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ANNUAL REPORT ON CONTRACTUAL CONGESTION AT INTERCONNECTION POINTS

5th edition

Period covered: 2017

May 2018
(Corrigendum June 2018)

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1. Executive summary

(1) The Commission Guidelines on Congestion Management Procedures ("CMP GL")\(^1\) and its paragraph 2.2.1(2) stipulate that the Agency for the Cooperation of Energy Regulators ("the Agency") has to publish a yearly report on contractual congestion at Interconnection points (IPs). The present Congestion Report is the fifth report presented on the basis of this provision.

(2) The CMP GL defines contractual congestion as a situation where at least one of the four criteria listed in paragraph 2.2.3(1) of the CMP GL is met. Therefore, this Report aims to identify contractual congestion at IPs in the European Union for products sold during 2017 for use in 2017, 2018 or 2019. The Report analyses where demand exceeded the offer of firm capacity, and, in line with paragraph 2.2.3(1)(d), at which IP sides no firm capacity product with a duration of one month or longer was offered.

(3) Based on the ENTSOG data sets and Booking platform data, the following conclusions can be drawn:

a. Less than 7% (17) of the 262 IP sides in scope of the CMP GL were contractually congested in the reference period. Annex 4 presents the list of contractually congested IP side, while other “formally congested” and “close to be congested” IP sides are listed in the technical annex to the Report\(^2\). For another 72 IP sides, products for the gas year 2018/19 were not offered in 2017. Based on both indicators, there is no conclusive evidence to assess whether contractual congestion has increased or decreased in 2017 compared to the previous year.

b. The Firm Day-Ahead Use-It-Or-Lose-It (FDA UIOLI) mechanism is already applied at 8 of the 17 IP sides detected as contractually congested. This means that at the remaining 9 contractually congested IP sides, the respective National Regulatory Authorities (NRAs) shall require the relevant Transmission System Operators (TSOs) to implement and apply the FDA UIOLI mechanism, according to paragraph 2.2.3(1) of the CMP GL or show that the congested situation is unlikely to reoccur in the following three years.

c. 11 of the 17 contractually congested IP sides are identified as congested based on the non-offer of firm products with a duration of at least one month for use in the gas year 2017/18. Congestion signalled by the occurrence of auction premia is less prevalent and was identified for 6 IP sides.

d. 9 of the 17 IP sides identified as contractually congested in this report were already assessed as congested in the Agency’s Congestion Report\(^3\) last year, and 10 of those in the Congestion Report the year before.

e. Physical congestion, indicated by actual interruptions of interruptible capacity, occurred at 5 contractually congested IP sides with varying frequencies.

f. Congestion management procedures (CMPs) have yielded additional capacity offers at the borders of 11 Member States in 2017, which is an improvement compared to the previous years. Oversubscription was applied in 6 Member States, with almost all additional capacity

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amounts offered on the Dutch and UK IP sides. Surrender was applied in 6 Member States, with a majority of additional amounts offered on the Czech IP sides.

(4) Due to ongoing data inconsistencies between data sources, the Agency provides recommendations on data and transparency addressed to ENTSOG, TSOs and NRAs at the end of the Report.

2. Introduction

(5) According to paragraph 2.2.1(2) of the Commission Guidelines on Congestion Management Procedures (hereafter, the “CMP GL”), the Agency for the Cooperation of Energy Regulators (“the Agency”) has a legal obligation to publish a yearly report on contractual congestion at interconnection points (“Congestion Report” or “Report”) by 1 June of each year, starting from 2014.

(6) This fifth edition of the Report is based on data on firm capacity products sold in 2017 for use in 2017, 2018 and 2019, as published by each Transmission System Operator (TSO) on the ENTSOG Transparency Platform (ENTSOG TP). Publication of such data is regulated by Section 3 of Annex I to Regulation (EC) No 715/2009 and, where appropriate, the data are validated by National Regulatory Authorities (NRAs). The analysis covers bundled and unbundled firm products for CAM relevant IP sides. In addition to firm capacity products, the Agency needs to take into consideration capacity trading on the secondary market and the use of interruptible capacity, to the extent possible for full assessment of congestion status.

(7) The purpose of this Report is to identify contractual congestion at IPs between entry-exit zones in the European Union (EU), based on the definition in Article 2(21) of Regulation (EC) No 715/2009. In particular, the Report aims to detect whether at least one of the conditions set out in paragraph 2.2.3(1) of the CMP GL is met during the reference period, from 1 January 2017 to 31 December 2019. In cases, where the IP side is identified as congested, the application of the Firm Day-Ahead Use-It-Or-Lose-It (FDA UIOLI) CMP mechanism may be triggered. The concerned NRAs shall then require the respective TSOs to apply the FDA UIOLI mechanism at the congested IP (side), unless they show that a congested situation is unlikely to reoccur in the following three years. In such cases, the relevant NRAs may decide to terminate or not to request the application of the FDA UIOLI mechanism.

3. Scope of the Report

(8) The Report covers IP sides of cross-border and in-country IPs and VIPs in the EU and cross-border IPs between EU and non-EU countries to the extent that NRAs decided those points to be subject to the application of CMP GL and the Network Code on Capacity Allocation Mechanisms (NC CAM).
The Agency and ENTSOG have established a NC CAM/CMP GL IP scope list, which is regularly updated. It contains all the relevant IP sides that are subject to the annual congestion analysis. The most recent scope list contains 366 CAM relevant IP sides. Out of those 366 IP sides, 262 IP sides are within the scope of the CMP GL, as there is no firm technical capacity at the majority of the remaining 104 IP sides.

All IPs within the scope of the CMP GL, including those found congested in the four previous Reports (2014 - 2017), are reviewed in the fifth edition.

Chapter 4 presents a short analysis on data quality and the methodology used for making the data, suitable for analysis ("data cleaning"). A summary of data quality issues highlights the possible improvements in the collection of raw data for more straightforward analyses in the future.

