Think Visegrad
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Policy Brief

The future of natural gas in the EU

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Abstract

In recent years, as the EU's decarbonisation and energy transition policies have accelerated under the Green Deal strategy, there have been increasing doubts whether the continued use of natural gas serves climate goals accompanied by calls for a rapid reduction of its use. In addition, the last months of 2021 are an exceptionally difficult time for the natural gas market. The gas and energy crisis and the record high prices are provoking questions about the affordability of natural gas use. Problems with supply from Russia, the continuing Nord Stream 2 (NS2) controversy, the outflow of liquefied natural gas (LNG) to Asia, and the challenges of declining domestic production are resulting in renewed concerns about security of gas supply.

At the same time, natural gas continues to play an important role in the European energy market's transition. It remains the least carbon-intensive of the fossil fuels, widely available and until recently it has been relatively cheap. It is also the most flexible element in energy mix more and more based on intermittent renewable sources - it is relatively easy to 'switch on' gas powered generation when the wind does not blow or the sun does not shine. In many countries, including in Central and South-Eastern Europe, increasing the consumption of natural gas enables moving away from coal and gradually decarbonising the energy mix. Therefore, according to many member states such as Poland and Germany as well as European Commission, gas remains an essential link in the energy transition and, as such, needs to be given an appropriate place in EU policy.

Thus, by raising questions about the role of gas in the decarbonisation process, as well as about costs and security of its supply, the current market crisis has once again highlighted the need for a common gas strategy, consistent with the objectives of the Green Deal, but also responding to short-term challenges.

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State of play of the EU gas market

The share of natural gas in the EU energy mix is approx. 22% . Its role has been changing in recent years - after a decline in its share in the total energy consumption since the beginning of the previous decade to approx. 19% in 2014, it began to grow in 2015 . The importance of gas as a transitional fuel and the least emissive of the hydrocarbons contributed to the strengthening and even temporary increase in its share in the EU energy mix. This was supported by low prices and the ongoing diversification of its sources in Europe, as well as its availability on global markets.

Yet over the past two years, the pandemic and the ensuing economic challenges have impacted the situation on the gas market. In 2020, due to the temporary lock-downs of many economic sectors and activity restrictions, we have seen a decline in demand for gas, among other things, and an economic slowdown. In 2021, by contrast, we are seeing a rebound in demand for natural gas in the EU and worldwide. In the first half of the year, the consumption of gas increased by 11% compared to the same period last year , and it also surpassed the consumption level of the first half of 2019.

At the same time, gas prices on European exchanges have been rising since August. They have reached record, unprecedented levels (on 6 October temporarily 160euro/MWh). This has been related to economic revival and growing consumption of gas in Europe and globally, but also to limited supplies to the European market. LNG largely flows to Asia, own production in the EU is declining, and finally there is significantly less gas coming from Russia.

As a consequence, European storage facilities have had the lowest level of supplies in many years, coinciding with the beginning of the heating period. According to data published by the association of European gas infrastructure operators on the AGSI+ platform , on 4 December, European underground gas storage sites (UGS) were only 66.8% full. This is approximately 18 percentage points less than the ten-year average filling level for this period (85%) . If low temperatures and insufficient supplies are to continue in the coming months, storage sites could be emptied at a rapid pace. This fuels anxiety, increases volatility in the market and puts additional upward pressure on prices.

What is Russia doing?

Russia remains the supplier with the largest share and influence on the European market. Russian gas accounted for 48% of the EU's import mix in 2020 . Russia also has the greatest scope among the suppliers to increase its exports to the EU at present. According to IEA estimates from October, Gazprom should have been able to increase supplies to the European market by 15%.

Meanwhile, Gazprom has, for several months now, been limiting its supplies to the EU de facto to the volumes contracted under long-term agreements. The Russian company has virtually stopped selling gas on exchanges. It is also limiting bookings of additional transmission capacities in export routes through Ukraine, Belarus and Poland. It is particularly true for longer term bookings, which are

decreasing every month. This results in both lower and fluctuating gas transmission. Use of the Yamal pipeline is several times lower than in previous years. At the beginning of November, transmission from Poland to Germany had stopped completely for several days. Similarly, in the case of Ukrainian corridor, actual transmission is often lower than booked capacities (mainly under the 2020-24 transit contract) .

