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IMPLICATIONS OF THE REPOWEREU ROADMAP FOR EUROPE – HOW MUCH WILL IT COST?

The European Commission set forth the full phaseout of Russian pipeline gas and LNG in the so-called REPowerEU Roadmap. The Roadmap published 6 May 2025, stipulates the full phase-out of Russian pipeline gas and LNG from 1 January 2026, with derogations for long-term contracts until 1 January 2028. The long-term contracts still delivered in October 2025 were the contract to Hungary (4.5 bcm/yr), Slovakia (2 bcm/yr) and Greece (2 bcm/yr). Long-term LNG bookings at terminals in France and Spain are also affected. The Commission's proposal was heavily debated from both sides: Hungary and Slovakia strongly opposed the ban on Russian contracts, while the European Parliament pushed for earlier implementation of the long-term contract ban.

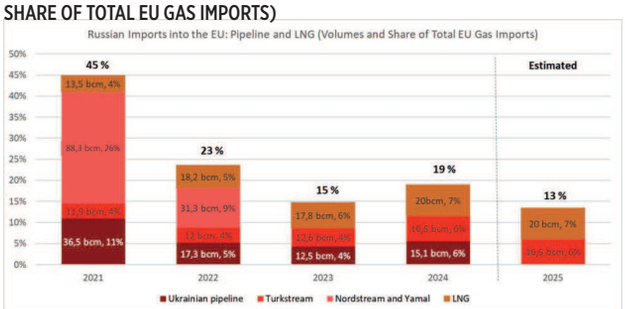
The main question that arising from the new Roadmap is how it will affect the markets and how much it will hurt the European consumers' pockets? Some have already quantified the effects, ranging from an exorbitant political statement like doubling the price on TTF to meagre price effects around 0.5 USD/mmbtu (~1.5 €/MWh) TTF price increase in 2028, as well as an 8 USD/mmbtu price increase in Hungary and Slovakia with 2026 implementation of the ban (~24 €/MWh). Using stylised modelling of the European gas market, we show that if the original proposal of the Commission is enacted, price effects will rather be below 0,5 €/MWh, a 1% increase of the wholesale gas prices for the EU27, and evenly distributed in the entire EU. Early implementation of the proposal could result in an average 4% increase of EU27's wholesale price and would widen the spreads between Western and Central Eastern European markets. While in Western Europe price increase would be around 1€/MWh, the latter would suffer from a 3-4 €/MWh price increase, which does not exceed 10%. The most affected countries in the Balkans may experience a price increase over 5 €/MWh (slightly over 10%).

SETTING THE SCENE

The Russian war on Ukraine changed rapidly the supply structure in Europe with Russian volumes falling from 45% of the EU27 import mix to 15% by 2023. This decrease however changed and volumes started to increase again in 2024. (Figure 1) The Commission's evaluation found that the original aim of the REPowerEU (to abandon Russian gas) will not be achieved voluntarily due to opposing business interests. Therefore, in summer 2025 they put a proposed Regulation on the table with the same goal. The Regulation can be approved by a qualified majority while any sanction would require the unanimity of all Member States and must be repeatedly renewed every 6 months.

The Russian gas to the EU27 accounted for 52 bcm in 2024, of which 32 bcm was pipeline gas and 20 bcm was LNG. Almost two-thirds of the Russian volumes arrived as part of long-term contract and one-third as short-term trade. (Figure 1)

FIGURE 1. RUSSIAN IMPORTS INTO THE EU: PIPELINE AND LNG (VOLUMES AND SHARE OF TOTAL EU GAS IMPORTS)



Source: REPOWER EU Roadmap, 2025

The Commission argues that the timing of such a move (full implementation from 2028) would not cause any disruption, as the Russian gas volumes could easily be replaced by increasing the supply on the global LNG market (about 200 bcm additional supply is assumed until 2030) and also in Romania (the Neptun Gas field will produce additional 8-10 bcm/yr of gas from 2027). Pipeline infrastructure has already been improved and adjusted to the changed flows during and in the aftermath of the 2021-23 energy crisis. New LNG regasification capacities have been continuously added to the EU system, of which the 13 bcm/ yr total extension of the Greek, Polish and Croatian terminals is being the most important for the CEE region (see Table 2 in Annex).