The approach to the congestion analysis and the methodology is presented in Chapter 5, with the presented condition for labelling an IP side "congested". Additionally, the different types of capacities and how they have been handled in the analysis, when it comes to firm or interruptible capacity, are discussed.

The results of the analysis are presented in Chapter 6 with an additional commentary on unsuccessful requests and the use of interruptible capacities and the activation of interruptions that might signal physical congestion.

The application of Congestion Management Procedures (CMPs) and information on secondary markets is presented in Chapter 7.

Supplement A provides the results of the capacity auctions for day-ahead capacity.

The Report does not assess a potential underuse of capacity ("capacity hoarding") by individual shippers, as this would require an in-depth analysis based on individual network users’ data, which is not public. A detailed analysis of individual network users is the task of national regulators. The Agency already assists NRAs in this task by providing the list of congested IP sides, filtered by country, which could be used for a closer assessment.

4. Analysis of the quality of the data and methodology for cleaning the data

4.1 ENTSOG Transparency Platform data

On 19 February 2018, the Agency received two bulk data export files from ENTSOG based on the data published on the ENTSOG Transparency Platform. The format of the files was specified by the Agency. The Agency received additionally a file with the CAM relevant IP sides.

The first file – the transport data file for 2017 – covers daily data for each NC CAM IP side, on booking levels of firm/interruptible capacities, technical capacity, flows (physical, commercial flows and nominations) and actual interruptions.

The second file – the CMP file – provides information on the oversubscription, FDA UILOI, surrender, long-term UIOLI, auction results, unsuccessful requests of capacity and non-availability of (firm) capacity products in 2017 and after, if available.

In the course of the analysis, it became clear that the CMP file was, although clean and structured, incomplete and inconsistent and therefore could not be used as a single source for the congestion analysis. The comparison of the CMP file with the data available on the ENTSOG TP showed

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9 In 2016, there were 247 CMP relevant IP sides.
around 2% of missing instances of CMP data in the CMP file. Occasionally, the data that were included in the CMP file was not available on the ENTSOG TP. The majority of instances with mismatching data were related to unavailable firm capacity, due to the different formatting of the date for the start or the end of the period of application of CMP. The CMP file needs to be reviewed with greater diligence by both TSOs and ENTSOG before its submission to the Agency in order to ensure that complete and correct information about CMPs is provided.

(21) The third file, with CAM relevant IP sides, includes a list of IPs with the operator and connected operator, the applicable Energy Identification Coding (EIC) codes for the IP and the operators, the connection of the IP to the relevant market zone, specification of the IP type and information on virtual flows. Moreover, this file contained inconsistencies, such as missing CAM relevant IP sides and wrongly included non-CAM-relevant IP sides. The CMP relevant status was incorrect for 10 IP sides and was commented by TSO/NRAs and corrected in the process of reviewing the results.

(22) The Agency and ENTSOG are engaged in a constructive dialogue to improve the data that are input to the Agency's monitoring activities. This dialogue includes regular exchanges on data quality, Agency feedback on the identified data issues to ENTSOG and TSOs, and intensive checking by TSOs of the monitoring results that are based on data provided by ENTSOG.

4.2 Capacity booking platform data

(23) The auction reports from booking platforms contain most of the relevant information on the auction results, including the identification of the IPs, capacity products and types, offered and allocated capacity, tariffs, and auction premia. This information enables the analysis on contractual congestion at IP sides in line with conditions set out in paragraph 2.2.3(1) of the CMP GL.

(24) The data from auction reports enabled to detect products, where demand exceeded offer by comparing demanded volumes with allocated volumes per IP side per auction.

(25) The non-offer of firm products with a duration of at least one month or longer (paragraph 2.2.3(1) (d) of the CMP GL) was assessed for all IP sides by identifying which products of all respective product categories (months, quarters, years for the calendar year 2017 until the gas year 2018/19) were offered and all products with no auctions were marked as non-offered. Since some IP sides started only in 2017 or ended before the end of 2017, additionally the validity period of the IP (from transport file) had to be checked.

(26) Unfortunately, the data on the booking platforms can only be analysed manually, auction by auction, due to the lack of consistent usage of IP names, and/or consistent application of the EIC codes. While the RBP and GSA platforms implement a consistent use of EIC codes and more or less of IP names, the PRISMA platform is lacking EIC codes of IP sides on numerous occasions and IP side names are inconsistent with the names used on ENTSOG TP.

(27) On the RBP booking platform, for some auction results, information on TSOs (both sides) was missing, preventing to define the direction of the flow, which was later reviewed by the concerned operators. Additionally, on some booking platforms, information on the reporting TSO is missing; therefore, the information could be only deduced based on the currency in which the capacity was auctioned.

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10 The CMP file reports the beginning of a period as the first day of the month, while the ENTSOG TP reports it as the first day of the next month.

11 Besides the missing auction premia occurring in 2017 for IP sides auctioned on PRISMA and RBP, some smaller inconsistencies were found in the CMP file. Altogether 8 records were duplicated, all in the area of "unsuccessful requests" of the CMP file. On the other hand, in the ENTSOG TP file "Capacities made available" 1 IP side uses different EIC code and 1 IP side had no name in the file. The list of unavailable products (months, quarters, gas years) for use at least in the 2017 and gas year 2017/18 is not complete and can therefore not be used as a reliable source to screen all the congestion indicators.

12 For instance, an IP that became operational in July 2017 would not have been able to offer capacity products that according to the CAM NG auction calendar (hosted by ENTSOG) are auctioned before July. The non-offer of firm products related to a period in which the IP was not valid has to be disregarded when evaluating the criteria in paragraph 2.2.3(1) (d).
5. Approach to the congestion analysis and applied methodology

The concepts of contractual congestion and physical congestion are defined in Articles 2(21) and 2(23) of Regulation (EC) No 715/2009 in the following way:

a. “contractual congestion” means a situation where the level of firm capacity demand exceeds the technical capacity;

b. “physical congestion” means a situation where the level of demand for actual deliveries exceeds the technical capacity at some point in time.

