

# CAM NC Monitoring Report

2016

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PART I

# Annual Report 2016 on Implementation Monitoring of CAM NC

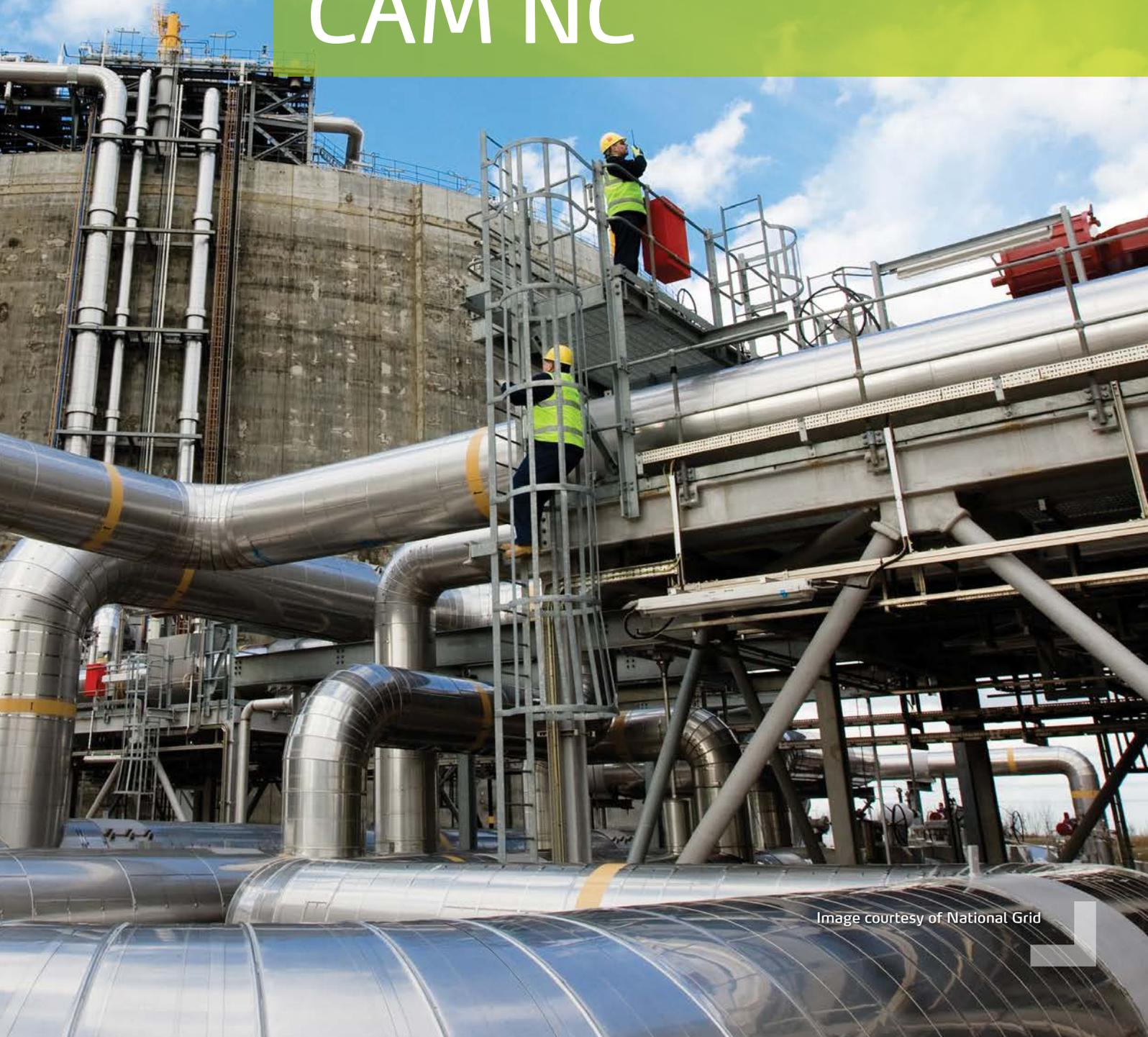


Image courtesy of National Grid

# Introduction

The Network Code for Capacity Allocation Mechanisms (CAM NC) was developed by ENTSOG (European Network of Transmission System Operators for Gas) based on the Framework Guideline on Capacity Allocation Mechanisms by ACER (Agency for the Cooperation of Energy Regulators) during 2011 and 2012.

The Network Code was approved by the EU Gas Committee on 14 October 2013 as Commission Regulation (EU) No 984/2013.

