Russia - Czech minister.” *Reuters*, Sep. 30, 2022.

<https://www.reuters.com/article/ukraine-crisis-energy-czech/eu-seeks-more-urgent-measures-in-energy-war-with-russia-czech-minister-idUKS8N2YA07X>.

²³ Stern, J., Pirani, S. and Yafimava, K. “The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment.” *The Oxford Institute For Energy Studies*, Feb., 2009.

<https://www.oxfordenergy.org/publications/the-russo-ukrainian-gas-dispute-of-january-2009-a-comprehensive-assessment/>.

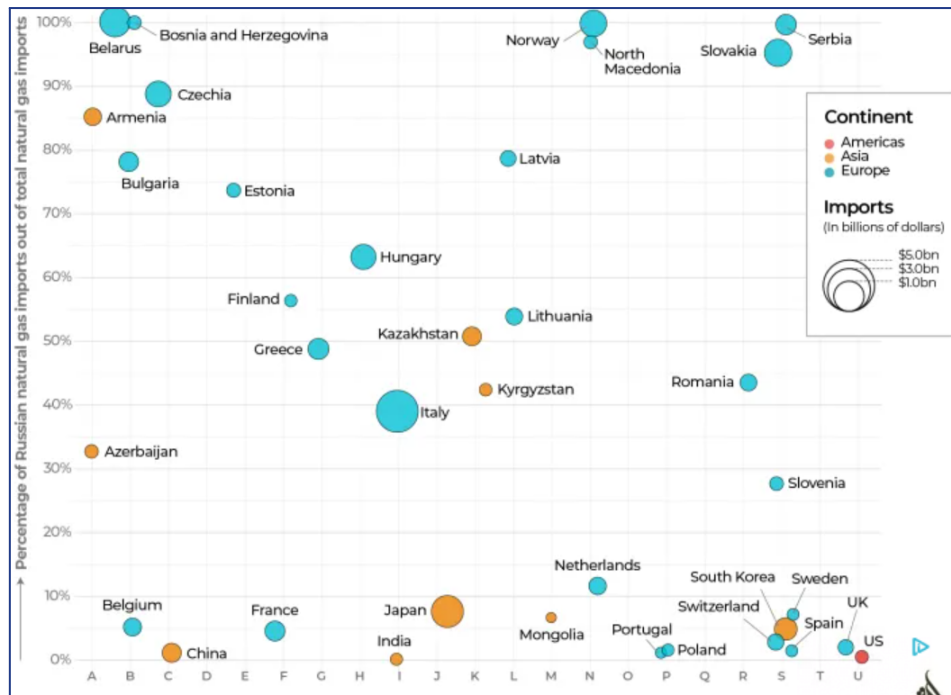


Figure 6: Russian natural gas reliance by country, 5 September 2023, [Source:](#) Aljazeera.

Accordingly, public opinion of Russia has been fairly low, plummeting even further after the invasion. At the same time, the population is also acutely aware of the perils of targeted disinformation, and as far as the latest energy crisis is concerned, the country faces similar problems to those of Slovakia, stemming from a lack of reliable public awareness. According to the latest [available information](#)²⁴, “almost half of both Czechs and Slovaks say that it is difficult for them to determine the accuracy of information about the energy crisis”. Besides the industrial and energy security consequences, it is clear that the conflict’s impact on public awareness, confidence, and even trust has been equally profound.

Response - diversification and effectiveness

At the same time, one aspect on which the country’s government and its people are clear on is the need to diversify, and more importantly to seek effective measures in cooperation with neighbouring countries. In fact, the same public opinion research cited above found that [70% of the population](#)²⁵ considered its close historical and cultural neighbour, Slovakia, as an important partner for domestic and regional energy security. This, furthermore, accords with one of the main objectives of the Czech [national energy policy](#)

²⁴ Central European Digital Media Observatory, “Czechs and Slovaks Struggle to Determine the Veracity of Information About the Energy Crisis and the War in Ukraine.” Jul. 3, 2023. <https://cedmohub.eu/czechs-and-slovaks-struggle-to-determine-the-veracity-of-information-about-the-energy-crisis-and-the-war-in-ukraine/>.

²⁵ Ibid.

[document](#)²⁶ (2015 - agreed to be updated by the end of 2023): supply security. Alongside competitiveness and sustainability, this pillar of the country's energy policy has been at the forefront of a number of measures taken by the government, most crucially since the regional consequences of the conflict became apparent.

In the long-term, the Czech Republic is heavily invested in bringing about an end to the war in Ukraine, and commencing as soon as possible with the reconstruction of Ukraine. As an important industrial and business investor in Ukraine, the Czech Republic has shown particular interest in the [reconstruction of the Dnipropetrovsk Oblast](#)²⁷, which is the most important industrial region in Ukraine. At present, however, the country needs to instead focus on energy source diversification.

Gas:

Foremost in the Czech efforts to diversify has been domestic governmental and bilateral action. Soon after the start of the conflict, the Ministry of Industry and Trade proposed five amendments to the Energy Act, and two governmental decrees. Discussions were also opened on the Stork II gas pipeline project with Poland, with the support of EU funds through REPowerEU. Besides the fellow V4 state, an important partner for the Czech Republic, both in terms of industry (consuming almost [a third](#)²⁸ of the Czech manufacturing output) and energy supply, is Germany, making the former quite heavily dependent on the latter. New LNG terminals from Germany are currently being put to use, with the hope of alleviating the economic pressure in the next heating season (23/24), and the government has additionally secured LNG supply for at least a third of the yearly gas demand through the [Dutch Eemshaven terminal](#)²⁹. Nevertheless, LNG is not generally considered as a long-term solution, mostly due to its lower reliability and higher prices. In terms of short term energy security, gas storage is only expected to be [filled to 65%](#)³⁰, and price surges are thus expected to continue well beyond the next couple of years.

Nuclear power:

A further strategy proposed, and more than available to the Czech Republic, is the transition towards a temporary, but more renewable source of energy, nuclear power.

²⁶ Ministerstvo Průmyslu a Obchodu. "Východiska aktualizace Státní energetické koncepce ČR a souvisejících strategických dokumentů." *MPO*, Apr. 4., 2023.
<https://www.mpo.cz/cz/energetika/strategicke-a-koncepcni-dokumenty/vychodiska-aktualizace-statni-energeticke-koncepcie-cr-a-souvisejicich-strategickych-dokumentu--273672/>.

²⁷ Omelchenko, T. "Ambassador of the Czech Republic to Ukraine: "Significant share of Czech investments has settled in the energy and agricultural sectors" *Mind*, Jun. 13, 2023.
<https://mind.ua/en/publications/20258492-ambassador-of-the-czech-republic-to-ukraine-significant-share-of-czech-investments-has-settled-in>.

²⁸ Charrel, M. "Czech industrial model shaken by energy crisis."

²⁹ 4Liberty.eu. "Review #17: Balancing Between Green Future and Energy Security." *4Liberty.eu*, Oct. 24, 2022.
<https://4liberty.eu/review-17-balancing-between-green-future-and-energy-security-difficult-path-czech-republic-has-to-consider-in-light-of-russian-aggression-in-ukraine/>.

³⁰ Mazač *et al.* "Czech and Norwegian Perspectives on New Security Threats Concerning Russian War on Ukraine - Energy Security."

According to experts from the [Czech Academy of Sciences](#)³¹, nuclear power provides a temporary solution, especially as the country shifts from a net electricity exporter, to a net importer. The country is, furthermore, well-positioned for this type of energy source usage, with existing nuclear power plants in Dukovany and Temelin. The latest national energy policy also includes a strong commitment to nuclear energy, with plans for an increase in capacity by 2040. Accordingly, the Dukovany plant's commission has been [extended to 2047](#)³², and both plants are expected to build new reactors (although construction has not begun on any of them yet).

Increasing domestic capacity is also crucial in light of the country's (and EU) goal of diversification. Dependence on Russian supply of nuclear fuel is still especially high in CEE countries. The Russian national company Rosatom furthermore controls [close to 50% of the global uranium enrichment market](#)³³, and continues to be a substantial source of revenue for the Russian government, not the least of which can be used to finance the current war effort. Diversification is thus especially desirable for the Czech Republic and the EU writ large, as a means to further the end of the war. In light of this, the former has taken measures already, signing [supply deals](#)³⁴ with the American Westinghouse and French Framatome companies.

Challenges and short-term measures:

Nevertheless, challenges remain. Besides the volatility of energy prices, resistance continues to certain temporary transition and diversification measures, notably that of nuclear power. [Public disapproval](#)³⁵ over increased reliance on nuclear power, and especially over the disposal of nuclear waste persists. Despite a [scheme approved by the European Commission](#)³⁶ to allocate 5 billion EUR to support large energy producers in the Czech Republic under the state aid Temporary Crisis and Transition Framework, [legislative changes](#)³⁷ are still necessary, especially regarding the share of renewable energy in the country's supply. Among the most [common proposals](#)³⁸, market integration and regional investment, as well as new energy source generation, are arguably the most prudent.

³¹ Hanáček, J. "Nuclear and renewable energy the way out of the current energy crisis." *Czech Academy of Sciences*, May 5, 2022.

<https://www.avcr.cz/en/news-archive/Nuclear-and-renewable-energy-the-way-out-of-the-current-energy-crisis/>.

³² World Nuclear Association. "Nuclear Power in Czech Republic." *World Nuclear Association*, Jun, 2023.

<https://world-nuclear.org/information-library/country-profiles/countries-a-f/czech-republic.aspx>.

³³ Gosling, T. "Czechs look to dump Russian nuclear fuel." *Aljazeera*, May 4, 2023.

<https://www.aljazeera.com/news/2023/5/4/czechs-look-to-dump-russian-nuclear-fuel>.

³⁴ Ibid.

³⁵ Hanáček, J. "Nuclear and renewable energy the way out of the current energy crisis."

³⁶ European Commission. "State Aid: Commission approves €5 billion Czech scheme to support energy producers in the context of Russia's war against Ukraine." *European Commission*, Jul. 26, 2023.

https://ec.europa.eu/commission/presscorner/detail/pt/ip_23_3996.

³⁷ Mazač *et al.* "Czech and Norwegian Perspectives on New Security Threats Concerning Russian War on Ukraine - Energy Security."

³⁸ Central Europe Energy Partners. "The Energy Crisis and Russian Aggression Against Ukraine." *CEEP*, Dec., 2022. https://www.ceep.be/www/wp-content/uploads/2022/12/CEDE_REPORT_2022.pdf.

1.2 Hungary

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Energy background

As a landlocked country in Central Europe, Hungary's energy supply is highly import dependent, relying on its neighbours and on existing energy infrastructure networks according to its 2030 [energy plan](#)³⁹. As a result, Hungary's energy supply is less dynamic and less adaptable to new geopolitical realities in the region. The country's energy sector is dominated by natural gas, oil, and nuclear technology (see Figure 7), all of which continue to depend on Russian supply.

Existing infrastructure is designed to enable the flow of both gas and oil from Russia to Hungary, and additionally Hungarian nuclear energy is built on Soviet technology, still relying on nuclear fuel provided by Russia's Rosatom. This has created a complex energy security situation for Hungary. The challenge moving forward will be the diversification and/or supplementation of its three main energy sources.

Hungary does, however, boast a robust energy industry. [MOL group](#)⁴⁰ is one of the region's largest companies, a multinational oil and gas company with a market capitalization of \$6.5 billion. MOL Group is an influential player in the CEE [regional energy market](#)⁴¹, particularly in neighbouring countries of Slovakia, Croatia and Romania. Likewise Hungary's [MVM Group](#)⁴², a fully state-owned company, dominates Hungary's electricity generation, transmission and the storage of gas. MVM Group additionally owns the critical Paks nuclear power plant.

³⁹ Ministry of National Development. "National Energy Strategy 2030." *Ministry of National Development*, 2012. <https://2010-2014.kormany.hu/download/7/d7/70000/Hungarian%20Energy%20Strategy%202030.pdf>.

⁴⁰ MOL Group. "Company Overview." <https://molgroup.info/en/about-mol-group/company-overview>.

