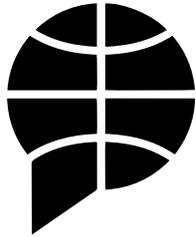




# ENERGY SECURITY IN V4



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# ENERGY SECURITY IN V4

Lead author:

**Agata Łoskot-Strachota**

OSW

Co-authors:

**Borbála Takácsné Tóth**

(REKK)

**Alexander Duleba**

(SFPA)

**Oldřich Sklenář**

(AMO)

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# ENERGY SECURITY IN V4

Since 2022, the topic of energy security has returned to the debate in the EU and in Central Europe, including in the Visegrad Four (V4) countries. This is mainly due to the growing challenges and risks arising from Russia's war against Ukraine, Russia's continued use of energy as a weapon in its relations with the West, the abrupt decrease in supplies of Russian energy resources to the EU, and the associated reshaping of supply chains and linkages. The ongoing war has also increased physical risks to infrastructure security (not only in Ukraine, but also, for example, in the Baltic Sea). In addition, energy markets are affected by other global shifts and tensions, including in the Middle East (consequences of Israel— Hamas war<sup>1</sup> and of Israel's attacks on Iran<sup>2</sup> among others), and by changes in US energy, trade and foreign policy.

At the same time, the energy transition underway for many years in the EU as a whole and the CEE region—accelerated after the outbreak of war—also brings fundamental changes to the shape and functioning of energy markets. Electrification, clean energy sources and decentralisation create opportunities to reduce dependence on traditional hydrocarbon suppliers, the scale of imports and systemic vulnerabilities. At the same time, they also create new risks and dependencies. Moreover, the transitional period, during which de facto two different energy systems coexist, is itself full of challenges linked to the process of change—sources, supply systems, responsibilities and governance.

Finally, the economy and the world are changing. On the map of traditional energy commodities and the connections built around them, the role of some regions (such as Europe) is declining (alongside successes in efficiency and transformation and decline of demand for coal, oil and gas in Europe), while the role of others is growing (including Asia)<sup>3</sup>. The importance of new energy carriers and technologies is also increasing—above all critical raw materials and their value chains, with China playing a key role. The nature of international trade in resources and energy components is changing too, with more frequent sanctions and restrictions disrupting its rather smooth operation before the start of the full-scale Russian invasion on Ukraine. Some traditional sectors of the economy are struggling (for example, Central Europe's automotive industry), while new sectors are developing and gaining importance (clean technologies and the digital sector, including the AI industry). Together with hard security challenges and energy prices higher than in China and the US, this raises strategic questions about Europe's (including Central Europe's) future economic development path. It also raises questions about the role of energy in the broad sense, and about how to ensure reliable, yet affordable, access to it.

The need to strengthen energy security is therefore today linked to questions about priorities and key instruments that reflect the new conditions and challenges. There are calls to act more efficiently and more quickly, and

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1 see p. ex. Loskot-Strachota A., Tagliapietra S, Israel-Hamas War: Implications for Gas Markets, Bruegel, 19 October 2023, <https://www.bruegel.org/first-glance/israel-hamas-war-implications-gas-markets>.

2 see p. ex. Loskot-Strachota A, Israeli Attacks on Iran—the Impact on Oil and Gas Markets, OSW Centre for Eastern Studies, 16 June 2025, <https://www.osw.waw.pl/en/publikacje/analyses/2025-06-16/israeli-attacks-iran-impact-oil-and-gas-markets>.

3 see p. ex. IEA Oil 2025, Gas 2025, Coal 2025

to be prepared for serious supply-chain disruptions<sup>4</sup>. A range of initiatives and actions are being undertaken in the EU to increase the energy security of the Old Continent, despite mounting challenges. At the same time, many of these actions are either unfinished or do not deliver concrete results quickly. Some may even prove Sisyphean task, given persistent geopolitical uncertainty and new challenges. Successive sanctions packages and other restrictive measures have sharply reduced imports of Russian resources—mainly oil and coal, but also to some extent gas from Russia<sup>5</sup>. Actions under the REPowerEU strategy are intended, after years of discussion, to finalise this process and recently agreed regulation is to bring a lasting end to imports of Russian gas by 2028. At the same time, as part of energy crisis management (the 2022/23 gas crisis), a number of instruments were introduced. They are still being used and have the potential to facilitate action in any future emergency situations. The obligation to fill storage to a specified level before the heating season remains in force, as does the demand aggregation mechanism AggregateEU (which, beyond natural gas, is to be used also in low- and zero-emission gas markets, and potentially in Critical raw materials (CRM) as well evolving into broader EU Energy & Raw Materials Platform). Work is under way to develop and increase effectiveness of common instruments (including in cooperation with NATO) to enhance the security of critical energy infrastructure and to expand energy networks. Here important are already in force Critical Entities Resilience (CER) Directive, Network and Information Systems (NIS2) Directive, Network Codes on Cybersecurity for Electricity Sector or functioning since 2023 EU-NATO Task Force and just proposed EU's Grids Package. Also measures are being taken to strengthen the security of supply of critical raw materials—Net Zero Industrial Act, Critical Raw Materials Act and the recently proposed RESourceEU Action plan. Finally, the EU's energy security policy framework is being reviewed. In the first quarter of 2026, the European Commission is due to propose amendments to the regulations on security of supply for gas and electricity.

