

9th ACER Report On Congestion In The EU Gas Markets And How It Is Managed

Period covered: 2021

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If you have any queries relating to this report, please contact
press@acer.europa.eu.

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Executive summary

- (1) In this Report, the European Union Agency for the Cooperation of Energy Regulators ('the Agency') monitors contractual congestion in the EU gas markets in 2021 and how it was addressed. The presence of contractual congestion implies that some network users were not able to obtain the transmission capacity product of their choice and they had to rely on mitigating measures to access the market. Such measures are necessary to improve the efficient use of the network and the overall market efficiency, and to avoid investment in physical transmission capacity when contracted capacity remains unused, meaning there is no physical congestion. To harmonise the approaches for identifying and dealing with contractual congestion, the European Commission issued Commission Guidelines on Congestion Management Procedures ('CMP GL')¹.
- (2) While the problem of contractual congestion remains at a much lower level than it was at the time the CMP GL were issued, the Agency continues to publish the annual Report to fulfil its legal obligation. This edition of the Report covers capacity products sold during 2021 for use in 2021, 2022 or 2023 and takes stock of the Congestion Management Procedures ('CMPs') that were used in 2021.
- (3) The Report covers a year that was marked by exponentially rising gas prices in the second half of 2021, a trend that continued in 2022 due to the uncertainties markets faced caused by Russia's invasion in Ukraine. ACER's Preliminary Assessment of Europe's high energy prices and the current wholesale electricity market design of November 2021, indicated that tightness of gas transmission capacity may have contributed as a secondary factor. In Annex III, we compared the occurrences of auction premia for all standard products, thus including firm day-ahead and within-day capacity, throughout the year, marking an increased occurrence of premia in the second half of 2021 when market nervousness began to rise. High and increasing spreads between gas commodity markets, particularly in the fourth quarter of 2021, may have been a factor as market players would have been willing to pay for capacity at a premium above the regulated tariff as long as the transport cost allowed a profitable cross-border trade.
- (4) Market nervousness contributes, but it is not the only factor that might affect year-on-year demand for gas transport capacity. Other factors also play a role, including gas market supply and demand dynamics, LNG market dynamics and expiration of long-term contracts. In the longer term, by 2030-2040, decarbonisation is likely to reduce gas demand by a significant amount, even when some fossil gas is replaced by low-carbon methane-based gases. Thus, also the demand for gas transport capacity is expected to decrease. On the other hand, the potential repurposing of gas pipelines for transportation of hydrogen could lead to tight capacity situations also in the future.
- (5) For this edition, the Agency notes that the ENTSOG data were delivered late due to problems with their databases, possibly affecting the accuracy of reported data. The Agency takes no responsibility for the accuracy of those data and used the data as delivered by ENTSOG for the assessment of congestion and congestion management procedures.
- (6) The Agency finds that in 2021:
 - Congestion is at the same level as in 2020;
 - The number of auction premia for yearly, quarterly and monthly capacity products increased to 71, rebounding from the plunge to 44 in 2020, but still only half of the 138 premia observed in 2019. The volume of unsuccessful requests rebounded to 1045 GWh/d in 2021, from a level of 372 GWh/d in 2020, but still only about one third of the 3,186.3 GWh/d in 2019;

¹ 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>.

- 13 out of 18 (72%) congested IP sides have been found congested before;
- Following the German market merger, German domestic IPs have ceased to exist, including 3 IP sides that were found to be congested in 2021 (for the part of the year the IP sides were operational);
- The amount of capacity made available via secondary capacity trading and the allocation of interruptible capacity at congested IPs (~304 GWh/d) is of the same order of magnitude as the amount of capacity that has been requested unsuccessfully by network users (381 GWh/d);
- Oversubscription remains the most applied Congestion Management Procedure ('CMP') despite a 20% reduction of capacity released through this mechanism. Volumes released through Firm-Day-Ahead Use-It-Or-Lose-It (FDA UIOLI) were halved, whereas volumes released through the Surrender mechanism quadrupled compared to 2020. To better understand these variations, advanced statistical analysis would be needed which is out of scope of this Report.

- (7) Based on the data provided by the European Network of Transmission System Operators for Gas ('ENTSO-G') and the three Booking Platforms, Table 1 summarises the Agency's main observations regarding contractual congestion in the analysis year 2021.

Table 1: Main observations regarding congestion in the analysis year 2021

Observations concerning analysis year 2021	Numbers
Number of congested IP sides (out of 200 CMP-relevant IP sides)*	18 (9% of total)
- Due to auction premia	10 (5% of total)
- Due to non-offer	8 (4% of total)
Occurrences of auction premia per product** (out of 71 auction premia)	
- Yearly products	5 (7%)
- Quarterly products	30 (42%)
- Monthly products	36 (51%)

* This report considers as relevant those IPs that are marked as CMP-relevant, have physical flow capacity (not where only virtual reverse flow exists) and were valid at least one day during the year of analysis (calendar year 2021).

** Multiple auction premia can occur at the same IP side.

- (8) For those IP sides that were found to be congested, the Agency examined the severity of the congestion with the following indicators: unsuccessful requests, capacity trades on the secondary market, demand for interruptible capacity (and effective interruptions), and recurrent² presence of IPs in previous editions of the Congestion Report. Table 2 lists the main observations on severity of congestion aggregated for the congested IP sides.

² Recurrent means an IP side has been found contractually congested in at least one previous edition of the Congestion Report.