⁴¹ MOL Group. "MOL Group Worldwide." <https://molgroup.info/en/about-mol-group/mol-group-worldwide>.

⁴² MVM Zrt. "Transmission, system management." <https://mvm.hu/Tevekenysegek/AtvitelRendszerIranyitas>.

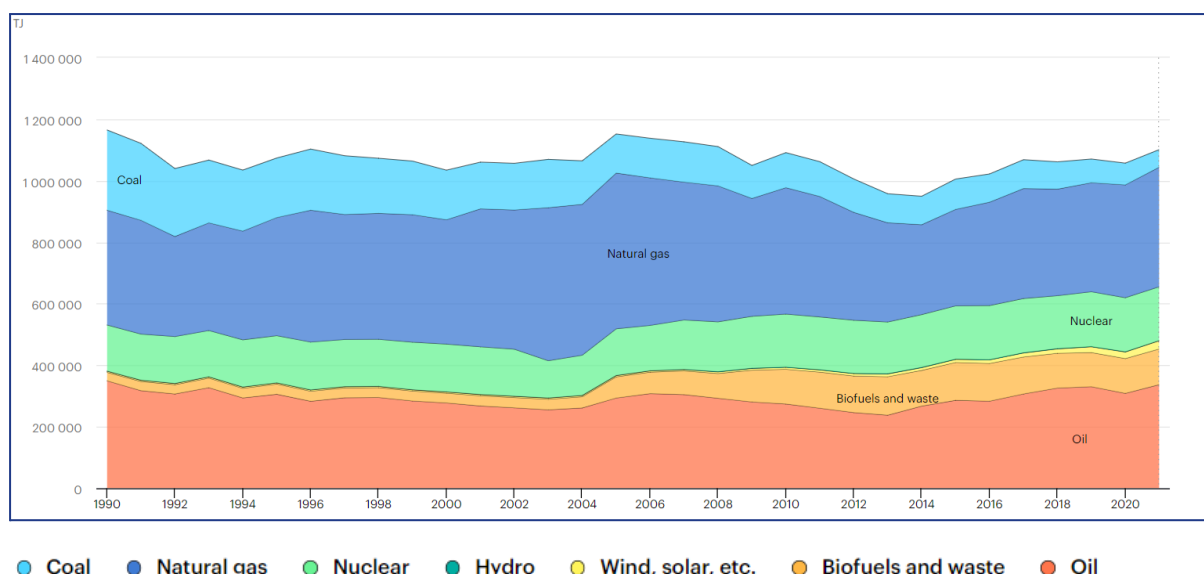


Figure 7: Total energy supply (TES) by source in Hungary (1990-2021), 26 July 2023, [Source:](#) IEA.

Gas:

Hungary has an annual natural gas [consumption](#)⁴³ of roughly 11 bcm (2020). While Hungary does have a [diverse](#)⁴⁴ set of natural gas supply routes, connecting to neighbouring countries by six separate pipeline interconnectors, there is a distinct lack of diversity when it comes to the sourcing of natural gas, which remains dominated by Russia (see Figure 8). Hungary's supply of Russian gas is provided by access to two primary pipeline networks. In the north, Ukraine's western transit corridor, consisting of the [Brotherhood](#)⁴⁵ pipeline network, and the Urengoy–Pomary–Uzhhorod, [Progress](#)⁴⁶, and [Soyuz](#)⁴⁷ pipelines, brings gas directly through Ukraine, or via Slovakia to Hungarian interconnector points. The second network, from the south, is TurkStream. Since the war, Hungary's gas supply has been largely provided via the TurkStream pipeline through an interconnection with Serbia. This pipeline network still supplies Russian gas though it bypasses Ukraine. In 2022, the pipeline was able to [supply](#)⁴⁸ Hungary with 4.8 bcm or roughly half of total demand.

⁴³ IEA. "Hungary." 2022. <https://www.iea.org/countries/hungary>.

⁴⁴ IEA. "Executive Summary - Hungary 2022." 2022.

<https://www.iea.org/reports/hungary-2022/executive-summary>.

⁴⁵ Zaniewicz, M. "New Gas Pipeline Geopolitics in Central and Eastern Europe." *Warsaw Institute*, Dec. 21, 2019. <https://warsawinstitute.org/new-gas-pipeline-geopolitics-in-central-and-eastern-europe/>.

⁴⁶ Reuters Staff. "FACTBOX - Russia's gas pipelines to Europe." *Reuters*, Sep. 3, 2022.

<https://www.reuters.com/article/ukraine-crisis-russia-gas-pipelines-idUKL8N30A083>.

⁴⁷ Strauss Center for International Security and Law. "Energy and Security - Developments in the energy field and questions of international security." *University of Texas (Austin)*.

<https://www.strausscenter.org/energy-and-security-project/ukraine/>.

⁴⁸ Szöke, E. "Hungary eyes diversification with Turkish LNG and Azeri gas." *CEE Energy News*, Jan. 20, 2023. <https://ceenergynews.com/lng/hungary-eyes-diversification-with-turkish-lng-and-azeri-gas/>.

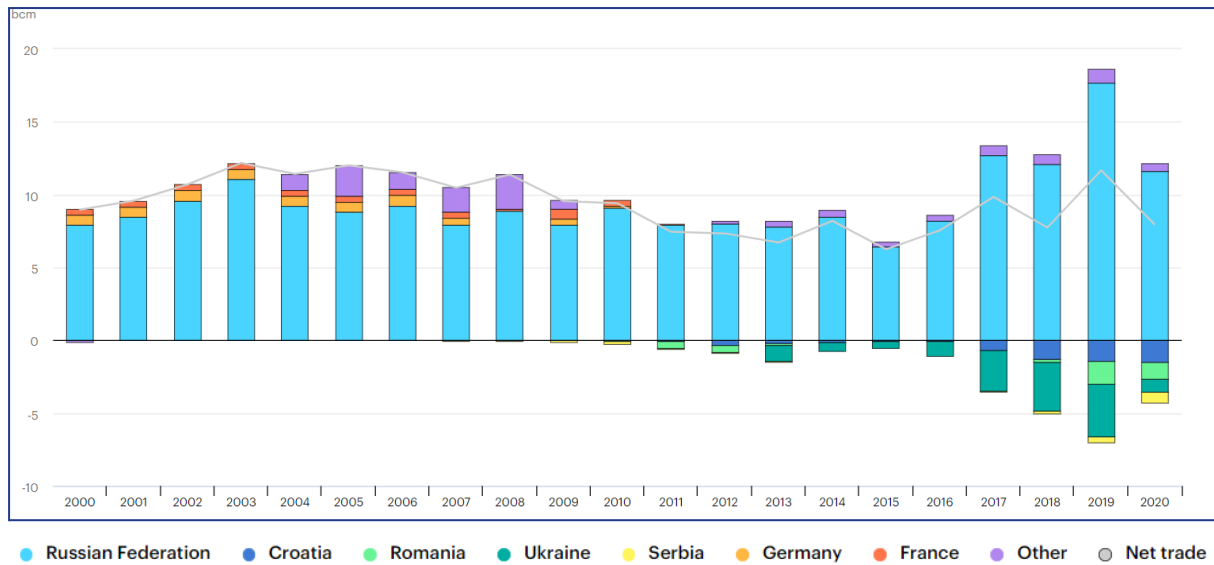


Figure 8: Natural gas net imports in Hungary (2000-2020), 26 July 2023, [Source:](#) IEA.

Crude Oil:

Hungary’s supply of crude oil, much like natural gas, is overly reliant on Russian supplies. Of the roughly 44,895 kilo barrels of oil equivalent (KB) per year, 27,338 KB are sourced from Russia (see Figure 9). However, unlike with natural gas, Hungary has more options to diversify oil sourcing, and finding an alternative supplier has more to do with the price differential than it does with hard infrastructural limitations. The Russian oil that Hungary does receive is supplied by the pipelines Druzhba I (total capacity 43,800 KB per year, see Figure 10, page 18), through Slovakia, and Druzhba II (total capacity 58,400 KB per year, see Figure 10) through Ukraine.

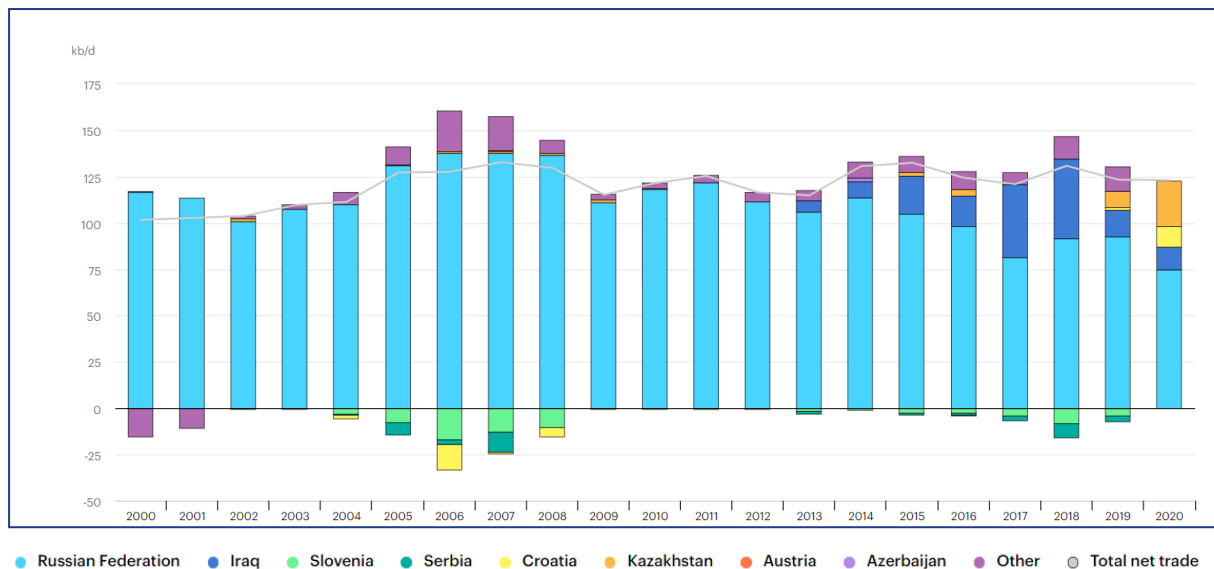


Figure 9: Crude oil imports in Hungary (2000-2020), 4 August 2023, [Source:](#) IEA.

War in Ukraine - impact on the Hungarian energy sector

Both the Hungarian economy and foreign policy have found themselves at a crossroads over the course of the last few years. While simultaneously maintaining commitments and ties to both the EU and NATO, the Hungarian government has gradually become [the most Russia-friendly nation](#)⁴⁹ among the members of both NATO and the EU. From 2014, during a period fraught with political tension regarding the annexation of Crimea, the government of Orbán continued pursuing normal relations with Putin's Russia. These relations go beyond political friendship, and tie the Hungarian economy quite closely to the Russian one. Primarily, Hungary strongly depends on Russian energy supplies: Hungary receives [approximately 80% of its gas and more than 50% of its oil](#)⁵⁰ from Russia. Hungary is one of the European countries that has the [strongest direct dependence](#)⁵¹ on Russia for its energy imports. This dependence, coupled with the government's closer diplomatic ties with the Kremlin, placed Hungary in a peculiar position at the outbreak of the invasion of Ukraine, which is reflected in the latter's decision to practise ["strategic calmness"](#)⁵².

While Hungary supported European calls for the restoration of peace and the condemnation of the invasion as a whole, Hungary also did not proceed with the provision of direct military support to Ukraine. In fact, the government has been vocal [in opposing harsh EU sanctions on Russian oil and gas](#)⁵³. Instead, agreements were reached with Russia to [continue delivering oil via pipeline](#)⁵⁴ to Hungary, along with amendments to existing energy agreements which would allow for [increases in energy delivery](#)⁵⁵ in case of necessity. The continued cooperation with Russian energy companies has drawn much criticism not only from other European nations, but also Ukraine itself. Hungary's particular position as a EU member state means that agreements on energy imports need to be approved by Brussels, meaning that Hungarian energy security hinges not only on condemned Russian supply, but also on approval by the EU, which is currently set on increasing sanctions on the Russian economy as a whole. The Hungarian case is also particularly difficult, given that Hungary's landlocked nature makes the [diversification of its energy imports difficult](#)⁵⁶. The government

⁴⁹ Cafiero, G. "Analysis: Ukraine war has both blindsided and empowered Orbán." *Aljazeera*, Jun. 27, 2022. <https://www.aljazeera.com/news/2022/6/27/analysis-ukraine-war-has-both-blindsided-and-empowered-hungary-orban>.