The Commission also argues that the sharp drop in gas consumption for the EU27 during the crisis (18% decrease in natural gas consumption between 2022 and 2025) will continue, and they expect further 70 bcm drop until 2027. Many stakeholders debate this expectation, and some Central Eastern European countries even experienced a demand increase in the last years due to the coal phase out in the power sector but also due to some rebounding or new industrial demand.

MODELLING SCENARIOS AND ASSUMPTIONS

To answer the question, what cost the full Russian gas phase out would mean in terms of price increase at the wholesale level, the effects were modelled using the European Gas Market Model (EGMM). This model incorporates the physical pipeline, LNG and storage infrastructure as well as the access tariffs and regulatory constraints on the network. It calculates an equilibrium where the cost of European consumers for procuring gas is minimal, considering the infrastructure and global market constraints.

We applied two modelling setups to mirror the differences between the Commission's original proposal of the REPowerEU Roadmap and the Parliament's early implementation.

The summary of these scenarios is depicted in Table 1 below.

TABLE 1. DESCRIPTION OF MODELLING SCENARIOS

Scenario	Overnight	Commission proposal
With Russian gas	2024/25 conditions*	2028 conditions
Repower EU Roadmap Russian gas phase out	2024/25 conditions*	2028 conditions

*historical demand between 2024 Q2 and 2025 Q1 and yearly average 40 €/MWh Asian gas wholesale price

** Central scenario: stagnating EU27 demand in 2028 with yearly average 40 €/MWh Asian gas wholesale price

For the early implementation we modelled an "overnight" ban on Russian deliveries on a setup that reflected the European gas market reality from 2024 Q2 to 2025 Q1. This model setup could also be verified using historical data: the EGMM very closely reproduced the EU's supply mix, the consumption patterns, the storage use, the flows on the key routes and the wholesale prices. The prices were then compared to the available price indices on hubs and exchanges in the EU27. In this scenario no additional LNG or Romanian offshore enters and the infrastructure in Europe is the same as the one we have now. In many ways, this scenario delivers the most severe impacts that the European gas market can face due to an overnight Russian gas phaseout.

In order to assess the Commission's proposal we compared a 2028 counterfactual scenario, in which the Russian LTCs and spot deliveries are still in the mix and a scenario without Russian supplies to EU Member States. Compared to 2024, additional LNG capacities of 60 bcm/yr were added to the European network as well as the offshore production in Romania comes online. In CEE we added 13 bcm/yr extensions to the LNG regasification capacities in Greece, Poland, Croatia. To avoid overestimating the savings and energy efficiency, we did not anticipate any sharp decrease in consumption, on EU27 level in our core modelling scenario demand is slightly going down from 3652 TWh/yr in 2024 to 3524 TWh/yr in 2028. On the contrary, we assumed that in CEE, where Russian gas still plays a major role and the need for gas supply still stagnates or even increases above the pre-crisis level in some countries (e.g. Bulgaria, Czechia, Lithuania, Poland, Romania) to support coal phase out in the power sector. (see Table 3 on country based data in annex)

MODELLING RESULTS

First, we discuss how an early implementation of the Repower Roadmap Regulation, that is a sudden Russian gas phase out from the EU 27 would impact the gas prices in Europe.

OVERNIGHT RESULTS ("PARLIAMENT PROPOSAL")

The overnight results show a differentiated price increase along the European countries. (Figure 2)

Looking at the RepowerEU overnight results we see that EU countries are impacted differently mainly due to their different geographical location and their share of the Russian gas in their current mix. Overnight effects are negligible in Western and Northwestern Europe, where Russian gas is present only in LNG form. The main receiving countries of Russian LNG (Spain and France) can easily host different cargoes from other sources and substitute Russian gas. The price impact is around 1 €/MWh increase in the 40 €/MWh price environment. The arrows on the map depict pipeline flows between countries and they point from west to east. The colouring turns grey for pipelines, when they are at least in 3 month of the year physically congested. The pipeline capacities are highly utilized meaning that LNG can partially reach the Central and Eastern European region. The price impact is therefore higher, in the range of + 2-3 €/MWh in Czechia, Austria, Slovakia, Hungary and even in Italy. The highest impact, an additional 4-5 €/MWh price increase is measured in Romania, Bulgaria and in Greece as the pipeline deliveries from Russia are currently reaching Europe via the Turk Stream 2 pipeline from Turkey.