Finally, Gazprom has accumulated a record low volumes of gas in its European storage facilities. One of the EU's largest storage facilities Rehden in Germany was 8.4% full at the beginning of December, Haidach (GSA) in Austria 3.9% and Bergermeer in the Netherlands 27.6% . Russian company has started pumping gas into its European storage units in 2021 unprecedently late, only in mid-November. It is when usually the withdrawal season begins in Europe, which is the reason why the level of filling of most of the UGS is falling due to increasing consumption and the heating season.

Meanwhile, Russia is using the tense situation on the European market and possibility of increasing its own supplies to ease it as an instrument to pursue its strategic interests in Europe. Firstly, Russia is increasingly clearly conditioning bigger gas exports on the launch of the controversial Nord Stream 2 pipeline, pressing, among other things, for a rapid conclusion of the procedure of application of EU law apply to this gas pipeline, which would be beneficial to Russian interests. Secondly, there are suggestions linking additional supplies to the signing of new long-term import contracts by European customers. Finally, the Russian ambassador to the EU said explicitly that the situation on the market could be facilitated by an improvement in Russia's relations with the EU , which have remained strained since the annexation of Crimea.

Questions of affordability and safety

Low levels of gas in EU storage sites, which have been falling even lower since the end of November, together with decreasing indigenous production and lesser availability of LNG, reduce EU's possibility to flexibly respond to (frequent in winter-time) spikes in demand and make up any shortfalls in the market. Together with continued uncertainty about the level of supplies from Russia, this increases market nervousness and price levels in Europe. As a result, the market is increasingly influenced not only by actual changes in supply and demand, but also by statements by politicians. The hopeful ones (e.g. Putin's statement that Russia intends to stabilise the situation on global markets) result in price drops of up to several dozen per cent, while the risky ones (e.g. suggesting possible burst of Ukrainian gas system) bring price increases. Unprecedented price levels also result in a reduction in gas consumption by the most gas-intensive customer groups. High gas prices are an important factor contributing to higher electricity, fertiliser and, consequently, food prices. As a result, the current price increases are becoming a serious economic and social challenge and are provoking questions about the affordability of using natural gas in the energy sector and the economy. There are calls (for instance by France) to eliminate the link between prices on the electricity market and

those on the gas market. The issue of gas and energy costs has also become one of the key topics of internal EU discussions during, among others, the subsequent two European Councils at the end of 2021.

The challenges observed on the natural gas market result in renewed concerns about the security and stability of supply. The main concern is related to the behaviour of Russia and Gazprom, which at the time of a unprecedented surge in prices and rising demand is behaving differently than it did in previous years and differently than the other EU suppliers do. By reducing rather than increasing supplies and fuelling uncertainty about their future level, and finally by hinting at possible problems with transit through Ukraine, Gazprom is contributing to further price increases. In addition, in spite of the available capacities in the existing infrastructure, it is conditioning export growth on the launch of new routes (Nord Stream 2). For years, Russia has been suggesting a goal to stop transit through Ukraine, which would significantly reduce the certainty of supply to Eastern and Central Europe. Finally, Russia/Gazprom pursues a policy of price differentiation in the EU neighbourhood, offering the lowest prices to its political allies (Belarus , Serbia) and higher prices to countries cooperating with EU (Moldova recently). Furthermore, challenges concerning security and stability of transmission also arise in the case of supplies from Algeria, which, due to difficult relations with Morocco, has completely stopped gas transit through its territory to Spain since November . These problems not only complicate the situation on the market, but also increase uncertainty about the behaviour of the key players.

Challenges relating to prices, market uncertainty and security of supply are adding to earlier questions about the role of gas in the decarbonisation process, about its usefulness as a bridging fuel, and may give rise to calls for a faster shift away from the use of gas.

The EU Green Deal and natural gas

The EU debate on the future of natural gas in the transitioning economy and energy sector has been ongoing for several years and has accelerated under the current European Commission and the European Green Deal strategy. The increased ambition of the EU climate policy in 2020 and the adoption of a higher target for greenhouse gas emissions reductions by 2030 (to 55%) translated directly into forecasts of lower natural gas consumption in the following decades - decreasing first gradually and then rapidly. According to each of the scenarios adopted by the European Commission, the share of gas in the total final energy consumption in the EU would decrease to 16-17% by 2030 and to a fraction of the current share by 2050 . These forecasts are primarily a manifestation of ambitious political goals and not a reflection of current market trends. There also are fundamental differences between the member states related to their perceptions of the future role of natural gas and its share in energy mixes; a number of Central and South-Eastern European countries envision a growing share of gas contrary to Northern and certain Western Member

States. Yet EC forecasts indicate an important direction of change in thinking about the role of natural gas in the EU economy.