The implementation date was 1 November 2015 with the exception of Article 6, which had to be implemented by 4 February 2015. Nonetheless, a number of TSOs were able to implement the majority of CAM NC Articles long before the deadline. Both ACER and ENTSOG are required to publish monitoring reports – on implementation as well as on effects of the network codes.

Pursuant to Article 8(8) of Regulation (EC) No 715/2009, ENTSOG monitors implementation of the Network Code

ENTSOG launched the current monitoring process in December 2016 to ensure the timely publication of its results in the 2016 Annual Report.

The same questionnaire was used in the previous year so that it could be possible to monitor which TSOs had implemented which specific Articles in the years between 2015 and 2016.

ENTSOG collected data for CAM NC implementation monitoring purposes independently from ACER. This differs from 2015 when ENTSOG and ACER had decided to develop a joint process for collecting data. But this year ACER changed the time frame for their data collection. ENTSOG and ACER's implementation monitoring reports are complementary. ENTSOG's report was developed based on data provided by TSOs.

This process of collecting and evaluating data is also applied during the implementation of monitoring and monitoring of effects on the harmonisation of applicable rules aimed at facilitating market integration for the COMMISSION DECISION (2012/490/EU), known as "Guidelines for Congestion Management Procedures". These findings are presented in two further reports published by ENTSOG and will be presented in the 2016 Annual Report along with the results of this CAM NC Implementation monitoring report.

The report on the implementation monitoring of CAM NC reflects the statuses of the 41 European Transmission System Operators (TSOs).

The questionnaire used for the data collection was divided into two parts:

- ▲ A first section with requests for the submission of information on how each TSO has applied CAM NC requirements.
- ▲ A second part with questions on how CAM NC requirements are applied at each side of an Interconnection Point (IP).

Thus, this report on implementation monitoring of CAM NC provides a detailed view on the level of implementation for each Article of the CAM NC per TSO and for each side of an IP in the European Union. Annex I contains detailed information on a question-by-question basis.

A list providing information on which capacity products are offered at each IP side can be found in Annex II.

# Overview of Implementation status (survey + IP list)

This chapter provides an overview of the implementation status of each Article of CAM NC at TSO level.

Questions were only asked that focussed on the mandatory provisions for TSOs stipulated in each Article. Thus, Articles containing no direct obligations or only optional requirements for TSOs were not taken into consideration in the questionnaire.

The presented data was collected from 49 TSOs (45 ENTSOG members, two associated partners and two TSOs that are not ENTSOG members). This report reflects the responses from 41 of these TSOs. Out of the eight missing TSOs, five TSOs are under derogation and three TSOs only have IPs that are not relevant to CAM NC provisions.

It must be mentioned that one of the 41 TSOs is also under derogation but has already applied some CAM NC Articles on a voluntary basis and is therefore included in the analysis.

Table 1 shows the implementation status of the mandatory CAM NC articles by TSOs while Table 2 provides data on how the relevant Articles are being implemented at all concerned IP sides. Both tables indicate the number of TSOs and IPs that share an implementation status of each given Article:

- ▲ Fully Implemented (FI): TSO has fully implemented the Article;
- ▲ Not Implemented (NI): TSO has not fully implemented the Article;
- ▲ Not Applicable (NA), meaning:
  - a) CAM NC is not applicable for particular IPs
  - b) TSO is under derogation but has applied some or all Articles of CAM NC on a voluntary basis
  - c) Capacity was already fully booked before CAM NC entered into force

The answers provided by the TSO under derogation but which had nevertheless voluntarily implemented some CAM NC Articles are considered in the following manner:

- a) If the TSO implemented the Article, the TSO is included in the FI group;
- b) If the TSO did not implement the Article, the TSO is included in the NA group since the TSO was not obligated to implement the provision.

