



European Union Agency for the Cooperation  
of Energy Regulators

# Congestion in the EU gas markets: have we reached a new normal?

## 11<sup>th</sup> ACER report on congestion in the EU gas markets and how it is managed

Period covered: 2023

30 May 2024

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## Executive Summary

### Market context

1. 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.<sup>1</sup>
2. ACER's monitoring of key gas market developments<sup>2</sup> found that 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, as shown in ACER's recent LNG MMR volume<sup>3</sup>, the expansion of the LNG import infrastructure capacity by over 50 bcm/y 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.
3. While in 2023 a fragile market equilibrium was reached, where tightness between supply and demand remained, **congestion at interconnection points ('IPs') reduced but persisted on the key West-East supply routes involving primarily Belgium, France, Germany and the Netherlands.**
4. The congestion revenues associated with scarcity of transmission capacity shrunk significantly in line with the lower spreads between gas hubs that were observed in 2023, still not reaching the levels measured before the start of the gas crisis, signalling a persistent pressure on price convergence between selected gas hubs.
5. **Addressing the most acute congestions by optimising the use of transmission capacity, remains a short-term action that together with the voluntary gas-demand reduction targets and storage-filling trajectories can help dealing with tight market conditions.**<sup>4</sup> The potential disruption in Russian gas transiting Ukraine might tighten EU gas markets, possibly resulting in renewed congestion in selected corridors, with Central East European Member States such as Austria, Czech Republic and Slovakia becoming more exposed to congested routes from North-West Europe.
6. In the long term, the decarbonization objectives will result in diminishing gas consumption and transmission capacity needs. Notwithstanding the possible increase of injection of low-carbon methane-based gases, it appears likely that selected network assets may be candidates for decommissioning or may be repurposed to transport hydrogen. The Union's ambitions in this regard are evolving rapidly, the recent adoption of the 'Decarbonised Gas and Hydrogen Package' sets a new milestone.<sup>5</sup> Therefore, any expansion of transmission infrastructure to address physical congestion shall be carefully assessed on how it aligns to the long-term energy and climate policies which focus on decarbonisation.

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<sup>1</sup> ACER analysed the 2022 flow changes in its '[Special Report: Addressing congestion in North-West European gas markets](#)'.

<sup>2</sup> [https://www.acer.europa.eu/monitoring/MMR/gas\\_key\\_developments\\_2024](https://www.acer.europa.eu/monitoring/MMR/gas_key_developments_2024).

<sup>3</sup> [https://www.acer.europa.eu/monitoring/MMR/LNG\\_market\\_developments\\_2024](https://www.acer.europa.eu/monitoring/MMR/LNG_market_developments_2024).

<sup>4</sup> As per the outlook shown in ACER's LNG MMR volume: *Under 'REPowerEU' demand scenarios, EU LNG supply will peak in 2024. Pipeline supply remains generally stable (with Russian pipeline imports ending in 2027). Domestic EU production is expected to slightly increase (with increases in decarbonised gases).*