A frequent occurrence of physical congestion cannot be remedied through the application of CMPs, but should be addressed, where efficient to do so, by infrastructure expansions or, in some instances, via contractual arrangements, such as flow commitments.

Contractual congestion, during time periods without physical congestion, can be tackled through the CMPs laid down in the CMP GL. The CMP GL contains certain conditions that require the application of the FDA UIOLI mechanism.

The conditions which may lead to the application of the FDA UIOLI are set out in paragraph 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:

a. for at least three firm capacity products with a duration of one month, or

b. for at least two firm capacity products with a duration of one quarter, or

c. for at least one firm capacity product with a duration of one year or more, or

d. where no firm capacity product with duration of one month or more has been offered.

Therefore, the main purpose of this Report is to identify, for which IP sides at least one of these conditions is met during the analysed period. For the purpose of this Report, IP sides fulfilling at least one of the above-mentioned criteria are identified as “contractually congested”. That situation occurs if there is more market demand than offers for a certain capacity product for a distinct duration at a specific moment in time, which can be observed in the following ways:

a. where auctions are used, congestion is apparent once the auction clears with an auction premium¹³;

b. in cases where auctions are not (yet) used and/or available firm capacity at the concerned IP is fully booked, the capacity demand exceeding the offer at the reference price could be indicated either as “unsuccessful request” for capacity and/or as demand for interruptible capacity that exceeds the typical demand for interruptible capacity at the IP.

¹³ The auction premium is a top-up paid by the successful bidder, on top of the reserve price at a specific IP.
(34) All references to the occurrence of “congestion” or “congested IPs” in this Report should be understood in the light of the above definitions and criteria. Some of the IPs identified as contractually congested could also be physically congested. There can be cases of contractual congestion, which are not covered by the four criteria of paragraph 2.2.3(1) of the CMP GL; for example, contractual congestion can also occur on the day-ahead or within-day timeframe (and would still fall under the general definition of contractual congestion in Regulation (EC) No 715/2009). Such instances are not included in this Report.

5.1 Firm capacities

(35) The PRISMA platform commercialises multiple types of capacities, beyond firm and interruptible, namely: bFZK, BZK, DZK, DZK and FZK for the German and Austrian markets. For the purpose of the congestion analysis, these capacities were treated in the following way:

Table 1: Types of capacity that are commercially available

<table>
<thead>
<tr>
<th>Type of Capacities</th>
<th>Short Description of Capacities</th>
<th>How to handle Capacities</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm</td>
<td>Firm capacity</td>
<td>Firm</td>
<td>Firm</td>
</tr>
<tr>
<td>FZK</td>
<td>Free allocable capacities</td>
<td>Firm</td>
<td>Freely available allocable capacities allow transports within a whole market area and access to its virtual trading point without any limits.*</td>
</tr>
<tr>
<td>bFZK</td>
<td>Conditionally firm freely allocable capacities</td>
<td>Firm</td>
<td>A capacity product which offers a shipper the possibility to use a part of capacity within a TSO's network on a firm basis within certain temperature restrictions and a part on interruptible basis to the virtual trading point.*</td>
</tr>
<tr>
<td>DZK</td>
<td>Dynamically allocable capacities</td>
<td>Firm</td>
<td>DZK are firm capacities in case of balanced transport between certain entry and exit capacities and only interruptible by use of virtual trading point.*</td>
</tr>
<tr>
<td>BZK</td>
<td>restricted firm capacity</td>
<td>Firm</td>
<td>Restricted – allocable capacities cannot be freely allocated due to physical reasons; the use of virtual trading point is not possible.*</td>
</tr>
<tr>
<td>Interruptible</td>
<td>interruptible</td>
<td>interruptible</td>
<td>Interruptible capacities allow transports in a whole market area and access to its virtual trading point on an interruptible basis.*</td>
</tr>
<tr>
<td>backhaul capacity</td>
<td>Virtual reverse flow</td>
<td>Interruptible due to limits of physical flow</td>
<td>In cases where a pipeline system allows physical gas flows in both directions, it is clear that capacity – firm and interruptible – can be offered to market participants in both directions. However, also in cases where it is technically not possible to physically transport gas in both directions, it is still possible for a TSO to offer capacity as a &quot;counter flow&quot; or &quot;backhaul&quot; in the other direction, on a virtual basis. Counter flow transports can be offered up to the maximum of the main flow, however generally only on an interruptible basis, as a TSO cannot guarantee the shipment of the counter flow gas under all circumstances.**</td>
</tr>
</tbody>
</table>


5.2 Steps in congestion analysis

(36) To assess the existence of contractual congestion, auction reports – covering the period from January 2017 to December 2017 – were downloaded from the booking platforms’ websites, consolidated, filtered and arranged for the relevant data. Due to the above-mentioned limitations of
ENTSOG’s CMP data, the ENTSOG data was used only for double-checking the outcome of the analysis based on the booking platforms’ data.

(37) Each IP side of the updated NC CAM / CMP IP scope list was attributed a unique ID constructed from TSO, TSO’s EIC, IP name, IP’s EIC, direction, connected TSO and connected TSO’s EIC.

(38) Based on the unique IDs, reports were screened for those auctions at IPs where total capacity demand exceeded the offer and/or where auction premia occurred for monthly/quarterly/yearly products. Products with an auction premium at a specific IP side (or bundle) (unique ID) were listed in the results table, created on the basis of the updated NC CAM / CMP IP scope list.