RUSSIAN GAS PHASE OUT FROM 2028 ("COMMISSION PROPOSAL")

Compared to these overnight impacts, the Commission proposal sets forth a stepwise implementation of phasing out Russian gas from the European mix, with all measures to be implemented by 2028. At that time more LNG is available at the global market, and additional Romanian offshore sources are also available. We assume that by 2028 there is a slightly decreasing overall EU27 demand. All these factors already dampen the EU level gas prices compared to the historical prices in 2024 in our core scenario. At this price environment the Russian gas phase out happens at a decreasing overall price environment. Figure 3 decomposes the two effects that happen to the EU27 gas prices in our RepowerEU roadmap implementation by 2028. The first change is due to the changes in the market circumstances (supply, demand, infrastructure), the second is attributable to the introduction of the regulatory change (full ban on Russian gas). EU average wholesale gas price is 4.9 €/MWh lower in 2028 than in 2024 due to changes in market conditions.

FIGURE 2. IMPACT OF THE OVERNIGHT RUSSIAN GAS PHASEOUT FROM EU27 ON YEARLY EUROPEAN WHOLESALE GAS PRICES (€/MWH, JP=40 €/MWH)

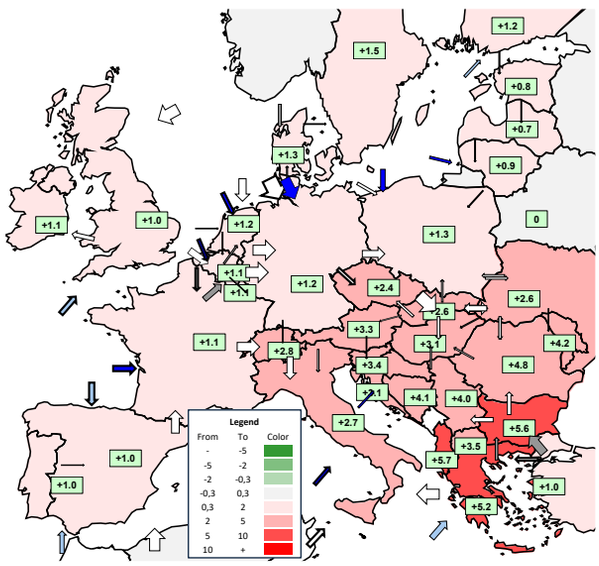
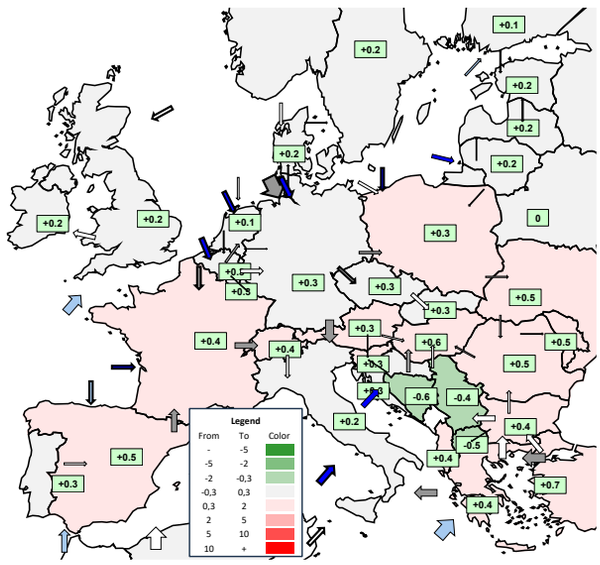


FIGURE 4. IMPACT OF THE RUSSIAN GAS PHASEOUT OF EU27 ON YEARLY EUROPEAN WHOLESALE GAS PRICES (€/MWH, JP=40 €/MWH IN 2028)