Natural gas is increasingly perceived, especially in Northern Europe, as a 'dirty' fuel and a long-term impediment to achieving climate neutrality by the EU, as its continued use can result in postponing green transitions in some member states. In parallel with the tightening of climate targets and the accelerating shift away from the use of fossil fuels, a gradual phasing out of financing of gas investments is evident in the EU. At the end of 2019, the decision to stop financing such projects was taken by the European Investment Bank. A year later, in a draft of revised regulation on trans-European networks in energy (TEN-E), the EC ended option for funding of natural gas infrastructure, while enabling it for green gas infrastructure including hydrogen, power-to-gas and smart gas grids .

The decision to end co-financing of gas investments under TEN-E was highly contested. There were MEPs and representatives of environmental organizations calling for this for a long time, as they see continued financing of gas infrastructure as subsidizing fossil fuels use and slowing down both transition to renewable energy as well as energy efficiency. In parallel, there was also a backlash from representatives of the gas industry and some Member States, including those in Central and South-Eastern Europe, who see increasing the use of natural gas as a way of moving away from coal and reducing emissions, and who lobbied for other solutions. Equally contested was the issue of whether and in what form natural gas (and nuclear energy) should be included in the EU taxonomy. The taxonomy, a set of rules for classifying economic activities, including investments, as green and contributing to sustainable development, is to be one of the key instruments for implementing the European Green Deal. Discussions on the fate of natural gas investments in it have been going on since mid-2020 - and have been prolonged precisely because of major differences of interest among member states .

In parallel to limiting support for natural gas related investments, the EU is also trying to reduce the carbon intensity of the gas sector. This is to be achieved, among others, through the EU strategy for limiting methane emissions, adopted in October 2020, and at the global level through the commitment to reduce methane emissions, initiated by the EU and the USA during the COP26 summit in Glasgow, signed by over 80 countries. The EU wants to achieve the gradual decarbonisation of its gas sector by increasing the share of green gases in the sector. The new gas package, published in mid-December 2021, is to set the direction for the transformation of the sector and revise rules on access to infrastructure and the internal market in which decarbonised gases will play an increasing role. It also sets grounds for the reduction in methane emissions & development of market for hydrogen.

Hydrogen is to play an increasing role in sectors that are difficult to electrify and decarbonise, and the EC defined its objectives for the development of the hydrogen market in its hydrogen strategy announced in summer 2020 . In it, the Commission sets the development of renewable, green hydrogen as the

main objective, but in the short to medium term also allows for the use of other low-carbon forms of hydrogen (either fossil-based hydrogen with carbon capture or electricity-based hydrogen form non-renewable sources). The option of producing low-carbon hydrogen from natural gas (so-called "blue hydrogen") would represent an additional way of using this fuel in the coming decades.

Together with the prospects of using existing gas infrastructure for hydrogen and other green gases, it is seen as an opportunity for the gas sector to maintain its role in a transforming EU energy landscape at least in the medium term. At the same time, however, low-carbon hydrogen would be a transitional solution, with the ultimate goal (after 2050) being to use green, zero-carbon hydrogen only. Consequently, there are doubts as to whether it will be possible to develop and implement cost-effective technologies for blue hydrogen if it is to play only a temporary role and its use is to decline after 2030. In addition, the question arises as to whether low-carbon hydrogen will not, in at least some EU markets, compete with natural gas, which is also supposed to be a bridging fuel in the energy transition, and what the effects of such competition would be. Finally, there are widespread questions about the profitability of production and the costs associated with the use of hydrogen.

Crisis and questions about EU gas policy

Meanwhile, the current unprecedented increases in gas prices have fundamentally changed the context for considering the future of natural gas in the transition. In particular, while the current price spikes are exceptional and extreme, there is much to suggest that, as decarbonisation continues, high price range and volatility will persist also in the longer term.