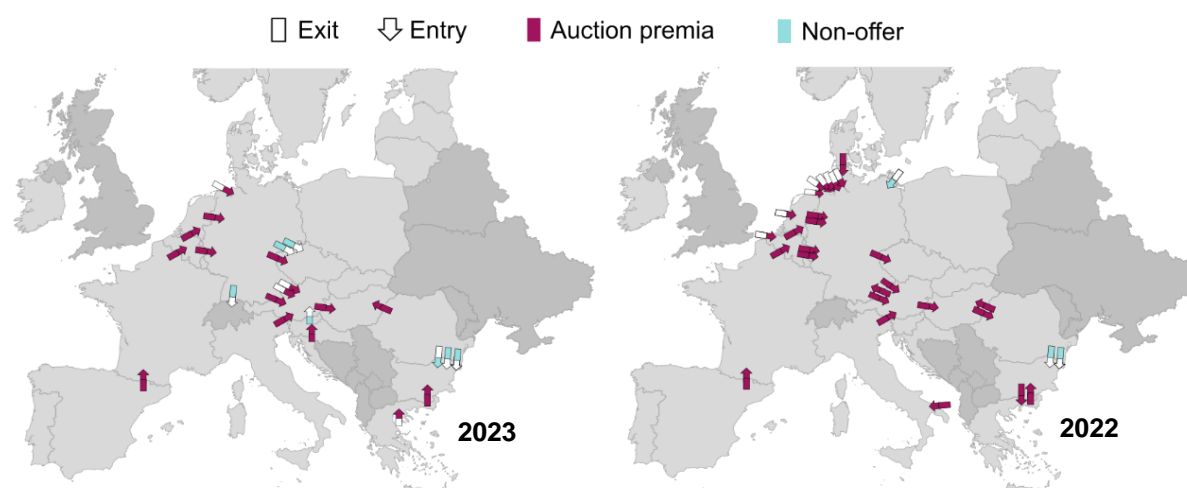
<sup>5</sup> <https://www.consilium.europa.eu/en/press/press-releases/2024/05/21/fit-for-55-council-signs-off-on-gas-and-hydrogen-market-package/>.

7. With this 11<sup>th</sup> report, ACER fulfils its legal obligation set in Point 2.2.1(2) of the Commission Guidelines on Congestion Management Procedures ('CMP GL')<sup>6</sup> and it covers the year 2023. The report is presented in a shorter 'executive summary' format that focuses on key congestion insights and policy actions. It complements the traditional congestion table that is an annex to the report.

## Key findings

### Key findings on the presence of congestion in the EU gas markets (Figure 1):

Figure 1: Map depicting the congested IP sides in 2023 (left) and in 2022 (right)



Congestion diminished in 2023 but remains present on key West-East routes that were found congested in 2022. The supply easing by new LNG import capacity removed congestion on entry points from Norway and from the UK.

Source: ACER congestion analysis based on data provided by ENTSOG, GSA Platform, PRISMA and RBP

- **Congestion at interconnection points diminished<sup>7</sup>**, compared to the unprecedented levels measured in 2022, following a progressive improvement of the gas supply and demand conditions. However, congestion **is not gone as the effects of the flow readjustments are still visible**.
- 35 exit and entry sides at interconnection points (IPs) have been found congested in 2023. While diminishing from the 50 IP sides found congested in 2022, at 35, the number of congested IP sides is almost twice as many as in 2021, when 18 IP sides were found congested.
- **The consolidation of congestion on West-East flow paths** can be observed as 13 out of the 27 (48%) congested IP sides that were found congested for the first time in 2022 are congested again in 2023. In 2022, contractual congestion emerged prevalently in North-West Europe (in particular in among Belgium, France, Germany and the Netherlands), when gas started to flow from West to East as a response to the supply shock. As depicted in Figure 1, congestions from Norwegian gas fields to Central Europe eased in 2023, together with the congestions observed

<sup>6</sup> Commission Decision of 24 August 2012 on amending Annex I to Regulation (EC) No 715/2009 of the European Parliament and of the Council on conditions for access to the natural gas transmission networks (2012/490/EU), OJ L 213/16, 28.8.2012, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:231:0016:0020:en:PDF>.