Numbers in the box depict the price impact of the Russian LNG and pipeline gas phaseout from the EU27 supply mix: the difference between the no Russian gas and the with Russian gas scenario. Arrows on the map indicate the flows on the pipelines (white arrows) indicating also the volumes (when bold they are 5 times higher) and the congestion of the technical infrastructure (the interconnectors are grey when they are congested in at least 3 months out of the 12 modelled months). Blue arrows represent the LNG regasification facilities. They are dark blue when they are physically congested at least in 3 months. Source: REKK modelling

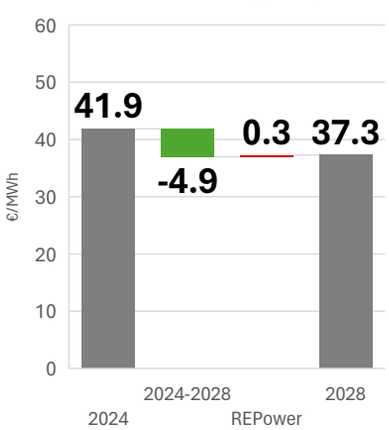
The regulatory measure would bring an average increase of 0.3 €/MWh in the EU27 wholesale gas price. This means that the gas bill that the EU pays would increase in total by 1% compared to the scenario where Russian gas would still be available.

The favourable change in market supply and demand conditions by 2028 highly outweigh the negative impact of the Russian gas phase out. The overall price change combining the market and regulatory effects would bring down the total gas bill from 2024 to 2028 with no Russian gas still by about 15%.

Looking at the country level price results on what the original Commission proposal would cause we see (Figure 4) that price impact of the Russian gas ban would be negligible not only in Western Europe but also in Central Eastern European and in the Balkans. The price change is in the range of 0.1-0.6 €/MWh in the EU Member States with the highest 0.6 €/MWh (+1.5%) increase in Hungary.

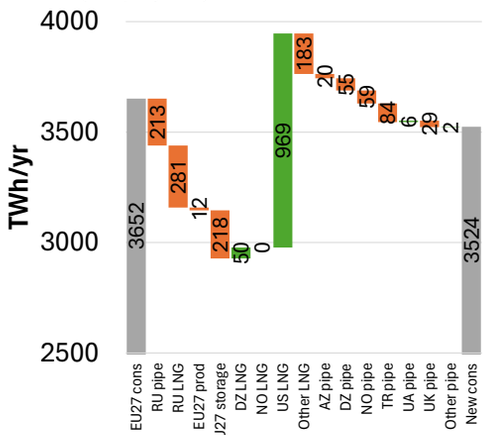
It is also interesting to see which alternative sources could reach the EU market and replace the Russian volumes on a market basis. In our modelling by 2028 it would largely be US LNG entering the EU27 markets, and crowd out not only Russian but other LNG sources as well. (see Figure 5.)

FIGURE 3. DECOMPOSING THE EU27 WEIGHTED AVERAGE NATURAL GAS WHOLESALE PRICE CHANGE FROM 2024 TO 2028 (€/MWH)



Source: REKK modelling

FIGURE 5. EU27 SUPPLY MIX CHANGE DUE TO THE REPOWEREU ROADMAP IMPLEMENTATION (TWH/YR, 2028)



Source: REKK modelling

SENSITIVITY ANALYSIS

To test the robustness of the results key parameters that drive the results should be tested. Key parameters that are based on assumptions are the global price environment (at what price would LNG be available in 2028) and the European gas demand need. These two factors together set the market conditions under which the Russian gas phase out could have different impacts.

The other risk is that it might happen that when the EU starts implementing the Russian gas phaseout, Russia might decide to stop delivering gas on Turk Stream2, which would mean that non-EU countries on the Balkans (Serbia, Bosnia Herzegovina and Nort Macedonia) would also need to look for other supply options. These risks are discussed in this chapter.

