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Monthly Analysis

New Challenges for the (SE) European Gas Market



Introduction

In 2023, the EU gas system consolidated the notable changes initiated in 2022 to reduce reliance on Russian supply through increased LNG imports and demand reduction. This supply shift initiated an important reshuffling of gas transit flows within the EU network moving away from the historical East-West transmission path. These reshuffled flows continued in 2023 and 2024 so far.

According to the ACER (1), the gas supply to Europe remained below the range observed before the Russian aggression in Ukraine. A combination of factors played a role and led to wholesale prices decreasing. On the one hand, with consumption substantially lower, storage levels stayed at historic highs. On the other hand, the expansion of the LNG import infrastructure capacity by over 50 billion cubic meters (bcm) in 2023 played a crucial role in facilitating an increase in LNG imports and helped to reduce supply bottlenecks as well as gas network congestions. As a result, not only did European gas wholesale prices decrease, but gas hub's price convergence improved.

With European countries turning to Algeria for gas supplies amid the disruption caused by the Russian invasion of Ukraine, Algeria has become Europe's second-largest pipeline gas supplier after Norway. The EU and Algeria have maintained a long-standing strategic partnership on energy, aiming for a stable and reliable flow of gas. This now includes several of the SE European EU member states, which have been exploring options to boost energy security and diversify their gas supplies. This has seen governments reach out to Azerbaijan in particular, as well as the construction of new gas pipeline infrastructure.

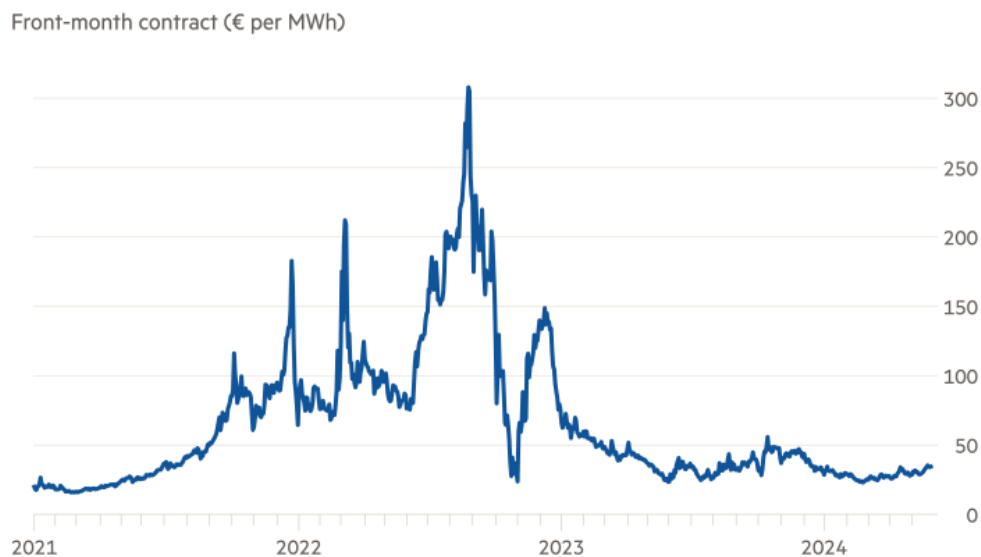
The current Monthly Analysis will attempt to shed light on the latest gas developments at European and SE European level, highlighting the challenges that now emerge in the wider region, amid geopolitical risks, as the war in Ukraine and Hamas-Israel conflict are still in progress.

Europe Must Act Over Vicious Circle in Gas Supply

The European gas market has proved far more resilient to the immense political and security challenges it has faced since the full-scale invasion of Ukraine in 2022 than many would have guessed. It was only two years ago that giving up the Russian pipeline habit seemed nigh-on impossible. But the EU is not yet out of the woods. Energy pundits observe that maintaining Europe's single gas market is likely to cost a lot more in the future. The EU system has already had to reconfigure itself around the loss of its largest source of supply. According to current analysis, as the transition from gas to greener alternatives gains pace, in theory a shrinking pool of remaining customers will have to shoulder the cost of maintaining oversized gas grids.