(39) All consolidated auction reports were screened IP by IP for the offer and non-offer of capacity products of at least 1-month duration for the analysed period. The analysis focused on the offer and non-offer of firm bundled products followed by the non-offer of the unbundled firm entry or exit products.

(40) Where no firm product offers were found in auctions held in 2017, the IP side was marked as “congested due to non-offer”.

(41) For all IP sides, the offer of interruptible products was checked and recorded in the analysis.

(42) Virtual reverse-flow IP sides were identified based on the ENTSOG list of CAM relevant IP sides, previous congestion analyses and information from TSOs.

(43) All available CMP data on unsuccessful requests, capacity made available through CMPs, auction premia and non-availability of products stemming from the ENTSOG TP CMP export file were added to the results table, as they may signal congestion.

(44) In line with the conditions set out in paragraph 2.2.3(1) of the CMP GL, the IP sides for which auction premia and/or non-offers of firm products occurred were labelled as contractually “congested” in the results table (Annex 4). The reason for congestion was recorded as well. If auction premia occurred at a lower frequency than indicated in the CMP GL, the IP side was marked as “close to be congested”, following the practice of the previous Congestion Reports. The IP sides for which only the yearly product for the gas year 2018/19 was not offered, were labelled as “formally congested”, following again the practice of previous Reports. The remaining IP sides were considered “not congested”.

(45) For those IP sides found congested, further information on whether interruptible capacity was generally offered at an IP side was checked based on the booking platform data, and, if this was the case, it was assessed whether it was fully, partially or not at all booked (in terms of predefined time periods). The information on interruptible capacity bookings can be used as a proxy in the analysis to show 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”.

(46) Additionally, the occurrence of actual interruptions of nominated interruptible capacity (as a possible indicator for physical congestion) was documented in the results table, based on ENTSOG’s TP data (transport data, export file and online). For the identified contractually congested IP sides, it was also assessed and indicated:

a. whether they were already found contractually congested in the previous four Congestion Reports;

b. whether the FDA UIOLI mechanism is already applied;

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14 Some TSOs do not (yet) offer gas yearly products beyond the front gas year or the gas yearly capacity for 2017/18 cannot be offered due to the short-term “quota” (i.e. capacity set aside according to Art. 8 (7b) of NC CAM). The congestion may therefore still disappear in the future. It should be noted that the NC CAM obliges the TSOs to offer at least the upcoming 5 gas years from July 2018 on.
c. to which extent secondary capacity trading took place;
d. whether auction premia also occurred at the day-ahead level in 2017.

6. Summary of the outcomes of the analysis

6.1 Identified contractual congestion and its breakdown

The results of the analysis of the auction reports and ENTSOG’s TP data for firm products offered in 2017 for use in 2017, 2018 or 2019 for the 366 CAM-relevant IP sides are shown in Figure 1.

Figure 2: Result of the congestion analysis of 366 CAM IP sides - 2017

According to the criteria set in sub-paragraphs (a) to (d) of paragraph 2.2.3(1) of the CMP GL, 17 IP sides were identified as congested. Application of sub-paragraphs (a) to (c) on auction premia resulted in 6 IP sides identified as congested, of which

a. 1 IP side had congestion for all types of products (monthly, quarterly and yearly);
b. 4 IP sides were congested only for quarterly products;
c. 1 IP side was congested only for yearly products.

The application of sub-paragraph (d) resulted in 11 IP sides being identified as congested due to the non-offer of the products. The number of IP sides congested due to the occurrence of auction premia as well as IP sides congested due to the non-offer has decreased compared to the previous year. Occurrences of auction premia decreased from 9 (2016) to 6 (2017) and occurrences of non-offer from 14 (2016) to 11 (2017). Breaking down the congestion results according to the criteria of paragraphs 2.2.3(1) (a) – (d) of the CMP GL, the following can be observed:
a. criterion a): auction premia for at least three monthly products did not occur at any IP side;

b. criterion b): differently from the previous year, auction premia for at least two quarterly products for use within the front gas year (i.e. Gas Year 2017/18) triggered 5 contractual congestion instances (all bundle products)\(^\text{15}\);

c. criterion c): auction premia for at least one gas yearly product occurred at 2 IP sides (1 bundle, 1 entry);

d. criterion d): no firm capacity product with a duration of one month or more has been offered at 11 IP sides\(^\text{16-19}\).

Figure 3: Distribution of congested IP sides by triggers for being congested - 2017

Majority of congested IP sides are congested due to "non offer", majority of auction premia occurred on quarterly products

100% = 17

35%  65%

- Auction premia for at least one gas yearly product - 1
- Auction premia for at least two quarterly products - 4
- Auction premia for all products (M,Q,Y) - 1

Due to auction premia  Due to non offer

(50) In addition to the label "congested", IP sides have also been labelled as "close to be congested" and as "formally congested". IP sides labelled as "close to be congested" had auction premia occurring at a lower frequency than the threshold determined in the CMP GL criteria, namely either

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\(^\text{15}\) IP side OGE Oberkappel exit had auction premia on bundled and unbundled capacities for the same products, while IP side bayernets Überackern SUDAL (AT) / Überackern 2 (DE) exit had auction premia only on the bundle products, while the unbundled products did not have auction premia.

\(^\text{16}\) For the IP side Kulata (BG) / Sidirokastron (GR) BGT exit, the TSO noted that the technical capacity is long-term booked and only interruptible products are auctioned at the RBP booking platform.

\(^\text{17}\) For Liaison Nord Sud GRTgaz exit, the NRA and the TSO note that the IP side is subject to physical congestion and the IP side will disappear as from 1st November 2018.

\(^\text{18}\) For Tarvisio-Arnoldstein, the Italian NRA notes that the capacity was offered as interruptible for use in 2016, 2017 and 2018 at the Tarvisio exit. Due to construction works ongoing until 2018 at Tarvisio exit and in order to guarantee the supply of Northern Italy, capacity products were offered only as interruptible capacity, given the status of the project. The works will be terminated in 2018. By that time, Italy will be ready to offer up to 40 mcm/d export capacity to Northern Europe.