Table 2: Main observations regarding severity of congestions (at congested IP sides)

Observations concerning analysis year 2021	Numbers
Number of IP sides found congested for the first time	3 (of which 1 new IP)
Number of IP sides with recurrent inclusion in Congestion Reports	15
Firm technical capacity of congested IP sides (from ENTSOG TP)*	1,620.6 GWh/d
Unsuccessful requests	381 GWh/d
Capacity made available via secondary trades	290.43 GWh/d
Interruptible capacity allocated	13.97 GWh/d
Effective interruptions (counted as day on which interruption occurred)	4 days

* No technical capacities were reported on the ENTSOG TP for Brandov/Opal (Opal Gastransport exit), Broichweiden Süd (Gascade Gastransport exit), Bunder-Tief (Gasunie Deutschland exit), Kienbaum (Gascade Gastransport exit), and Negru Voda II (Transgaz exit) and III (Transgaz exit)

- (9) Physical congestion, indicated by actual interruptions of interruptible capacity, occurred at 2 contractually congested IP sides: 3 days at Csanádpalota (RO>HU) and 1 day at Broichweiden Süd (domestic German IP).
- (10) The Agency checked the application of CMPs at the congested IPs. The FDA UIOLI mechanism is already applied at 10 of the 18 IP sides detected as congested. This means that at the remaining 8 congested IP sides, the respective National Regulatory Authorities ('NRAs') shall require the relevant Transmission System Operator(s) ('TSO(s)') 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.³ NRAs can use the information contained in this Report in their decision making. The list of congested IPs and their depiction on a map is available in Annex I and Annex II, respectively, of this Report. A separately published Technical Annex contains the full analysis of all IP sides regarding congestion and application of CMPs.
- (11) The Agency has been publishing Congestion Reports since 2014 and the observations vary from one year to the other. Currently, the Agency does not investigate the reasons underlying these changes, which would require a more advanced analysis. Nevertheless, the Agency observes the following evolutions over time of congestion and of the application of CMPs, as listed in Table 3.

Table 3: Evolution of congestion and CMP application (across CMP-relevant and non-CMP-relevant IP sides)

Evolution over recent Congestion Reports	2018	2019	2020	2021
Number of congested IPs	31	37	19	18
Application of CMPs [GWh/d]				
- LT UIOLI	3,190.6	3,190.6	3,206.9	2,158.1
- FDA UIOLI	492,352.2	225,931.6	408,291.0	203,005.8
- Oversubscription	1,638,285.4	1,667,881.5	1,248,621.1	975,200.0
- Surrender	281,616.6	71,818.1	92,816.6	374,574.1

- (12) Based on its analysis, the Agency formulates a set of recommendations addressed to TSOs, ENTSOG and the European Commission in Section 4 of this Report. These recommendations reiterate some recommendations already formulated in previous Reports and reflect on the changes proposed by the EC's 'Hydrogen and decarbonised gas market package'.

³ The concerned IP sides are Csanádpalota (HU>RO, entry), Csanádpalota (RO>HU, exit and entry), GCP GAZ-SYSTEM/ONTRAS (DE>PL, entry), GCP GAZ-SYSTEM/UA TSO (UA>PL, entry), Kulata (BG) / Sidirokastron (GR) (BG>GR, entry), Negru Voda II (RO>BG, exit), Negru Voda III (RO>BG, exit)

1. Introduction

- (14) The CMP GL, in particular its Point 2.2.1(2), stipulate that the Agency has to publish a yearly report on contractual congestion at IPs. The present Congestion Report is the ninth Report fulfilling this legal obligation and it covers the year 2021.
- (15) This Report uses the concepts of contractual congestion and physical congestion that are defined in Articles 2(21) and 2(23) of Regulation (EC) No 715/2009 in the following way:
- ‘*Contractual congestion*’ means a situation where the level of firm capacity demand exceeds the technical capacity;
 - ‘*Physical congestion*’ means a situation where the level of demand for actual deliveries exceeds the technical capacity at some point in time.
- (16) Contractual congestion during time periods without physical congestion can be tackled through the CMPs laid down in the CMP GL. Additionally, the CMP GL contain certain criteria that require the application of the FDA UIOLI mechanism.
- (17) The criteria which may lead to the application of the FDA UIOLI are set out in Point 2.2.3(1) of the CMP GL. In particular, FDA UIOLI shall be applied at IPs where, based on this Report, it is shown that demand exceeds supply at the reserve price when auctions are used, in the course of capacity allocation procedures for products for use in either that year or in one of the subsequent two years:
- for at least three firm capacity products with a duration of one month, or
 - for at least two firm capacity products with a duration of one quarter, or
 - for at least one firm capacity product with a duration of one year or more, or
 - where no firm capacity product with duration of one month or more has been offered.
- (18) The concepts above are used for the Agency’s screening of the data made available by ENTSOG and auction data collected from the booking platform operators GSA Platform, PRISMA and RBP.
- (19) Given that the transitional period following the Withdrawal Agreement of the UK from the EU applied till 31 December 2020, the Agency stopped collecting and analysing the data for the UK interconnection points. The Agency notes that ENTSOG data does neither exclude information on British IP sides nor labels them as non-EU.
- (20) The remainder of this Report contains the congestion analysis in Chapter 0 and an analysis concerning the application of CMPs in Chapter 3. The Report concludes with a set of recommendations addressed to the European Commission, NRAs and TSOs, and suggestions for further analysis, e.g., for research institutes and scholars.

