



BREAKING FREE: NATURAL GAS SECURITY AND DECARBONIZATION IN SOUTHEAST EUROPE

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Russia's invasion of Ukraine has exposed Europe's vulnerabilities in energy and climate security. It exacerbated the energy crisis caused by the gas supply deficit on global markets,¹ and highlighted the excessive reliance of many EU member states, particularly Germany and Italy, on Russian fossil fuel imports.² Countries in Southeast Europe (SEE) are particularly vulnerable to the energy and climate security risks emanating from the crisis. To address them, SEE governments need to transform the region's energy sectors over the next decade by phasing out fossil-fuel-based power generation and investing heavily in renewables. The market tumult could provide the much-needed momentum for **aligning the region's energy policy priorities with those of the EU.**³

A key element of this long-term strategy is the timed phaseout of natural gas. Natural gas consumption in SEE has been stagnating and on the decline for most part of the 2010s due to a number of factors, including: improved energy efficiency, the switch to electricity (and even back to biomass in some countries), and the limited competition because of an uncompleted gas market liberalization and integration. However, the trend has been changing, especially in Greece, where **natural gas has been gradually replacing coal in the power generation mix.** With plans for boosting the natural gas capacity until 2030, the region's dependence on gas could increase significantly.

¹ Center for the Study of Democracy, *EU Energy and Climate Security Strategy to Counter the Russian Aggression in Europe*, Policy Brief No. 108, March 2022.

² Vladimirov, M., Rangelova, K., and Dimitrova, A., *The Great Energy and Climate Security Divide: Accelerated Green Transition vs. the Kremlin Playbook in Europe*, Sofia: Center for the Study of Democracy, 2022.

³ Center for the Study of Democracy, *Energy Transition Governance for Better Energy Security in Europe*, Policy Brief No. 88, October 2019.

KEY POINTS

- SEE countries are particularly vulnerable to the **energy and climate security risks** emanating from the energy crisis caused by the gas supply deficit on global markets and exacerbated by the Russia gas export cuts after the invasion of Ukraine.
- To address them, SEE governments need to transform the region's energy sector over the next decade by **phasing out fossil-fuel-based power generation** and investing heavily in renewables.
- A key element of this long-term strategy is the timed **phaseout of natural gas** because reducing gas demand directly improves the **security of supply** without simply replacing one supply dependence with another.
- Russia remains one of the key gas suppliers to the SEE region but **diversification options** such as imports from Azerbaijan and liquefied natural gas (LNG) are now available.
- In all gas security/decarbonization scenarios assessed, **gas demand reduction policies** can alleviate Southeast Europe's vulnerability to Russia's blackmail and contribute to stronger energy and climate security.
- Mobilising Romania's full potential for reducing natural gas demand could make it a **net exporter** without the need for additional investments in natural gas production, projected to double by 2030 in all scenarios.
- In the cases of Bulgaria and Greece, reducing natural gas demand would not eliminate their **import dependence**, but would decrease their import requirements in volumetric terms, enabling supply diversification without the need for **additional infrastructure investments** or new supply contracts.
- SEE governments need to make sure that Russia does not **circumvent sanctions on Gazprom** via intermediaries with close ties to the Russian company or by supplying the SEE region with LNG cargoes.
- Bulgaria, Greece, and Romania need to sign solidarity agreements along the model of other EU member-states to **optimize the allocation of limited volumes** of alternative gas supplies entering the region.

The gas phaseout strategy is key because it would also **reduce security of gas supply risks**. A year after the invasion, Gazprom remains one of the most important suppliers in SEE. Even Bulgaria, which was the first EU member state to get its Russian gas deliveries cut at the end of April, 2022, continues to import Russian pipeline gas indirectly from Greece, where two of the largest gas companies have agreed to the Gazprom's ruble-based payment scheme and have continued executing their long-term supply agreements with the Russian company. At the same time, TurkStream, which is still delivering Russian gas to Southeast Europe and Hungary through Bulgaria, is currently the single biggest source of Russian gas exports to Europe at around 10 billion cubic meters per year (bcm/yr).

Despite the Russian gas lock-in, diversification options such as imports from Azerbaijan and liquefied natural gas (LNG) are now available. Wholesale gas market players have also increased alternative imports, replacing between 4 and 5 bcm/yr of Russian gas. Before the energy crisis, TurkStream had limited the potential for diversification projects, increasing the region's dependence on Gazprom as other options appeared commercially unviable.⁴ However, the surge in gas prices, ironically caused by Russia's squeeze on European gas markets, has suddenly made all **regional pipeline interconnectors, storage facilities, and LNG regasification plants bankable**.