\(^\text{19}\) For RC Thayngen-Fallentor TNBW exit, the TSO notes that due to capacity reduction at the cross-border transmission IP Thayngen-Fallentor, there was no firm capacity marketable during quarterly and monthly auctions, as all the remaining capacity was already marketed in the yearly auction.
twice per monthly product or once per quarterly product. IP sides labelled as “formally congested” had only the gas yearly product for the gas year 2018/19 not offered in 2017.

(51) In the Congestion Report for 2016, 78 IP sides were labelled as “contractually congested”, combining “congested” (23) and “formally congested” (55) IP sides. The analysis of 2017 data resulted in an increased number of “contractually congested” IP sides with 89 instances. In a number of cases, this non-offer does not necessarily hint to contractual congestion, as some TSOs have either decided not to offer capacity beyond one gas year ahead or the NC CAM capacity quota\(^{20}\) prevented the offer of the Gas Year 2018/19 product.

(52) 163 IP sides (62% of the 262 IP sides within the scope of the CMP GL – cf. section 2.1) were found not to be contractually congested in 2017.

(53) Comparison with the previous Congestion Reports shows that of the 17 IP sides identified as congested in 2017, 9 IP sides were already indicated as congested in 2016\(^{21}\), while in 2015 and 2014 10 and 6 of those same IP sides were found congested, respectively\(^{22}\).

(54) In addition, of the 72 formally congested IP sides in 2017, 3 were congested in 2014, 9 were congested in 2015, while, in 2016, 4 were congested and 29 “formally congested”.

(55) The distribution of the congested IP sides across IP types is depicted in Figure 3 below. Most congestion is detected at cross-border IP sides, which also represent the majority of IP sides within the CMP GL scope list. 4 in-country cross-zonal IP sides, as well as 2 IP sides with third-countries (non-EU countries) and 1 IP side (of 1) virtual IP, constitute the remaining congested IP sides.

Figure 4: Breakdown of congested IP sides by IP type - 2017

\[^{20}\] 10% of technical capacity has to be set aside for offers not earlier than in the auctions for quarterly products.

\[^{21}\] IP sides congested in 2017 that were congested in 2016 as well are: Bayernets Überackern SUDAL (AT) / Überackern 2 (DE) exit, BTG Kulata (BG) / Sidirokastron (GR) exit, Fluxys TENP GmbH Wallbach exit, GASCADE Kienbaum exit, GRTgaz Liaison Nord Sud exit, OGE Kienbaum entry, OGE Oberkappel exit, OGE Steinitz entry, SNAM RETE GAS Tarvisio (IT) / Arnoldstein (AT) exit.

\[^{22}\] BTG Kulata (BG) / Sidirokastron (GR) exit, GASCADE Kienbaum exit, OGE Kienbaum entry, OGE Oberkappel exit were labelled congested in all previous reports, whereas Bayernets Überackern SUDAL (AT) / Überackern 2 (DE) exit, OGE Steinitz entry were labelled congested in 2015 and 2016.
6.2 Extent of congestion at IP level: unsuccessful requests

At IPs where all capacity products are offered via auctions, an indication of demand exceeding offer can easily be derived from the emergence of auction premia, whereby the volume of “unsuccessful requests” can be calculated by subtracting total allocated capacities from total demanded capacities at the reserve price. The unsuccessfully requested capacity amounts show to what extent an IP side is contractually congested.

The PRISMA auction reports revealed auction premia (and therefore unsuccessful requests) for 8 IP sides. The RBP auction report showed a premium for 1 IP side. The combined information indicates that a total of 9 IP sides characterised by unsuccessful requests. At the same time, only for 4 out of the 17 congested IP sides, unsuccessful requests were reported on the ENTSOG TP. The reporting on the ENTSOG TP should be improved, as it does not cover all auction premia and resulting unsuccessful requests yet.

The majority of unsuccessful requests at the 9 IP sides occurred for quarterly products (16 occurrences), followed by monthly products (10 occurrences) and gas year products (3). The largest volumes have been requested at the North-South link in France. A detailed table showing the volumes/extent of unsuccessful requests based on the auction reports is provided in Annex 2.

6.3 Analysis of offer and use of interruptible capacity and instances of interruptions

Besides the occurrence of unsuccessful requests for firm capacity, the booking(s) of interruptible capacity can be used as an indicator of contractual congestion to the extent that the demand for capacity exceeds the technical capacity and under the assumption that those who booked interruptible capacity would have preferred firm capacity.

Interruptible capacity was offered at 15 of the 17 IP sides for which contractual congestion was identified.

As indicated in Figure 4 below, interruptible capacity was booked at more IP sides for use in Q2/2018 and Q3/2018 than in the earlier quarters of the gas year 2017/18, while the yearly product for the gas year 2018/19 was not booked at all.

At 3 congested IP sides – DESFA S.A.Kulata (BG) / Sidirokastron (GR) entry, Fluxys TENP GmbH Wallbach exit, Transgaz|Negru Voda (RO) / Kardam (BG) entry – no interruptible capacity was offered for use in 2017.

The auction premia occurred for 5 bundled products involving 8 different IP sides.
Actual interruptions of nominated interruptible capacity mostly occurred at contractually congested IP sides with substantially booked interruptible capacity, which may indicate the existence of (temporary) physical congestion. Such instances of possible physical and contractual congestion have been observed at 5 IP sides (for a total number of 154 instances). For most of those IP sides, interruptions occurred for a limited number of days in 2017, ranging from 1 to 23 days. Interruptions occurred more often at 3 IP sides: 28 days at Oberkappel (Germany to Austria), 28 days at Oberkappel (Austria to Germany) and 74 days Liaison Nord Sud, within France.