Against this background, it is important to examine how Member States, including the V4 countries, view energy security. The text below shows how representatives of these countries define the objectives and the most important challenges for energy security, what those challenges stem from, and whether—and in which areas—they see a need for regional cooperation to strengthen security. In writing this text, I used available publications, but an invaluable source was a research survey completed in October 2025 by energy experts and sector practitioners from Czechia, Poland, Slovakia and Hungary.

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4 see p. ex. Global Critical Minerals Outlook 2025, IEA International Energy Agency, June 2025, <https://iea.blob.core.windows.net/assets/ef5e9b70-3374-4caa-ba9d-19c72253bfc4/GlobalCriticalMineralsOutlook2025.pdf>, Securing Clean Energy Technology Supply Chains, IEA/OECD, July 2022, [https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/08/securing-clean-energy-technology-supply-chains\\_26f7d1c1/be931bdc-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/08/securing-clean-energy-technology-supply-chains_26f7d1c1/be931bdc-en.pdf)

5 Russian gas imports decreased mostly due to Russian restrictions introduced in 2022. Nevertheless there were some actions undertaken also on EU side: Russian LNG reloading has already been forbidden in EU, LNG imports are included into 19<sup>th</sup> sanctions package and will be stopped as of 2027, and the text of regulation on phasing out Russian gas has just been agreed. Additionally there are restrictions introduced by few member states individually such as Baltic States or Finland

# WHY THE SURVEY?

The idea of collecting views from all four Visegrád Group (V4) countries pursued several objectives. First, I hoped it would enable the gathering of up-to-date and diverse perspectives on the current—rapidly evolving—state of, and outlook for, energy security in these countries and across the wider region. Second, it appeared to be an effective way to capture both crucial differences in how the issue is perceived and the associated divergences of interest—related, *inter alia* (though not exclusively), to the future of energy cooperation with Russia—as well as areas of convergence that leave room for at least targeted further cooperation on energy security within the V4.

Naturally, such an approach entails a number of limitations. The study is not replicable, and the views it contains—although varied—are not representative of the populations of the individual V4 countries nor of their official politicians, narratives. Moreover, respondents' partial or biased perspectives may yield a distorted picture of prevailing national positions or of the region's dominant vision of energy security. To mitigate these risks, the survey in each country was distributed to representatives of the ministry responsible for energy matters, other public institutions, independent think tanks, and actors from the energy industry and/or system operators. Although qualitative research is generally less easily comparable, it enables more nuanced analysis and more detailed explanations of complex—rarely binary—approaches, processes, and interests, as well as the identification of salient narratives emerging in individual countries with regard to the issue of energy security.

The survey consisted of mostly open-ended questions grouped into three thematic blocks. The first addressed definitions of energy security, the current situation, and outlooks. It asked respondents which definition(s) of energy security they employ or see as relevant, which dimension of energy policy they consider most important, and how they assess the state of—and prospects for—energy security in their own countries, within the V4, and in the EU. The second block concerned key processes and factors affecting energy security. Questions focused on the impact on national energy security, as well as the positive and negative consequences of developments such as the energy transition and electrification, the war in Ukraine, instability in the Middle East, shifts in US policy, EU enlargement, and the current economic situation. The final block examined instruments and measures intended to enhance energy security. It covered the division of competences between the EU and the Member States, the most effective or promising policies, the future and potential for cooperation on energy security within the V4, and possible specific areas for such cooperation.

The survey was conducted between 22 September and 10 October 2025. With the support of representatives of think tanks involved in the V4ETTP project (AMO, REKK, and SFPA) and colleagues from OSW, I distributed it to more than 120 individuals. I received 32 responses, half of which were from Poland (see below).

**Figure 1. Share of respondents from each V4 country**



The responses were predominantly descriptive, varied in length and level of detail, and at times addressed general issues while at other times focused on a particular energy sector (e.g. the power sector). Not all respondents answered all questions. For the limited number of quantitative questions, and for those items where comparisons and aggregation into subgroups were feasible, I presented the percentage shares of particular response types in order to highlight emerging trends and to assess whether any country-specific regularities were apparent. Where no such regularities could be identified, I indicated the main response types without providing a detailed country-by-country breakdown. For the open-ended questions—which constituted the majority of the questionnaire—I also sought to summarise the principal arguments and viewpoints expressed. At the same time, deriving common denominators across response groups and synthesising several dozen, often extensive answers necessarily reflects my own analytical work and interpretation.

I would like to express here my sincere gratitude to everyone who decided to support the work on this text with their time and knowledge. I would like to thank: Piotr Arak, Stanisław Baranski, Tomas Jungwirth Brezovsky, Alexander Duleba, Jakub Groszkowski, Wojciech Jakobik, Lenka Kovacovska, Monika Morawiecka, Andrej Nosko, Veronika Oravcova, Tymon Pastucha, Mariusz Ruszel, Antonin Samal, Oldrich Sklenar, Marianna Sobkiewicz, Nolan Theisen, Borbala Toth, Leszek Wiwala, Maciej Zaniewicz and to everyone else who preferred to remain anonymous.

# 1. Energy Security: Definitions, current situation and outlook

The traditional definition of energy security says that it is about ensuring access to stable energy supplies at affordable prices<sup>6</sup>. It is often supplemented by a statement that this should be done in a sustainable manner (environmentally and/or climatically). This is also how the author understands the term in the present text, except where she explicitly refers to alternative definitions or interpretations, for instance those reflected in respondents' answers. Historically in Europe the term was developed primarily in relation to the oil market after the 70. oil supply shocks. Since then, with the evolution of energy markets, its scope has broadened and included also natural gas and electricity security. Recently, given the ongoing transition, geopolitical challenges and growing global economic competition, the debate has intensified—not only about how to strengthen energy security in unsettled and volatile times, but also about how to broaden the approach to and perhaps even redefine energy security.