Alternative Visions for 2030 Natural Gas Security

This policy brief reviews three different likely scenarios for the natural gas security of supply in three key SEE EU and NATO member states: Bulgaria, Romania, and Greece, until 2030.⁵ It also outlines three policy visions for the role of natural gas in the region's energy mix, based on the **potential for a gas phaseout in the electricity, industry, and buildings sectors**. The three scenarios were selected for their high relevance for policy-makers and the diversity on gas phaseout trajectories that they offer:

⁴ Nitzov, B., and Rangelova, K., *How to Deal with Kremlin's Desire to Starve Europe of Energy: The Case of Nord Stream 1 and Beyond*, CSD Working paper, August 2022.

⁵ Rangelova, K., and Vladimirov, M., *The Future of Natural Gas in Southeast Europe: Diversification and Phaseout after the Russian Invasion in Ukraine*, Sofia: Center for the Study of Democracy, 2023.

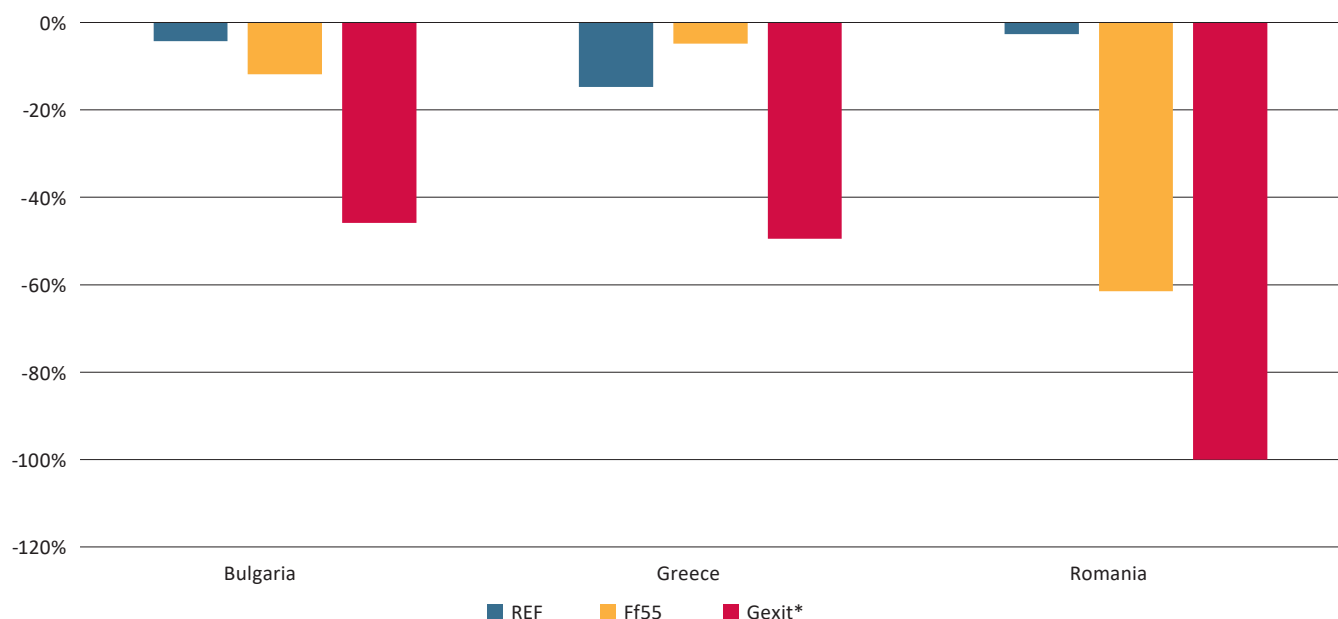
- **EU Reference scenario (REF):** This is a baseline scenario provided by the European Commission that takes stock of the policy framework already in place. It covers all EU Member States and provides macroeconomic, energy, climate, and transport projections with a 2050-time horizon.
- **Fit for 55 – MIX scenario (Ff55):** This is one of the three policy scenarios for delivering the European Green Deal provided by the European Commission. It models a strong carbon price signal, extended to road transport and buildings, in combination with an intensification of national decarbonization policies in the energy and transport sectors. It provides macroeconomic, energy, climate, and transport projections with a 2030-time horizon.
- **Accelerated gas phaseout scenario (Gexit):** This is an EU-wide scenario for reaching carbon neutrality by 2050 through the acceleration as much as realistically possible of the natural gas phaseout.⁶ The results from this study cover the industry, buildings, and district heating sectors. The power sector results are still preliminary.