Analysts point out that in order to address these challenges and others, some of the network maintenance costs may have to be borne differently. Europe needs a way of avoiding the creation of a vicious circle in which system tariffs keep having to go up because fewer users are around to pay for them. Two years ago, European businesses and governments acted remarkably swiftly to build enough floating LNG terminals to replace lost Russian supply. As a result, the continent avoided gas rationing, and market prices fell back to near pre-crisis levels after just 12 months. The most controversial new cost to come out of 2022, though, has been Germany’s so-called “storage levy”. The country introduced this new charge on all gas leaving its grid as a way to make up the multibillion-euro losses the government incurred in buying gas at record-high prices two years ago in order to fill storage. The German levy is €1.86/MWh at the moment and will increase to €2.50/MWh from the start of July. The German government announced recently, however, that it plans to abolish the charge from the start of 2025. (2)

Figure 1: European Benchmark Gas Price



Sources: Argus Media, Financial Times

Meanwhile, the operators of Europe’s gas transmission networks, which provide the arteries of pipelines across the continent, are having to rethink their revenue models for a world in which no Russian gas flows through the system. So-called transmission system operators (TSOs) in Czechia, Austria and Slovakia are all planning to raise their fees for transporting gas through their systems to cover lost Russian transit revenue. These extra transport costs will make it more expensive to ship gas south and west to central Europe. Shippers are already doing what they can to avoid transporting gas through Germany, the main route for LNG to reach landlocked eastern markets.

When companies cannot avoid the German route, the local price at the final destination of the gas must be at a significant premium to that in Germany to attract imports. As a result, cross-border trading opportunities are drying up, with the consequence that flexible assets like storage sites are now underused and developing markets such as Ukraine are finding it harder to integrate into the European network. For instance, traders are left with little incentive this summer to store gas in Ukraine as they used to, because the spreads between summer and winter prices are too narrow to cover even half the cost of shipping gas from Austria to Ukraine and back again. There are several possibilities. More support could perhaps be provided for TSOs in former Russian transit countries. The EU might consider the creation of an EU-owned “bad TSO”, like a bad bank, which could own (and pay for) capacity that the market no longer needs but has not yet been fully decommissioned. A subsidised network downsizing in those places that used to carry a lot of Russian gas may also be part of the solution. In the other direction, there should perhaps be an exemption from tariffs for companies using new or repurposed pipelines between LNG terminals and landlocked countries.

Network tariffs are a useful way of spreading costs across the industry. System use is usually a good proxy for market share and therefore how much of the market upkeep costs a company should pay. But some costs may be better recouped in other ways to avoid network fees discouraging the kind of behaviour that the EU wants to promote — for instance, shipping more LNG inland from the coasts. As Europe builds out its LNG import capacity, maintaining a limited difference in market price between the coasts and the interior will require cheap pipeline capacity. In short, maintaining a single European gas market, which was never free, will be more expensive from now on. Europe needs to rethink how these additional costs are borne, or the fragmentation of its traded markets may be unavoidable.

Europe in Talks to Keep Russia-Ukraine Gas Pipeline Flowing

Strange as it may sound in view of EU’s fierce anti-Russia stance, European officials are in talks to keep gas flowing through a key Russia-Ukraine pipeline, as they race to prevent Moscow’s war further damaging the continent’s energy supplies. Europe has tried to wean itself off Russian gas but several SE European countries continue to receive it through a pipeline that crosses Ukraine and also through TurkStream, whose volumes have not been much affected, and which is used to supply SE Europe, including Greece and Serbia. The agreement that covers the transit arrangement through Ukraine expires at the end of this year. And with war raging, most market watchers expect the gas to finally come to a halt.