**TABLE 1: SURVEY ON IMPLEMENTATION STATUS BY TSOs**

		Fully Implemented (FI) Number of TSOs	Not Implemented (NI) Number of TSOs	Not Applicable (NA) Number of TSOs	Comments
Article 4	Coordination of maintenance	41	0	0	
Article 6(1)	Capacity calculation and maximisation	36	1	4	
Article 8(6)	Allocation methodology	38	0	3	
Article 9	Standard capacity products	39	0	2	1 TSO offered one-off non-standard nine-month product from 1 Jan 2017 1 TSO applied non-standard implementation of the article
Article 10	Applied capacity unit	41	0	0	
Article 11(3)	Annual yearly capacity auctions	37	3	1	
Article 19(1)	Bundled Capacity products	34	4	3	2 NA: border to non-EU-country
Article 19(5)	Bundled Capacity products	36	1	4	
Article 19(7)	Bundled Capacity products	35	5	1	
Article 21(1)	Allocation of interruptible services	36	3	2	
Article 21(2)	Allocation of interruptible services	41	0	0	
Article 21(4)	Allocation of interruptible services	40	0	1	
Article 21(5) & 21(6)	Allocation of interruptible services	36	2	3	1 NA: derogation 1 NI: wrongly stated in year 2015
Article 21(7)	Allocation of interruptible services	37	2	2	
Article 22(2)	Minimum interruption lead times	41	0	0	
Article 23	Coordination of interruption process	41	0	0	
Article 24(1)	Defined sequence of interruptions	41	0	0	
Article 24(2)	Defined sequence of interruptions	41	0	0	
Article 24(3)	Defined sequence of interruptions	38	2	1	
Article 25	Reasons for interruptions	40	0	1	
Article 26(1)	Tariffs	39	1	1	

**TABLE 2: SURVEY ON IMPLEMENTATION STATUS BY IP SIDE**

	Fully Implemented (FI) Number of IP sides	Not Implemented (NI) Number of IP sides	Not Applicable (NA) Number of IP sides	Comments
Article 3(7)	321	7	0	-
Article 6(1(a)) Capacity calculation and maximisation	263	21	29 + 15	15 IP sides NI: only interruptible capacity or reverse flow capacity is offered or the IP is operated by the same TSO on both sides
Article 6(1(b)) Capacity calculation and maximisation	258	26	29 + 15	
Article 8(1) Allocation methodology	319	4	2	2 IP sides NI: TSO been granted derogation
Article 9 Standard capacity products	321	2	5	2 IP sides NI: TSO been granted derogation
Article 19(1) & 19(2) Bundled Capacity products	303	5	20	2 IP sides NI: TSO been granted derogation
Article 19(5) Bundled Capacity products	264	5	39 + 20	<ul style="list-style-type: none"> <li>- 2 IP sides NI: TSO been granted derogation All available firm capacity is bundled</li> <li>- Both IP sides are operated by one TSO</li> <li>- Bundling of capacity is not possible because the adjacent TSO has already sold all firm capacity on a long-term basis</li> <li>- Only interruptible capacity is offered</li> </ul>
Article 21(1) & 21(3) Allocation of interruptible services	328			
Article 26(2) Tariffs	323	4	1	4 NI: no information was delivered 1 NA: TSO been granted exemption

In this year's evaluation an improvement regarding the implementation status is recognised in comparison with the monitoring of the implementation results from year 2015.

# Summary and conclusions

The implementation of CAM NC is an important step in the harmonisation and development of an integrated energy market within the European Union.

Network Users can join and operate within the integrated market more easily than in a multitude of separate national markets with different rules and regulations for network access and capacity trading.

In the European Union, standard procedures for capacity booking are provided within the integrated market, like unified capacity auction dates for capacity products offered on no more than one common booking platform (BP, with two exceptions as described further in the report) at any single inter-connection point instead of individual TSO websites for the booking procedures. Moreover, capacity products are harmonised and operational steps are facilitated by booking the entry and exit capacity at an IP in one single step by bundling the respective products. Since the application deadline of CAM NC on 1 November 2015, significant progress was made towards achieving an integrated energy market. The vast majority of TSOs have implemented all of the mandatory requirements from CAM NC on time, thus providing strong support for the integrated EU gas market. To fully achieve the desired results, certain measures that have not yet been implemented by some TSOs and/or at some IPs need to be completed as soon as possible. The implementation monitoring report shows further developments regarding the implementation of provisions in comparison with the monitoring report for the year 2015.

The survey conducted by ENTSOG regarding TSO implementation of CAM NC shows that of the 41 TSOs required to apply CAM NC, 32 of them have already developed and applied all or at least all mandatory CAM NC measures. This means that they fully comply with the obligations defined in the CAM NC.

Nine TSOs claimed to have partially implemented the CAM NC requirements, while the Member States of five TSOs have been granted derogation by the EC under Article 49 of the Gas Directive. Nonetheless, one of these TSOs has partially implemented CAM NC. Furthermore, three TSOs have IPs that are not relevant to CAM NC.