On the one hand this was triggered by changing global energy trends but also by European own experience of the last few years and European Commission initiative seeking to increase energy security and speed up the move away from Russian commodities by accelerating the energy transition<sup>7</sup>. Somehow building on that there have been calls to move away from a definition focused on energy supplies side of a story and to approach the topic more from the perspective of the whole, changing system<sup>8</sup>, and even—given the advancing decarbonisation process and the strong linkage between climate and energy policies in the EU—to rename the concept as sustainable energy security<sup>9</sup>.

At the same time, we can see opposite tendencies. After Donald Trump took office for a second term as President of the United States in January 2025, Washington began to focus on a strategy of increasing mostly domestic hydrocarbon production and exports—energy addition rather than energy transition<sup>10</sup>. Also its priority has been to reduce US import dependancy, also when it comes to energy technologies. As a result, the US focus is on traditional energy resources, nuclear energy, geothermal energy and hydropower. The rationale for climate policy has been questioned, and funding has been

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6 see p. ex. for example, IEA: <https://www.iea.org/topics/energy-security> or Yergin D., Ensuring Energy Security, Foreign Affairs. Vol 85 No.2 March-April 2006, <https://users.metu.edu.tr/utuba/Yergin.pdf> or Dulian M., Security of energy supply, 26 September 2024, European Parliament Research Service, [https://www.europarl.europa.eu/thinktank/en/document/EPRS\\_BRI\(2024\)762410](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2024)762410)

7 See the assumptions of the REPowerEU package.

8 See: Chairs' summary, Summit on the future of energy security, IEA and UK Government, April 2025, London, [https://iea.blob.core.windows.net/assets/e9c913b8-4efe-4e25-8c50-460f800cc2a6/ChairsSummary\\_FutureofEnergySecurity.pdf](https://iea.blob.core.windows.net/assets/e9c913b8-4efe-4e25-8c50-460f800cc2a6/ChairsSummary_FutureofEnergySecurity.pdf) <https://www.iss.europa.eu/publications/briefs/re-imagining-european-energy-security-towards-whole-system-approach>

9 See definition of Sustainable Energy Security at <https://climate.sustainability-directory.com/term/sustainable-energy-security/> or a proposal Jakobik M., Zaniewicz M., Kardas S., Keliaskaite U., Zachmann G., Towards Sustainable Energy Security. Europe Needs a New Strategy Now, Forum Energii, March 2025 <https://www.forum-enerгии.eu/en/towards-sustainable-energy-security-europe-needs-a-new-strategy-now>. <https://www.forum-enerгии.eu/en/towards-sustainable-energy-security-europe-needs-a-new-strategy-now>

10 See The Energy Transition Needs a Reality Check. S & P Global, 25 February 2025, <https://press.spglobal.com/2025-02-25-The-Energy-Transition-Needs-a-Reality-Check#:~:text=%22What%20has%20been%20unfolding%20is, to%20about%2080%20percent%20today.%22>

paused for many renewable energy projects (wind and solar). The broader drive towards net-zero economies is increasingly portrayed as a risk rather than an opportunity<sup>11</sup>.

Similar voices can be heard more frequently in EU Member States such as all V4 countries, Bulgaria, France or Italy, calling for policies prioritizing to bigger extend economic competitiveness and security than decarbonisation. While the European Commission and some member states continue to seek a strong linkage between the two processes, there are also more frequent calls to slow down and/or reform parts of climate-policy instruments (ETS1 and ETS2). Differences are also growing over level of climate policy ambition for the coming years (discussions on the 2040 target and how it should be implemented).

The ongoing EU debates and efforts to respond to energy security challenges, as well as the differences between the EU and the US in their approach to energy policy, including energy security, are particularly important for Central and Eastern Europe, including the V4 countries. As EU members, the countries of the region are obliged to comply with EU energy and climate law, while at the same time they cooperate closely with, and rely on, the US in the area of security and—to a varying degree—also in energy sector. It seems to be in their shared interest, to find space for common interests and pragmatic energy cooperation between Europe and the US. At the same time, although the countries of the region have traditionally been similar—given their experience of systemic transformation, geographical location and historical dependencies—they are increasingly diverging. These differences are visible in the pace and pathways of the energy transition, in energy-geopolitical dilemmas, and also stem from economic structures and market-trade linkages. As a result, the question arises whether there is a common regional denominator in energy security: at least partly shared, short-term priorities that could be pursued within the current EU-level debates and actions.

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11 see p.ex. Returning to Common Sense Energy and Climate Policies with Secretary of Energy Chris Wright". FPC Briefing, 24 September 2025, United States Department of State, New York <https://www.state.gov/briefings-foreign-press-centers/unga-2025/returning-to-common-sense-energy-and-climate-policies/>.

# 1.1 Key dimensions of energy policy in V4 countries

According to respondents to the survey, the unequivocally most important dimension of their countries' energy policy is, and/or should be, the affordability of energy. It was indicated on its own by 45% of respondents, and together with other dimensions (energy security and/or sustainability) by a further 32%. Affordability as a stand-alone priority dominated most clearly in responses from Czechia and Slovakia. It was also indicated—more often in combination with other objectives—in Hungarian and Polish responses. Energy security as the most important stand-alone objective of V4 energy policies was indicated in 19% of responses (most of them from Polish respondents).

