

OPINION No 03/2024
OF THE EUROPEAN UNION AGENCY
FOR THE COOPERATION OF ENERGY REGULATORS

of 18 July 2024

on ENTSOG's Summer Supply Outlook 2024

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators ('ACER'), and, in particular, Article 4(3)(b) thereof,

Having regard to Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005, and, in particular, Articles 9(2) and 8(3) thereof,

Having regard to the outcome of the consultation with ACER's Gas Working Group,

Having regard to the favourable opinion of the Board of Regulators of 17 July 2024, delivered pursuant to Article 22(5) of Regulation (EU) 2019/942,

Whereas:

1. INTRODUCTION

- (1) On 16 April 2024, the European Network of Transmission System Operators for Gas ('ENTSOG') published its Summer Supply Outlook 2024¹ pursuant to Article 8(3)(f) of Regulation (EC) No 715/2009.
- (2) Pursuant to Article 4(3)(b) of Regulation (EU) 2019/942, ACER may provide an Opinion to ENTSOG on, inter alia, relevant documents referred to in Article 8(3) of Regulation (EC) No 715/2009, as submitted by ENTSOG to ACER pursuant to Article 9(2), first subparagraph, of Regulation (EC) No 715/2009.

¹ <https://www.entsog.eu/outlooks-reviews#summer-outlooks-and-reviews>

2. SUMMARY OF THE DOCUMENT

- (3) ENTSOG's Summer Supply Outlook 2024 assessed the European gas network² readiness to meet demand, exports and the storage injection needs during the upcoming summer period (from 1 April 2024 to 30 September 2024) under different scenarios. The main goal is to reach a 90% filling level of storage by 1 October 2024.
- (4) ENTSOG applied several supply stress scenarios to assess the Union's dependence on Russian piped gas³ and liquified natural gas (LNG). Russian piped gas was minimised and fully disrupted, while the availability of LNG supply for Europe was modelled under a high, reference and low supply scenarios.
- (5) Following the interest expressed by ACER and stakeholders, ENTSOG has carried out an extended analysis for the 2024/2025 winter season, starting from the simulation results obtained for the 2024 storage injection period. This extended scenario uses a reference case of reaching by 31 March 2025 a 59% storage filling level, which corresponds to the same filling level available by 31 March 2024.

ENTSOG main findings and conclusions

- (6) ACER underlines the importance of the following conclusions:
 - a. New gas infrastructure, and particularly the new LNG terminals commissioned since autumn 2022 (most of them Floating Storage and Regasification Units, FSRUs), has contributed to reduce the gas system dependence on Russian piped gas, allowing additional imports from alternative gas supply origins. Moreover, selected cross-border capacity expansions have contributed to reduce supply congestion and help accommodate increasing West to East gas flows. With high storage levels at the beginning of the summer 2024 and assuming additional supply from other gas sources, in particular LNG, the gas network would enable to meet gas demand and fill storages by the end of the injection season without relying on Russian piped gas.
 - b. Storages remain crucial for ensuring security of supply as they provide most of the seasonal supply flexibility during the winter season. Significant early withdrawals during the winter could however lead to low storage levels by the end of winter, impacting the gas system flexibility. To keep adequate security of supply levels, it is important to inject sufficient gas during summer and keep storages at adequate levels until the end of the winter.
 - c. In the event of a combined full disruption of Russian pipeline gas supplies and limited availability of LNG supplies⁴ for Europe, storage withdrawals would have to be maximised in several countries to meet forecasted demand, implying low filling levels at the end of the 2024/25 winter, severely limiting their flexibility. In this scenario, gas demand measures and additional gas supply from other sources

² As the Summer Outlook notes (p.35), the readiness of the gas infrastructure under different scenarios should not be considered as a forecast. The actual gas supply mix and flows will depend on market players' behaviour.

³ It does not consider gas in form of LNG supplied by Russia.

⁴ Under a scenario of LNG supplies at the 5-year average level.

would be necessary: for example, a reduction of gas demand by 15% due to changes in market behaviour or policy-based demand measures, and access to additional LNG supply would avoid demand curtailment risks and maintain adequate storage levels.

- d. Additional storage flexibility in the Union could be achieved by storing gas in Ukrainian storage facilities, which offer 10 bcm of storage available. Potential gas transit between Member States through Ukraine could also improve the interconnectivity between the CEE and SEE regions.