The situation regarding CAM NC implementation by TSOs is also reflected in the results of the IP survey, which was sent to 328 IP sides where CAM NC is applicable. The number of IP sides was the same as in 2015. Even though some IPs had merged together into VIPs, other IPs were newly created. Generally it has been shown that CAM NC has already been

implemented at the vast majority of relevant IP sides. Furthermore, the number of IP sides where CAM NC provisions have been implemented has increased in comparison with the previous year.

Standard capacity products have been introduced at all IP sides where TSOs are obliged to offer them (according to Article 9) and tariffs are calculated uniformly in the intended manner (according to Article 26.2).

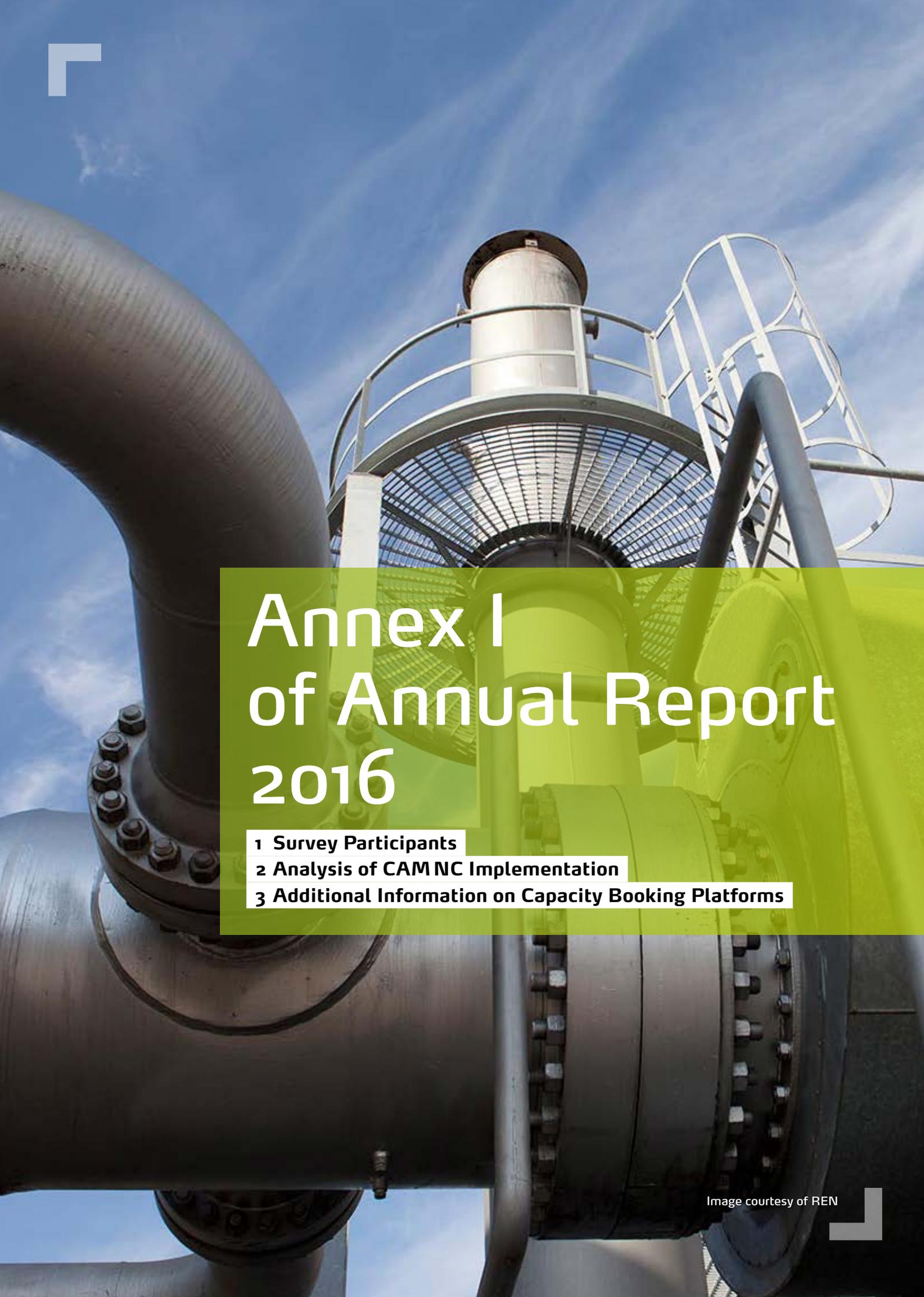
At a small number of IP sides, some CAM NC Articles have not yet been fully implemented (up to 10% of all IP sides). Some delays in implementing CAM NC provisions are still present in the capacity calculation and maximisation (according to CAM NC is the necessity of offering all their bundled capacity at one IP on one capacity platform. Some TSOs were not able to reach an agreement on which capacity booking platform to use, e.g., between AT-HU and DE-PL, while in the case of BG-GR, the decision has been taken and the adjacent TSOs have agreed on the booking platforms to be used.