⁵⁰ Ibid.

⁵¹ Redeker, N. "Same shock, different effects: EU member states' exposure to the economic consequences of Putin's war." *Hertie School Jacques Delors Centre*. Mar. 7, 2022. <https://www.delorscentre.eu/en/publications/economic-consequences-ukraine>.

⁵² Varga, T.C., Deák, A., Jójárt, K. "Narrowing room for manoeuvre: The effects of Putin's war on Hungary." *Heinrich Böll Stiftung Prague*, Mar. 18, 2022. <https://cz.boell.org/en/2022/03/18/russo-ukrainian-war-effects-hungary>.

⁵³ Cafiero, G. "Analysis: Ukraine war has both blindsided and empowered Orbán."

⁵⁴ Gavin, G. "Ukraine accuses Hungary of funding Russian war crimes with energy deals." *Politico*, Apr. 12, 2023. <https://www.politico.eu/article/hungary-ukraine-russia-gas-deal-urges-eu/>.

⁵⁵ Ibid.

⁵⁶ Csernus, D. "Country Report Hungary: Energy Without Russia." *Friedrich Ebert Stiftung*, 2023. <https://library.fes.de/pdf-files/bueros/budapest/20509.pdf>.

has made statements regarding willingness to diversify, although the level of active progress in this area is unclear.

Although Hungary has remained strict in its opposition to EU sanctions, it has slowed the progress on the construction of a [nuclear construction with Rosatom](#)⁵⁷, a project called Paks-2. The halt in the project though is not entirely out of volition of the Hungarian government; extenuating circumstances including the fact of the project's creditor bank being [banned from the SWIFT banking circuit](#)⁵⁸, means that funding is lacking. The conflict has also endangered a series of other exports and investments with Russia, as well as halting other common economic cooperation projects such as the establishment of a [logistical terminal for Chinese imports](#)⁵⁹.

Overall, the high level of dependence on Russian natural gas and oil exports places the Hungarian economy in a precarious point. Although, momentarily, households are somewhat protected from energy price shocks due to [fixed household end-user prices](#)⁶⁰, a decoupling of the Hungarian energy sector from the Russian one would be necessary in order to improve Hungarian energy security, given that European sanctions are not likely to be lifted until the end of the conflict.

Response - diversification and effectiveness

Although Hungarian officials, and predominantly Prime Minister Orbán, have been vocal in blaming EU sanctions on Russia for Hungary's precarious energy position, the fact of the matter is that medium- to long-term responses must be implemented in order to increase Hungarian energy security. Most importantly, effort has already been placed into diversifying oil and natural gas imports, and this must be continued.

⁵⁷ Varga, T.C., Deák, A., Jójárt, K. "Narrowing room for manoeuvre: The effects of Putin's war on Hungary."

⁵⁸ Ibid.

⁵⁹ Ibid,

⁶⁰ Csernus, D. "Country Report Hungary: Energy Without Russia."

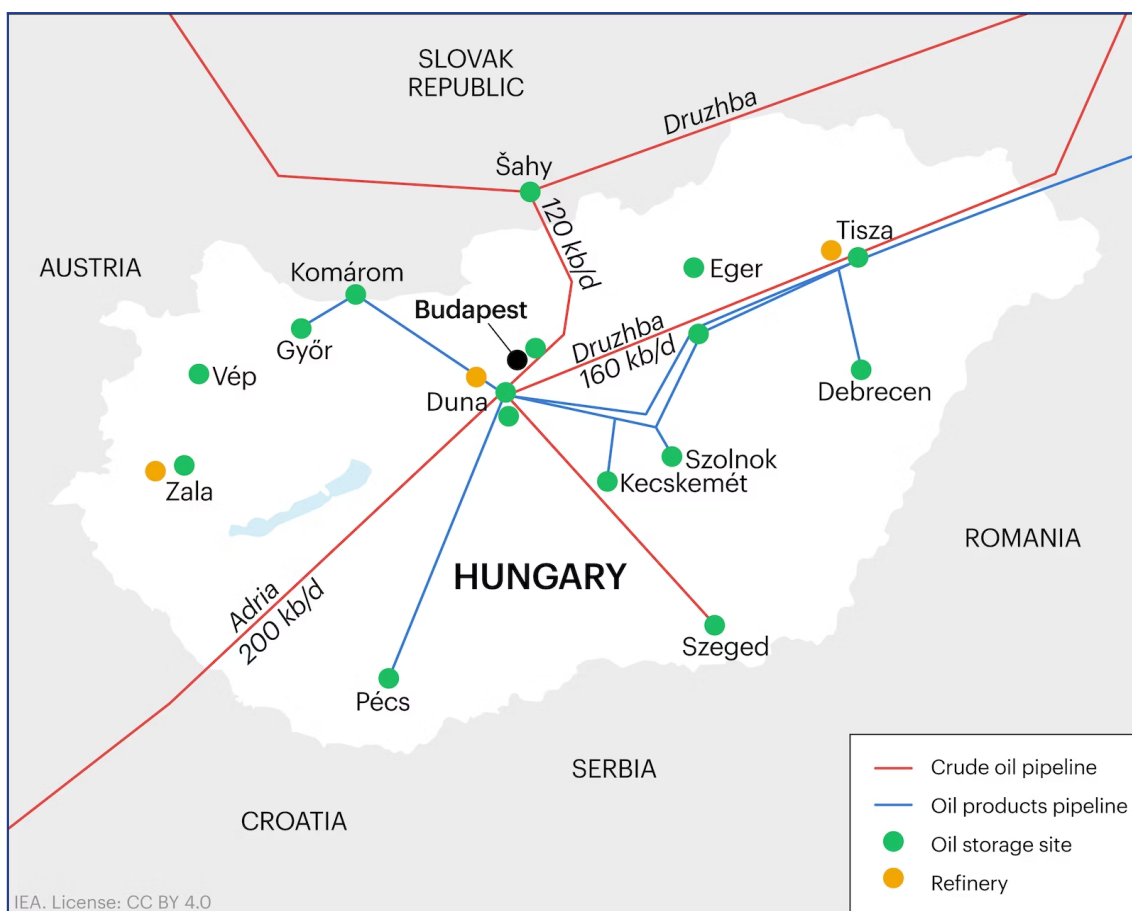


Figure 10: Hungary’s oil infrastructure (2022), 2 September 2023, [Source:](#) IEA.

Gas:

Hungary’s emerging [alternative](#)⁶¹ is a supply of LNG through Croatia’s Krk terminal on the Adriatic sea. The terminal's [capacity](#)⁶² rests between 3 and 3.5 bcm per year, however there are plans to expand this capacity to 6 bcm per year in the near future. Hungary has already taken advantage of terminal access to import gas via the Drávaszerdahely interconnection point with Croatia. So far the terminal's contribution to Hungary’s gas supply has been relatively minor but a [deal](#)⁶³ is in place for the import of up to 1 bcm per year.

Another component of Hungary’s response to the ongoing gas crunch is expanding its own natural gas production. The “[Corvinus Project](#)”⁶⁴ plans to ramp up natural gas production from the Nyékpuszta natural gas field in Békés county. This is, however, a limited means;

⁶¹ IEA. “Hungary Natural Gas Security Policy.” *IEA*, Aug. 10, 2022.

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

⁶² Patricolo, C. “Expansion of the Krk LNG terminal can be completed for the gas year 2024-2025.” *CEE Energy News*, Sep. 6, 2022.

<https://ceenergynews.com/oil-gas/expansion-of-the-krk-lng-terminal-can-be-completed-for-the-gas-year-2024-2025/>.

⁶³ IEA. “Hungary Natural Gas Security Policy.”

⁶⁴ ABT Treuhand. “Corvinus Project - Unconventional Nyékpuszta natural gas field.” *ABT Treuhand - Doing Business in Hungary*, Aug. 30, 2022.

<https://doing-business-in-hungary.com/eng/corvinus-project-unconventional-nyekpuszta-natural-gas-field/>.

Hungary already produced around 1.5 bcm in 2021, and in 2023 this production is only [expected](#)⁶⁵ to reach 2 bcm (roughly 20% of total demand).

Based on these alternatives to Russian gas, Hungary will likely face a supply gap of between 2-4 bcm per year, at current consumption levels. The primary issues for Hungary are limited infrastructure and limited access to gas markets. The capacity of LNG imports is highly limited in comparison to pipelines, but considering the timeframe of constructing new pipelines and sourcing gas, LNG will likely remain a key stopgap in Hungarian gas supply.

Crude Oil:

Hungary's primary alternative to Russian crude oil and the Druzhba pipeline is from the Adriatic Pipeline (Adria) which connects Hungary to Croatian ports. This pipeline has a total capacity of 73,000, but is expected to only fulfil 70%-80% of Hungary's crude demand [according](#)⁶⁶ to Orban's Chief of Staff Gergely Gulyás.

The advantage of the Adriatic Pipeline is that it connects Hungary to a wider oil market. Alternative oil sources have included Iraq and Azerbaijan. In early 2023, Hungary's MOL group began [delivering](#)⁶⁷ crude oil from Azerbaijan's Azeri-Chirag-Gunashli oil field (in which MOL owns a share), via Croatia and the Adriatic pipeline. While this new sourcing was [hailed](#)⁶⁸ as a demonstration of flexible oil procurement by the MOL group, it was also asserted that Russian oil will remain a critical component in the region's supply.

In comparison to Hungary's gas supply of crude oil appears to be both more diverse and more easily altered. The potential capacity of the Adriatic Pipeline could be sufficient to supply Hungary; the bottleneck would then likely come from port capacity in Croatia.

Other solutions and beyond:

Beyond oil and natural gas it is relevant for Hungary to also look beyond immediate energy needs, and consider the ongoing energy transition. For instance, laws regulating the [location of the construction of new wind turbines](#)⁶⁹, which so far have limited the development of the Hungarian wind energy sector, could potentially be revised. Proposals have been put forth as early as February 2023, but as of yet no concrete plans have been made in passing new legislation. Increased investment in and development of domestic renewable resources could prove instrumental for Hungary in terms of not only increasing its energy independence, but also bringing it up to speed with European-wide norms and

⁶⁵ Beyer, S. and Molnar, G. "Accelerating energy diversification in Central and Eastern Europe." *IEA*, Sep. 14, 2022. <https://www.iea.org/commentaries/accelerating-energy-diversification-in-central-and-eastern-europe>.

⁶⁶ Reuters. "Hungary and Croatia seek to expand Adriatic oil pipeline." *Reuters*, Feb. 9, 2023.

<https://www.reuters.com/business/energy/hungary-croatia-seek-expand-adriatic-oil-pipeline-2023-02-09/>.

⁶⁷ MOL Group. "MOL Group reaches historic well-to-wheel and diversification milestone by bringing home Azeri light crude oil from oilfield co-owned in Azerbaijan." *MOL Group*, Mar. 20, 2023.

<https://molgroup.info/en/media-centre/press-releases/mol-group-reaches-historic-well-to-wheel-and-diversification-milestone-by-bringing-home-azeri-light-crude-oil-from-oilfield-co-owned-in-azerbaijan>.

⁶⁸ Ibid.

⁶⁹ Csernus, D. "Country Report Hungary: Energy Without Russia."

developments vis-à-vis green energy. For instance, even a revision on the aforementioned wind turbine construction law could result in the meeting of a [prerequisite set by the European Commission for Recovery and Resilience Funds](#)⁷⁰, thus freeing more funds for Hungarian use.