DECOMPOSTION OF MARKET AND REGULATORY PRICE IMPACT IN DIFFERENT GLOBAL SUPPLY AND DEMAND CIRCUMSTANCES

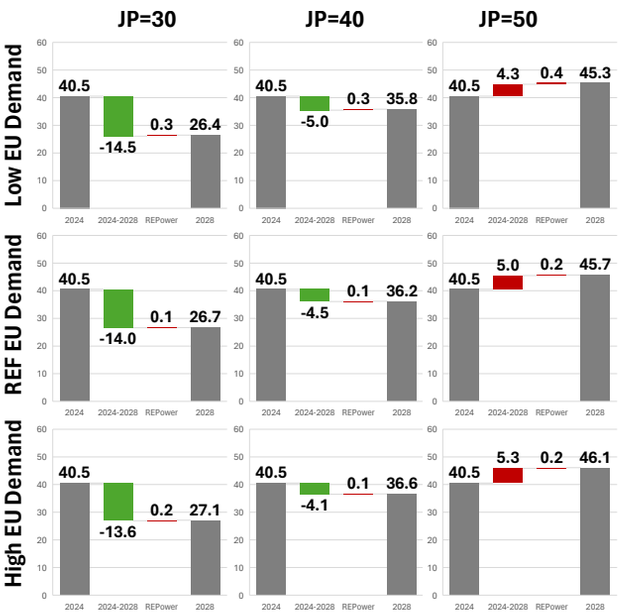
Availability of LNG and European natural gas demand has a considerably affect modelling outcomes. To test the robustness of our results, parameters related to global LNG market and European consumption were adjusted. An oversupplied LNG market was modelled for 2028 by setting the JP price (JKM marker) at 30 €/MWh, while a tight market was modelled at 50 €/MWh. EU27 natural gas demand was assumed to be 15% lower (representing pre-energy crisis gas consumption levels) and 15% higher than in the central scenario. Sensitivity scenarios allow us to decouple the effects of the market and regulations. It is apparent from Figure 6 that the price level in European gas markets will be mainly driven by the availability and price of LNG, followed by the European gas demand. The effects of the regulation are below 0.5 €/MWh for the Western-European markets such as the Netherlands in all sensitivity scenarios. Effects of the regulation are somewhat higher for Central European markets like Hungary: still in 7 out of 9 scenarios the price effect of the regulation is below 1 €/MWh.

MODELLING A RUSSIAN RESPONSE

As an even more severe supply shock than the Repower EU Roadmap itself, we also tested a scenario in both setups (overnight and 2028), where the EU 27 gas phase out is complemented by a Russian gas phase out in the non-EU member states on the Balkans, that are currently supplied via Turk Stream 2, be that a consequence of a Russian reaction to the EU ban or a voluntary ban on Russian gas by these countries. This scenario stops the Russian long term contract deliveries to Serbia, Bosnia and Herzegovina and North Macedonia.

Though not being discussed within the REPowerEU Roadmap, the one-sided ban on Russian gas supplies leaves some of the non-EU member countries on the Balkans that are still being supplied via their long-term contracts by Russian gas exposed to the decision of Gazprom on whether to keep on the Turk Stream 2 deliveries for these small contracts. The Turk Stream 2 pipeline has a yearly 15 bcm/yr throughput capacity, that has been fully utilized in the last years. Would the REPowerEU Roadmap happen, it might be too costly to operate the system for the remaining 3-4 bcm/yr. It would not be an unprecedented move: At the beginning of 2025 the cut of the Ukrainian delivery route also resulted in the complete cessation of the Moldovan Russian supply contract, although the physical possibility was there to supply Moldova via the Trans Balkan pipeline in a backhaul mode, from Turkey via Bulgaria and Romania. We have no information on the intentions of Russia towards Serbia, Bosnia and North Macedonia, however a complete shutdown could be a result also of a political backslash on the REPowerEU. To see how exposed EU and non-EU member European countries are to such a response, we tested the price impacts of a full Russian supply cut on Turk Stream 2, when the current long-term supply contracts to Serbia, Bosnia Herzegovia and to North Macedonia are not delivered. The results are depicted on Figure 7. The spreads between regions emerge similarly as in the REPowerEU case, however an additional + 2 €/MWh is

FIGURE 6. PRICE EFFECT OF MARKET AND REGULATORY CHANGES IN THE SENSITIVITY SCENARIOS (LEFT: NETHERLANDS, RIGHT: HUNGARY)