**Table 1. Most important dimension in energy policy, survey results**

	Affordability	Other	Total no responses
CZ	4	1—affordability and sustainability	5
HU	3	1—affordability and security 1—energy security 1—all 3 dimensions	6
PL	4	3—affordability and security 4—energy security 4—all 3 dimensions	15
SK	3	1—energy security 1—sustainability	5
TOTAL	14	6—energy security 4—affordability and security 1—affordability and sustainability 5—all 3 dimensions 1—sustainability	31

# 1.2 Definition of energy security

More than half of participants in the research survey (59,4%) defined energy security in a traditional way, focusing on security of supply—either solely (15,6%) or with addition of notion of affordable prices (21,9%) or affordable prices and environmental/climate sustainability (21,9%).

**Table 2. Definitions of energy security, survey results**

	security of supply	SoS at affordable prices	SoS at affordable prices, in sustainable way	focus on dependence, diversification, geopolitical risks	resilience, security of critical infra and/or supply chains, cybersecurity added	TOTAL
CZ		2		2	1	5
HU		3	1	2		6
PL	3	2	5	2	4	16
SK	2		1	1	1	5
TOTAL	5	7	7	7	6	32

This focus on “security of supply” stems from the fact that, as several responses noted, both the V4 and the EU are highly dependent on imports. This affects both the definition of energy security (which may be understood as the level of dependence) and its core components. Several respondents pointed to the need to distinguish between short- and long-term perspectives, within which objectives and feasibility may be defined differently. The energy landscape and the current situation in individual countries can shape how energy security is specified. 21,9% of respondents included, alongside ‘traditional’ security, information security and cyber risks affecting supply routes, networks, critical infrastructure and supply chains. Some linked challenges not only to the geopolitical situation, but also to extreme weather events, and pointed to a close connection between energy security and resilience and preparedness. Only one response stated that moving away from imports of energy commodities from Russia does not serve security/diversification.

## 1.3 Current state and outlook for energy security in V4 countries

In most responses, the current state of energy security in the V4 countries and in the EU was to a significant extent linked to the consequences of Russia’s full-scale invasion of Ukraine. At the same time, clear differences were visible within the region. In the case of Czechia and Poland, a number of responses pointed to a satisfactory situation and to the fact that much has been done in terms of diversifying sources and routes of supply and reducing import dependence (on Russia). At the same time, several respondents from Poland pointed to the need for further action. They cited dependence on new supply routes and their choke points, as well as the need to develop alternative energy sources (renewables and nuclear). For Slovakia, and for several responses from Hungary, the assessment of the current situation was worse. In their view, the key challenge is the continuing dependence on Russian supplies and the need to diversify sources. At the same time, in both cases there were also voices assessing the security situation as good. One respondent pointed to the current EU regulatory situation as a risk factor. Few noted the current lack of a coherent energy security strategy framework on national level.

Across the region, the condition of networks and infrastructure—including critical infrastructure—remains a challenge. Respondents pointed to the need for modernisation, expansion and protection. 18,7% of responses also highlighted the key importance of costs of transition, affordability and competitiveness. Finally, 18,7% responses suggested that, in the short term, the transition and the move away from coal may negatively affect the level of energy security if there is no well-planned and well-managed transition period (generation adequacy, the timing of bringing new capacity online, moving too quickly/too heavily into gas, etc.). Such views were heard from Poland and Czechia, which still rely on coal fired generation<sup>12</sup>. There were also few voices with the opposite message—namely that slowing the pace of the transition may itself be a risk to security.

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<sup>12</sup> Hungary has one coal-fired power plant operational (Matra) whereas Slovakia has ended coal fired generation in 2023.

A number of statements pointed to widening differences between those V4 states that have invested in reducing dependence on Russia and those that maintain energy cooperation with Russia. As a result, it is difficult to give a single, collective assessment of energy security across the four countries. Divisions within the V4 over policy towards Russia and over how security of supply is ensured are in themselves a challenge for energy security and for the capacity to act jointly. They may also be used instrumentally by Russia. Protecting critical infrastructure at key choke points remains crucial, as does expanding interconnections (including gas and oil) within the North–South corridor.

## **a. Czechia**

Energy security situation in the country was usually described as relatively good, thanks to diversified oil and gas supplies and the ongoing diversification of nuclear fuel supply chains. Nuclear fuel until recently was still partly sourced from Russia, which was sometimes identified as a challenge. At the same time, some pointed to the challenges, including one respondent drawing attention to the continued dependence on imports of oil and gas from third countries.

Beyond the process of moving away from imports from Russia, energy security is also affected by the energy transition and the phase-out of coal, as well as by the prioritisation of nuclear projects (often at the expense of developing renewable energy or energy efficiency). Phasing out coal and the associated decommissioning of part of generation capacity creates challenges, including in district heating, and is linked with concerns related to the EU's ETS2 system.

A short-term advantage for Czechia is its extensive electricity infrastructure and surplus generation capacity. However, this will change with the transition. Respondents pointed to the need for major investment in grids—expansion, modernisation and digitalisation.

## **b. Hungary**

A key feature of Hungary's situation is the continuing—and possibly increased (compared with the pre-war period)—dependence on Russian gas and oil. Assessments differ. Some responses indicated that this is Hungary's main vulnerability, and that finding alternatives is one of the main challenges. Some pointed to a very low level of energy security (lower than the average in the EU and the V4), while others considered it fairly good, noting that the transmission network ensures supplies of oil, gas and electricity. According to one response, the focus of Hungarian energy security policy is the opposite of the EU's and consists in efforts to maintain imports from Russia. Hungary has taken little action to change this state of affairs, largely due to price and affordability considerations. For the Hungarian authorities, cutting off imports from Russia is seen as a greater risk than continued dependence.