Regarding nuclear energy, which was acknowledged as providing almost [half of Hungarian electricity](#)⁷¹, the way forward remains unclear. The halting of work on the nuclear power plant in collaboration with Rosatom is proving to be a burden, and the future of the project is largely dependent on the evolving geopolitical situation, given that over the course of the last few years, [Hungarian dependence on Russia only grew](#)⁷². Hungary would have the option of turning to its fellow European states, like Germany and France, to potentially find new investors or collaborators in progressing with its nuclear project, but given existing political disagreements between the countries, achieving a quick collaboration agreement might prove difficult. Ultimately, sources predict that if no solution is found, Hungary might find itself in a situation of [electricity shortage at the end of 2030](#)⁷³, which coincides with the shut-down date of Paks 1. Currently, the priority for the Hungarian government is to secure a steady energy supply, and without increased diplomatic cooperation, the road to energy security might be difficult.

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Héjj, D. “Consistent increase in Hungary’s energy dependence on Russia.” *Instytut Europy Środkowej*, Oct. 11, 2021. <https://ies.lublin.pl/en/comments/consistent-increase-in-hungarys-energy-dependence-on-russia/>.

⁷³ Csernus, D. “Country Report Hungary: Energy Without Russia.”

1.3 Poland

Pau Álvarez-Aragonès, Nathan Alan-Lee and Jasmine Maria Deva

Energy background

Poland is one of the [largest energy consumers and producers](#)⁷⁴ in the EU, due to its size in territory and in population. Poland's total primary energy supply (TPES) by source in 2020 was [as follows](#)⁷⁵:

Fossil fuel	Renewable energy sources
Coal: 49.9%	Biofuels and waste: 6.1%
Oil: 23.4%	Hydro: 0.5%
Natural gas: 16.8%	Wind: 2.3%
	Solar PV: 0.7%
	Geothermal: 0.1%
	Other: 0.2%

The energy challenge for Poland comes, as with many of its neighbours, from limited access to global markets and a historical dependency on Russia. While coal remains the basis for Poland's energy sector, it is understood that this form of fuel is not sustainable and will be phased out in the future. The Energy Policy of Poland until 2040 (EPP2040) [asserts](#)⁷⁶ that coal will be abandoned in the period between 2030 and 2050. For the time being this transition will raise questions not only about low emitting replacements for coal, such nuclear or renewables, but also about the increased role of natural gas and potentially oil.

In the region, Poland does maintain a strong and influential energy industry, the prime example being the Orlen Group, a multinational oil refiner and petrol retailer. The Orlen Group also dominates Poland's natural gas industry, even more so as of 2023 after a [merger](#)⁷⁷ with Poland's leading gas company PGNiG. Another unique aspect of Orlen Group is that it is [controlled](#)⁷⁸ by the Polish government, with the national treasury holding 49.9% of the company's shares.

⁷⁴ IEA. "Executive Summary - Poland 2022." 2022.

<https://www.iea.org/reports/poland-2022/executive-summary>.

⁷⁵ IEA. "Poland." <https://www.iea.org/countries/poland>.

⁷⁶ Ministry of Climate and Environment Republic of Poland. "Energy Policy of Poland until 2040 (EPP2040)." *gov.pl*. <https://www.gov.pl/web/climate/energy-policy-of-poland-until-2040-epp2040>.

⁷⁷ Orlen S.A. "ORLEN GROUP (companies of ex-PGNiG)." *PGNiG*, Jun. 30, 2023. <https://en.pgnig.pl/pgnig/pgnig-capital-group>.

⁷⁸ Orlen. "Shareholders structure." *ORLEN*, 2023.

<https://www.orklen.pl/en/about-the-company/company/bodies-and-structure/shareholders-structure>.

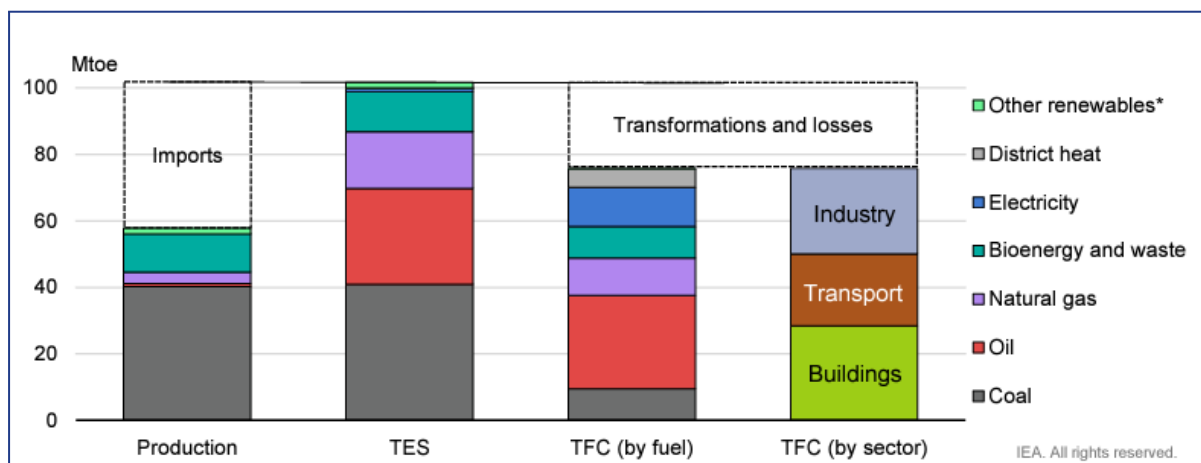


Figure 11: Overview of energy production, supply and demand in Poland (2020), 2 September 2023, [Source](#): IEA.

Gas:

Poland's natural gas consumption [reached](#)⁷⁹ 23.6 bcm as of 2021. Previously Poland has relied heavily on a supply of Russian gas, however in the last 10 years the proportion of Russian gas has significantly decreased in Poland's overall supply (see Figure 12). The primary route of Russian gas supply was the Yamal-Europe pipeline, which connects to Poland via Belarus and continues to Germany. Despite this reliance on Russian supply, Poland has invested heavily into alternate gas supply routes. The LNG terminal in Świnoujście, which [opened](#)⁸⁰ in 2016, has allowed Poland to access a more dynamic gas market. In addition, Poland also integrated into regional gas networks via interconnectors with [Germany](#)⁸¹, [Lithuania](#)⁸² and [Slovakia](#)⁸³ which itself offers a degree of supply flexibility.

⁷⁹ Enerdata. "Poland Energy Information." *Enerdata*, 2021.

<https://www.enerdata.net/estore/energy-market/poland/>.

⁸⁰ IEA. "Poland Natural Gas Security Policy." *IEA*, Jun. 30, 2022.

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

⁸¹ Reuters. "Eastward Yamal gas flows from Germany to Poland remain steady." *Reuters*, Jan. 23, 2022.

<https://www.reuters.com/business/energy/eastward-yamal-gas-flows-germany-poland-remain-steady-2022-01-23/>.

⁸² Directorate-General for Energy. "Inauguration of gas interconnection between Poland and Lithuania."

European Commission, May 5, 2022.

https://commission.europa.eu/news/inauguration-gas-interconnection-between-poland-and-lithuania-2022-05-05_en#:~:text=The%20gas%20interconnection%20between%20Poland,in%20the%20current%20geopolitical%20context..

⁸³ *Ibid.*

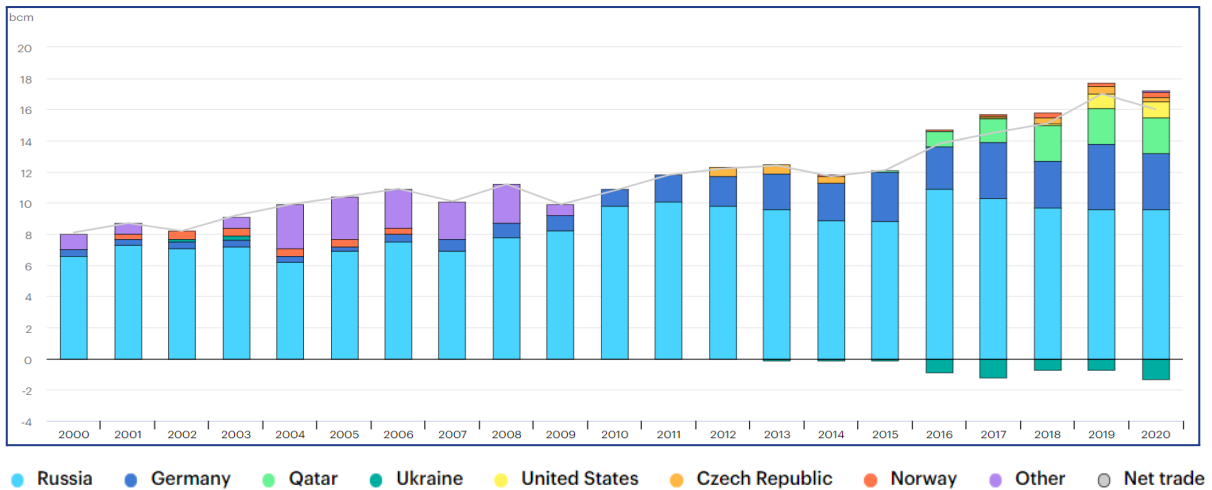


Figure 12: Natural gas net imports in Poland, 3 September 2023, [Source:](#) IEA.

Oil:

Much like with gas, Poland’s supply of crude oil has been traditionally dominated by Russia. Russian oil flows west via a northern branch of the Druzhba Pipeline. The pipeline enters Poland with a [capacity](#)⁸⁴ of around 365,000 KB per year, and branches to refineries in Płock and Gdańsk via the Pomeranian pipeline. Poland's primary alternative supply route comes from its oil terminal in Gdańsk “Naftoport.” Naftoport is connected to the Pomeranian pipeline with a total capacity of 200,750 KB per year, depending on port capacity utilisation. From this port Poland is able to import oil supplies from vendors such as Saudi Arabia and Nigeria to offset reliance on Russia.

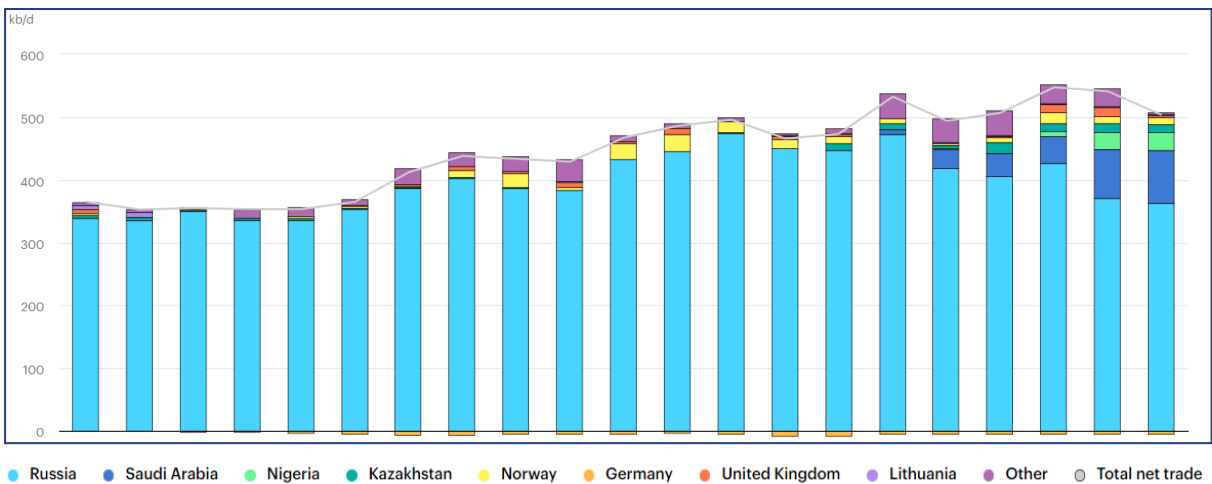


Figure 13: Crude oil net imports in Poland (2000-2020), 3 September 2023, [Source:](#) IEA.