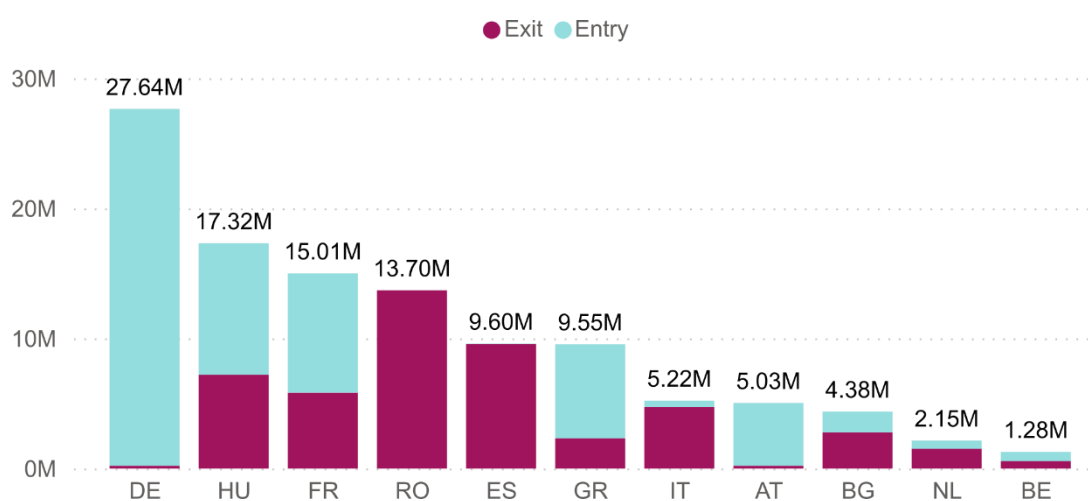
<sup>7</sup> For its analysis, ACER relies on data provided by ENTSOG (last updated 8 February 2024) and by the booking platform operators. While an effort has been made to provide a basic validation of those data, ACER is not responsible for their accuracy and uses the data as delivered for the assessment of congestion and congestion management procedures.

at the Interconnectors (BBL & IUK) connecting the UK with the continent. **In sum, contractual congestion, while reduced, it remains present on the West-East flow paths as the market is still adjusting to a changed supply pattern.**

- **Physical congestion**, indicated by actual interruptions of interruptible capacity, occurred at 7 congested IP sides.<sup>8</sup> Among the most physically congested IP sides, signalled by the effective interruption of interruptible capacity, were Virtualys (FR>BE) on 222 occasions, VIP THE-ZTP (BE>DE) on 88 occasions, VIP-BENE (BE>NL) on 20 occasions, all in North-West Europe. The application of congestion management procedures ('CMPs') only helps with contractual congestion and would not resolve physical congestion. The latter is addressed through measures that adjust supply or demand, or expand the capacity of the gas system.

## Key findings on congestion revenues and auction premia (Figure 2):

Figure 2: Congestion revenues 2023, in million euros (countries below 1 million euro-revenues not depicted)



Total congestion revenues recorded in EU during 2023 amounted to 140 million euros. These revenues mark a sharp decrease from the 3.4 billion euros recorded for capacity auctions during 2022 but remain 2.5 times larger than the 55 million euros recorded in 2021. The improved market conditions at the most acute bottlenecks reduced hub spreads giving less incentive to network users to pay high premia.

Source: ACER calculation based on auction data provided by GSA Platform, PRISMA and RBP

- **Congestion revenues recorded by transmission system operators declined dramatically to around 140 million euros in 2023** from the unprecedented level of 3.4 billion euros registered in 2022 (Figure 2). This reduction can be interpreted as a sign of improved market conditions. However, part of the congestion revenue recorded in 2022 pertains to yearly and quarterly capacity products to be used in 2023 and later years. Nevertheless, market equilibrium and price convergence have not stabilised to the level observed in 2021 when congestion revenues accounted for 55 million euros<sup>9</sup>.
- The presence of premia in gas transmission auctions signals heightened market interest in transmission capacity, with capacity offered being insufficient to fulfil interest at the reference prices. This is a key criterion outlined in the network code for designating an interconnection point as congested. The number of auctions closing with premia for yearly (39), quarterly (54)

<sup>8</sup> Interruptions of interruptible capacity are not the only indicator of physical congestion. As soon as all physical capacity is nominated and thus used, there is physical congestion.