Hungary is also in a critical period for its security due to forthcoming EU legislation intended to bring about a complete end to imports of Russian energy resources. The difficulty is compounded by the fact, as was mentioned by one respondent, that Hungary is a landlocked country.

## **c. Poland**

The level of energy security was assessed by over 50% of Polish survey participants as stable, relatively good or improved thanks to diversified supply

sources and routes—in particular, the diversification of gas (LNG) imports and the move away from dependence on Russia.

Some responses focused on the short-term dimension. Costs and energy prices, as well as the physical security of energy infrastructure, are increasingly important today. Risks are also linked to new dependencies—for example, the growing importance of supplies via the Baltic Sea and of choke points in global and domestic trade (the Danish Straits, import terminals, etc.). Respondents pointed to the need for physical protection, monitoring and smartness of the grid, on the one hand, and to grid expansion and the creation of redundancies, on the other. Some mentioned the absence of an energy security strategy given the need for ‘war readiness’, including the ability to restore key infrastructure in case of damage.

According to some responses, security remains incomplete: import dependencies persist (resources and technologies), the share of fossil fuels and centralised generation remains high, there are shortcomings in balancing services and an insufficient number of interconnections, and there is no nuclear generation capacity.

According to 25% of Polish responses, the key challenge is to reduce structural dependence on hydrocarbon imports while maintaining system stability. This is to be achieved by increasing RES capacity, building a nuclear power plant in the longer term, and increasing system flexibility. Renewables, together with gas as a back-up fuel, are to enable the phase-out of coal and strengthen security over the longer term. According to several responses, the priority is to maintain the pace of the transition while strengthening technological security and ensuring stable, affordable supplies.

## d. Slovakia

Most responses identified dependence on imports from Russia as the key vulnerability. Challenges include ensuring alternative sources of oil and gas, as well as covering the costs of the energy transition, which may negatively affect industrial competitiveness. According to one respondent, security of supply is good and the level of diversification has never been better. A problem and risk factor is according to few respondents the continuing dependence on Russian nuclear fuel supplies for VVER reactors<sup>13</sup>. In the context of further diversification, respondents stressed the need to avoid strong dependence on a single supplier, whoever it may be. At the same time, they noted the different nature of dependence on LNG supplies from the US, given the global character of the LNG market.

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13 despite diversification efforts undertaken

## **2. KEY PROCESSES AND FACTORS AFFECTING ENERGY SECURITY IN V4**

### **2.1 International situation and challenges**

#### **a. The war in Ukraine**

Russia's full-scale war against Ukraine and its wide-ranging consequences are clearly identified as one of the key causes of today's energy security challenges in the EU and the V4 countries. In the survey responses, the same share of respondents (34.4% each) considered that the war and the related hard-security challenges have mainly or exclusively negative effects on energy security, and that they have both negative and positive effects. There was also a small group of respondents (12.5%) who saw only positive effects—the war enabled becoming less dependent or totally independent on Russian energy. Finally, two respondents noted no real impact of the war on energy security in their countries.

Clear differences were visible between responses from Poland and Czechia on the one hand and those from Slovakia and Hungary on the other. For the first two, moving away—or being able to move away—from imports from Russia was an opportunity and a confirmation of, or a catalyst for, good strategic decisions and investments. For this reason, the responses that saw mainly positive effects of the war on energy security came from Polish and Czech respondents. For Slovakia and Hungary, reducing imports of oil and gas from Russia is one of the most important energy policy clashes with the EU REPower strategy. Another challenge is the reduced number of available supply routes and the increased risk to transit. The strongest focus on the security of critical infrastructure and on cybersecurity was visible in Poland (and was hardly mentioned by respondents from the other countries).

#### **Gains and opportunities**

The most frequently indicated positive consequence of the war was that it led to a process of phasing out of Russian oil and gas supplies in the EU, the V4 and individual states and increasing independence from Russia in that area. The importance of 'Europeanisation' of this process was also noted. New trade links were developed and much of the necessary infrastructure was built (LNG terminals, the Transalpine+ oil pipeline (TAL)). Emergency management instruments were implemented, making it easier to weather the energy crisis. A few respondents also pointed to the launch of fuel and energy supplies to Ukraine as a positive effect. An opportunity was seen in the increased interest in, and work on, strengthening the security of critical infrastructure.

Smaller group of respondents said that the war and the energy crisis highlighted the role of the energy transition and of increasing the share of renewables (RES) as instruments of energy security.

## Risks and challenges

A lot war-related risks were identified. Most respondents—mainly from Poland—spoke of increased threats to the security of critical energy infrastructure (including in the Baltic Sea), including hybrid threats and cyber risks. They also mentioned rising costs of protecting this infrastructure. There were also voices pointing to risks linked to disinformation.

The similarly frequently cited challenge was the fallout from the energy crisis-linked to a sharp rise in gas and electricity prices—and the ongoing instability and risk of further price increases.

45% respondents from Slovakia and Hungary pointed to the EU policy to fully move away from Russian resources (mainly gas) and necessity of finding alternative supplies as a risk/challenge (or that it is perceived by authorities as such). Others pointed to those countries' excessive dependence on supplies from Russia and to insufficient diversification and adaptation measures taken by the authorities in Bratislava and Budapest. There were also voices about the negative effects of stopping transit via Ukraine and, linked to changes in routes and sources of supply, the loss of transit revenues (Slovakia).