7. Secondary trading and application of CMPs

7.1 Secondary capacity trading at congested IP sides

The publication of PRISMA Secondary market data and the direct reporting of secondary trade data by TSOs to the Agency for the IP sides identified as congested has made more data available and, with it, the oversight of activities on the secondary market has further improved compared to what was possible for last year’s Congestion Report.

Nevertheless, with 5 IP sides out of 17, the number of congested IP sides for which secondary capacity was traded remained relatively low.

The concluded trades on PRISMA Secondary market are summarised in Figure 5. Most trades were concluded for Fluxys TENP GmbH\Wallbach\exit, with 110 products and the majority being monthly and quarterly products, and for GRT\gaz\Liason Nord Sud\exit with 24 year products, 17 monthly products, and 3 non-standard products. These trading numbers indicate a vivid secondary market for capacity at these IP sides. Additionally, secondary trade information was made available for 17 of the 72 IP sides for which no firm capacity offer of the Gas Year 2018/19 was found on the primary market.
In 2017, PRISMA Secondary has been increasingly used as a trading platform by shippers. For the 17 congested IP sides, mostly unbundled capacity was traded, with the exception of GRTgaz|Liaison Nord Sud, on PRISMA Secondary. From the group of offered firm capacity products, predominantly monthly products were traded on PRISMA Secondary. The possibility to trade non-standard capacity products was predominantly used in 2016. In 2017, however, standard (monthly and quarterly) products are leading the secondary market, while use of non-standard products for congested IP sides decreased.

7.2 Application of CMPs

According to ENTSOG’s TP data, the overall application of CMPs – and therefore days for which additional capacities were offered – has further increased compared to the previous year.

Figure 6 shows the number of days for which additional capacity was offered through the various CMPs at all IP sides. After a year of no application of the long-term Use-It-Or-Lose-It (LT UIOLI), this CMP was applied for a limited number of days in 2017. The (daily) instances of FDA UIOLI, which was only applied at the German and Austrian IP sides in 2017, has slightly decreased compared to the previous years. Most of the reported FDA UIOLI offers – both in total numbers and capacity amounts – occurred at the borders of the NCG market area, which encompasses more entry and exit IP sides than any of the other two market areas (Gaspool and Austria) where FDA UIOLI was applied in 2017.
The extent of application (the number of instances in days) of oversubscription has increased in 2017 compared to the previous year; almost 85% of the reported applications still concern IP sides of the Dutch TSO GTS.

The number of days for which capacity products were surrendered during 2017 for use in that year increased around 30% compared to 2016. Again, the majority (72% of the days) of products and amounts were surrendered at Dutch IP sides followed by the UK (17%).

The CMP application in 2014, 2015, 2016 and 2017 leading to an additional offer of capacity at congested and non-congested IP sides is compared in Figure 7. While the number of IP sides for which capacity was offered through oversubscription was almost the same in 2015 and 2016 (-2 compared to 2015) and 2017 (+1 compared to 2015), the application has not reduced the number of contractually congested IP sides (since oversubscription was not applied at the congested IP sides). On the other hand, its application may have prevented contractual congestion at some of the IP sides.
At 8 IP sides where the FDA UIOLI mechanism is applied, congestion was identified in 2017 (3 compared to 2016). Although the FDA UIOLI mechanism cannot resolve contractual congestion for products beyond the day, it increases the amount of FDA capacity available to the market, supporting spot market price convergence even in the reverse flow direction at unidirectional IPs.

Still, for 123 CMP relevant IP sides, no "capacity made available via FDA UIOLI" was reported on the ENTSOG TP. The reasons for this may include the non-application of the FDA UIOLI mechanism due to the 10% threshold or the absence of contractual congestion. It may also be that capacity was made available, but the data was not reported on the ENTSOG TP; however, the possibility of missing data has not been investigated.

For 2 IP sides marked as congested due to auction premia – bayernets|Überackern SUDAL (AT) / Überackern 2 (DE)|exit and OGE|Oberkappel|exit – the ENTSOG TP includes data on the FDA UIOLI. For the other IP sides marked as congested due to auction premia, this data was not included in the ENTSOG’s TP CMP file. However, PRISMA data shows that firm capacities were traded for all 5 congested IP sides on the PRISMA platform. Additionally, Kulata (BG)/Sidirokastron (GR) Desfa entry IP side had available firm day-ahead capacities on the RBP platform, while no data was available on the ENTSOG TP.

11 Member States reported capacity amounts made available via CMPs, while in 2016 this happened only in 7 Member States. As shown in Figure 6, a predominant increase of surrender and oversubscription CMP processes has been observed in 2017, while LT UIOLI was reported for the first time.

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24 Sub-paragraph 2.2.3.5 of the CMP GL specifies that paragraph 3 shall not apply to network users — persons or undertakings and the undertakings they control pursuant to Article 3 of Regulation (EC) No 139/2004 — holding less than 10% of the average technical capacity in the preceding year at the interconnection point.
Figure 9: Capacity made available [averaged GWh/d] via CMPs in the EU (according to ENTSOG’s TP data) – 2017 (GWh/d)

Annex 3 provides an overview of the average capacity made available in 2017 via the various CMPs at each of the congested IP sides for which data reported was greater than "0". Annex 4 shows for each of the 17 congested IP sides, whether capacity was made available via CMPs or not. Whether and to which extent any capacity released by CMPs was booked cannot be determined, since publications of capacity offers (at the booking platforms) and of capacity bookings (at the ENTSOG TP) do not differentiate the origin of the offered capacity.
8. Supplement A: Results of the 2017 day-ahead auctions

The analysis presented in this Congestion Report focused on the criteria of paragraph 2.2.3(1) (a) –(d) of the CMP GL. Knowing the congestion of the IP sides at the day-ahead level could bring in an additional assessment criterion. The results of day-ahead auctions may facilitate the NRA’s decision to enforce the FDA UIOLI application at specific contractually congested IP sides.