⁸⁴ IEA. “Poland Oil Security Policy.” *IEA*, Jun. 30, 2022. <https://www.iea.org/articles/poland-oil-security-policy>.

War in Ukraine - impact on the Polish energy sector

Before delving into the specifics of Polish energy security in the face of the conflict in Ukraine, it would be helpful to gain perspective on the impact of the conflict on the Polish economy as a whole. Although Russo-Polish trade is not crucial for the Polish economy, Poland's geographic proximity to Russia and its status as a border state means that significant inflationary pressures are currently being felt in Poland and are [projected to increase](#)⁸⁵, specifically regarding staple products like food and energy. The problem intensifies when acknowledging that Poland's largest import from Russia involves energy resources like mineral fuels, oils and other distillation products. In 2022 alone, including significant cuts in imports resulting from attempts to de-russify the energy supply, imports in the aforementioned category amounted to a value of [\\$10.32 billion](#)⁸⁶, approximately three times more than the second largest import from Russia. Cuts in coal and gas imports from Russia have had a serious impact on the cost of raw materials in Poland, with coal posing an imposing problem given that it is the [most important source of energy](#)⁸⁷ for Polish households. Despite the fact that Poland is the [largest coal energy producer in Europe](#)⁸⁸, over the course of the last decade, it has become [reliant on Russian coal](#)⁸⁹, which was used primarily for the heating of civilian housing.

The other side of the Polish energy problem regards natural gas. Unlike its European neighbours, Poland had been investigating alternative sources of natural gas for some time, and was scheduled to [end commercial relations](#)⁹⁰ with Russian Gazprom by 2022 regardless of the invasion. The conflict in Ukraine resulted in an acceleration of pre-existing energy transition plans, yet the concomitance of the spike in gas prices due to the speculation and uncertainty surrounding the progression of the conflict, and the increase in military spending to [provide aid to Ukraine](#)⁹¹, resulted in a shortage of funds. As suggested by the Polish Minister of Foreign Affairs, another avenue Poland could and is pursuing is a [greater investment in nuclear energy](#)⁹², which is a solution also supported by France. Essentially,

⁸⁵ Rajca, K. "Poland economy briefing: The consequences of the war in Ukraine." *China-CEE Institute*, 57(2), Dec., 2022.
<https://china-cee.eu/2022/12/19/poland-economy-briefing-the-consequences-of-the-war-in-ukraine-increasing-inflation-and-new-energy-challenges/>.

⁸⁶ Trading Economics. "Poland Imports from Russia." Sep., 2023.
<https://tradingeconomics.com/poland/imports/russia>.

⁸⁷ Rajca, K. "Poland economy briefing: The consequences of the war in Ukraine."

⁸⁸ Ibid.

⁸⁹ Ciobanu, C. "Ukraine War Exposes Extent Of Poland's Obsolete Energy Policies." *BalkanInsight - Reporting Democracy*, Sep. 20, 2022.
<https://balkaninsight.com/2022/09/20/ukraine-war-exposes-extent-of-polands-obsolete-energy-policies/>.

⁹⁰ Ibid.

⁹¹ Schwartzberg-Czerny, U. "The impact of the war on Poland's energy transformation." *Notes from Poland*, Apr. 26, 2022.
<https://notesfrompoland.com/2022/04/26/the-impact-of-the-war-on-polands-energy-transformation/>.

⁹² Bergmann, M. "Poland and the War in Ukraine: A Conversation with Zbigniew Rau, Poland's Minister of Foreign Affairs." *CSIS*, Sep. 28, 2022.
<https://www.csis.org/analysis/poland-and-war-ukraine-conversation-zbigniew-rau-polands-minister-foreign-affairs>.

Poland's early investment in de-tangling itself from Russian natural gas means that it is better placed than many of its European counterparts, but Poland's provision of nearly [\\$3 billion](#)⁹³ worth of aid to Ukraine as of September 2022 means that it will also need aid from the EU to inject funds in its energy transition goals.

Response - diversification and effectiveness

The country has tried to diversify its mix through the National Energy and Climate Plan (NECP), which has set a target of increasing the share of renewable energy sources (RES) in the total primary energy supply (TPES) to 23% by 2030. Nevertheless, as of 2019, Poland is way below the EU's average of 17.6%. The remaining 0.2% comes from other sources, which are not disclosed. As for nuclear energy, Poland has 0.0% of nuclear energy in its mix. The IEA defines renewable energy sources (RES) as biofuels and waste, hydro, wind, solar PV, geothermal and other. Therefore, the share of RES green energy in Poland's TPES in 2020 was barely 10%.

One of the remarkable aspects is that half of the energy mix is based on coal. Poland's comparative advantage has always been [coal](#)⁹⁴, which is overrepresented in its energy mix as its TPES. Lack of diversification in fossil fuels shows the country's dependency on coal, and increases the challenges in [transitioning](#)⁹⁵ to a greener model. The consequences of this [dependency on coal](#)⁹⁶ present threats for the country diversifying its sources and becoming greener. Of course, the immediate risk for Europe is that Poland is one of the most carbon-intensive and air-polluting countries on the continent. Secondly, the necessity for Poland in phasing out from coal requires taking into account the 80,000 workers in the coal sector, as well as the stability that this has provided for many years.

⁹³ Ibid.

⁹⁴ Blaschke, W.S., Baic, I. and Szafarczyk, J. "Current State, Improvements, and Latest Trends in Coal Preparation in Poland." *ResearchGate*, Jan., 2016.
https://www.researchgate.net/publication/308275038_Current_State_Improvements_and_Latest_Trends_Incoal_Preparation_in_Poland.

⁹⁵ IEA. "Poland."

⁹⁶ Blaschke, W.S., Baic, I. and Szafarczyk, J. "Current State, Improvements, and Latest Trends in Coal Preparation in Poland."

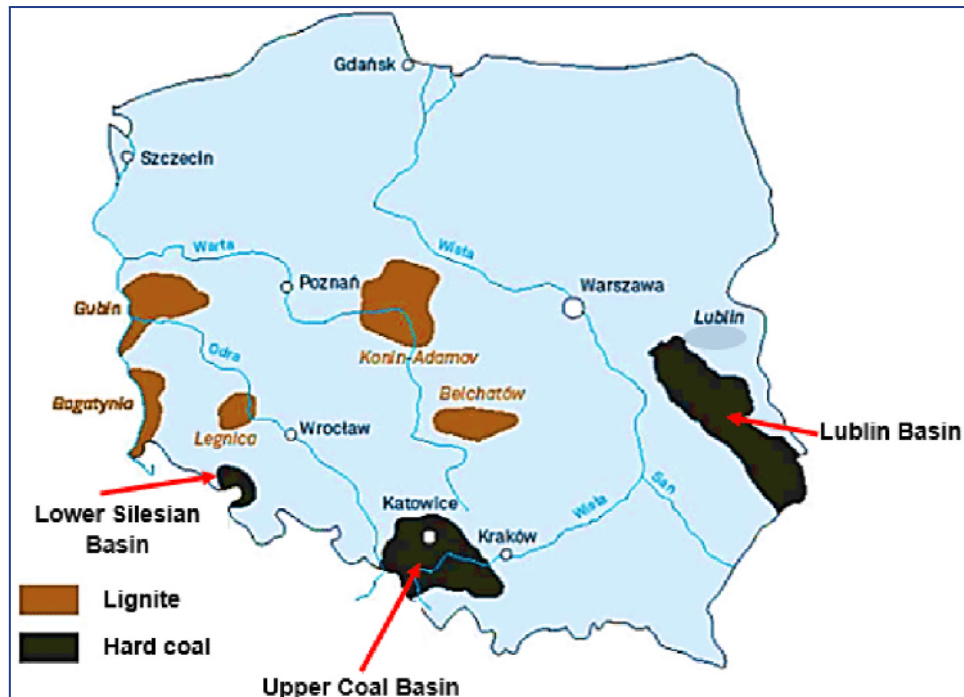


Figure 14: Distribution of hard coal deposits and basins in Poland (2016), 24 July 2023, [Source:](#) Blaschke and Baic.

Gas:

Poland has diversified its gas sources and routes, reducing its dependence on Russian gas from 55% in 2019 to 35% in 2022. Poland has also increased its gas storage capacity and interconnection capacity with neighbouring countries, such as Lithuania, Ukraine and Slovakia.

The country has developed its domestic gas production, especially from unconventional sources, such as shale gas and coalbed methane, which could provide up to 10% of its gas demand by 2030, and has become a net gas exporter in 2022, supplying gas to Ukraine and other countries via reverse flows.

- *Baltic Pipeline* - The Baltic Pipeline has a capacity of up to 10 bcm per year, a [capacity](#)⁹⁷ which was already achieved in November 2022. This represents a significant portion (43%) of Poland’s total natural gas consumption which [according](#)⁹⁸ to the IMF is around 23.6 bcm per year as of 2022.
- *LNG terminal in Świnoujście* - Currently the Świnoujście LNG terminal has a regasification [capacity](#)⁹⁹ of 6.2 bcm annually. In the first week of June 2023, the US

⁹⁷ Baltic Pipe Project. “GAZ-SYSTEM: Baltic Pipe has reached its maximum capacity.” *Baltic Pipe Project*, Nov. 30, 2022. <https://www.baltic-pipe.eu/gaz-system-baltic-pipe-has-reached-its-maximum-capacity/>.

⁹⁸ Enerdata. “Poland Energy Information.”

⁹⁹ GAZ-SYSTEM. “Terminal LNG - technical data.” *GAZ-SYSTEM*, <https://www.gaz-system.pl/en/terminal-lng/lng-terminal-technical-data.html#:~:text=The%20LNG%20Terminal%20in%20%C5%9Awinouj%C5%9Bcie.at%20two%20dedicated%20reloading%20platforms.>

International Development Finance Corporation (DFC) [pledged](#)¹⁰⁰ up to \$500 million to “facilitate higher volume of US LNG imports.” The recipient of these funds is to be Poland’s state-controlled PKN Orlen, one of the largest petrochemical companies in the region. Earlier, in January 2023, PKN Orlen and Sempra Infrastructure [signed](#)¹⁰¹ a 20-year contract for the annual purchase of 1 million metric tons of US sourced LNG (1.3 bcm).

Nuclear energy:

In terms of Poland’s long-term nuclear development, 2022 has seen Poland enter into [agreements](#)¹⁰² with the US’s Westinghouse and Korea’s KHNP for the constructions of large scale conventional nuclear plants. These plants are expected to become operational in the early to mid 2030’s. Poland has also begun to make plans for the incorporation of [small modular reactors](#)¹⁰³ (SMRs) into its energy supply.

The Polish government has been vocal throughout the course of the conflict in calling for [tougher sanctions](#)¹⁰⁴ against Russia. This could be partially spurred by a feeling of solidarity with the Ukrainian situation created by [bonds of shared history](#)¹⁰⁵, but also partially due to the fact that Poland is not so dependent on Russian fossil fuel supplies as other European countries. [A study](#)¹⁰⁶ assessing the import of raw materials and the energy security of the EU suggests that Poland falls in a group of countries which, optimistically, would not be severely affected by the suspension of Russian fossil fuels. Domestic production of coal paired with early investment in alternate natural gas sources can be said to have somewhat insulated Poland from the heavy brunt of the de-russification of the energy supply. In fact, Poland’s rich coal resources might also make it a [significant coal exporter again](#)¹⁰⁷ at some point.

¹⁰⁰ Orlen. “Public Information Summary.” *PKN Orlen*, <https://www.dfc.gov/sites/default/files/media/documents/PKN%20Orlen%20Public%20Information%20Summary.pdf>.

¹⁰¹ Orlen. “PNK ORLEN and Sempra Infrastructure enter long-term LNG sales and purchase agreement.” *Orlen*, Jan. 25, 2023.

<https://www.orklen.pl/en/about-the-company/media/press-releases/2023/january-2023/PKN-ORLEN-and-Sempra-Infrastructure-enter-long-term-LNG-sales-and-purchase-agreement>.

¹⁰² World Nuclear News. “Polish plans for large and small reactors progress.” *WNN*, Apr. 17, 2023.