2. Analysis of contractual congestion

2.1 Assessment methodology

- (21) The congestion analysis contains two parts. The first part concerns the assessment of the existence of congestion at IP sides. The second part concerns the assessment of the severity of the identified congestions.
- (22) First, with respect to the assessment of the existence of contractual congestion, the data provided by ENTSOG were analysed. Furthermore, auction reports were collected from the booking platforms, consolidated and screened IP by IP, for the offer and non-offer of capacity products and for those auctions at IPs where the total capacity demand exceeded the offer and/or where auction premia occurred for monthly, quarterly and yearly products. The Agency notes a significant improvement with respect to combining both data sets, thanks to the efforts from the booking platform operators to make available the auction data in an agreed template that structurally includes EIC codes.
- (23) In line with the criteria set out in Point 2.2.3(1) of the CMP GL, the IP sides for which auction premia and/or non-offers of firm products occurred were labeled as contractually ‘congested’. The IP sides have been classified accordingly into four mutually exclusive categories:
- i. ‘*Congested*’: those which meet the criteria set in sub-Points (a) to (d) of Point 2.2.3(1) of the CMP GL, but do not fall into category (ii) below;
 - ii. ‘*Formally congested*’: those which only meet the criterion set in sub-Point (c) of Point 2.2.3(1) of the CMP GL because of a missing yearly product for the gas years 2022/23 and 2023/24 in the auction of July 2021;
 - iii. ‘*Close to be congested*’: those which had auction premia occurring at a lower frequency than the threshold defined in the CMP GL criteria, namely for either two monthly products or one quarterly product;
 - iv. ‘*Not congested*’: those which do not meet the criteria (a) to (d) of Point 2.2.3(1) of the CMP GL and do not fall into category iii above.
- (24) Second, with respect to the assessment of the severity of contractual congestion for those IP sides identified as congested (category (i) above), the Agency collected and analysed further information linked to the severity and alleviation of congestion. This analysis included an inquiry on ‘unsuccessful requests’, the products (monthly, quarterly, yearly) traded on the secondary market and whether interruptible capacity was allocated at an IP side. Finally, the Agency also connected the current analysis to the results of the previous editions of the Congestion Report.
- (25) The volume of ‘unsuccessful requests’ sheds light on the extent of congestion where auction premia have occurred. Unsuccessful requests are calculated by subtracting total allocated capacity from total requested capacity at the reserve price.⁴
- (26) Secondary market trades allow a reallocation of transmission capacity from network users who do not plan to use (part of) their capacity in a particular period to those interested in obtaining capacity for the concerned period.
- (27) The information on interruptible capacity bookings can be used in the analysis to indicate that demand for capacity exceeded the actual offer of firm capacity. This is in line with the provision of the CMP GL ‘to take into account the use of interruptible capacity’. Additionally, the occurrence of

⁴ In the seventh edition of the Congestion Report, unsuccessful requests have been reported as the difference of requested capacity at the reserve price and the offered capacity.

actual interruptions of nominated interruptible capacity was documented as a possible indicator for physical congestion.

- (28) For the identified contractually congested IP sides, the Agency assessed the severity of congestion at IP sides based on:
- the amount of unsuccessful requests (where auction premia occur);
 - to which extent secondary capacity trading took place;
 - to which extent interruptible capacity was allocated and whether interruptions occurred;
 - whether they were found congested in the previous Congestion Reports;
- (29) The chapter closes with the conclusion concerning the application of FDA UIOLI at congested IPs.

2.2 Identification of contractually congested IPs

- (30) For this year's Report, 403 IP sides were considered to be CAM-relevant, of which 200 were considered CMP-relevant, based on the feedback received from the TSOs.
- (31) The year-to-year composition of IP sides changes for several reasons. For instance, several physical IP sides had been merged into a virtual interconnection points (VIPs) in 2020 and, in 2021, the German domestic IPs ceased to exist following the German market merger on 1 October 2021.
- (32) This report considers as contractually congested only those IP sides labelled as 'congested'. IP sides labelled as 'formally congested' could potentially be congested in the future but are not the focus of this report.⁵ A Technical Annex that is published alongside this Report contains the full classification of IP sides and clarifications provided by TSOs and NRAs on possible reasons for the occurrence of congestion.
- (33) According to the criteria (a) to (d) of Point 2.2.3(1) of the CMP GL, 18 IP sides were identified as congested. The reasons why these IP sides were identified as such differ as follows.
- (34) The occurrence of auction premia resulted in 10 IP sides being classified as congested, of which:
- 2 IP sides⁶ had premia on monthly, quarterly and yearly products;
 - 1 IP sides⁷ had premia on monthly and yearly products;
 - 2 IP sides⁸ had premia on monthly and quarterly products;
 - 4 IP side⁹ had premia for quarterly products only.
 - 1 IP side¹⁰ had premia for monthly products only

⁵ The Agency's analysis identifies a large number of formally congested IPs within Germany due to the yearly product 2022/23 and 2023/24 not being on offer as these internal IPs ceased operation after the German market merger on 1 October 2021. The congestion status of these points has been revised to 'not congested'.