<sup>9</sup> Value recorded in 2021 includes congestion revenues collected at UK sides of interconnection points.

and monthly (62) capacity products decreased to 155. This number is still more than half of the record number of auctions closing with premia observed in 2022. Again, comparing the 2023 values to 2021 (71 auctions closing with market premia) highlights that the market conditions are still not back to the levels observed pre-crisis.

### Key findings on the use of CMPs and other congestion relieving actions:

Table 1: Evolution of congestion and CMP application (CMP-relevant and non-CMP relevant IPs)

Evolution over recent Congestion Reports	2019	2020	2021	2022	2023
Number of congested IPs	37	19	18	50	35
Application of CMPs [GWh/d]					
- LT UIOLI	3,190.6	3,206.9	2,158.1	802.8	294.2
- FDA UIOLI	225,931.6	408,291.0	203,005.8	207,914.7	99,848.3
- Oversubscription	1,667,881.5	1,248,621.1	975,200.0	924,162.1	772,002.2
- Surrender	71,818.1	92,816.6	374,574.1	594,193.3	548,068.9

- When the interest in firm capacity exceeds its offer, some market participants cannot obtain the capacity product of their choice. In such case, the sale of interruptible capacity as well as bringing unused firm capacity to the secondary market might relieve congestion and optimise the use of the network. For yearly, quarterly and monthly products, the combined amount of capacity made available via secondary capacity trading and the allocation of interruptible capacity at congested IPs (~570 GWh/d) was below the amount of capacity that was unsuccessfully requested by network users (~3,000 GWh/d). This shows that the voluntary<sup>10</sup> congestion-relieving actions could not fully compensate the unmatched interest in firm capacity in the primary capacity market.
- In addition to the aforementioned congestion relieving actions, the application of (mandatory) CMPs aims to further optimise the use of (firm) capacity. Oversubscription decreased by 15% year-on-year and remains the most applied CMP, followed by Surrender which decreased by almost 8% year-on-year. Capacity released through Firm-Day-Ahead Use-It-Or-Lose-It (FDA UIOLI) and Long-term Use-It-Or-Lose-It (LT UIOLI) more than halved with respect to 2022.
- ACER reminds that at congested IP sides the respective National Regulatory Authority ('NRA') shall require the relevant Transmission System Operator(s) ('TSO') to implement and apply the FDA UIOLI mechanism, according to Point 2.2.3(1) of the CMP GL, or show that the congested situation is unlikely to reoccur in the following three years. NRAs can use the information contained in this Report in their decision making. The list of congested IPs is available in the Technical Annex to this Report.

## Recommendations

8. 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

<sup>10</sup> These actions are voluntary as TSOs are not required by EU rules to offer yearly, quarterly, or monthly interruptible capacity, and capacity holders are not obliged to offer their unused capacity on the secondary market.

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.

9. Based on its analysis, ACER finds that contractual congestion progressively diminished in 2023. However, the effects of the market crisis are still evident, price convergence between European gas hubs has still not reached the levels measured before the crisis. Therefore, **ACER recalls its recommendations from the special congestion report<sup>11</sup> and calls on:**



- Neighbouring TSOs to extensively coordinate and jointly maximise the availability of firm and interruptible capacities.
- Neighbouring NRAs to extensively coordinate and remove regulatory obstacles that prevent an optimal use of the existing network for the reconfigured supply routes<sup>12</sup>.



- TSOs to carefully consider if investment is needed where physical bottlenecks remain after the operational optimisation of the existing network and considering whether the bottlenecks would be prevailing over a relevant period; NRAs shall carefully assess the appropriateness of investment that removes structural bottlenecks considering the Union's energy and climate policies, and security of supply while mitigating the potential of future asset stranding. Congestion revenues may be used to finance such network investment.

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<sup>11</sup> [Special Report: Addressing congestion in North-West European gas markets.](#)

<sup>12</sup> Regulatory obstacles are not necessarily raised by regulatory authorities as national measures may present obstacles that risk disrupting the optimal flow of gas across EU member states.