3. ASSESSMENT

- (7) In terms of scope of the assessment and the process followed by ENTSOG, ACER welcomes the timely publication of the Summer Supply Outlook 2024 ahead of the summer season. Furthermore, ACER appreciates the use of gas supply minimisation and disruption scenarios to assess the main risks for gas supply, as well as ENTSOG's recommendations to mitigate risks of imbalance of gas supply and demand. In addition, ACER acknowledges ENTSOG's and Gas Infrastructure Europe's (GIE) efforts to make their gas supply monitoring tools⁵ available and continuously improve those. An assessment of the various assumptions and scenarios is provided below.

3.1. Gas storage assumptions

- (8) On 1 April 2024, at the starting point of the outlook simulations, the storage filling level was 59% of the total EU-27 + UK storage capacity. This level lies in the higher range of the past 5 injection seasons and doubles the filling level observed two years ago.
- (9) ACER welcomes that ENTSOG has implemented its recommendation to consider the strategic reserves for storages set out by each country's specific regulations⁶ in the assumptions for this Outlook, as it allows for "more realistic" simulations of storage utilisation. Strategic gas reserves in storages represent approximately 11% of the total European storage working gas volume on average.
- (10) ACER finds that the inclusion of the Ukrainian storage in ENTSOG's model for the first time⁷ is an improvement. Ukrainian gas storage is large (10 bcm) and might provide additional seasonal supply flexibility to the European gas system, although its use presents risks. ACER finds it reasonable how ENTSOG has modelled Ukrainian gas storage as a last resort node, i.e. that it is only filled after other storages in the Union have been filled up to target levels.
- (11) While EU gas hub prices are subject to increasing volatility, TTF forward gas prices have overall flattened across 2024 in comparison to last year⁸. In April 2024, summer-winter

⁵ E.g. ENTSOG's supply monitoring dashboards and GIE AGSI+ storage inventory platform
<https://www.entsog.eu/outlooks-reviews>
<https://agsi.gie.eu/>

⁶ ENTSOG Summer Supply Outlook, p.4, 9, 16, 30, 33, 36 and Annex A, Strategic Storage.

⁷ Ibid, p. 6, 8.

⁸ On 29 April 2024, TTF day ahead price is 27.8 €/MWh, while Q4 2024 and Q1 2025 forward prices are 32.4 and 34.4 €/MWh respectively. Source: ICIS Heren.

price spreads remained cost-effective when furthermore discounting storage capacity costs, encouraging market-based gas storage injections, albeit less than last year. Summer-winter price spreads have an impact on the potential need to activate administratively-led storage measures. ACER understands that gas prices do not play a role in ENTSOG's modelling tool and assumptions. However, as summer-winter price spreads may signal possible challenges for market-based filling of storage, ACER recommends ENTSOG to consider including background information on gas wholesale futures' price data (e.g. on TTF) in upcoming seasonal outlooks.

3.2. Supply assumptions

- (12) ACER reiterates that the Outlook conclusions are only valid if the gas supply from the various sources matches the volumes used in the simulations, which are based on historically observed data (for Norwegian, Caspian, Algerian and Libyan gas sources). The assumptions regarding Russian piped gas supply reflect the currently reduced Russian imports, which are limited to flows via Ukraine and TurkStream. As the transit contract of Russian gas via Ukraine will cease on 31 December 2024, the Outlook assumes no more Russian pipeline gas since this date. In ACER's view, ENTSOG has used a prudent and plausible scenario for modelling the potential Russian pipeline gas supply, considering the likelihood⁹ of no more Russian gas flows via Ukraine to central European markets in 2025. This is one of the key gas supply risks to consider for the preparation of the upcoming winter 2024/2025. Moreover, such scenario will also affect gas supply imports into Ukraine during the rest of 2024, which are needed to replenish Ukraine's gas storage facilities for winter.
- (13) The Outlook does not consider whether other supply constraints (e.g. related to commercial aspects)¹⁰ may exist, nor the effect of limited gas supply on gas prices and demand. ACER has called on TSOs to factor in potential gas prices when submitting projected gas demand data¹¹.
- (14) ACER acknowledges that ENTSOG has implemented its recommendation to collect and factor in information on the availability of Norwegian gas supply by considering maintenance works on Norwegian gas fields in September 2024¹².