## b. Changes in the US and instability in the Middle East

A clearly smaller, or less clear-cut, role was attributed to other international-scale developments, including US policy shifts and instability in the Middle East. It is worth recalling that the survey was completed in October 2025.

### Changes in the US

The largest group (30%) saw mainly positive effects of changes in US policy on energy security in their countries, but these were practically only responses from Poland. 26% of respondents believed the consequences for energy security are mixed, and 18.5% saw exclusively or mainly negative effects. 11% concluded that there is no such impact.

The most commonly cited positive effect of the current Trump administration's energy policy was that it makes it easier to diversify sources of gas supply and nuclear technologies, reduce dependence on Russia in this dimension and increase security of supply. Interest in promoting US exports is expected to translate into greater reliability of supplies (e.g. LNG). According to some respondents, the chances of US investment in the sector may also increase—for example, through Westinghouse's involvement in regional nuclear energy. Several respondents indicated that Washington's current actions, including increasing oil and gas production, may contribute to lower fuel prices on global markets. Isolated voices suggested that the US's anti-climate rhetoric may support V4 interests and slow the transition, and that falling US demand for green technologies and know-how may attract this type of investment to Europe.

At the same time, opposing views appeared, seeing this rhetoric as an important challenge and a risk of slowing the transition and fuelling anti-climate movements in the EU as well. A number of respondents pointed to risks linked to the unpredictability of the Trump administration, including in energy policy and commodity exports, prices and potential sanctions, as well as its stance on the future of Russian oil and gas exports. In this context, the theme of disruptions of global order of free trade appeared, which may lead to price increases. Isolated voices pointed to the risk of pressure from

this administration on specific solutions in V4 countries (for example, linked to moving away from imports from Russia or purchasing commodities from the US). Finally, there were also isolated opinions about risks linked to an excessive dependence on LNG imports from the US, and the fact that US gas is more expensive than Russian gas.

## **The Middle East**

In the view of most respondents (56%), instability in the Middle East (Israel's policy in the region, situation in Iran) has no or little impact on energy security in their countries or in the V4. All those who perceived an impact considered it negative (44.4%). For most, however, this impact is indirect, mainly linked to a temporarily higher risk of rises in oil and gas prices and the risk—if the situation escalates—of an energy crisis. Respondents also pointed to the impact of the Middle East situation on the security of supply routes, especially where bottlenecks exist (such as the Strait of Hormuz). At the same time, they pointed out that alternatives exist (Poland), that any effects would be mainly or exclusively market-related, or that these issues do not have direct effects for individual countries (e.g. responses from Slovakia or Hungary). Finally, in the case of Czechia and Slovakia, there were views that in this area their countries should rely mainly on a common EU approach and policy.

## **c. The EU enlargement process**

37.5% of respondents did not answer the question on impact of process of EU's enlargement process on their country's energy security at all, and a further 9% had difficulty assessing this impact. Among those who answered, the majority (55%) saw positive effects and opportunities arising from enlargement; 10% believed the effects would be mixed (both positive and negative); and 15% concluded that it has and/or will have no impact. Mostly or all positive answers came from Poland and Slovakia. In Hungary 40% of respondents saw both positive and negative effects of enlargement, and one indicated there's little link between the enlargement and energy security. All respondents from Czechia saw little or no impact on their energy situation, one said that this is because they are not direct neighbours with candidate countries. According to some voices, the impact of enlargement on V4 energy security will be moderate, because candidate countries are already members of the Energy Community, have been implementing parts of EU regulation for years, and have begun to integrate their energy markets with that of the EU. According to one response, enlargement to the Western Balkans would have a positive effect for Hungary's energy security, while enlargement to Ukraine would have a negative one.

Among the positive effects and opportunities linked to enlargement, respondents most often pointed to an increase in the number of, or expansion of, cross-border interconnections—both gas and electricity. This is expected to create new opportunities for cooperation, increase gas and electricity trade, and provide access to infrastructure such as gas storage in Ukraine. It may also facilitate future joint projects (e.g. hydrogen corridors). It is also expected to increase the possibilities for diversifying routes of gas and electricity supplies.

In addition, the respondents indicated that the accession process would lead to levelling the playing field (by modernisation of the Ukrainian energy sector and adaptation of the EU emission standards), between Ukrainian and V4 energy-intensive producers, and that it will open an attractive energy market—at least for some regional participants. Isolated voices spoke of increasing the potential for domestic production of energy and critical raw materials in an enlarged EU.

The integration of the Western Balkans and Ukraine may also strengthen regional energy cooperation, including the creation of regional hubs and a reference price index.

Among the risks and challenges, respondents indicated that competition for access to EU funds would increase, and that the energy sectors of accession countries (especially Ukraine) have enormous investment needs (reconstruction, system resilience, climate targets). There were also reflections on the risks of the transition period, risks linked to incomplete implementation of EU law (distortion of competition, carbon leakage, etc.), and risks related to traditional strong and multilevel links with Russia.

## 2.2 Energy transition

In general, all respondents perceived a significant impact of the transition and decarbonisation on energy security in their countries; there were no answers that downplayed or regarded these issues as irrelevant. Most responses (44%) showed that the transition has both positive and negative effects on energy security, with some indicating that negative effects are more visible in the short term. Smaller groups of respondents pointed only to negatives (22%, none of them was from Slovakia) or only to positives (19%). According to one Slovak response, the transition has no impact on energy security in that country at all.