⁶ Csanádpalota (HU>RO, both exit and entry) and GCP GAZ-SYSTEM/ONTRAS (DE>PL, both exit and entry)

⁷ Kulata (BG) / Sidirokastron (GR) (BG>GR, entry)

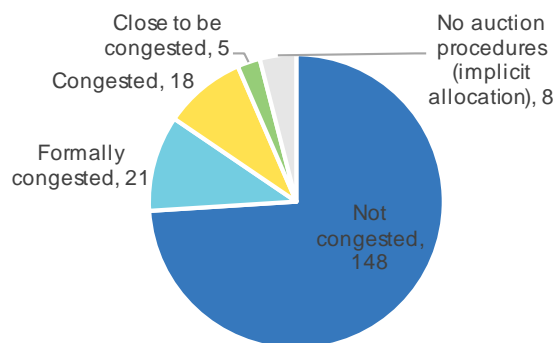
⁸ Csanádpalota (HU>RO, both exit and entry)

⁹ Csanádpalota (RO>HU, both exit and entry) and Mosonmagyaróvár (AT>HU, both exit and entry)

¹⁰ GCP GAZ-SYSTEM/UA TSO (UA>PL, entry)

- (35) 8 IP sides were identified as congested due to the non-offer of firm capacity products. 3 of these IP sides concern German domestic IPs that ceased operation on 1 October 2021 following the German market merger (Broichweiden Süd, Bunder-Tief and Kienbaum)
- (36) Congestion triggered by occurrences of auction premia remained stable at a level of 10 compared to 9 in 2020 (30 in 2019, 16 in 2018, 6 in 2017 and 9 in 2016) and by occurrences of non-offer of firm capacity products decreased to 8 in 2021 from 10 in 2020 (7 in 2019, 15 in 2018, 11 in 2017 and 14 in 2016).
- (37) 8 of the 200 CMP-relevant IP sides were not analysed because they allocate capacity implicitly and do not organise auctions for allocating yearly, quarterly and monthly products; the concerned IPs are Kiemenai (Ambergrid exit and entry, Conexus exit and entry) and Balticconnector (Elering exit and entry, Gasgrid Finland exit and entry). Based on the information from the respective TSOs, there is no contractual congestion as defined in this Report at these IPs. The Agency has not assessed the functioning of the implicit allocation mechanism that is applied in the Estonian, Finnish, Latvian and Lithuanian gas markets.
- (38) Figure 1 graphically presents the results of the analysis.

Figure 1: Result of the congestion analysis of 200 CMP-relevant IP sides - 2021



2.3 Severity of contractual congestion

- (39) The Agency reports in this section on four indicators that shed light on the severity of congestion at an IP. These indicators are the unsuccessful requests, capacity traded on the secondary market, demand for interruptible capacity (and effective interruptions), and the recurrence of congestion over several years as recorded in the previous editions of the Congestion Report.
- (40) The unsuccessful requests based on the Agency's analysis of auction data concern 27 IP sides, of which 9 were congested due to the auction premia and 5 were close-to-be-congested IP sides.¹¹
- (41) The majority of unsuccessful requests occurred at GCP GAZ-SYSTEM/ONTRAS (DE>PL, both exit and entry) followed by Csanádpalota (HU>RO, both exit and entry, and RO>HU, both exit and entry). The largest volumes were requested at GCP GAZ-SYSTEM/ONTRAS (DE>PL, both exit and entry) followed by Csanádpalota (HU>RO, both exit and entry, and RO>HU, both exit and entry).
- (42) The Agency observed that with 8 IP sides out of 18, the number of congested IP sides for which **secondary trades for capacity** occurred remained relatively low.¹²

¹¹ The remaining 13 IP sides had 1 monthly premium each.

¹² Mosonmagyaróvár (AT>HU exit) IP side, Mosonmagyaróvár (AT>HU entry) IP side, Csanádpalota (HU>RO exit) IP side, and Csanádpalota (HU>RO entry) IP side, GCP GAZ-SYSTEM/ONTRAS (DE>PL exit) IP side, GCP GAZ-SYSTEM/ONTRAS (DE>PL entry), GCP GAZ-SYSTEM/UA TSO (UA>PL entry), IP side, Kulata (BG) / Sidirokastron (GR) (BG>GR entry) IP side.

- (43) The congested IP sides with the most active secondary trading of capacity products are: Csanádpalota (HU>RO exit) IP side, followed by Mosonmagyaróvár (AT>HU entry) IP side.
- (44) The demand for **interruptible capacity** can also be used as an indicator for capacity demand exceeding the technical capacity, under the assumption that those who booked interruptible capacity would have preferred firm capacity.
- (45) Interruptible capacity, with a duration exceeding one day, was offered for at least one product for 11 of the 18 congested IP sides. The Agency encourages the relevant TSOs to offer interruptible capacity with a duration exceeding one day, according to the provisions of Article 32 of the NC CAM¹³, to ease the severity of congestion.
- (46) Effective interruptions occurred at two congested IP sides, 3 days at Csanádpalota (RO>HU, entry) and 1 day at Broichweiden Süd (German domestic IP). Effective interruptions that occur structurally hint at physical congestion.
- (47) Of the 18 IP sides identified as congested, 3 are included for the first time. **Recurrence of congestion** in the three preceding years (2018-2021) has been observed at 15 IP sides: 11 IP sides were found congested in 2020, 10 were found congested in 2019, 9 were already found congested in 2018 and 10 IP¹⁴ sides have been identified as congested in the last three editions of the Congestion Report (current edition included), and 6 IP sides¹⁵ were continuously congested in the last four editions.

2.4 Application of FDA UIOLI

- (48) Annex I lists the IP sides for which the FDA UIOLI mechanism needs to be implemented and applied according to Point 2.2.3(1) of the CMP GL, unless it is shown that a congested situation is unlikely to reoccur in the following three years.
- (49) 10 IP sides¹⁶ labelled as congested already apply FDA UIOLI. The Agency notes that NRAs take the final decision on how to mitigate and prevent congestion, taking into account the severity of congestion and the application of FDA UIOLI or other CMPs. They can use the information contained in this report to support their decision making.

¹³ Commission Regulation (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013.