<https://world-nuclear-news.org/Articles/Polish-plans-for-large-and-small-reactors-progress>.

¹⁰³ World Nuclear Association. “Nuclear Power in Poland.” *World Nuclear Association*, Aug., 2023.

<https://www.world-nuclear.org/information-library/country-profiles/countries-o-s/poland.aspx>.

¹⁰⁴ Francis, D. “Poland is leading Europe’s response to the Russian invasion of Ukraine.” *Atlantic Council*, Jan. 28, 2023.

<https://www.atlanticcouncil.org/blogs/ukrainealert/poland-is-leading-europes-response-to-the-russian-invasion-of-ukraine/>.

¹⁰⁵ Ibid.

¹⁰⁶ Rybak, A., Rybak, A. and Kolev, S.D. “The import of energy raw materials and the energy security of the European Union - the case of Poland.” *Mineral Resources Management*, 38(4), 2022, 29-48.

<https://bibliotekanauki.pl/articles/2173836.pdf>.

¹⁰⁷ Ibid.

In the future, Poland needs to ensure that the full potential of its coal deposits are used, while also considering climate change objectives. Furthermore, a careful consideration of the national budget and steady efforts to continue energy diversification and the energy transition are also paramount.

1.4 Slovakia

Eva Kristinova and Ivan David Neef

Energy background

When it comes to the [key energy sources and infrastructure](#)¹⁰⁸ of Slovakia, the western side of the country has several oil and gas fields, with oil and gas pipelines near the border with Ukraine on the east connecting to the borders on the west. Gas pipelines diverge to Austria and the Czech Republic, while oil pipelines diverge to the latter only. There are also several [storage facilities](#)¹⁰⁹ in Slovakia, with a large oil refinery in Bratislava. Nuclear power plants are located on the west side of the country, with the Bohunice and Mochovce nuclear power plants. Slovakia also has various hydro power plants, the largest being the Gabčíkovo-Nagymaros Dams. Roughly [75% of municipalities](#)¹¹⁰ in the country are linked to the gas infrastructure, representing roughly 94% of the population, and over 68% of Slovak houses. There are several medium-sized bioenergy companies producing [renewable energy](#)¹¹¹ in Slovakia, with various solar power plants in southern Slovakia that have been built in recent years. However, its solar power generation is still trivial, while wind power is still in need of development.

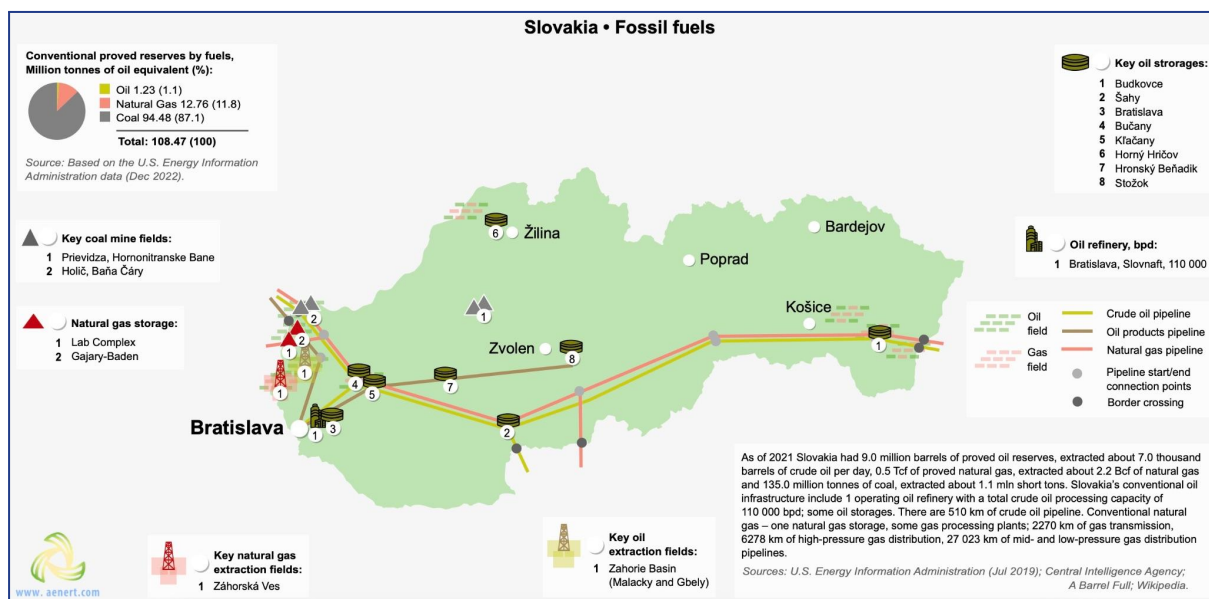


Figure 15: Infrastructure facilities of the fossil fuel sector in Slovakia, 19 August 2023, [Source:](#) Advanced Energy Technologies.

¹⁰⁸ Advanced Energy Technologies. “Energy industry in Slovakia.” *Advanced Energy Technologies*, Feb. 20, 2023. <https://aenert.com/countries/europe/energy-industry-in-slovakia/>.

¹⁰⁹ Ibid.

¹¹⁰ Oravcová, V. “Country Report Slovakia - Energy Without Russia.” *Friedrich Ebert Stiftung*, 2023. <https://library.fes.de/pdf-files/bueros/budapest/20408.pdf>.

¹¹¹ Advanced Energy Technologies. “Energy industry in Slovakia.”

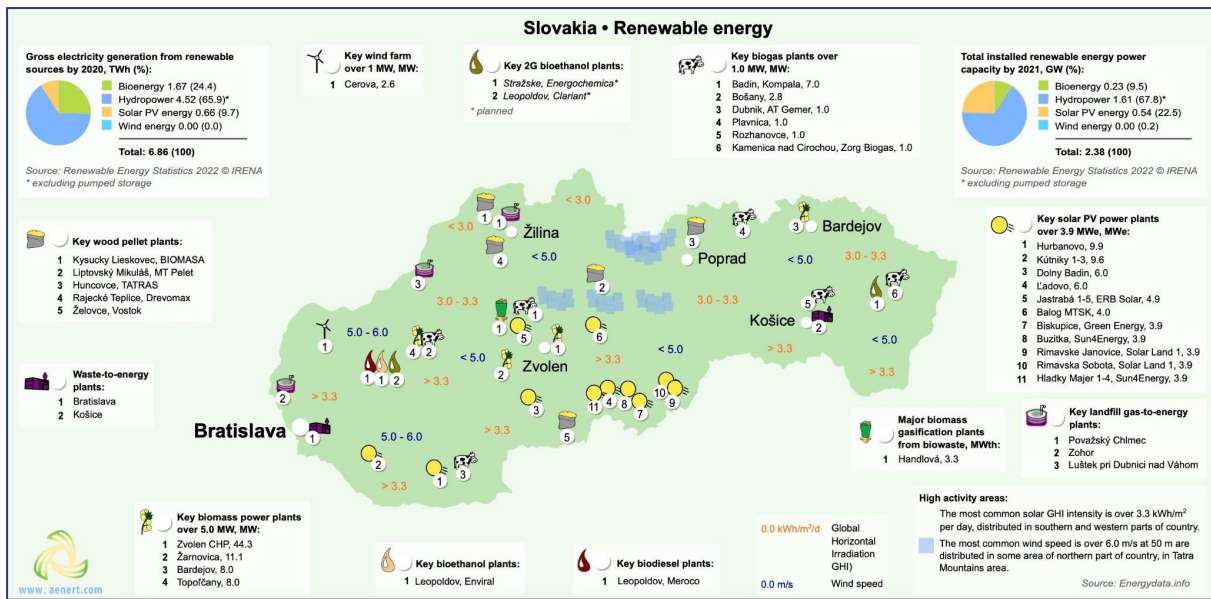


Figure 16: Renewable energy in Slovakia, 3 September 2023, [Source:](#) Advanced Energy Technologies.

[Natural gas consumption](#)¹¹² in Slovakia decreased by roughly 3.9% annually between 2001 and 2014, then slightly increasing on average by 1.3% annually from 2014 to 2020. Consumption then increased by 12% in 2021 due to the growth from all sectors, predominantly the power sector. Slovakia [consumed 33%](#)¹¹³ of its own domestic production of primary energy in 2021, thus it is a country that is heavily dependent on energy imports. Nuclear and renewable energy sources account for 32.3% of major energy consumption, followed by gas at 27%, oil at 26%, and coal at 14.5%. Though coal and natural gas consumption has decreased in the last 20 years, oil consumption has increased. Through the Druzhba pipeline, running through Belarus and Ukraine, nearly all of Slovakia’s imported crude oil used to come from [Russia](#)¹¹⁴, with 5.5 metric tons imported in 2021. Over the previous [ten years](#)¹¹⁵, Slovakia has produced 25 to 26 TWh of electricity, of which about 60% is generated by nuclear energy. Except for hydropower, the proportion of electricity from renewable sources is gradually increasing. Slovakia consistently ranks worst in indices relating to fossil fuels because of its scarcity of fossil resources. Slovakia is also a [top performer](#)¹¹⁶, where the production-consumption balance is concerned; it has improved over the past three years as a result of a decline in overall energy demand and an increase in renewable generation.

¹¹² Enerdata. “Slovakia Energy Information.” *Enerdata*, 2021. <https://www.enerdata.net/estore/energy-market/slovakia/>.

¹¹³ Advanced Energy Technologies. “Energy industry in Slovakia.”

¹¹⁴ Enerdata. “Slovakia Energy Information.”

¹¹⁵ Advanced Energy Technologies. “Energy industry in Slovakia.”

¹¹⁶ Ibid.

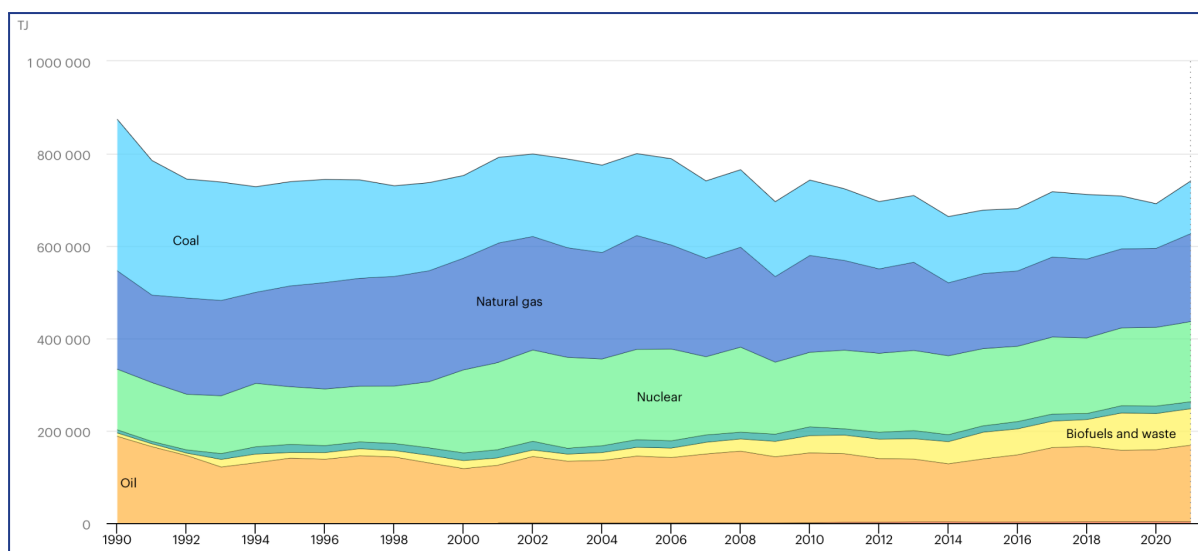


Figure 17: Total energy supply (TES) by source of Slovakia (1990-2021), 19 August 2023, [Source:](#) IEA.