The question on electrification was treated as complementary to the question on the energy transition. A few respondents (9.4%) saw no impact of electrification on energy security, because they perceived little or no progress of this process in the V4 countries. Equal-sized groups (21.3% each group) considered electrification to be a process associated mainly with challenges and risks, or one that has both positive and negative effects on energy security. Whereas respondents from the Czech Republic, Hungary, and Poland saw both positive and negative effects of the electrification process, those from Slovakia focused on the negative ones (or indicated that the authorities view the process as problematic). Only 9.4% of total respondents considered it to strengthen energy security clearly or primarily.

### Gains and opportunities

Among the positive effects of the energy transition for energy security, most respondents emphasized that increasing the share of renewable energy sources and nuclear energy means diversification of energy sources and translates into lower demand for imports of oil and gas. Several respondents pointed to the role of electrification in strengthening energy security, as it is expected to reduce fuel imports and import costs by enabling better integration of renewables (RES). It is also expected to result in greater energy efficiency, which is itself indicated as an important factor closely linked to the transition and strengthening energy security. Similarly, a group of respondents pointed to the transition's contribution to decentralisation of the energy system, the development of energy communities and local generation. To support this process, more systematic support for system flexibility and demand-side management is needed (including wider use of smart meters than is currently seen in the V4 countries). Few respondents indicated that the transition and electrification reduce dependence on single nodes and force investment in grids and energy storage, thereby increasing system resilience.

## Risks and challenges

As regards the negative effects or risks of the transition process for energy security, most respondents highlighted challenges inherent to the process itself. They pointed out that countries in the region face infrastructure shortfalls, investment gaps and enormous investment needs (grids, balancing services, building stocks, etc.). A key challenge for electrification is the huge, time- and capital-intensive need to modernise and expand networks and to stabilise their operation. Respondents also pointed to regulatory gaps and bottlenecks. Until capacity and infrastructure in the region are expanded (this was highlighted particularly in responses from Slovakia and Hungary), there are structural constraints on increasing renewables capacity. This limits the ability to use the transition and its components (energy communities, decentralisation, flexibility, etc.) to minimise traditional energy security challenges. A recurring, related theme across all V4 countries was the rising cost of the transition and electrification, and how these processes translate into energy prices and affordability—for households and industry.

An equally large group of respondents considered that a challenge in the region—above all in Czechia and Poland, with one voice also from Hungary—is managing the transition process, especially the phase-out of coal. The risk is excessively rapid decarbonisation before large new capacities (e.g. nuclear or offshore wind in Poland) are built. This may lead to a generation gap amid growing electricity demand and/or reduced investment in the necessary gas and/or oil infrastructure. In Hungary, respondents pointed instead to the challenge of too rapid an increase in the share of renewables (solar power) relative to system capacity, which does not allow accommodate further growth and is also linked to increased use of gas as a balancing fuel. Across all V4 countries, respondents spoke of the need to ensure dispatchable generation capacities in addition to RES, and of uncertainty about what those capacities should be and how they should be built and financed. This issue was particularly pronounced in relation to the nuclear units planned in all countries of the region. In Slovakia, some views suggested that after decarbonising the power sector thanks to a high share of nuclear energy, Bratislava in practice avoids transition and electrification in other sectors (e.g. district heating or transport) and is not interested in increasing the share of renewables, which contributes to maintaining the role of natural gas.

Alongside the question of managing the transition, some respondents indicated that replacing coal with gas as a bridging fuel or using gas as a balancing/stabilising element (again mainly in Czechia and Poland), carries the risk of increasing dependence on gas imports.

Some respondents highlighted that the transition, like any process of change, increases security risks and creates new challenges, linked, among other things, to the increasing pervasiveness of electricity and the specific features of power systems. Examples include increased intermittency and challenges to grid stability, and the need to invest in flexible balancing and storage solutions to manage this. Another frequently mentioned issue is the growing threat to infrastructure security, including cyber risks. Individual voices also pointed to new dependencies, including in supply/value chains of critical raw materials for clean generation sources.

## 2.3 Economic situation

The economic situation of individual countries is influenced by the situation on energy markets, including energy prices. At the same time, these prices, and in general affordability of energy can also affect energy and economic security— in extreme cases limiting access to energy supplies due to excessively high costs for households, companies, or entire sectors and/or countries. This was clearly visible during energy crises 2022/23.

In the survey, most respondents assessed the economic situation in their countries as rather poor (slowdown, stagnation) or pointed to several negative elements. The only few statements that assessed it as partly or generally good came from Poland. Assessments of the economic situation shaped how its impact on energy security was assessed. According to the majority of voices (71%), and all of those from Czech Republic and Slovakia, the economic situation affects energy security negatively in their country; 14% considered the impact mixed, and 7% considered it positive.

Among the opportunities and positive effects identified by those who considered the economic situation to be less than favourable were opinions that it may stimulate reforms, for example moving away from imports of expensive fossil fuels, especially gas; increasing diversification and energy efficiency; and, finally, prioritising innovation.