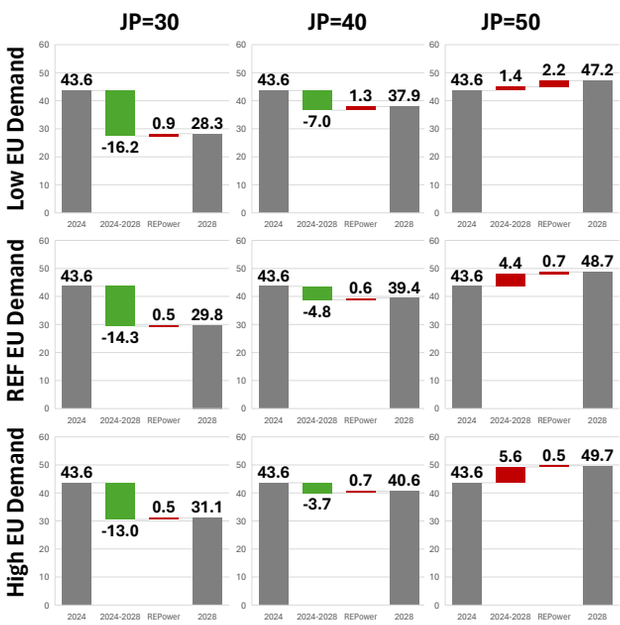


FIGURE 7. IMPACT OF THE OVERNIGHT RUSSIAN GAS PHASEOUT OF EU27 + SERBIA, BOSNIA AND NORTH MACEDONIA ON YEARLY EUROPEAN WHOLESALE GAS PRICES (€/MWH, JP=40 €/MWH)

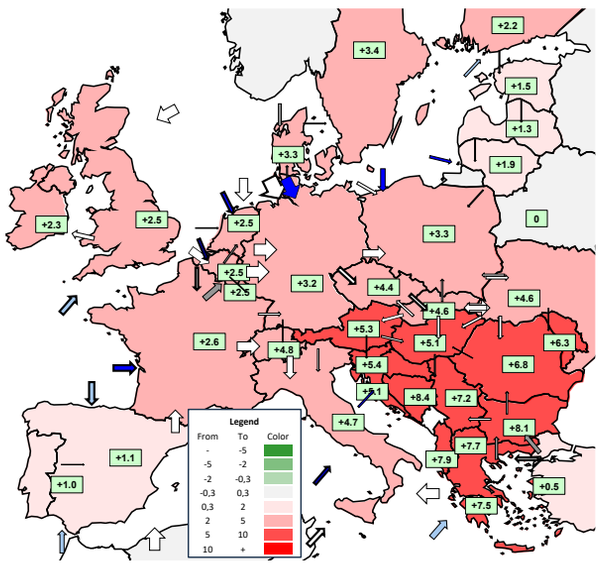
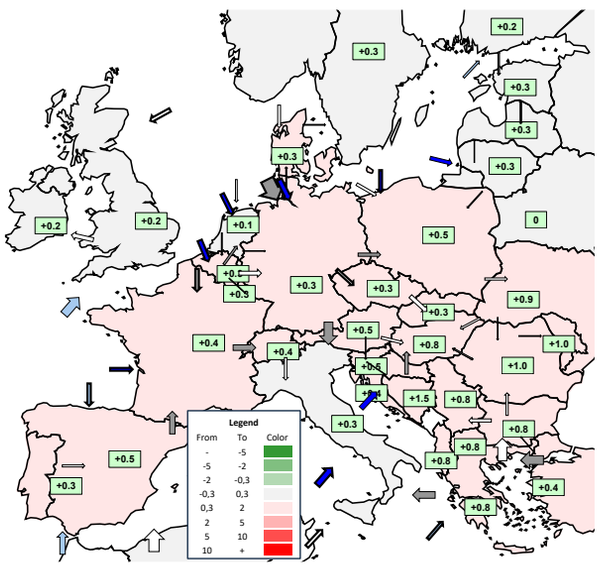


FIGURE 8. IMPACT OF THE RUSSIAN GAS PHASEOUT OF EU27 + SERBIA, BOSNIA AND NORTH MACEDONIA ON YEARLY EUROPEAN WHOLESALE GAS PRICES (€/MWH, JP=40 €/MWH IN 2028)