LNG imports and its increasingly important role

- (15) ENTSOG's supply assumptions for LNG consider three scenarios: a reference, a low and a high supply scenario¹³. ACER welcomes this approach as it can be expected that the

⁹ OIES Quarterly Gas Market Review, April 2024, p. 17

<https://www.oxfordenergy.org/wpcms/wp-content/uploads/2024/04/OIES-Quarterly-Gas-Review-Issue-24-2024-04-15.pdf>

¹⁰ ENTSOG Summer Supply Outlook, p.9,13.

¹¹ See previous Opinions on ENTSOG summer and winter outlooks
<https://www.acer.europa.eu/gas/infrastructure/security-of-supply>

¹² Ibid, p.12.

¹³ The Reference LNG supply case is calculated using the maximum 30-day rolling average.

The Low LNG supply case is based on the average historical flows over the last five years for each season.

The High LNG supply case is only limited by the regasification capacity of European LNG terminals and the capacity of the transmission network.

Union will increase its reliance on LNG supply over the summer season to replenish storages to offset reduced supplies from Russian pipeline gas. This is also in view of the limited additional supply flexibility through other sources of piped gas. At the same time, ACER calls on ENTSOG to quantify and include information on the maximum supply potential under a high supply scenario of LNG¹⁴, which is currently not provided unlike in other scenarios.

- (16) ACER calls on ENTSOG to consider a low LNG scenario without Russian LNG imports in future Outlooks. This low LNG scenario should be built based on the reference scenario, deducting historic Russian LNG imports to Europe.¹⁵ ACER believes that modelling a constraint on the availability of Russian LNG would allow to better anticipate how the Union would be prepared for a scenario of no Russian LNG (in addition to no Russian pipeline gas), which would also be aligned with the REPowerEU's ambitions for 2027. In this sense, ACER has recently published an analysis of the European LNG market which includes a mid-term assessment of the EU gas supply and demand outlook. ACER's report specifically assesses the current EU LNG contractual position and possible future LNG supply needs by 2030, under different EU policy and demand scenarios¹⁶.

3.3. Infrastructure and capacity assumptions

- (17) ENTSOG periodically upgrades the topology of its network model based on firm capacities provided by TSOs. ACER notes¹⁷ that the Outlook reflects the significant additional cross-border and LNG regasification capacities have come online during the year 2023, increasing the resilience and flexibility of the European gas network. In addition, ACER notes that Balticconnector came operational again in May 2024 and welcomes that ENTSOG has included transmission and storage capacities in Western Ukraine.
- (18) ACER welcomes that the Outlook mentions the projects commissioned during the last year. However, it encourages ENTSOG to provide more clarity on the timestamp of the network topology, and to list the significant monthly capacities added by commissioned projects (e.g. additional LNG import¹⁸ and cross-border capacities) in the Outlook.
- (19) ENTSOG's simulations are under the assumption of efficient cooperation between the countries. ACER validates this assumption. In addition, ACER asks ENTSOG to consider explaining how the simulations would work out without the assumption of efficient cooperation. The objective of this request is to showcase the importance and added value of TSOs' cooperation to deal with tight gas supply situations.

¹⁴ ENTSOG Summer Supply Outlook, p.12. and Annex B.

¹⁵ ACER MMR: Analysis of the European LNG market developments for LNG, pp.26, 27. In 2023, the EU imported 18 bcm of Russian LNG: https://www.acer.europa.eu/monitoring/MMR/LNG_market_developments_2024

¹⁶ Ibid.

¹⁷ ENTSOG Summer Supply Outlook, p.9 lists the main gas infrastructure projects coming online.

¹⁸ A list of LNG capacities/terminals taken into account should be provided for transparency.

- (20) Demand curtailment intervenes when the cooperation between countries is still insufficient to overcome the lack of infrastructure capability to balance supply and demand. ACER recommends that when demand curtailment appears in the Outlook, ENTSOG assesses specific infrastructure bottleneck(s) that may lead to curtailment of demand.
- (21) ACER reiterates that ENTSOG should investigate incorporating booked capacities in the modelling assumptions¹⁹, as they may help simulate more accurately possible future gas flows.