But European governments and company officials are talking to counterparts in Ukraine about how to keep the gas flowing next year. One option that has been discussed is for European companies to buy and inject gas from Azerbaijan into Russian pipelines heading to Europe. Such an arrangement would allow Europe to

avoid the embarrassment of buying Russian gas at a time when it is trying to crimp Moscow’s revenues. The idea is gaining momentum as it becomes clear that Ukraine would be in favor. Transit revenue amounted to about \$1 billion in 2021 — providing crucial funding for the war-ravaged economy. There are also concerns that disused pipelines could become military targets, or fall into disrepair that is costly to reverse. “There are two factors we should always remember”, Oleksiy Chernyshov, chief executive of Ukraine’s state-run Naftogaz, told Bloomberg News. “One is that Ukraine has incredible infrastructure of transit and storage gas, which should be used, and Ukraine is predisposed to use this infrastructure because it brings a lot of advantages”. (3)

Figure 2: Russian Gas Still Flows to EU via Ukraine



Sources: Eustream, Bloomberg

He ruled out any plan that involved working with Russia’s Gazprom PJSC, and said bringing gas from Azerbaijan “might have some future.” A plan to use Azeri gas could in theory benefit Russia if it was set up as a swap that allowed Moscow to send its gas elsewhere. Russia has struggled to find enough new customers for the fuel as its infrastructure is set up to supply Europe, and China is driving a hard bargain. The idea of swaps is not alien to oil and gas markets and is used when it is not possible to physically deliver fuel from one location to another. A swap could be a temporary solution as Azerbaijan does not currently have spare gas production and is already using its pipeline system to Europe at full capacity. The Caspian nation seeks to increase exports to Europe but a major boost would require infrastructure upgrades, higher gas production from Caspian fields under development and new long-term contracts. European gas prices remain vulnerable to any perceived change in supply.

Deadline Pressure

Talks are in the early phase and people familiar with the matter expect decisions only toward the end of this year, when the expiry deadline — and the start of the European winter — adds pressure. Many details still need to be hashed out, and it is not clear a deal will get done. Developments on the battlefield may also be a factor. Uniper SE, the gas giant that was nationalized by Germany as the energy crisis ruined its business model, has been involved in discussions. Slovakia is one of the key countries that could benefit from such a deal, and Prime Minister Robert Fico spoke of the possibility recently following a trip to Azerbaijan, without providing details. “Now, it depends on negotiations between companies such as Russian Gazprom, Azerbaijani, Ukrainian companies, and others to agree on economic and pricing conditions”, he told reporters in May. “If they do, Slovakia could import gas from Azerbaijan, with part of it staying in Slovakia and part passing through to other countries”. Slovakian state-run gas importer SPP said another option could be a consortium of European companies or countries, or a designated third party, taking over the ordered gas deliveries from Gazprom at the Russia-Ukraine border.

Russia still ships around 15 bcm of gas to Europe a year via Ukraine, mainly to Slovakia and Austria, where Russia is still a dominant supplier. In Austria, Russian gas has covered more than 80% of Austrian consumption for five straight months. Türkiye and Greece receive almost 50% of Russian gas imports through TurkStream. Europe also imports Russian LNG by ship, and despite frequent debates about whether it should, it has never sanctioned Russian gas. European Commission functionaries believe the bloc can withstand the end of Russian transit via Ukraine without any major security risk. However, this remains to be seen. Its plan is to rely on alternative suppliers and pursue its ambitious climate strategy, including more renewables and energy savings. Some member states are less sanguine and fear a replay of the energy crisis. That aligns them with the interests of Ukraine. “I’m doing everything to find a solution that the Ukrainian gas transportation system will continue to be operational because it is a big asset and someone should be a customer”, Chernyshov said. “Otherwise it is loss generating”.