Decisions by the EC and EU financial institutions to withdraw public support for gas investments, uncertainty about whether and under what conditions natural gas will be included in the EU's green taxonomy, and finally the clear prospect of decreasing natural gas consumption in the EU reduce the attractiveness of investments in gas assets also by private investors. This, in turn, together with the implementation of climate policies by other countries around the world, contributes to a decline in investment in gas upstream, in new fields and export infrastructure, and thus reduces the chances of significant future production increase and price declines. This fuels the uncertainty in the market now and makes the prospects for significant improvement in the future not obvious. This may ease reductions of gas consumption and implementation new green technologies and solutions. The current prices of gas and of emission allowances, among other things, are narrowing the gap in costs of gas and low-carbon or green hydrogen and, consequently, may provide an incentive to develop the hydrogen market.

At the same time, however, the crisis has also shown the importance of gas for the situation in energy markets and system balancing, especially in periods of lower RES generation, when there is no wind and/or no sun shining. The persistently high costs of not only gas, but also of electricity, have also a

negative impact on the entire economy. Additionally, galloping prices in the time of post-pandemic economic problems raise fears among some European countries and societies about the costs of the assumed ambitious energy transition and of further changes, which will have to be paid by individual consumers. They are accompanied by questions by Spain among others whether the crisis does not undermine social support to European Green Deal or even questions by some of the CEE countries if the way of implementing the European Green Deal goals (especially ETS reform) will not contribute to the further price increases in the future.

As a result, the issue of gas and energy prices - how to counteract their increases, how to cushion their impact and how they might affect the energy transition - has become a key topic of debate both in Member States and in the EU. In addition to a number of ad hoc & temporary measures, the EU has started to think about making the transition more sustainable financially by, among other things, stabilising the situation in the natural gas sector. In October 2021 , the current European Commission for the first time officially admitted that in addition to renewable energy sources, the EU needs nuclear energy and in the interim period also natural gas. It has also been reported that natural gas investments, provided a number of conditions are met, could be included in the EU's green taxonomy . The role of natural gas in the transformation has also been taken into account, among others, by Germany, where the new ruling coalition assumes an increase in gas-fueled generation capacity and electricity generation.

The current situation in the EU gas market has also spurred the EU to look at the resilience of the European gas sector to similar shocks and to revisit the issue of security of supply. This is reflected in the proposed amendments to the Security of Gas Supply Regulation concerning storage, strategic gas reserves and options for voluntary joint purchase of gas for these reserves, as well as boosting regional cooperation in risk assessment and solidarity arrangements as part of the new decarbonisation gas package .

At the same time, it is clear that the proposed changes on the part of the EU will not calm the current situation in the gas market - this would require stronger political action, including talks about the level and principles of gas supply to the EU from its most important supplier, Russia. Meanwhile, there are currently no plans for EU action in this area, and gas issues - both supply and transport routes, including NS2 - are increasingly becoming the subject of bilateral relations between Moscow and individual European capitals. It is also unclear what the long-term impact of the EC's proposed changes will be, not least because of the controversy among member states over individual solutions and visible criticism of both the inclusion of natural gas in the taxonomy and the idea of strategic reserves and joint purchases.

A key challenge for the EU remains the lack of a coherent and consistent strategy concerning gas - both natural gas and greenhouse gases. Despite the fact that EU policy has, for years, touched upon various important gas topics, as we have clearly seen in the case of the Energy Union, and despite many

achievements (including the regulation on security of gas supply, expansion of infrastructure in CEE/SEE, the common market, revision of the Gas Directive etc), the EU has failed for years to develop an effective common gas policy, largely due to Member States proving unwilling to look beyond their own interests. A challenge has been the differing interests of Member States concerning the importance of gas itself, the shape of cooperation with its largest supplier, Russia, of which the most obvious manifestation is the never-ending controversy over NS 2, and finally the role of EU institutions. The current Commission, concentrating its actions on the strategy of decarbonisation, has until recently left aside the issues of natural gas, a fossil fuel whose consumption in the next decades should be decreasing. This has been facilitated by the oversupply on the market in the last few years. The current gas crisis creates an opportunity for the EU to develop, perhaps starting with the proposed new gas package, a coherent strategy on this still important resource, its cost effectiveness, its role in the transition, and its security of supply. It will be even more important in the time when the European gas market will start to shrink.

Such strategy should have a political dimension as well as a regulatory. It could map out the key EU objectives and interests concerning the demand for gas in particular sectors (especially those where alternatives to natural gas are expensive or technically difficult to implement), as well as the necessary and coherent regulations concerning the internal market, including the entire infrastructure and gas pipelines from third countries (such as Nord Stream 2). Finally, it could set out the priorities and 'rules of the game' in relations with key partners in terms of both natural gas supplies and future hydrogen cooperation.

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