¹⁴ Csanádpalota (FGSZ exit), Bunder-Tief (Gasunie Deutschland exit), Brandov / OPAL (OPAL Gastransport exit), Csanádpalota (Transgaz entry), Mosonmagyaróvár (FGSZ entry), Mosonmagyaróvár (Gas Connect Austria exit), Kienbaum (GASCADE Gastransport exit), Greifswald / LBTG (LBTG entry), Negru Voda II (Transgaz exit), Negru Voda III (Transgaz exit).

¹⁵ Mosonmagyaróvár (FGSZ entry), Mosonmagyaróvár (Gas Connect Austria exit), Kienbaum (GASCADE Gastransport exit), Greifswald / LBTG (LBTG entry), Negru Voda II (Transgaz exit), Negru Voda III (Transgaz exit).

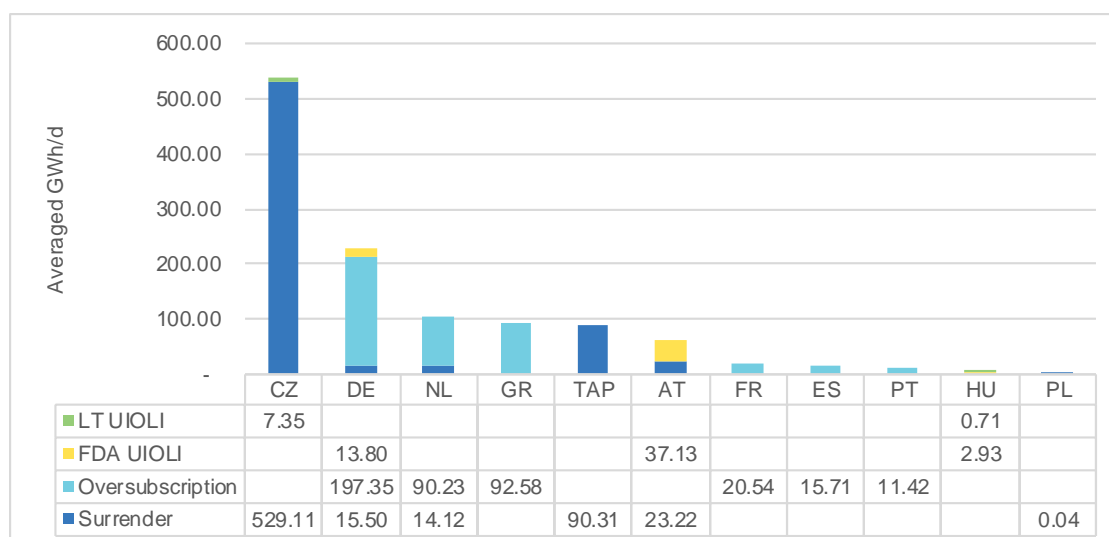
¹⁶ Brandov / OPAL (OPAL Gastransport exit), Broichweiden Süd (Gascade Gastransport, exit), Bunder-Tief (Gasunie Deutschland exit), Csanádpalota (FGSZ exit), GCP GAZ-SYSTEM/ONTRAS (Ontras, exit), Greifswald / LBTG (LBTG entry), Greifswald / OPAL (OPAL Gastransport, entry), Kienbaum (Gascade Gastransport, exit), Mosonmagyaróvár (FGSZ entry) and Mosonmagyaróvár (GasConnect Austria exit).

3. Application of CMPs

- (50) According to Point 2.2.3 of the CMP GL, any additional capacity made available through the application of one of the CMPs shall be offered by the respective TSO(s) in the regular allocation process.
- (51) The CMP GL Section 2.2 defines four CMP measures to mitigate congestion:
- *Oversubscription* allows TSOs to offer more firm capacity than is technically available at IPs on the assumption that not all the allocated capacity will be actually used by network users. This scheme provides financial incentives for the TSOs and requires basic modelling built on statistical scenarios.
 - *FDA UIOLI* brings unused firm capacity back to the market on a day-ahead basis. TSOs are not incentivised financially by this CMP. The network user loses its capacity and provides the additional capacity volumes by being subject to re-nomination restrictions.
 - *Surrender* is a CMP measure that allows network users to return their capacity to the TSO. The TSO will again offer this capacity in the primary market (by an auction on a booking platform). Capacity returned by network users will only be sold after the TSO has sold its own available capacity. During the auction, the capacity given back by a network user will not be distinguished from the TSO capacity, and it will be offered based on the standard volume and price units applied in the auctions. The Agency remarks that users could sell their capacity on the secondary market, which might be a faster option in liquid secondary markets, than triggering surrender.
 - *Long Term (LT) UIOLI* is described in Point 2.2.5 of the CMP GL. This mechanism aims at deterring capacity hoarding over the longer term and may not serve as an immediate tool for congestion per the criteria (a) to (d) of Point 2.2.3(1) of the CMP GL. LT UIOLI, nevertheless, plays an important role in the optimal management of transport capacities and dictates that NRAs require their TSOs to fully or partially withdraw systematically underutilised capacity if certain criteria are met. The process could trigger the release of yearly capacity products.
- (52) In 2021, 10 Member States ('MSs') reported capacity amounts made available via CMPs, while in 2016, 2017, 2018, 2019 and 2020 there were 7, 11, 10, 12 and 10 MSs (including the UK) reporting such amounts, respectively. Additionally, surrender was also reported for the TAP IPs. For calculating the average deployment of CMPs, the Agency calculated the occurrences by counting on how many days the application of CMPs took place. An increase of surrender (~290%) has been observed in 2021 compared to the previous year, while the use of oversubscription and FDA UIOLI has decreased (~65% and ~58% respectively). LT UIOLI remains small and decreased compared to 2020 (~30%).
- (53) Figure 2 shows the results in 2021 per MS and per CMPs applied at CMP-relevant IP sides.¹⁷