Some TSOs have applied interim measures from the Commission Regulation (EU) No 312/2014, also known as Network Code on Gas Balancing of Transmission Networks. In these cases, certain provisions laid out in the CAM NC are not applicable, e.g., the introduction of an over-nomination procedure or the offer of within-day interruptible capacity.

Progress has been made in dealing with competing capacities at the AT-DE IPs. Thanks to the agreement achieved between the concerned TSOs and NRAs, and due to the technical development of the booking platform, the capacities are already offered as bundled.

Moreover, at some IPs it is not possible to implement all CAM NC articles in daily use since all technical capacity has already been booked on a long-term basis. Hence, no auctions can take place and neighbouring TSOs cannot bundle the available capacity.

However, such restrictions in applying of the CAM NC provisions, especially in the last case, do not necessarily mean a delayed implementation. Despite the non-application of certain rules, TSOs may still have implemented the required measures.

A low-angle, upward-looking photograph of industrial machinery, likely a power plant or refinery. The image shows large, dark metal pipes and a complex structure of metal grates and railings. The sky is a clear, bright blue with some light clouds. A semi-transparent green rectangular box is overlaid on the right side of the image, containing the title and table of contents.

# Annex I of Annual Report 2016

- 1 Survey Participants**
- 2 Analysis of CAM NC Implementation**
- 3 Additional Information on Capacity Booking Platforms**

# Annex 1: Survey Participants

The following European TSOs participated in the survey:

<b>AUSTRIA</b>	Gas Connect Austria GmbH
	Trans Austria Gasleitung GmbH
<b>BELGIUM</b>	Fluxys Belgium S.A.
<b>BULGARIA</b>	Bulgartransgaz EAD
<b>CROATIA</b>	Plinacro d.o.o.
<b>CZECH REPUBLIC</b>	NET4GAS s.r.o.
<b>DENMARK</b>	energinet.dk
<b>ESTONIA</b>	Elering Gaas AS (derogation)
<b>FINLAND</b>	Gasum Oy (derogation)
<b>FRANCE</b>	GRTgaz SA
	TIGF SA
<b>GERMANY</b>	Bayernets GmbH
	Fluxys TENP GmbH
	GASCADE Gastransport GmbH
	Gasunie Deutschland Transport Services GmbH
	GRTgaz Deutschland GmbH
	Gastransport Nord GmbH
	JordgasTransport GmbH
	NEL Gastransport GmbH
	Nowega GmbH
	Ontras Gastransport GmbH
	Open Grid Europe GmbH
	terrannets bw GmbH
	Thyssengas GmbH
	OPAL Gastransport GmbH (no ENTSOG member) (exemption)
Lubmin-Brandov Gastransport GmbH (no ENTSOG member) (exemption)	
<b>GREECE</b>	DESFA S.A.
<b>HUNGARY</b>	FGSZ Zrt.
<b>IRELAND</b>	Gas Networks Ireland Ltd.
<b>ITALY</b>	Snam Rete Gas S.p.A.
	Infrastrutture Trasporto Gas S.p.A. (only IPs that are not CAM relevant)
	Società Gasdotti Italia S.p.A. (only IPs that are not CAM relevant)
<b>LATVIA</b>	Latvijas Gāze Ltd. (derogation)
<b>LITHUANIA</b>	AB Amber Grid
<b>LUXEMBOURG</b>	Creos Luxembourg S.A. (derogation)
<b>NETHERLANDS</b>	BBL Company V.O.F.
	Gasunie Transport Services B.V.
<b>POLAND</b>	GAZ-SYSTEM S.A.
<b>PORTUGAL</b>	REN - Gasodutos S.A.
<b>ROMANIA</b>	Transgaz S.A.
<b>SLOVAKIA</b>	eustream a.s.
<b>SLOVENIA</b>	Plinovodi d.o.o.
<b>SPAIN</b>	Enagas S.A.
	Regasificadora del Noroeste S.A. (only IPs that are not CAM relevant)
<b>SWEDEN</b>	Swedegas AB (derogation)
<b>UNITED KINGDOM</b>	Interconnector Ltd.
	National Grid Gas plc
	Premier Transmission Ltd.
	GNI (UK) Ltd.