The SE European Countries Look to Algeria to Diversify Gas Supplies

Algeria has become an important supplier of natural gas to SE Europe, including some of the SE European countries, as they seek to diversify their energy sources and reduce reliance on Russia. With the aim of boosting gas supplies from Algeria, Slovenian Prime Minister Robert Golob signed a gas purchase agreement with Algerian officials during his official visit to Algiers on May 27, 2024. The amendment to the gas purchase agreement between Geoplin doo Ljubljana and Algeria’s Sonatrach group will increase gas supply by an

additional 200 million cubic metres (mcm) per year, supplementing the existing basic contract of 300 mcm per year from 2023 to 2025. Slovenia indicated it is keen to extend the natural gas supply contract beyond 2026, when the current contracts are set to expire.

Historically, Slovenia relied on Algerian gas, sourced via Italy, to meet up to 30% of its gas market needs. However, after the expiration of the contract between Geoplin and Sonatrach in 2012, Slovenia's then government, under Janez Jansa, opted to solely depend on Russian gas. The importance of Algerian gas as a viable substitute became apparent following Russia's 2014 attack on Ukraine and the ensuing energy crisis. In recent years, Slovenia has thus sought to reestablish its energy collaboration with Algeria, which includes a three-year gas supply agreement between Geoplin and Sonatrach, signed in 2022. This contract, effective from January 1, 2023, covers a third of Slovenia's annual gas consumption, with provisions for potential extensions. (4)

Shortly before the Slovenian prime minister's visit to Algeria, Algerian Sonatrach shipped its first LNG cargo to neighbouring Croatia, which arrived at the Krk floating regasification terminal on May 22, 2024. The shipment, a result of extensive collaboration with Croatian stakeholders since the terminal's commissioning in 2021, marks Sonatrach's first natural gas supply to Croatia and Hungary. It should be mentioned that Greece has been a long-standing customer of Sonatrach, having in place long-term contracts since 1988. First Algerian shipments were delivered in Greece in 2000. In February 2022, DEPA Commercial, which is the main importer of pipeline gas and LNG in Greece, signed new long-term contract with Sonatrach.

Algeria, a major natural gas exporter, increased its production by 3.3 bcm to 136 bcm in 2023. The country exported 52.4 bcm of gas in 2023, up from 49.3 bcm in 2022. Foreign Minister Ahmed Attaf told the World Economic Forum in Riyadh in April that many European countries were requesting more gas supplies to meet high demand. In the past, Algeria delivered gas to Europe via the Maghreb-Europe Pipeline (MGE), which also passed through Morocco. Political tensions, however, led to the pipeline's closure in October 2021. Since that time, Algeria has been using the Medgaz pipeline to export gas to Europe, particularly to Spain. By 2023, Algeria became the leading energy supplier to Spain, meeting 29.2% of its energy requirements.

Algiers is also considering building the Algeria-Sardinia GALSI gas pipeline to further boost gas exports to Europe, and may in future use the pipeline to transport hydrogen and ammonia exports. To further boost gas exploration and production, Sonatrach signed agreements with ExxonMobil and Baker Hughes on May 23. The first agreement with ExxonMobil focuses on the development of hydrocarbon resources in Algeria's Ahnet and Gourara basins. The second agreement, with Baker Hughes, involves providing services for Algeria's largest gas field, Hassi R'Mel.

Vertical Gas Corridor Enhances (SE) Europe’s Energy Security

Greece, Bulgaria, Romania, Hungary, Slovakia, Moldova and Ukraine form part of the Vertical Natural Gas Corridor, an ambitious project that aims to enhance energy security in SE and Central Europe and to increase Europe’s energy infrastructure. Its foundations were laid back in 2022 during the “World LNG Forum and Awards 2022,” organized by the Natural Gas System Operator of Greece (DESFA). The National Operators of Greece (DESFA), Romania (Transgaz), Bulgaria (Bulgartransgaz) and Hungary (FGSZ), together with the Interconnector Greece-Bulgaria (IGB) and the Alexandroupolis Floating Storage and Regasification Unit (FSRU) project operators, signed a Memorandum of Understanding to deepen cooperation in the energy field. Ukraine, Moldova and Slovakia joined the Vertical Gas Corridor last January, in the sidelines of the Ministerial Meeting of Central and Southeastern Europe Energy Connectivity (CESEC) that took place in Athens. (5)