¹⁷ The capacity numbers include all capacity released at CMP-relevant IP sides, in both directions and considering the days of application, as reported to ACER by ENTSOG. Compared to the previous Report, we changed the calculation slightly to consider more accurately CMP volumes that have been reported for a duration longer than one day. The numbers shown cover the application of CMP measures at CMP-relevant IP sides only, whereas previous reports included also non-CMP-relevant IP sides

Figure 2: Capacity released by CMP measures [averaged GWh/d] via CMPs in the EU (according to ENTSOG's TP data) – 2021



- (54) Compared to 2020, the use of LT UIOLI in 2021 in the Czech market decreased by more than 20%. The volumes released in Czechia remain by far the largest.
- (55) In 2021, FDA UIOLI continued to be applied at the Austrian, German and Hungarian IP sides. In terms of absolute capacity released, FDA UIOLI decreased compared to 2020 as volumes released in Germany halved. The average capacity remained stable due to a decrease of the number of days on which capacity was released. The use of FDA UIOLI in Hungary is on the rise, but remains small compared to the Austrian and German borders.
- (56) The extent of application of oversubscription and the corresponding capacity offered decreased compared to 2020. As in 2020 and 2019, the vast majority of the reported applications still concern IP sides of the Dutch TSO, GTS.
- (57) The daily instances of surrender of capacity products, and the capacity surrendered, has increased sharply in 2021 compared to 2020. The increase was driven by the surrender of capacity at the IPs in Czechia and at IPs connected to the TAP pipeline.

4. Recommendations

- (58) The Agency acknowledges the gradual improvement that has been achieved on data quality and the data files from ENTSOG, including the CAM/CMP scope list and instructions being better prepared for the analysis. However, in producing this report, the Agency was not able to perform an extensive assessment of data quality due to the delayed availability of the data files. Nevertheless, in order to improve data availability, consistency and transparency, the Agency formulates the following recommendations.

4.1 Recommendations for ENTSOG and TSOs

- (59) On improving data quality, implementing automated data processing and making the data available at one single platform.
- ENTSOG/TSOs shall ensure that auction results with premia and data on all non-available capacity products are uploaded on the ENTSOG's TP, as required by the CMP GL, that these are consistent with the information reported by the booking platforms, and that these data can be made available swiftly;
 - ENTSOG/TSOs shall ensure that the TP includes up-to-date information on the virtualised operation¹⁸, on the commercial and operational validity of the IP sides and on the identification IP sides where only virtual reverse flow is available in the absence of technical capacity in the concerned direction). The Agency appreciates that ENTSOG made available an updated list of IPs where the dual model virtualisation applies and recommends that such information is available on the TP;
 - The Agency found very effective for its analysis, the structured use of EIC codes ('unique identifier'¹⁹) in booking platform data that were collected through an agreed Agency template. Continuous improvement and quality checks of consistency of EIC codes by data providers remain fundamental to allow data users to efficiently and effectively combine data sets from different providers;
 - Although ENTSOG has updated its version of the CAM/CMP scope list, a few IPs were still identified as non-relevant during the analysis. Therefore, based on the findings in this Report, ENTSOG shall adapt and update the CAM/CMP IP scope list on its TP continuously;
 - ENTSOG's TP should aim to incorporate information on bundled capacities.²⁰

4.2 Policy recommendations

- (60) On the basis of the experience gained in producing the Congestion Reports, the Agency formulates the following recommendations to the European Commission, taking into account the Commission's recent policy proposal:

¹⁸ The dual model entails that a physical IP remains operational for existing contracts whereas future capacity offering is done at the VIP that the physical IP has been merged into.

¹⁹ An IP side can be uniquely identified only with a combination of the following: IP name (EIC code), TSO (EIC code), direction, connected TSO (EIC code, if applicable).

²⁰ Currently, some commercial information on capacity products (e.g. on bundling and the level of firmness and allocability of firm capacity) is not available on the ENTSOG TP. Such data is only publicly accessible through the reporting of the three booking platforms. In order to fully comply with CMP GL's obligation to report on auction premia on the ENTSOG TP, at least an indicator on whether the auction premia occurred for bundled or unbundled capacity products is necessary. For the future, it would be desirable to have a single platform for all public gas transport data related to CAM, CMP, balancing and tariff data to enable stakeholders to efficiently access all the required information in a harmonised form.