Table 3: Survey Participants

# Annex 2: Analysis of CAM NC Implementation

## 2.1 TSO SURVEY QUESTION-BY-QUESTION ANALYSIS

The presented data was collected from 49 TSOs (45 ENTSOG members, two associated partners and two TSOs that are not ENTSOG members). The following analysis reflects the responses from 41 of these TSOs. Of the eight TSOs not included here, the Member States of five of them had been granted derogation and three TSOs only operate IPs that are not CAM NC-relevant. However, it should be noted that one of the 41 TSOs is exempted from implementing CAM NC requirements but has nonetheless implemented some of the CAM NC Articles on a voluntary basis and is therefore included in the analysis.

In the following evaluation, only those Articles containing mandatory requirements are taken into consideration regarding the implementation status of CAM NC. The remaining Articles are either not directly applicable for TSOs and/or can be implemented on a voluntary basis by TSOs.

### 2.1.1 Coordination of Maintenance

#### Article 4

All TSOs have established communication channels to adjacent TSOs for exchanging maintenance plans affecting both available and booked firm capacities. Some TSOs hold annual meetings with their adjacent TSOs to agree on how to cooperate during maintenance and how to minimise the impact on affected Network Users. A number of TSOs even organise meetings more often according to their needs. In addition to planned meetings, TSOs also communicate with each other whenever it is deemed necessary. TSOs exchange information on the estimated duration and extent of planned works/maintenance in order to minimise the impact on Network Users.

### 2.1.2 Capacity Calculation and Maximisation

#### Article 6(1)

According to the survey, 36 TSOs have applied Article 6(1). While taking a closer look on the data we see that, jointly with their adjacent TSOs, 14 TSOs analyse their technical capacities and discrepancies at all relevant IPs on a regular basis. This is done at least once a year prior to publishing auctions for yearly capacity products for the next gas year and, if possible, also during the following gas years. This analysis takes into account assumptions made in the EU-wide Ten-Year Network Development Plan (TYNDP) pursuant to Article 8 of

Commission Regulation (EC) No 715/2009, national investment plans, relevant obligations under the applicable national laws and any relevant contractual obligations.

All of the necessary data for the relevant IPs is exchanged as the basis for this analysis. This analysis also includes an evaluation of the need and potential for capacity maximisation prior to upcoming yearly auctions.

After having jointly analysed the general circumstances and restriction at relevant IPs, TSOs assess the actual results of all auctions for capacity products with durations of one month or longer.

In the case of five TSOs, the situation is unclear regarding the status of the joint assessment, as they did not answer the question.

It can be positively mentioned that 15 TSOs received future plans on bookings and took this information into account when re-calculating their technical capacity. One TSO mentioned that it also uses the information to model their national development plan as well as for the TYNDP. Another TSO took into consideration short-term indications for shifting capacity from an IP of no significant interest to an IP with higher capacity demand. But before the capacity at the concerned IPs was changed, discussions were held and an agreement was concluded between the affected TSOs.

Two other TSOs, which received information on future booking from Network Users, did not take into account this data for the re-calculation of capacity. One of these two TSOs explained that the process of recalculating technical capacity takes into consideration the much more reliable and accurate Network User's nominations than its indicated demands. Another one stated that capacity recalculation including the Network User's data was in progress.

Network Users did not report projected nominations or future IPs capacity bookings to 24 TSOs in the previous year.

### 2.1.3 Allocation Methodology

#### Article 8(6)

It can be positively highlighted that 38 TSOs have implemented Article 8(7) of CAM NC for allocating capacity. 35 of them set aside at least 20 % of capacity while two TSOs with less than 20 % available capacity set aside all of their available capacity to be offered in short-term auctions according to Article 8(7).

Only three TSOs have not yet applied any of the provisions. For two TSOs, the Article's rules are currently not relevant as all technical capacity is fully booked on a long-term basis and the Member State of the third of those three TSOs is granted derogation.