Implementing ambitious decarbonization policies that reduce natural gas demand can diminish Southeast Europe's vulnerability to **Russia's blackmail and contribute to stronger energy and climate security**.⁷ Incentivising energy efficiency and electrification across different sectors, along with biomass co-firing in district heating and for high-temperature industrial processes like chemical production, could fully mitigate the gas security of supply risks in the biggest gas producer of the region, Romania by 2030. Mobilising Romania's full potential for decreasing natural gas demand could make it a net exporter without the need for additional investments in natural gas production, which is already projected to double by 2030 in all scenarios.

In the cases of Bulgaria and Greece, decreasing natural gas consumption would not eliminate their import dependence, but it would reduce their import requirements in volumetric terms. This decrease would facilitate **supply diversification without the need for additional infrastructure investments** or the conclusion of new long-term supply contracts. Striking new gas import deals is particularly challenging in the current

⁶ The modelling framework for this scenario steps on the work of Artelys, TEP Energy, and Wuppertal Institute and consultations with national experts.

⁷ Center for the Study of Democracy, *Tackling the Energy and Climate Security Conundrum in Southeast Europe*, Policy Brief, No. 110, May 2022.

Figure 1. Security of natural gas import: 2030 vs 2021 in the three alternative scenarios


Source: CSD based on the ECSRI.

tight global market, with fierce competition from larger consumers in Europe such as Germany and Italy, and from China and the rest of Asia. In this market environment, Southeast European countries seeking new supply contracts will face difficulties securing favorable pricing offers.

The cornerstone of Southeast Europe's natural gas import security is the **diversification away from Russia**. Greece currently has the most diversified import mix in the region, with a diversification score in 2021 almost three times higher than that of Bulgaria and Romania, which had almost the same score with an 80% share of Russian gas in total imports. Nonetheless, Greece still heavily **relies on Russian gas, accounting for 41% of its total imports**, with similar to the volume of Bulgarian total imports at about 2.7 bcm/yr.

The Potential for a Gas Exit

Southeast Europe has a huge untapped potential for reducing natural gas demand. The low energy efficiency performance of the industry and buildings sectors presents some low-hanging fruit options for decreasing gas consumption. Additionally, transforming the electricity sector in a smart way could help avoid a gas lock-in and tap into the region's enormous renewable energy potential to accelerate the electrification of different economic sectors.

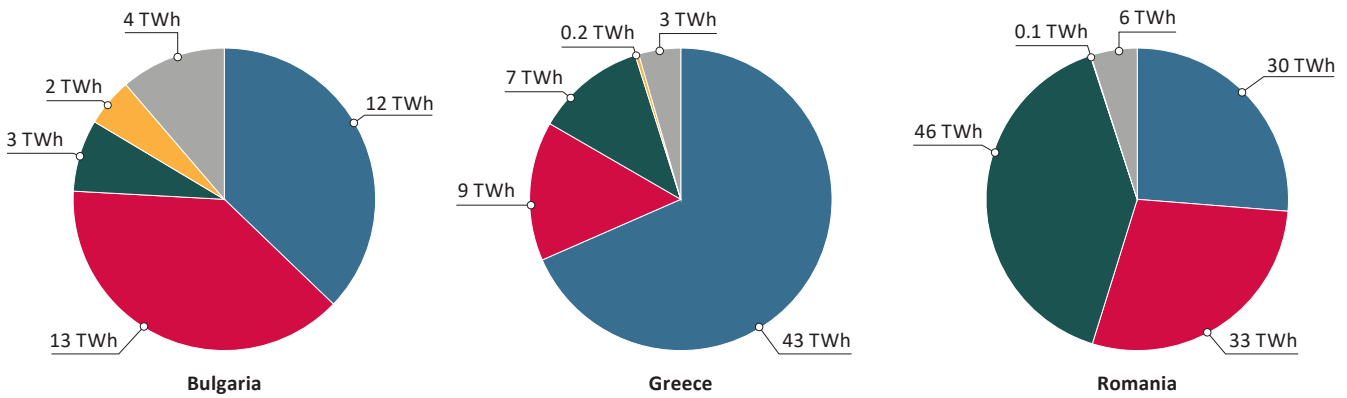
The **accelerated gas phaseout** scenario, which explores the maximum demand reduction potential by 2030, estimates that more than 6 bcm of gas demand can be phased out across Bulgaria, Romania, and Greece by 2030 vs. the EU Reference scenario. The opportunities for cutting gas consumption vary greatly in the three countries due to the widely different role natural gas plays in the three countries' respective energy mixes.