- The Report fulfils the requirements of the CMP GL to analyse the auction data for a calendar year. However, the Agency has consistently highlighted that the CMP GL should be improved in two ways:
 - i. Gas capacity auctions follow an auction calendar that is organised according to the gas year, which lasts from 1 October of the calendar year until 1 October of the following calendar year. The scope of the analysis in the Congestion Report should be aligned and follow the auction calendar for the gas year. The current wording and timing in the CMP GL do not allow the Agency to do so;
 - ii. A clarified CMP GL with respect to its criterion d) of Point 2.2.3(1) – ‘where no firm capacity product with a duration of one month or more has been offered’ – could make the congestion analysis more market oriented. For network users it is relevant to have the opportunity to book capacity for delivery throughout the period under review – regardless of whether the booking takes place for any month during the year, in the form of either monthly, quarterly or yearly products. The current practice in the Congestion Reports has been to analyse whether at least one product with a minimum duration of one month has been offered during the period under review.
- The Agency welcomes the proposals of the ‘Hydrogen and decarbonised gas market package’ published by the EC in December 2021:
 - i. The EC proposes an adjusted **criterion d)** of Point 2.2.3(1) of the CMP GL, ‘where **for at least six months** no firm capacity product with a duration of one month or more has been offered’, aligning it better with the other congestion criteria and making it more market oriented by covering a larger part of the year;
- With respect to Point 2.2.1 of the CMP GL, the Agency notes the Commission’s proposal:
 - i. To have a monitoring report at least every two years, or, upon substantiated request from the Commission, up to once a year;
 - ii. Without a deadline of when to publish the report, the Agency can decide whether to continue the current practice of monitoring congestion according to the calendar year or to monitor the gas year.
- The legislative proposals treat the requests tabled by the Agency in previous Congestion Reports. The Agency also notes that Point 2.2.3 of the CMP GL refers to ACER’s yearly monitoring. The EC could clarify that this is to be understood as the biennial report covering the two preceding years.
- In addition, it should be further clarified that Article 6 of Regulation (EU) No 459/2017 regarding the joint method to maximise capacity and the dynamic approach to capacity **(re-)calculation, takes priority over the application of oversubscription** in the yearly, quarterly and monthly timeframe. The Agency has kept this recommendation from its previous reports and suggests that it is revisited in terms of its relevance, at the point in time when it is considered to be included in the NC CAM.

4.3 Topics for further analysis

- (61) This Report focuses on the identification of contractual congestion in line with the criteria set out in Point 2.2.3(1) of the CMP GL and on monitoring the use of CMPs.
- (62) The Agency acknowledges that deeper and broader analyses of the congestion data can provide additional insights and invites academia, research institutes and other interested parties to use the data, which is publicly available for several years, for other types of analysis than the one included in this Report.

(63) Topics of interest to the Agency include in particular:

- The identification and statistical analysis of the factors that could explain the changes in the level of contractual congestion over time. Such factors can include market events (e.g., changes in transport tariffs, demand and supply changes and shocks) or non-market events (such as changes in national energy and climate policies) and other events (such as geopolitical events);
- A detailed analysis of the preventive and mitigating measures to deal with contractual congestion, including the role of CMPs therein;
- A critical review of the criteria for identification of contractual congestion as defined in the CMP GL, including the formulation of alternative criteria;
- The analysis of contractual congestion as a signal for market failures (that could trigger deeper and more specialized analysis such as investigating anti-competitive behaviour).
- A detailed analysis of contractual congestion between hubs in the day-ahead timeframe.

(64) Insights from such studies could feed into the Agency's monitoring of the gas markets and lead to a refinement of the Report and of policy recommendations based thereon.

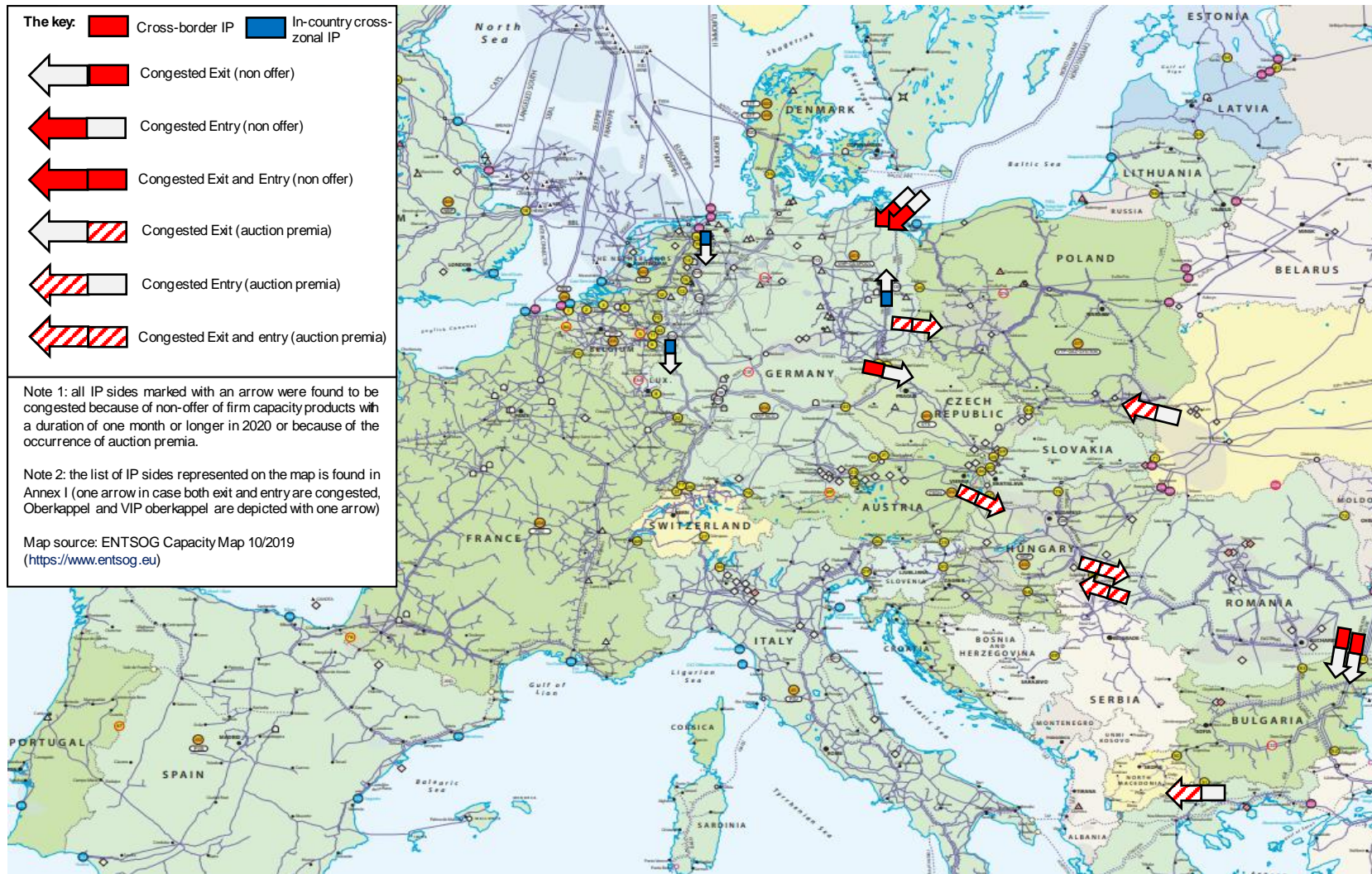
Annex I: List of the 2021 IP sides for which NRAs should require the FDA UIOLI application