3.4. Demand assumptions

- (22) ENTSOG's reference scenario expects that daily demand for the summer of 2024 is in the same range as the last three years, close to 9,000 GWh/d (7.4% higher than last year), while winter demand is estimated at 16 100 GWh/d (11% higher than last year)²⁰. Recently, the International Energy Agency (IEA)²¹ calculated that the European gas demand decreased by an estimated 3% in the first half of 2024, noting that gas demand for the power sector dropped by 20% y-o-y amid improving nuclear availability in France, the rapid expansion of renewables and a 25% y-o-y increase of Europe's hydro power output. European gas demand in the residential and commercial sectors increased marginally, while gas use by industry continued its recovery, albeit fragile.
- (23) On 25 March 2024, the European Council adopted a recommendation that encourages Member States to continue reducing their gas consumption until 31 March 2025, by at least 15% compared to their average gas consumption in the period from 1 April 2017 to 31 March 2022²². This recommendation, which replaces previous urgent European Regulation of 2022 on gas demand reduction measures, advises Member states to continue taking adequate supply security measures.²³
- (24) ACER notes that the ENTSOG's Outlook uses TSOs' gas demand projections for the reference scenarios, and that demand reduction is considered only as a sensitivity used for stressful gas supply scenarios. ACER notes that ENTSOG uses high gas demand projections for this Outlook when comparing it with scenarios from other sources (e.g. International Energy Agency). While considering conservative gas demand assumptions (i.e. high demand figures) adds value to understanding the extent to which the gas system would cope under high demand situations, it would be preferable to combine a base-case

¹⁹ GIE's platforms AGSI for storage and ALSI for LNG collected contracted capacity, although the reporting of contracted capacity from operators is currently very limited.

²⁰ ENTSOG Summer Supply Outlook, p.10.

²¹ Gas Market Report, Q3-2024, July 2024, p.25

<https://iea.blob.core.windows.net/assets/a5df21c9-84a8-4c83-b6ef-d30c1a127dd2/GasMarketReport%20Q3-2024.pdf>

²² <https://www.consilium.europa.eu/en/press/press-releases/2024/03/04/security-of-gas-supply-member-states-agree-on-recommendation-to-continue-voluntary-demand-reduction-measures/#:~:text=Extended%20period%20for%20voluntary%20demand,2017%20to%2031%20March%202022>

²³ Thanks to demand reduction measures, the EU has succeeded in saving approximately 65 billion cubic meters of Russian gas in 2023, primarily in households and industries. Demand side measures (while voluntary based on consumer behaviour and not in demand destruction) help phase out of Europe's remaining dependency on Russian gas.

scenario with more realistic assumptions about demand (i.e. by aligning those with demand scenarios from other sources) with a sensitivity reflecting a higher-than-expected demand situation.

3.5. Disruptions scenarios and risk factors

- (25) The Outlook disruption scenarios simulate the cease of piped Russian gas flows and limited availability of liquified natural gas (LNG) from all sources. ACER finds these assumptions relevant, as they match the two main supply risk factors the Union faces for the upcoming summer and winter²⁴. In this sense, ACER agrees on the importance of securing additional LNG for the European Union and to activate demand response should this scenario materialise.
- (26) However, this scenario could be heightened by pipeline disruption scenarios for sources other than Russia, which are much less likely to occur (e.g. limited gas supplies from Algeria, prolonged disruption of Norwegian gas supplies via offshore pipeline such as Europipe, Norpipe, Zeepipe or Franpipe). Such additional combined extreme scenarios would provide useful insights regarding the readiness of the European gas infrastructure to deal with less likely but still highly impactful disruption scenarios.

Risk factors for upcoming summer and winter seasons

- (27) The following main risk factors are relevant for the upcoming summer and winter season:
- a. A possible full stop of already reduced Russian gas transit flows via Ukraine from 1 January 2025, as there is a risk that Ukraine's long-term transit agreement for Russian gas will not be renewed;
 - b. A colder than usual winter, driving up gas demand;
 - c. Lack of implementation of gas demand reduction recommendations;
 - d. Limited additional gas volumes from gas pipeline imports beyond the contracted/booked volumes;
 - e. The level of LNG price imports to the EU, quite influenced by Asian's demand;
 - f. Increased demand volatility of gas power plants; and
 - g. Operational incidents or accidents in major supply routes, upstream production sites or major LNG liquefaction terminals limiting the availability of gas supply to the EU market.
- (28) Finally, ACER reiterates the importance of continuing ENTSOs' exchange of data and results used for the seasonal gas and electricity outlooks, in particular for the determination of gas volumes needed for operating critical gas-fired power plants as well as critical electricity facilities for the gas system (e.g. electricity-driven compressors to guarantee adequate pressure levels in the gas systems).