Both state and private, there are various key players and decision makers in the energy industry. [State institutions](#)¹¹⁷ such as the Slovak Innovation and Energy Agency, as well as the Ministry of Economy have provided information on how to decrease home and business energy bills, with the Ministry of Environment providing its own “energy saving guidelines”. Some institutions and politicians have argued to cut off Russian natural gas, while others, such as former Minister of Economy [Richard Sulík](#)¹¹⁸, say such a move could cause problems by not having sufficient gas supplies. Slovakia continues to diversify its nuclear energy dependency on Russia, with state company [JESS](#)¹¹⁹ (Nuclear Energy Company of Slovakia) looking to construct a nuclear power plant in the coming decades. In terms of the [renewable energy](#)¹²⁰ industry, [Železiarne Podbrezová](#) plans to invest €3 million in a new solar power plant, and [Duslo Šaľa](#) is set to invest €60 million to employ wind energy on a huge scale in an industrial facility for the first time. A project on wind development in the country's Western region was also submitted by SPP.

Prior to the [Russo-Ukrainian conflict](#)¹²¹, Slovakia was very dependent on energy imports from Russia as its main supplier, with 100% of crude oil and nuclear fuel, and 90% for natural gas. In 2018, nuclear fuel was supplied by Russian business TVEL under a contract signed by Slovenské elektrárne, which runs nuclear power facilities.

¹¹⁷ Oravcová, V. “Country Report Slovakia - Energy Without Russia.”

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Ibid.

¹²¹ Ibid.

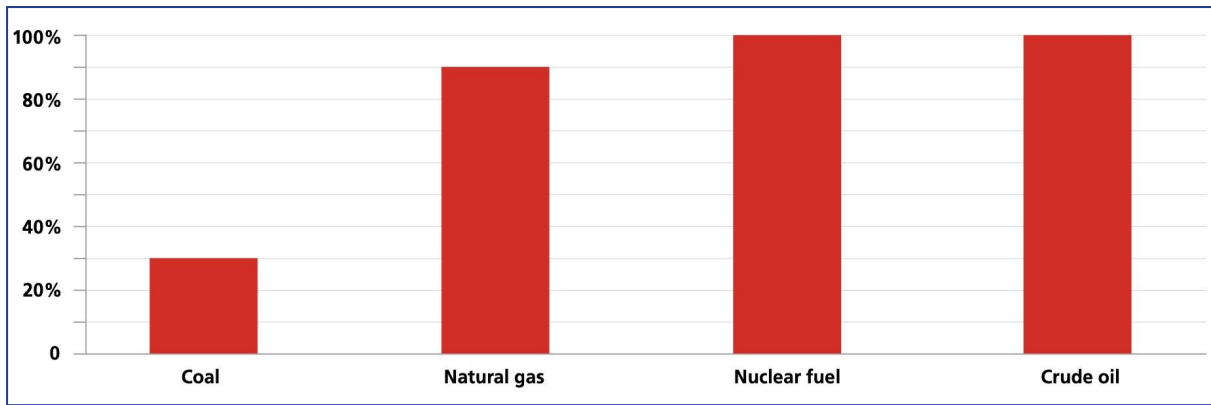


Figure 18: Imports from Russia to Slovakia in energy supply before the war (2021), 3 September 2023, [Source:](#) Friedrich Ebert Foundation.

War in Ukraine - impact on the Slovak energy sector

Russia's invasion of Ukraine in the spring of 2022 contributed significantly to the returned focus on energy security in Slovakia, and a number of otherwise hidden gaps became visible rapidly. Like in much of Europe, the immediate aftermath of the invasion saw energy prices rise by [approximately 60%](#)¹²² within a month, and further [almost 200%](#)¹²³ by September. At the same time, policy regarding energy security could only hope to catch up, and even such hope remains miniscule - along with the Czech Republic, Slovakia has [not yet announced](#)¹²⁴ strategies or targets to reduce reliance on Russian energy sources. This is despite the fact that energy security forms a central pillar of the [current national energy policy](#)¹²⁵. Nevertheless, this latest document by the Slovak Ministry of Economy was released almost a decade ago in 2014, at a time when geopolitical and regional security realities differed substantially from those at present. Despite political unrest a year prior, and territorial secessionist movements in Ukraine's Donbas region following, Slovakia's energy security had not been threatened. With a full-scale invasion, however, attempts at national energy decoupling from a significant source have accelerated, not least because of Slovakia's [tougher stance](#)¹²⁶ towards Russia, in line with that of the EU.

Following the invasion, Slovak foreign policy towards Russia under the existing coalition government faced challenges from all sides. On the one hand, the EU sided firmly

¹²² Statista Research Department. "Average monthly electricity wholesale price in Slovakia from January 2019 to August 2023." *Statista*, Sep. 6, 2023.

<https://www.statista.com/statistics/1314560/slovakia-monthly-wholesale-electricity-price/>.

¹²³ Ibid.

¹²⁴ Beyer, S. and Molnar, G., "Accelerating energy diversification in Central and Eastern Europe."

¹²⁵ Ministry of Economy of the Slovak Republic. "Energy Policy of the Slovak Republic." Oct, 2014.

<https://www.mhsr.sk/uploads/files/47NgRIPO.pdf?csrt=15536726343069418112>.

¹²⁶ Dębiec, K. "Slovakia: strategic dilemmas after the Russian invasion of Ukraine." *Centre for Eastern Studies*, May 10, 2022.

<https://www.osw.waw.pl/en/publikacje/osw-commentary/2022-05-10/slovakia-strategic-dilemmas-after-russian-invasion-ukraine>.

with Ukraine from the outset, setting a clear direction for future orientation towards the conflict and both countries involved. On the other hand, Russia had been an important strategic partner for Slovakia, and a complete break proved impossible right from the start. Accordingly, Slovakia asked for [an exemption](#)¹²⁷ from the sixth package of EU sanctions against Russia, which allows Russia to continue supplying it with crude oil until the end of 2023, and subsequently asked for a three-year transition period. This has allowed for the country to keep many of its existing energy supply routes intact, and avoided some of the more profound, and possibly devastating, consequences on energy security. At the same time, it has met with certain levels of disapproval from pro-Ukrainian sources; however, Slovakia has been striving to compensate through a constant [stream of arms supply](#)¹²⁸ to Ukraine. At the same time, economic and geopolitical considerations alone are not enough. A significant security risk for Slovakia stemming from the economic and energy fallout of the war has been domestic in nature.

Domestic political circumstances and dissatisfaction with the energy-related fallout of the war have contributed significantly to polarisation and a new level of political destabilisation in Slovakia. Despite certain measures put in place to cushion the population from the impact of rising energy prices, including [subsidy packages](#)¹²⁹ for household heating throughout 2023, public awareness of energy security-related policy and implications remains low. This reality is strengthened by a divided domestic political scene on the war itself, with [more than half of the population](#)¹³⁰ supporting a Russian victory in one form or another, although a more conservative estimate for total support of Russia has been put at [34%](#)¹³¹.

Such state of the public opinion had been exacerbated by the COVID-19 pandemic, during which disapproval over the government's handling of the public health and safety response made likely existent divisions more visible and pronounced. A subsequent [vote of no confidence](#)¹³² in the government in December 2022, and the upcoming elections in September 2023 paint a clearer picture of the extent of the resulting destabilisation. Currently, the main opposition parties, notably left-wing [SMER-SD and Hlas](#)¹³³, if victorious, are

¹²⁷ Oravcová, V. "Country Report Slovakia - Energy Without Russia."

¹²⁸ Janicek, K. "Slovakia joins Poland in agreeing to give fighter jets to Ukraine." *PBS News*, Mar. 17, 2023. <https://www.pbs.org/newshour/world/slovakia-joins-poland-in-agreeing-to-give-fighter-jets-to-ukraine>.

¹²⁹ Ministerstvo Hospodárstva Slovenskej Republiky. "Kompenzácia cien plynu za domácnosti." <https://www.mhsr.sk/energetika/vyplatene-energiodotacie-a-kompenzacie/vyplatene-ziadosti-o-kompenzacie-cien-plynu-za-domacnosti?csrt=18234799347674143090>.

¹³⁰ Instytut Europy Środkowej. "Slovakia: an unstable public support for Ukraine and the West." *Instytut Europy Środkowej*, Oct. 28, 2022. <https://ies.lublin.pl/en/comments/slovakia-an-unstable-public-support-for-ukraine-and-the-west/>.

¹³¹ Dębiec, K. "Slovakia: strategic dilemmas after the Russian invasion of Ukraine."

¹³² Janicek, K. "Slovak coalition government collapses after losing no-confidence vote in parliament." *PBS News*, Dec. 15, 2022. <https://www.pbs.org/newshour/world/slovak-coalition-government-collapses-after-losing-no-confidence-vote-in-parliament>.

¹³³ Schminke, T.G. "Important Ukraine-ally Slovakia might switch government in September." *Euractiv*, Apr. 17, 2023. <https://www.euractiv.com/section/politics/news/important-ukraine-ally-slovakia-might-switch-government-in-september/>.

expected to turn the tide on Russia, and bring Slovakia's foreign policy closer to that of Hungary, the government of which has been much more vocal in its opposition to EU sanctions and policy towards Russia, Ukraine, and the conflict in general. This would mean a significant shift in Slovakia's foreign policy, likely affecting its future energy policy and security, depending on the regional and international responses.

Response - diversification and effectiveness

As previously mentioned, there is little to observe by way of future strategy on energy security at present, despite the heightened place energy security now holds in European and Slovak political discourse. Nevertheless, Slovakia's modified recovery and resilience plan, covering 64 reforms and 60 investments, has recently (June) been [endorsed by the European Commission](#)¹³⁴. The plan, aside from involving an expanded scope of renewable sources eligible for financial support (including [biomethane](#)¹³⁵, also known as "renewable natural gas"), is also designed to adjust to the new economic and geopolitical reality facing the region, notably as a result of the war in Ukraine. Despite a measured resistance to EU sanctions against Russia (exemplified by the sought exemptions), the plan furthermore includes a [REPowerEU chapter](#)¹³⁶, intended to address the objectives "to make Europe independent from Russian fossil fuels... before 2030". In this way, Slovakia is thus making its present and future geopolitical security position quite clear, as well as demonstrating continuous commitment to its green energy transition (46% of the plan, as opposed to the original 42%, is dedicated to this purpose).

As to its effectiveness, only time can tell, although an updated plan, along with an evaluation of its earlier effectiveness, are expected by the Commission every ten years (the next one to be submitted by [January 2033](#)¹³⁷). With the added pressure of current domestic uncertainty as to the possible orientation of the future government, an insistence on an energy transition period, and relatively insufficient public awareness of the importance of diversification, Slovakia's energy security hangs in the balance of regional and international circumstances. At the same time, current regional approaches to the issue, including closer cooperation with Poland (see above, page 19), provide a more hopeful outlook on future resilience. A concerted effort and outlook in the form of coherent, implementable national policies, subject to regular and rigorous evaluation are key to keeping energy security on the agenda of future governments. Additionally, an effective public awareness campaign,

¹³⁴ European Commission. "NextGenerationEU: European Commission endorses Slovakia's €6.4 billion modified recovery and resilient plan, including a REPowerEU chapter." *European Commission*, Jun. 27, 2023. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3443.

¹³⁵ IEA. "An introduction to biogas and biomethane." *IEA*, <https://www.iea.org/reports/outlook-for-biogas-and-biomethane-prospects-for-organic-growth/an-introduction-to-biogas-and-biomethane>.

¹³⁶ European Commission. "NextGenerationEU: European Commission endorses Slovakia's €6.4 billion modified recovery and resilient plan, including a REPowerEU chapter."

¹³⁷ IEA. "Slovak National Energy and Climate Plan." *IEA*, Feb. 28, 2022. <https://www.iea.org/policies/7963-slovak-national-energy-and-climate-plan>.

detailing the importance of energy security without causing undue concerns or exacerbating existing polarising tendencies is key to ensuring domestic political success on the issue.