The list shows the congested IP sides, for which the FDA UIOLI mechanism needs to be applied according to Point 2.2.3(1) of the CMP GL, unless it is shown that a congested situation is unlikely to reoccur in the following three years. NRAs take the final decision on this matter, considering the severity of congestion and the application of all CMPs. The separate Technical Annex contains the full analysis and all TSO and NRA clarifications.

In the table C stands for congested, FC for formally congested and CTBC for close to be congested. NA stands for not on the CMP relevant list

Operator	IP Name	Direction	Adjacent Operator	Congestion Status	FDA UIOLI	Interruption	LT UIOLI (volum)	FDA UIOLI (volum)	OVER SUBS	CRIP	SURR ENDE	Secondary	Day-Ahead and Within	Congestion Status 20	Congestion Status 21	Congestion Status 22	Congestion Status 23	Congestion Status 24	Congestion Status 25	Congestion Status 26	Congestion Status 27	Congestion Status 28	Congestion Status 29	Congestion Status 30	Congestion Status 31	Congestion Status in Q4/13			
DESFA	Kulata (BG) / Sidirokastron (GR)	entry	Bulgartransgaz	CONGESTED (auction premium Y)								y				C									FC				
FGSZ	Csanádpalota	exit	Transgaz	CONGESTED (auction premium Q)	Y	y	y	y				y	5		C	C										C			
FGSZ	Csanádpalota	entry	Transgaz	CONGESTED (auction premium Q)		y							11		C	C						FC				FC			
FGSZ	Mosonmagyaróvár	entry	GCA	CONGESTED (auction premium Q)	Y	y	y	y				y	1													NA			
Gas Connect Austria	Mosonmagyaróvár	exit	FGSZ	CONGESTED (auction premium Q)	Y	y		y			y	y	1	C	C	C								C	C	C			
GASCADE Gastransport	Broichweiden Süd	exit	Thyssengas	CONGESTED (non-offer)	Y	y											CTBC									CTBC			
GASCADE Gastransport	Kienbaum	exit	OGE	CONGESTED (non-offer)	Y	y									C	C										FC			
Gasunie Deutschland	Bunder-Tief	exit	OGE	CONGESTED (non-offer)	Y	y										FC										FC	C	C	C
GAZ-SYSTEM	GCP GAZ-SYSTEM/ONTRAS	entry	ONTRAS Gastransport GmbH	CONGESTED (auction premium Y, Q)		y						y					C									C	C	FC	
GAZ-SYSTEM	GCP GAZ-SYSTEM/UA TSO	entry	Gas TSO UA	CONGESTED (auction premium M)								y																	
LBTG	Greifswald / LBTG	entry	Nord Stream	CONGESTED (non-offer)	Y	y									C	C										FC	FC	C	
ONTRAS	GCP GAZ-SYSTEM/ONTRAS	exit	GAZ-SYSTEM	CONGESTED (auction premium Y, Q)	Y	y		y				y					C									FC			
OPAL Gastransport	Brandov / OPAL	exit		CONGESTED (non-offer)	Y											C	FC									FC	FC	C	
OPAL Gastransport	Greifswald / OPAL	entry	Nord Stream	CONGESTED (non-offer)	Y	y		y							C	C										FC			
Transgaz	Csanádpalota	entry	FGSZ	CONGESTED (auction premium Q)								y	5		C											FC			
Transgaz	Csanádpalota	exit	FGSZ	CONGESTED (auction premium Q)									11		C	C	C									C	C	C	
Transgaz	Negru Voda II	exit	Bulgartransgaz	CONGESTED (non-offer)											C	C	C									C	C	C	
Transgaz	Negru Voda III	exit	Bulgartransgaz	CONGESTED (non-offer)											C	C	C									C	C	C	NA

Annex II: Map depicting the 18 congested IP sides in 2021



Annex III: Market tightness in second half of 2021 – Any evidence from auction premia?

The graph shows the occurrence of auction premia throughout the year for all standard products as collected from the booking platforms. The majority of auction premia in 2019 occurred in summer months. In 2020, there were a very low number of auction premia occurrences, which may have been due to the COVID context, and no particular pattern of the occurrence in summer or winter. In 2021, the occurrence of auction premia increased predominantly in the second half of the year when market nervousness was on the rise. Increasing spreads between gas markets, especially in the fourth quarter of 2021, may have been a factor contributing to this trend as market players would have been willing to pay for capacity at a premium above the regulated tariff up to the level where the total transport cost remained below the spread.