### 2.1.4 Standard Capacity Products

#### Article 9

All TSOs required to apply CAM NC offer standard capacity products, which according to Article 9, include the following:

- ▲ Yearly
- ▲ Quarterly
- ▲ Monthly
- ▲ Daily
- ▲ Within-day capacity products

One TSO voluntarily applied some CAM NC chapters, even though a derogation according to Article 49 has been granted to its Member State. This TSO does not offer the standard capacity products yet. As an exception, one TSO offered a nine-month capacity product starting on 1 January 2017. One TSO applied non-standard implementation of the Article, therefore it is recorded as Not Implemented in this Report.

### 2.1.5 Applied Capacity Unit

#### Article 10

All TSOs use energy units per unit of time when publishing their capacity data. 28 TSOs use "kWh/h" (kilowatt-hour per hour), ten TSOs use "kWh/d" (kilowatt-hour per day) and three TSOs use both units: "kWh/h" and "kWh/d".

### 2.1.6 Annual Yearly Capacity Auctions

#### Article 11(3)

All TSOs are compliant with the rule described in Article 11(3). No TSO offers yearly capacity products beyond the next 15 gas years.

Furthermore, 37 TSOs calculate the capacity offered during the respective capacity auctions in accordance with the following formula for capacity offered in the annual yearly capacity auction:  $A - B - C + D$

Where:

**A** is the TSO's technical capacity for each standard capacity product

**B** is for annual yearly auctions offering capacity for the next five years, and represents the amount of technical capacity (A) set aside in accordance with Article 8(7)(b); for annual yearly auctions for capacity beyond the first five years, it is the amount of technical capacity (A) set aside in accordance with Article 8(7)

**C** is the previously sold technical capacity, adjusted by the capacity re-offered in accordance with applicable congestion management procedures

**D** is additional capacity, for such year, if any

In addition to the requirements for the yearly capacity products, almost all of the above-mentioned 37 TSOs stated that they also applied the rules for calculating the other standard capacity products.

Thus, the capacity offered in the annual quarterly capacity auction is equal to  $A - C + D$

Where:

**A** is the TSO's technical capacity for each standard capacity product

**C** is the previously sold technical capacity, adjusted by the capacity re-offered in accordance with applicable congestion management procedures

**D** is additional capacity, for such quarter, if any

The capacity offered in the rolling monthly capacity auction is, each month, equal to:  $A - C + D$

Where:

**A** is the TSO's technical capacity for each standard capacity product

**C** is the previously sold technical capacity, adjusted by the capacity re-offered in accordance with applicable congestion management procedures

**D** is additional capacity, for such month, if any

The capacity offered in the rolling day-ahead capacity auction is, each day, equal to: **A - C + D**

Where:

**A** is the TSO's technical capacity for each standard capacity product

**C** is the previously sold technical capacity, adjusted by the capacity re-offered in accordance with applicable congestion management procedures

**D** is additional capacity, for such day, if any

The capacity offered in the within-day capacity auction is, each hour, equal to: **A - C + D**

Where:

**A** is the TSO's technical capacity for each standard capacity product

**C** is the previously sold technical capacity, adjusted by the capacity re-offered in accordance with applicable congestion management procedures

**D** is additional capacity, if any

Three TSOs are currently not calculating within-day capacity products and one of these three TSOs also does not calculate day-ahead products. Unfortunately, these three TSOs did not provide the alternatively applied formulas for their capacity product calculations and also did not specify when they applied the alternative formulas.

Only one TSO does not offer the standard capacity products in capacity auctions, as it has been granted an exemption for implementing CAM NC provisions. This TSO allocates capacities on the 'first committed, first served' basis. To calculate the capacity products, the TSO uses an alternative formula: **A - C + D**

Where:

**A** is the TSO's technical capacity

**C** is the previously sold technical capacity, adjusted by the capacity re-offered in accordance with applicable congestion management procedures

**D** is additional capacity, if any

## 2.1.7 Bundled Capacity Products

### Article 19(1)

34 TSOs offer the maximum possible available capacity as bundled capacity at each of their IPs. Seven TSOs do not bundle all of their available capacity beyond the exemption given in Article 19(5) of CAM NC.

Three of these seven TSOs mentioned that the adjacent TSO has no obligation to bundle capacity as the country is a non-EU-Member State or has been granted derogation.