²⁴ ENTSOG Summer Outlook, conclusions, p.6.

4. CONCLUSION

(29) Based on the foregoing assessment, ACER:

- a. Welcomes ENTSOG's improvements in the Outlook's methodology, namely:
 - i. Use of an extended analysis covering the supply outlook for 2024 and the winter 2024/2025 season;
 - ii. Use of assumptions regarding strategic reserves for storages in the modelling to allow for more realistic simulations of storage utilisation;
 - iii. Inclusion of Ukrainian's storage in the model and modelling its utilisation under the supposition that it would be filled only after other storages in the Union have reached their targets;
 - iv. Factoring in maintenance works in the Norwegian gas fields in September 2024 into the gas supply assumptions;
 - v. Use of a conservative scenario of Russian piped gas supply potential, which builds on no more Russian gas flows via Ukraine to central European markets in 2025; and
 - vi. Use of three different LNG supply scenarios to assess the Union's increased reliance on liquefied natural gas (LNG) supply.
- b. Stresses the following conclusions from ENTSOG's summer supply Outlook and winter 2024/2025 overview, namely:
 - i. Storages remain crucial for ensuring security of supply as they provide flexibility of gas supply during the winter season. Significant early withdrawals during the winter could lead to low storage levels by the end of winter, impacting the gas system flexibility. To keep adequate security of supply levels, it is important to inject gas during summer and keep storages at adequate levels until the end of the winter.
 - ii. In the event of a combined full disruption of Russian pipeline supplies and limited availability of LNG supplies, storages would have to be used at maximum level in some countries to meet demand and would end the winter 2024/2025 on a very low level, limiting severely their flexibility. In this scenario, reducing gas demand by 15% due to market behaviour changes or policy-based demand measures, and access to additional LNG supply would avoid demand curtailment risks and help maintain adequate storage levels until the end of the season.
 - iii. There is uncertainty about the continuity of already reduced Russian gas transit flows via Ukraine from 1 January 2025, as there is a risk that Ukraine's long-term transit agreement for Russian gas will not be renewed. The Union's storage flexibility could be enhanced by storing extra volumes in the Ukrainian Western storage facilities, which count with 10 bcm of storage available.
- c. Calls on ENTSOG to consider further methodological improvements in next Outlooks, namely:

- i. Quantify and include the maximum supply potential under a high-supply scenario of LNG, similarly to how it is done for other gas sources and LNG scenarios, and consider a low LNG scenario without Russian LNG imports;
- ii. Collect and publish the assumptions used to define the demand data provided by the TSOs (including the underlying gas price assumptions, where relevant). In this sense, ENTSOG should consider facilitating the provision of such data in a consistent manner, e.g. by aligning the assumptions about the evolution of gas prices;
- iii. Assess whether the TSOs' gas demand projections are consistent with the gas demand estimates from other entities and with European aspirations for gas demand reduction;
- iv. Provide a clearer timestamp of the network topology and list significant capacities added by commissioned projects during the season (e.g., additional LNG import and cross-border capacities);
- v. Investigate considering booked capacities in the modelling assumptions;
- vi. Include, for information, future gas wholesale price data; and
- vii. Proactively engage with stakeholders well in advance of the supply Outlooks' preparation and consult them on the proposed methodology to gain insights into expected improvements,

HAS ADOPTED THIS OPINION:

1. ACER finds that ENTSOG' Summer Supply Outlook 2024 is broadly consistent with the objectives listed in 4(3)(b) of Regulation (EU) 2019/942 and Regulation (EC) No 715/2009.
2. Future seasonal Outlooks should appropriately take into account ACER's comments and recommendations as provided in this Opinion.

This Opinion is addressed to ENTSOG.

Done at Ljubljana, on 18 July 2024.

- SIGNED -

*For the Agency
The Director*

C. ZINGLERSEN