In the **Fit for 55** scenario, the region's gas use falls by less than half of what is possible, reflecting the need for more **targeted sector policies** for incentivizing the uptake of alternative energy sources and new technologies across sectors. This is particularly relevant for Greece, where gas demand even increases slightly in this scenario, mainly due to the country's **extensive gas-fired power generation**. Greece has five new gas-fired power plants in the pipeline, with a total capacity exceeding 4 GW. One of these plants has already come online in a trial mode as of early 2023, while the other four are expected to begin operating between 2024 and 2025. In Romania, there are two active gas plant projects with financing from the EU. Bulgaria initially planned to build a 1 GW gas-fired generation unit, but this project was ultimately scrapped. However, the risk of a U-turn remains high as the national energy strategy is in flux due to the political instability in the country since 2021.

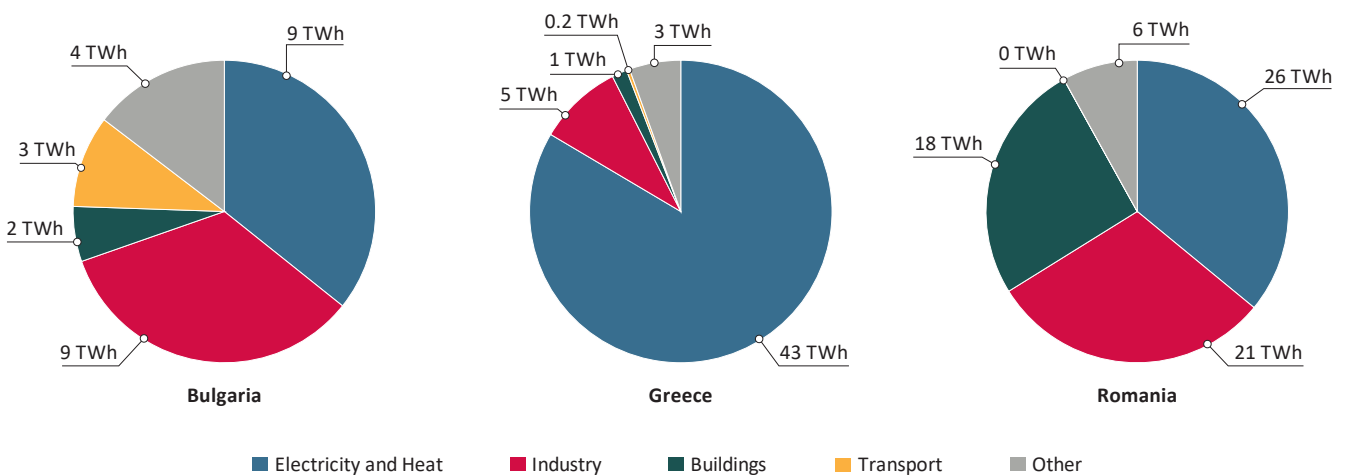
The buildings sector has the **highest potential for lowering Southeast Europe's natural gas demand by**

Figure 2. Natural gas demand by sector in 2021 and in 2030 in the accelerated gas phaseout scenario

2021



2030



Source: CSD based on data from Eurostat, Wuppertal Institute, TEP Energy, Artelys.

2030, accounting for half of the total estimated gas savings in the *accelerated gas phaseout scenario*. To enable the deep decarbonization of the sector, a comprehensive policy strategy is required based on electrification, energy efficiency, and an extensive focus on reducing energy poverty risks.

The role of natural gas in the buildings sector has strengthened in Southeast Europe, especially in Romania, where individual gas boilers have replaced district heating and biomass, making **natural gas the dominant source of energy for heating** in urban areas. While Greek and Bulgarian consumers face strong incentives to phase out natural gas in buildings due to the high prices, the Romanian government has introduced price caps on natural gas for households, with no targets for gas savings. Gasification has been less explosive in Greece, where natural gas accounts for

less than 10% of heating demand in buildings. The gas phaseout in Bulgaria is the least challenging as only 2.5% of households are directly connected to the gas grid.⁸

The energy transition debate in Southeast Europe remains painfully short-sighted ignoring the critical issue of industrial decarbonization. The region requires **deep industrial transformation to secure its economic competitiveness** over the coming years. The high energy and material intensity of national industries offers a great opportunity for the introduction of energy efficiency measures and low-hanging fruit innovation. These actions can deliver considerable gas demand cuts already by 2030 and contribute to improving energy and climate security. The surge in natural gas prices

⁸ Bulgarian Association Natural Gas, General Facts, [In Bulgaria](#).

has already provided strong incentives to industry players to invest in energy efficiency, fuel and technology switching, contributing to the large gas savings realized in 2022 across the region (more than 20% year-on-year). Yet, more needs to be done to change long-term business choices. Instead, regional governments with short-term policy agendas chose to splash helicopter money at the sector in terms of lavish energy subsidies without conditionalities, which may entrench further the current consumption patterns.