**Table 3. Key risks related to economic situation that affect energy security identified in survey\***

	high prices	slowdown in investment	increased energy poverty	competitiveness	challenges to energy transition
CZ	3	2	2	1	1
HU	4	2	1	1	2
PL	8	3		2	2
SK	3	2	2	1	
TOTAL	18	9	5	5	5

\* More than one answer per respondent was given

At the same time, this group mapped more risks. The most frequently and widely identified risk across all V4 countries was related with high energy prices (58% respondents). The challenges were that they would remain high or increase further for both households and industry. This is expected to undermine affordability and, on the one hand, limit the competitiveness of the region's economies, and, on the other, increase an already rising level of energy poverty. Some respondents from Slovakia and Poland pointed to the challenge of a high level of price subsidisation for final consumers in the region and rising costs of social policies. There was also mentioned the risk of significant volatility in emission allowance prices, increasing pressure on industry. All of this may negatively affect social cohesion and support for the energy transition in the region, or more broadly fuel populism. A second important issue identified was that, due to stagnation and economic challenges, domestic capacity to invest—or to attract the investment needed to continue modernising and transforming energy sectors and expanding grids—is limited.

Those who considered the economic situation generally good (several Polish respondents) indicated that it supports investment (private, industrial or state) in modernising the energy sector, increases the chances of delivering capital-intensive investments such as a nuclear power plant, and supports renewables (RES) and grid investments. Among the risks, they pointed out that economic growth is associated with rising energy consumption and therefore usually with increased import dependence.

### 3. HOW TO STRENGTHEN ENERGY SECURITY IN V4 COUNTRIES

Energy policy is a competence, shared between Member States and the EU. Most respondents shared the view that decisions on the shape of the energy mix are, and should remain, a Member State competence. Many voices indicated that states are also responsible for strategic security policy, which includes energy security (security of supply, setting local standards and objectives, alternative sources of supply, etc.). At the same time, it was emphasised that this issue should be kept out of day-to-day political conflicts. Some respondents argued for strengthening the role and autonomy of Member States, with the EU's role limited to strategic guidance or recommendations. More respondents indicated that the EU's task is to provide a stable legal framework and rules enabling the functioning of the single market (and to support regulatory harmonisation with associated countries) and to ensure effective compliance. According to some voices, EU frameworks, financial support and legal and institutional instruments should facilitate the formulation of national energy policies and support coordination. Some considered EU support crucial for strengthening regional cooperation. There were also voices that cooperation is indispensable for managing security challenges and crisis response.

EU competences are often important where action by individual states is ineffective or sub-optimal. Examples include relations and managing the energy consequences of conflicts in the Middle East, or trade restrictions by the US or China, as well as the suggested alignment of the EU's energy transition with energy security objectives and adapting it to challenges linked to high prices and declining competitiveness. Respondents also pointed to more concrete areas important from a Central European perspective, including support for developing and integrating pan-European energy infrastructure. Finally, they saw an EU role where national policies fail—for example in pursuing a full end to imports of Russian energy resources—and in enforcing the relevant rules.

REPowerEU was quite widely regarded as the most successful or promising EU energy security policy instrument, as it has genuinely helped to overcome important challenges linked to dependence on Russian imports. Respondents also highlighted crisis-management instruments from recent years and earlier ones: support for expanding key infrastructure, including gas infrastructure, in the region; security of supply SoS regulations; the gas storage obligation; the Aggregate EU mechanism; support for efficiency and energy savings; and support for the development of renewables (RES).

Cooperation within the V4 has recently become increasingly uncertain, due both to political divergences (e.g. attitudes and policy towards Russia) and to growing differences in energy sectors and related needs. This raises questions about whether such cooperation makes sense, at what level, and in which areas related to energy security. Among respondents, there was a clear divergence of views. Over half believed that, at least in selected areas, there is a need for and value in Visegrád cooperation (or in a broader format of Central and Eastern European states, which for some seemed easier than the V4 one), while the rest considered that, given widening differences, V4 cooperation is not possible. A few respondents pointed to a hypothetical 'worst-case' scenario in which cooperation by Slovakia and Hungary (and potentially also

Czechia) would go in opposite direction to what the EU does, including with regard to the directions and objectives of energy policy.

**Table 4. Is there a scope for V4 cooperation in energy security area? Survey results**

	Yes	Yes but there are challenges	No
CZ	1	1	
HU	4	1	1
PL	7	1	6
SK	1	3*	1
Total	13	6	8

\* here 2 respondents mentioned risk of cooperation between Hungary, Slovakia and possibly Czechia not in the pro-EU direction

The most promising or necessary areas for strengthening energy security in the countries of the region and V4 as a whole were identified as including:

- everything that leads to greater integration, interconnectivity and facilitation of trade in energy and energy resources (coordinating grids expansion, capacity planning, removing trade barriers) in a region understood by some more broadly as stretching from the Baltic Sea to the Black Sea and the Adriatic (mentioning also need to develop North—South interconnections), sometimes also including Ukraine. Several responses pointed to the need to fill missing links not only in electricity networks but also in gas and oil networks (including expanding the NATO fuel pipelines system);
- greater integration and interconnectivity is necessary to make better use of, and create synergies between, regional potential and resources—including different energy sources in general and renewable energy (endowment and generation potential differs across countries). There is also a need to share and pooling and fostering regional know-how and innovation, expert capacities and good practices;
- there is also widely indicated need for regional cooperation in the field of nuclear energy and, more broadly, for building the capabilities required to deliver major energy investments in the region;
- regional cooperation may also be important for preparation, planning and prevention of energy crises or hybrid activities, including increasing protection and resilience of strategic critical infrastructure, diversifying sources and routes, developing mechanisms for crisis planning, preparedness and cooperation in crisis situations, and countering disinformation;
- finally, there were voices about the region's common interests in the EU (not always directly linked to energy security, but touching on economic security and affecting EU cohesion) concerning the future of ETS1 and ETS2, protecting energy-intensive industries, and maintaining a level playing field in EU's state aid rules.