The analysis of the three booking platforms’ auction reports for day-ahead auctions has revealed the following findings.

The results of the PRISMA platform shows 60 IP sides with at least one auction that resulted in auction premia for day-ahead auctions. 5 of those IP sides are already labelled as congested on long-term products in line with the criteria of sub-paragraphs 2.2.3(1) (a) – (c) of the CMP GL and 3 more IP sides are labelled as congested due to non-offer in line with criteria of sub-paragraph 2.2.3(1) (d) of the CMP GL.

In addition to the IP sides labelled as congested, 8 IP sides labelled as close to being congested and 14 labelled as formally congested resulted with auction premia on day-ahead market.

These are the 10 IP sides with the highest occurrences of auction premia on day-ahead market:

a. GCA|Überackern ABG (AT) / Überackern (DE)|21Z000000000002E|entry| 96
b. GCA|Überackern SUDAL (AT) / Überackern 2 (DE)|21Z0000000001240|entry| 96
c. GRTgaz|Liaison Nord Sud|21Z000000000166L|exit| 86
d. OGE|Oberkappel|21Z00000000001G|exit| 71
e. bayernets|Überackern SUDAL (AT) / Überackern 2 (DE)|21Z0000000001240|exit| 64
f. Fluxys TENP GmbH|Wallbach|21Z0000000001216|exit| 55
g. GTS|Bunde (DE) / Oude Statenzijl (L) (NL) (GTG Nord)|21Z000000000079G|exit| 49
h. SNAM RETE GAS|Tarvisio (IT) / Arnoldstein (AT)|21Z00000000004A|entry| 45
i. Energinet|Ellund|21Y---A001A002-8|exit| 42
j. OGE|Ellund|21Z0000000000260|entry| 42

The results of the RBP platform show only 1 IP side with auction premia on the day-ahead market, being Mosonmagyaróvár (AT>HU) FGSZ entry, which had 9 occurrences of auction premia.
9. Conclusions and recommendations

9.1 Conclusions and implications

(84) Compared to last year’s Congestion Report, in which 23 IP sides (9% of the 247 IP sides within the scope of the CMP GL) were identified as congested, the number of congested IP sides has decreased to 17 (~6.5 % of the 262 IP sides within the scope of the CMP GL); this number disregards the 72 IP sides where only the Gas Year 2018/19 has not been offered.

(85) For the 17 contractually congested IP sides listed in Annex 4, the FDA UIOLI mechanism should be implemented pursuant to paragraphs 2.2.1(4) and 2.2.3(1) of the CMP GL.

(86) The FDA UIOLI mechanism is already applied at 8 of these 17 IP sides. This means that at the remaining 9 contractually congested IP sides (cf. Annex 5), the respective NRA shall require the relevant TSO(s) to implement and apply the FDA UIOLI mechanism, unless it is shown that a congested situation is unlikely to reoccur in the following three years. These IP sides currently have not implemented and applied oversubscription or surrender rules since October 2013 and, according to the ENTSOG TP data, there was no capacity made available via any of the CMPs in 2017. The NRAs should investigate the reasons why CMPs are not applied, in particular for those IP sides that were found congested already in previous Reports. The full implementation and application of CMPs – even as a preventive measure at potentially congested IP sides – should be facilitated, monitored and enforced by the respective NRAs.

(87) The map in Annex 6 may assist in determining whether the contractually congested IP side is the only one connecting two entry-exit zones, which makes a congested situation even more critical in terms of restricting the free flow of gas across the Union.

(88) The existence of “capacity hoarding” cannot be checked in this Report, as, in order to do so, individual shipper data on capacity utilisation would be needed, which is not publicly available. Such data could be requested by NRAs from TSOs or network users and based on the Agency’s findings
and detailed data sets accessible in this Report, the NRAs could complete the analysis, as necessary.

9.2 Recommendations for TSOs, ENTSOG and NRAs

(89) Although an overall improvement has been achieved on data quality, the experience gained in producing this Report indicates that the recommendations from the previous Report are still relevant. The Agency also notes that progress on improving data quality, allowing for automated data processing and making the data available on a single platform, has been limited. In order to improve data availability and consistency and, ultimately, transparency the Agency provide the following recommendations:

a. ENTSOG/TSOs shall ensure that auction results with premia (in particular from PRISMA) and data on all non-available capacity products are uploaded on the ENTSOG TP, as required by the CMP GL.

b. The alignment of EIC codes and of IP names and format (“unique identifier”\(^27\)) used for the IPs in the NC CAM scope list on both the ENTSOG TP and on booking platforms is a necessary step to allow the consistent use of these identifiers by TSOs and ENTSOG to enable efficient and automated data processing for all stakeholders.

c. Based on the findings presented in this Report, ENTSOG shall adapt and publish the updated CAM/CMP IP scope list on its TP.

d. The ENTSOG TP should aim to incorporate information on bundled capacities\(^28\).

9.3 Policy recommendation

(90) On the basis of the experience gained in producing this Congestion Reports and as a result of the discussions following the Agency’s public consultation of the “congestion indicators” in September 2016, the Agency reiterates the following recommendations to the European Commission:

a. The Commission may consider amending the CMP GL to review how the full effectiveness of the CMP measures can best be achieved, in particular, if CMPs are applied as a preventive measure\(^29\), before contractual congestion occurs.

(91) Further, the following recommendations from last year’s Congestion Report are still valid and restated:

a. The Commission may consider aligning criterion d) of paragraph 2.2.3(1) of the CMP GL with the other congestion criteria. The current reading of criterion d) considers an IP side not congested if at least one month was offered out of 12 months in the preceding year’s rolling monthly auction procedures.

b. Alternatively, criterion d) could be aligned with the timeframes of criteria b) or a) as follows: “At least six [but minimum three] monthly products should be offered at an IP in order for it not to be considered contractually congested”.