Numbers in the box depict the price impact of the Russian LNG and pipeline gas phaseout from the EU27 supply mix: the difference between the no Russian gas and the with Russian gas scenario. Arrows on the map indicate the flows on the pipelines (white arrows) indicating also the volumes (when bold they are 5 times higher) and the congestion of the technical infrastructure (the interconnectors are grey when they are congested in at least 3 months out of the 12 modelled months). Blue arrows represent the LNG regasification facilities. They are dark blue when they are physically congested at least in 3 months. Source: REKK modelling

visible. Countries with abundant LNG regasification capacities (Spain, UK) seem to withstand the price increase, however their interconnectedness with the rest of the EU market is limited, therefore the other countries cannot utilize the access to the global LNG market fully. We see that even in France and in the Benelux countries, the Nordic countries and in Germany and Poland the price impact is 2-3€/MWh in a 40 €/MWh price environment. The Central European counties (Czechia, Austria, Hungary, Slovakia, Slovenia, Croatia, Italy and Ukraine) see a +4-5 €/MWh price increase, while the Balkan is even +6-8 €/MWh more expensive that in was before Russian gas was banned.

Would the full stop of Russian deliveries to the non-EU countries occur in 2028, the results are much more modest and stay below a 1€/MWh increase for all EU and for most of the non-EU countries, with the exception of Serbia (+1.5 €/MWh). These results show that there is no Russian leverage on the European gas market by 2028 and the Russian gas phase out can be implemented with negligible price impact. (Figure 8.)

CAVEATS AND THINGS TO CONSIDER

While modelling the effects of the proposed REPowerEU Roadmap regulation, a number of assumptions must be made on parameters.

We assumed that Ukraine mostly covers its domestic natural gas demand with own sources. In 2025, concerted and targeted attacks of Russia on the Ukrainian production and storage infrastructure increase the import need of Ukraine. To allow for a financially feasible alternative delivery route for Ukraine from the south, the gas tariffs on the Trans-Balkan route should be reviewed as it has already been on the agenda for some time.

We also assumed that Russia would continue to deliver the contracted gas volumes to Serbia, Bosnia and North Macedonia. Not having these volumes would add an additional demand need in the Balkans and would curb up the modelled price impacts.

As the Commission's proposal suggests the Turkish-Bulgarian network point Strandzha-Malkoclar is partly exempted from the regulation, and such we opted to allow spot flows utilise this network point. Some amendments to the Commission's proposal aim to include this network point in the regulation which would require certification for the gas volumes utilising the Strandzha-Malkoclar point. While the certification of gas is necessary to avoid the relabelling of Russian sources, access to non-Russian gas molecules on the Turkish market is key to mitigate the price impact of the regulation on the Balkans.

On the demand side we adopted a conservative option by using a stagnating demand for future scenarios rather than assuming a continuous sharp decline of EU27 gas consumption. With that we acknowledge the risk that energy efficiency investments and switching away from gas to renewables can also be slower than planned. These assumptions together result in a very modest price increase EU wide in 2028 without threatening the markets to fall apart into regionally different priced sub-markets.

However, these positive results change when the Regulation is implemented too early: as the overnight modelling results shows, the need for new alternative supply to enter is very much needed especially in the Central Eastern European region and on the Balkans. The new Romanian offshore gas resources and the additional supply of new LNG production facilities are key to balance the missing Russian volumes. Without them the price impact is much higher and more importantly the spread between gas markets would emerge that would necessarily spread over also to the electricity markets, as natural gas-fired power plants are usually the price setting units. In an early implementation setup a potential Russian response of cutting deliveries to non-EU markets on the Balkans would add a further +2 €/MWh to the costs of gas phase out all across Europe.

This means that the Commissions original proposal is a well-designed plan to phase out Russian gas from the EU 27 without placing an excessive financial burden on the EU gas consumers. Even the minor burden is shared equally across Europe, as price increase does not differ between regions.