Section 2: Cooperation and Challenges

2.1 Visegrad 4 and the European Union

Eva Kristinova and Pau Álvarez-Aragonès

Joint action on energy

While the non-institutionalised nature¹³⁸ of the Visegrad 4 limits the potential for certain extent of development, its structure nevertheless provides ample opportunity for cooperative action, including in the area of energy security. This is especially the case if all four countries recognize the potential benefits stemming from such cooperation at all levels, and leverage each to their mutual advantage:

1. Government - at this level, it is imperative that motivation and political will underpin joint action at the highest levels, while safeguarding the sovereignty of individual states. In practice, existing annual meetings of the heads of state need to be utilised effectively, and move as much as possible beyond formal proceedings¹³⁹. A well-informed approach is also necessary, provided with the support of other levels.
2. Civil society - effective cooperation between NGOs and cultural institutions is also desirable, in the area of energy security¹⁴⁰ among many others. Crucial is the impact of these bodies on direct on-the-ground action, connecting higher level initiatives and policy with individuals in charge of implementation, such as infrastructure and energy supply companies, as well as the industrial base at large. Thus, a clear line between policy and practice may be established, with rigorous and active assessment and feedback mechanisms.
3. Research - informed policy and action may only take place on a backbone of critical and well-informed analysis and understanding of the social and political issues facing the V4 at present. For this reason, the existing interconnectedness¹⁴¹ of V4 research organisations and think tanks plays an important role in ensuring that cooperative potential is updated continuously, and materialised policy initiatives yield successes as well as lessons for the future. Participation is of significance given the pivotal moment of energy transition that the V4 and all of Europe find themselves in.

¹³⁸ Visegrad Group. “Aims and Structure.” *International Visegrad Fund*, 2021.

<https://www.visegradgroup.eu/about/aims-and-structure>.

¹³⁹ National Council of the Slovak Republic. “Conclusions of the Heads of Delegations of the V4 Parliamentary Economic Affairs Committees.” *Slovak Presidency 2022/2023 of the Visegrad Group*, Oct. 24, 2022.

<https://drive.google.com/file/d/18OLInFzobycI57o-ZaPpx4KGbHdYelAI/view>.

¹⁴⁰ Ministry of Foreign Affairs of the Czech Republic. “Czech Presidency of the Visegrad Group 2023-2024.” *Ministry of Foreign Affairs of the Czech Republic*, Jul. 3, 2023.

https://www.mzv.cz/jnp/en/foreign_relations/visegrad_group/czech_presidency_of_the_visegrad_group.html.

¹⁴¹ Nosko, A., Orbán, A., Paczyński, W., Černoč, F. and Jaroš, J. “Energy Security - Policy Paper.” *Slovak Atlantic Commission*, <https://www.visegradgroup.eu/download.php?docID=139html>.

A number of these points have long been taken seriously, including by the [current Czech presidency](#)¹⁴² of the V4. Nevertheless, challenges remain as the EU, and the V4 by extension, have become increasingly divided over geopolitical issues connected with the present conflict. [A level of disunity](#)¹⁴³ is being felt in each of the states' domestic circles, particularly with the comparatively weak Hungarian stance on the conflict, threatening to spill over into a lack of common position on energy governance. In order to further cooperation and leverage the full potential of the V4 platform, the four states will have to engage in constructive and continuous dialogue, solidifying the shared positions that remain, and which are critical to energy security.

Beyond internal cooperation:

The V4 countries overall have faced the consequences of the war in Ukraine due to their prevalent dependence on Russian gas imports, even with different levels of [dependence](#)¹⁴⁴ in 2020. Equally, some smaller European countries that neighbour the V4, such as North Macedonia, Bosnia and Herzegovina and Moldova, have exclusively relied on Russian gas. Nevertheless, the V4 has the possibility to [cooperate](#)¹⁴⁵ with other neighbouring Eastern European countries that are less dependent, such as Romania, Croatia, Slovenia and Bulgaria.

The latter countries have both diversified their gas sources with other partners or rebalanced their energy mix, while also fostering their domestic production. They have the possibility to cooperate with the V4 in developing regional gas infrastructure, such as interconnectors, LNG terminals and storage facilities, as well as promoting agreements or MoUs on energy efficiency and renewable energy projects. Furthermore, this would foster the integration of Ukraine and other Eastern Partnership countries into the European energy market, which is not only desirable for regional security, but also benefits the EU long-term.

Action within the EU

Nevertheless, cooperation with neighbouring countries within the V4 framework alone is not enough if all four countries want to step up in energy governance and emancipate from Russia's weaponization of gas. For the purposes of successful and impactful V4 cooperation, it needs to continue to wield the joint power of its position within the EU, the main driver of cohesive policy towards the conflict, and towards wider energy security. With its history as the primary vehicle for the EU ascension of the four states, such a role appears most appropriate, and has been played to the countries' great advantage in previous policy areas. In fact, the V4 remains the most comprehensive and effective cooperative initiative in

¹⁴² Ministry of Foreign Affairs of the Czech Republic. "Czech Presidency of the Visegrad Group 2023-2024."

¹⁴³ Reporting Democracy. "Visegrad Group: No Rekindling the Romance." *BalkanInsight*, <https://balkaninsight.com/2023/03/01/visegrad-group-no-rekindling-the-romance/>.

¹⁴⁴ European Union Agency for the Cooperation of Energy Regulators. "Estimated number and diversity of supply sources 2021." *ACER*, <https://aegis.acer.europa.eu/chest/dataitems/214/view>.

¹⁴⁵ Anderson, R.J. "Europe's Dependence on Russian Natural Gas: Perspectives and Recommendations for a Long-term Strategy." *George C. Marshall European Center for Security Studies*, Sep., 2008.

<https://www.marshallcenter.org/en/publications/occasional-papers/europes-dependence-russian-natural-gas-perspectives-and-recommendations-long-term-strategy-0>.

the region, other than the EU, with the goals of promoting [shared interests and greater integration](#)¹⁴⁶. Since the four states' ascension and admission into Schengen, a chief among these has been cooperation on [issues of security](#)¹⁴⁷. The V4 can achieve further gains in this area by applying the model of cooperation at all levels to discussions at the table of EU policy-making.

In concrete terms, more credible commitments in Brussels should be on the table, specifically in compliance with the EU's Fit for 55. V4 countries have often [resisted](#)¹⁴⁸ complying with EU's proposals for deeper integration and coordination of energy markets, such as the Energy Union or the joint gas purchasing mechanism. All countries have expressed concerns over national sovereignty, competitiveness and affordability. Nevertheless, this hinders and jeopardises their capacity to be reliable partners in European energy security. In the cases of Poland and Hungary, they have also been reluctant to phase out coal, which still accounts for a large share of their electricity generation, arguing that it is essential for their energy security and social stability.

Ultimately, such challenges need to be addressed at the regional (V4) level first, before moving onto their resolution in broader terms. Contending with an open conflict on the continent, and the energy security fallout even closer to home will require political will, mutual understanding, and active engagement on all sides. Moreover, it will be instrumental in bringing about consensus on key areas of policy needed to ensure security in Europe, short-term and long-term alike.

¹⁴⁶ Bauerová, H. "The V4 and European Integration." *Politics in Central Europe*, 14(2), 2018. <https://intapi.sciendo.com/pdf/10.2478/pce-2018-0012>.

¹⁴⁷ European Council. "The Visegrad Group (V4)." *European Council*, Jul. 5, 2016.

<https://www.consilium.europa.eu/en/documents-publications/library/library-blog/posts/the-visegrad-group-v4/>.

¹⁴⁸ Supernak, P. "The Position of the V4 in Terms of Security Challenges Threatening the European Union." *The Warsaw Institute Review*, Oct. 24, 2019.

<https://warsawinstitute.review/issue-2019/issue-3-2019/the-position-of-the-v4-in-terms-of-security-challenges-threatening-the-european-union/>.

2.2 Individual and regional alternatives

Nathan Alan-Lee

The Three Seas Initiative

The Three Seas Initiative, or 3SI, was originally announced in 2015, with a joint [announcement](#)¹⁴⁹ between the Polish President Andrzej Duda and former Croatian president Kolinda Grabar-Kitarović. The [mission](#)¹⁵⁰ of this initiative has been to foster economic growth, greater connectivity, and energy security through infrastructure and cooperation on the north-south axis between the Baltic Sea, and the Black and Adriatic Seas. The bloc includes the V4 countries as well as an additional 8 EU member states.

The initiative functions as a means of both attracting regional investment as well as a platform to coordinate and plan cross-border projects. The initiative's investment fund has been able to attract the participation of regional development banks, as well as institutional donors such as the United States, which committed [\\$300 million in 2022](#)¹⁵¹. In terms of cooperation, the initiative's aims and objectives have been integrated in the wider EU plans to [address](#)¹⁵² Europe's ongoing energy crisis.

Over the past eight years, the 3SI has become an increasingly legitimate and important actor in the region, and since Russia's invasion of Ukraine, its objectives have become indispensable. The initiative is involved in a wide array of projects, which have specifically addressed questions of energy security in CEE. Notable examples include: investment in the development and [expansion](#)¹⁵³ of the Świnoujście LNG terminal in Poland, the [construction](#)¹⁵⁴ of gas network interconnectors between Poland, Lithuania, Slovakia, Ukraine and Hungary, and [funding](#)¹⁵⁵ projects such as the Baltic Pipeline which began operations in 2022. In addition to energy infrastructure, the initiative also works to develop transportation and information infrastructure within the group.

¹⁴⁹ Mihai, C. "Three Seas Initiative to enlarge with Greece says Romanian president." *Euractiv*, Aug. 30, 2023. <https://www.euractiv.com/section/politics/news/three-seas-initiative-to-enlarge-with-greece-says-romanian-president/>.

¹⁵⁰ Three Seas. "Objectives." *Three Seas Initiative*, <https://3seas.eu/about/objectives>.

¹⁵¹ U.S. International Development Finance Corporation. "DFC and the Three Seas Initiative Investment Fund Agree to Term Sheet for up to \$300 Million in Financing." *DFC*, Jun. 20, 2022. <https://www.dfc.gov/media/press-releases/dfc-and-three-seas-initiative-investment-fund-agree-term-sheet-300-million>.

¹⁵² European Parliament. "Verbatim report of proceedings." *European Parliament*, Jul. 6, 2022. https://www.europarl.europa.eu/doceo/document/CRE-9-2022-07-06-ITM-016_EN.html.

¹⁵³ Three Seas. "Diversification of gas supply sources and integration of gas infrastructure in the Three Seas Region." *Three Seas Initiative*, 2022. <https://projects.3seas.eu/projects/diversification-of-gas-supply-sources-and-integration-of-gas-infrastructure-in-the-three-seas-region-diversification-of-gas-supply-sources-and-integration-of-gas-infrastructure-in-the-three-seas-region-with-the-implementation-of-the-baltic-pipe-project-and-cross-border-interconnections-republic-of-poland-slovak-republic-and-republic-of-poland-ukraine>.

¹⁵⁴ Three Seas. "Priority Projects." *Three Seas Initiative*, <https://3seas.eu/about/progressreport>.

¹⁵⁵ Three Seas. "Diversification of gas supply sources and integration of gas infrastructure in the Three Seas Region."

The 3SI is an increasingly important player within the region's geopolitical standing. In the first case, enhanced regional infrastructural integration works to both align the bloc's priorities, and lessen individual member's dependency on outside countries, a prime example being Russia. In the second case, further developed infrastructure fosters economic growth and potential, as well as enhancing security, especially of energy, via a diversified network of supply channels. Overall, the pursuit of regional integration may very well add to the bloc's collective negotiating leverage vis a vis other third party actors in the EU and internationally. This ability to negotiate from a unified position, along with a further economic development, can work to offset the traditional imbalance between Western European countries and the newer EU members in the East. Another benefit of regional integration and a collective negotiating position is the ability to interact with international actors, such as the US, and China from a position of relative strength rather than as individual countries. This position has already resulted in positive outcomes whether that is attracting investment from the US, or curtailing the growing influence of China, seen the breakdown and effective [replacement](#)¹⁵⁶ of the "16+1 format."

¹⁵⁶ Morris, D. "The Three Seas Initiative: A European answer to China's Belt and Road?" *The Interpreter*, Oct. 26, 2020. <https://www.lowyinstitute.org/the-interpreter/three-seas-initiative-european-answer-china-s-belt-road>.



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