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\(^{27}\) An IP side can be uniquely identified only with a combination of the following: IP name, TSO, direction, connected TSO.

\(^{28}\) 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 comply fully 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(at).

\(^{29}\) At least at those IP sides which are found “potentially” congested or “close to be” congested, or where the TSOs can anticipate any risk for contractual congestion occurring.
c. With respect to paragraph 2.2.1 of the CMP GL, the Commission may consider clarifying:

   c.i. **until when** the Agency shall produce congestion reports (or under which conditions the reports are not required anymore);

   c.ii. an **implementation period** for the FDA UIOLI mechanism, if congestion is identified at IP sides only after 1 July 2017 and the respective NRA has decided to require the TSO to implement and apply the FDA UIOLI mechanism.

d. The Commission may also consider to extend the **scope of “contractual congestion”** to the **day-ahead timeframe** between hubs (requiring the Agency to assess auction premia and the non-offer of firm day-ahead products at a cross-zonal level), which could then also result in an obligatory application of the FDA UIOLI mechanism at IPs/VIPs/IP sides between the corresponding market areas, to promote a short-term gas market price convergence.

e. In addition, it should be further clarified that Article 6 of Regulation (EU) No 984/2013 regarding the joint method to maximise capacity and the dynamic approach to capacity calculation (**re-calculation**), **takes priority over the application of oversubscription** in the yearly, quarterly and monthly timeframe.
# ANNEX 1: List of abbreviations

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACER</td>
<td>Agency for the Cooperation of Energy Regulators (&quot;the Agency&quot;)</td>
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<td>CAM</td>
<td>Capacity Allocation Management (Gas)</td>
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<td>CMP</td>
<td>Congestion Management Procedures (Gas)</td>
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<td>DZK</td>
<td>Dynamically allocable capacity</td>
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<td>EC</td>
<td>European Commission</td>
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<td>ENTSOG</td>
<td>European Network of Transmission System Operators for Gas</td>
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<td>EU</td>
<td>European Union</td>
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<td>FDA</td>
<td>Firm Day-Ahead Use-It-Or-Lose-It</td>
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<td>FZK</td>
<td>Freely allocable capacity (firm)</td>
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<td>IP</td>
<td>Interconnection Point</td>
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<td>Network Code</td>
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<td>TP</td>
<td>(ENTSOE) Transparency Platform</td>
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<td>TSO</td>
<td>Transmission System Operator</td>
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<td>UIOLI</td>
<td>Use-It-or-Lose-It</td>
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ANNEX 2: Unsuccessful requests at congested IP sides in 2017

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**ANNEX 3: Capacity made available at congested IP sides through the application of CMPs**

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<th>No</th>
<th>Operator</th>
<th>Point</th>
<th>Direction</th>
<th>Booking Platform</th>
<th>Connected Operators</th>
<th>LT UIOLI - Avg value of the capacity in kWh/d made available at the point for 2017</th>
<th>FDA UIOLI - Avg value of the capacity in kWh/d made available at the point for 2017</th>
<th>Surrender - Avg value of the capacity in kWh/d made available at the point for 2017</th>
<th>Oversubscription - Avg value of the capacity in kWh/d made available through the application of the pointed CMP in 2017</th>
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<td>exit</td>
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* GCA applies FDA UIOLI at this IP side since 1 October 2013. Due to technical reasons, the data on CMP capacities made available through FDA UIOLI was not uploaded to ENTSOG TP by GCA.
### ANNEX 4: Indicative list of contractually congested IP sides within the scope of the CMP GL

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* GCA applies FDA UIOLI at this IP side since 1 October 2013. Due to technical reasons, the data on CMP capacities made available through FDA UIOLI was not uploaded to ENTSOG TP by GCA.
ANNEX 5: List of the 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 implemented according to paragraph 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.

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<td>GCA applies FDA UIOLI at this IP side since 1 October 2013. Due to technical reasons, the data on CMP capacities made available through FDA UIOLI was not uploaded to ENTSOG TP by GCA.</td>
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<td>yes</td>
<td>74</td>
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<td>no</td>
<td>PRISMA</td>
<td>The capacity was offered as interruptible for use in 2016, 2017 and 2018 at the Tarvisio exit. Due to construction works ongoing until 2018 at Tarvisio exit and in order to guarantee the supply of Northern Italy, capacity products were offered only as interruptible capacity, given the current status of the project. The works will be terminated in 2018. By that time, Italy will be ready to offer up to 40 mm/d export capacity to Northern Europe.</td>
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<td>yes</td>
<td>no</td>
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<td>yes</td>
<td>no</td>
<td>Only virtual reverse flow (backhaul) possible at this point direction and therefore interruptible (unidirectional IP where firm capacity is offered only in the exit direction) (please see also column M and N). This point direction is not relevant as per CMP GL.</td>
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<td>BTG</td>
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</tr>
</tbody>
</table>
ANNEX 6: Map of 17 contractually congested IP sides in Europe in 2017

The key:
- Cross-border IP
- In-country cross-zonal IP
- Congested Exit (non offer)
- Congested Entry (non offer)
- Congested Entry and Exit (non offer)
- Congested Exit (auction premia)
- Congested Entry (auction premia)
- Congested Entry and Exit (auction premia)

Note 1: all IP sides marked with an arrow were found to be congested because of non-offer of firm capacity products with a duration of either one month or longer in 2017 or because of the occurrence of auction premia.

Note 2: the list of IP sides represented on the map is found in Annex 4 (one arrow in case both entry and exit are congested)

Tarvisio (exit, Italy): no firm offers due to construction works until 2018 (see detailed explanation in Annex 5)

Map source: ENTSOG Capacity Map 7/2017 (https://www.entsog.eu)
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