ADDENDUM

On 3 December 2025 the provisional agreement was reached on the REPowerEU Roadmap, that it shall be implemented from November 2027. The Hungarian government's reaction is harsh and the Minister of Foreign Affairs already announced that Hungary will challenge the Regulation at EU court. He stated that

> *"the adoption, implementation, and enforcement of this Brussels diktat is impossible from Hungary's side, and the regulation undermines the country's energy security, because without energy imports from Russia, it is physically impossible to safely supply Hungary with sufficient oil and gas relying only on the remaining infrastructure."*

He also added that the adoption of the ban would result in

> *"certain market players and countries being placed in a monopoly position vis-à-vis Hungary, which would lead to dramatic price increases for energy carriers and a tripling of household energy bills."*

Government communications often cite that according to their estimation the Hungarian gas bill might be 800 billion HUF/year more due to the Russian gas phase out. This is a magnitude higher than what our modelling suggest. In our core scenario (REPOWER JP=40 €/MWh with stagnating demand) the Hungarian gas bill increases by 65 million € (about 26 billion HUF) due to the Russian gas ban, which is a 1.5% increase in the counties' gas bill. The comparison with the household's end user bills is arbitrary, as those are regulated in Hungary and are set well below the market price. If the Hungarian government estimates a 2-3 times higher gas bill for the households, in the future it should not be blamed on the Russian gas phase out, nor on the European Commission. If this happens than this happens because the Hungarian government is not any more able or willing to finance the low gas bill for households from other state budget lines.

ANNEX

TABLE 2.LNG REGASIFICATION CAPACITIES ASSUMED FOR MODELLING

	LNG regasification capacity, TWh/yr		
	2021	2024	2028
BE	99	244	264
DE	-	187	429
ES	682	778	778
FI	7	51	51
FR	414	541	541
GR	76	104	165
HR	29	31	65
IT	192	264	391
LT	43	44	44
MT	7	7	15
NL	176	315	317
PL	55	80	169
PT	84	73	73
EU27 total	1,865	2,720	3,301

Source: REKK based on ENTSOG TYNDP

TABLE 3. ANNUAL NATURAL GAS CONSUMPTION ASSUMED FOR THE EU27

	Annual gas consumption, TWh/yr		
	2021	2024	2028
AT	98	81	67
BE	185	156	178
BG	36	31	46
CZ	97	78	100
DE	976	872	764
DK	30	25	29
EE	5	3	3
ES	388	314	252
FI	21	17	17
FR	464	368	342
GR	71	73	67
HR	33	28	24
HU	119	97	108
IE	55	55	49
IT	808	672	642
LT	22	18	25
LU	8	7	7
LV	11	8	6
MT	4	4	3
NL	356	298	296
PL	223	222	245
PT	65	41	36
RO	124	122	152
SE	12	8	10
SI	10	10	12
SK	58	45	43
EU27	4277	3652	3524

Source: REKK based on ENTSOG TYNDP

REKK FOUNDATION

The goal of the REKK Foundation is to contribute to the formation of sustainable energy systems in Central Europe, both from a business and environmental perspective. Its mission statement is to provide a platform for open-ended, European-wide dialogue between government and business actors, infrastructure operators, energy producers and traders, regulators and consumers, professional journalists and other interested private entities. The Foundation will develop policy briefs and issue papers with forward-looking proposals concerning challenges posed by energy and infrastructure systems and organize regional forums allowing stakeholders to become familiar with the latest technological and regulatory developments within the industry.

Péter Kotek graduated in 2009 at the Corvinus University of Budapest as an economist, majoring in market analysis. He joined REKK in the same year as a research associate. From 2015, he is working as a senior research associate. His areas of interest are ancillary services market in electricity, LNG and gas storage markets. He has participated actively in REKK's gas market modelling work since 2015.

Borbála Takácsné Tóth has worked with REKK since its creation in 2004. In 2001 she received an M.A. in International Relations and European Studies at the CEU in Budapest. Borbala is an economist and received her degree from the Budapest University of Economic Sciences in 1998. Between 2001 and 2003 she was Head of the President's Secretariat responsible for international relations of the Hungarian Energy Office. Her main fields of expertise include: regional co-operations; security of supply issues; energy geopolitics; major infrastructure initiatives in the gas sector and incentives for investments; competition cases in the gas market; and the effect of gas release programs on competition in the gas market in Europe.

Adrienn Selei has been working for REKK since 2011. Her work especially includes gas market modelling, but she has been also involved in different works in the field of electricity markets (mainly analysing system reserves market and topics of mar ket integration). She has already finished her Phd studies in Economics. Due to her studies and teaching experience she has a profound knowledge in industrial economics and market modelling.

EUROPEAN UNION

Interreg Programme Danube Region

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