What's Next?

Resolving the natural gas security – phaseout nexus would require SEE governments to undertake a series of **short and long-term measures** that would put the region on a consistent pathway to **strategic decoupling** from Russia and carbon neutrality:

Security of Supply

- Clearly establish the **dependence on oil and gas imports from Russia** as one of the main pillars of the countries' energy and climate security strategies.
- Make sure that Russia does not circumvent sanctions on Gazprom via **intermediaries with close ties to the Russian company** or by supplying the SEE region with LNG cargoes. Russian LNG shipments to Europe jumped ten-fold in 2022 mostly to France and Southern European countries, including Greece.
- Regional governments should allow all long-term supply contracts with Gazprom to expire by the mid-2020s. The clients of the Russian company should seek to **renegotiate the existing agreements to allow more flexibility** and replace the contracted volumes with alternative supply.
- Complete the region's **gas diversification** strategies in the medium term by finalizing strategic projects such as regional gas interconnectors, storage facilities and LNG regasification facilities.
- Gas imports at the **LNG regasification terminals** in Greece and Turkey would play a crucial role in maintaining the security of gas supply. It is imperative that Bulgaria, Greece, and Romania sign **solidarity agreements** along the model of other EU member-states to optimize the allocation of limited volumes of alternative gas supplies entering the region.
- Avoid the conclusion of **LNG supply agreements beyond 5 years**, which is also the standard average gas contract in most of Europe. Priority should be given to new floating regasification terminals leased on a temporary basis rather than fixed facilities, whose commercial viability is questionable.
- The security of supply crisis should not be a justification for replacing the dependence on one gas supplier with another. Where possible, SEE countries should **friendshore supply agreements**, so that they are based on commercial relationships that will facilitate the entry of constructive capital in the region.
- SEE countries should ensure physical and contractual **reversibility on existing interconnection pipelines**, as well as the TransBalkan transit pipeline, no longer in use by Gazprom, to enable the South-North Vertical Gas Corridor connecting alternative supply in the Mediterranean with Central European markets, and most importantly with Ukraine.
- A **common EU gas purchasing mechanism** should be introduced that secures gas stocks and achieves economies of scale in mobilizing alternative gas supplies.

Gas Phaseout and Decarbonization

- Roll out **demand response tenders** to accelerate natural gas demand cuts beyond the 2022 energy savings through voluntary contributions from businesses on a market basis.
- A key security of supply risk remains the **untapped potential for energy efficiency**. Cutting overall gas consumption will mean less fossil fuel imports and, thus, more energy independence. SEE countries should undertake an accelerated energy efficiency investment strategy, focusing specifically on energy poor households and via deep renovation programs to reduce consumption faster than the current 2030 targets.
- Reduce the overall role that natural gas plays in the energy mix by replacing it with **locally-sourced renewable energy**. This would not only limit the exposure to Russian imports and geopolitical risks, but also to the inherent volatility of fossil fuel prices.

- **Natural gas phaseout** is possible if the region strengthens efforts to:
 - Replace natural gas in heating with **heat pump rollout** and electrification;
 - Accelerate energy efficiency investments, focusing specifically on **energy poor households**;
 - Accelerate **offshore wind and power storage projects** to replace natural gas power plant use for covering peak power demand;
 - Avoid a natural gas lock-in by abolishing any new EU-financed natural gas transmission and gas-fired power plant projects unless they contribute to reducing **short to medium-term natural gas supply risks**. Optimizing the use of existing gas infrastructure could limit the need for a major expansion of the existing gas assets.
- Avoid a **blue hydrogen uptake** based on the increased use of natural gas or the unnecessary expansion of existing or construction of new gas transmission networks repurposed for hydrogen transportation.
- Governments in the region should link their **hydrogen strategy with a firm commitment to the use of renewable energy sources** only for hydrogen production.
- A complete gas phaseout would not be possible without major **industrial decarbonization measures**, directed towards the electrification of production, especially in the most energy-intensive sectors such as mining, metallurgy and cement.