Figure 3: The Vertical Gas Corridor



Source: DESFA

First conceived in 2014, following the signing of an MoU between Greece, Bulgaria and Romania and elaborated by IENE in a pioneering 2015 study (6), the “Vertical Natural Gas Corridor” is an expanded gas pipeline system made up of existing and future infrastructure for natural gas. This includes pipelines, LNG terminals and natural gas storage facilities. Its purpose is to transfer natural gas from Azerbaijan (through the Trans-Adriatic Pipeline or TAP) and LNG from trusted sources, such as the US, Algeria and Qatar towards

Europe. The Vertical Corridor starts in Greece, passes through Bulgaria and reaches countries in Central, Eastern, and SE Europe, helping them to reduce and phase out their dependence on Russian hydrocarbons.

The Russian invasion of Ukraine has elevated the issue of European energy security into a very high priority. At the same time, devastating wildfires and floods in Greece and the Mediterranean have highlighted the challenge of climate change and the need for transition to cleaner energy sources. Decreasing Europe's reliance on Russian hydrocarbons and tackling climate change are major priorities. Greece's geographical location and its proximity to major gas-producing regions, such as the Eastern Mediterranean, further enhance its role in the Vertical Gas Corridor.

In October 2022, a big moment for the "Vertical Natural Gas Corridor" was the inauguration of the Greece-Bulgaria Natural Gas Interconnector (IGB), a milestone project that is reshaping the "energy map" of the wider region. Moreover, the Alexandroupolis FSRU that is Greece's second import gate of LNG – following the upgraded Revithoussa LNG terminal – will soon become fully operational. Greece thus expects to double its LNG liquefaction capacity, further positioning itself as a crucial transit hub for gas supplies destined for Europe. As such, Greece stands to play a pivotal role in shaping further Europe's energy infrastructure and supply routes through the development of the Vertical Gas Corridor.

Discussion

EU's integrated gas market has proven resilient to the crisis, facilitating the reconfiguration of supply and demand and ensuring that gas flows where it is most needed. A combination of enhanced LNG supply, new gas infrastructure investments (in LNG regasification) and sharply reduced gas consumption has brought a new supply-demand balance equilibrium to EU gas markets, enabling the shift away from (the majority) of Russian gas pipeline supply. However, this equilibrium remains fragile in the short term, with the market navigating within a narrower comfort zone, expected to loosen as global LNG production ambitiously expands. Within this scenario, the persisting higher congestion of 2023 relative to 2021 values, may signal a reduction in market efficiency (i.e. from a societal perspective, a market with occasional congestion may be more efficient if addressing such congestion would cost more than the benefits gained from removing the bottleneck). In the context of a tight gas market with significant local congestion, it is a no-regret measure to address acute bottlenecks.

In 2023, the EU gas system consolidated the notable changes initiated in 2022 to reduce reliance on Russian supply through increased LNG imports and demand reduction. However, Russian gas has not disappeared from EU's gas system, as it continues to supply a number of countries. Undoubtedly, there has been a big shake up in European gas supply and market consolidation is not yet over. Especially as there is a need to

safeguard competition and EU reliance on LNG heightens, and likely to face amplified volatility until new global LNG production (from 2026 onwards) stabilizes prices. In addition, the surge in LNG supply has led to flow reconfigurations, which are at risk of being affected by uncoordinated national measures rising cross-border transportation costs. Amidst these changes, the market is evolving to incorporate larger volumes of decarbonized gases (e.g. biomethane, synthetic fuels, etc.), while overall remaining to ensure EU's seasonal energy supply through vast storage capacities.

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