Four TSOs are still in the process of choosing the capacity platform to use for offering bundled capacity. Since one TSO's Member State has been granted derogation, this TSO is not obliged to bundle capacity with its adjacent TSOs

### Article 19(5)

36 TSOs auction all of their unbundled capacity according to the auction calendar, which means that the capacity is offered in auctions on the following dates:

- ▲ Yearly capacity:
  - Firm – first Monday of March
  - Interruptible – first Monday of April
- ▲ Quarterly capacity:
  - Firm – first Monday of June
  - Interruptible – first Monday of July
- ▲ Monthly capacity:
  - Firm – second Monday of month-1
  - Interruptible – third Monday of month-1
- ▲ Daily capacity:
  - Firm – default timing
  - Interruptible – one hour after firm daily capacity auction

Only five TSOs do not auction all of their unbundled capacity according to the auction calendar. However, the survey showed that two TSOs are not obliged since they have been exempted from implementing CAM NC requirements or their Member States have been granted derogation, and two TSOs currently have no available capacity to offer. Only one TSO is late in implementing the relevant CAM NC requirements, however, this TSO is planning to comply with them by March 2017.

## Article 19(7)

35 TSOs reported that they provide Network Users with the possibility to nominate bundled capacity via a single nomination procedure. Six TSOs do not provide such a possibility yet.

Some of the six TSOs are still discussing a single nomination procedure with adjacent TSOs and have not signed an inter-connection agreement so far. Only one TSO needs to finalise IT tests for such a nomination procedure. One of the TSOs, which mentioned that Article 19(7) has not been implemented, only operates IPs to non-EU-countries and thus does not offer any bundled capacity. Four TSOs did not provide any reason to justify their status.

## Article 19(9)

Even though the implementation of Virtual Interconnection Points (VIPs) is not obligatory until 1 November 2018, five TSOs have already implemented VIPs. These already created VIPs are:

- ▲ VIP PIRINEOS: IPs Irún-Biriatou and Larrau;
- ▲ VIP IBÉRICO: IPs Valença do Minho-Tuy and Badajoz-Campo Maior;
- ▲ VIP GCP GAZ-SYSTEM/ONTRAS: IPs Lasów, Lasów Rewers, Gubin and Kamminke.

But 25 other TSOs have also already started the analysis and three of them are in discussions with adjacent TSOs for creating VIPs. Five TSOs mentioned that establishing VIPs is not applicable due to their grid conditions (just one IP between countries or only IPs with non-EU-countries). One TSO says that after analysing the situation it considers that there is no need for a VIP creation.

The remaining five TSOs did not provide any information on their plans to analyse the potential establishment of VIPs.

## 2.1.8 Allocation of Interruptible Services

### Article 21(1)

36 TSOs offer interruptible capacity on a daily basis in both directions at their IPs.

Only three TSOs do not offer a daily interruptible capacity product in both directions at all their IP sides, if firm capacity is sold out on a day-ahead basis. The reasons behind this decision vary between TSOs. One TSO is far from selling out its available firm capacity, but if demand is expressed, they are ready to offer interruptible capacity. Another TSO is obliged to offer interruptible capacity if at least 95% of firm capacity is sold out according to national legislation. However, the TSO still has a higher amount of firm capacity than 5% available at its IPs. And only one TSO has not yet implemented CAM NC provisions, but is aiming to do so by the beginning of 2017.

One TSO has already sold out all of its offered interruptible capacity on a long-term basis until the year 2018.

### Article 21(2)

None of the TSOs, for which CAM NC requirements are mandatory, has limited the offer of firm capacity at any IP side in order to offer interruptible capacity.

### Article 21(4)

The TSOs apply the same mechanism for allocating interruptible capacity products. 40 TSOs apply an allocation mechanism in line with the provisions laid out in Article 21(4) as well as Articles 21(8) and 21(9) of the CAM NC. Thus the interruptible capacity is offered in auctions that are held on the booking platforms.

Only one TSO follows a differing allocation mechanism. This TSO applies the 'first committed, first served' approach. The Member State of this TSO is granted derogation and so the offer of interruptible capacity is done based on a voluntarily implementation of CAM NC and furthermore, there is no congestion on the TSO's IP(s).

### Article 21(5) & 21(6)

36 TSOs allocate within-day interruptible capacity via an over-nomination procedure and only once firm capacity is sold out.

Just five TSOs do not follow this procedure. Three of those five TSOs have still firm capacity to offer (for one of the three TSOs, a threshold of 5% of maximum available firm capacity has been defined by national legislation); therefore interruptible within-day capacity has not been offered yet. However, the TSOs are ready to offer the service if there is demand.

One TSO considers the non-application of within-day interruptible capacity due to two important reasons. On one hand the national balancing group model allows a separation of the actual capacity contract owner and the balancing group responsible party that only nominates the capacity contract without necessarily being the contract owner. The responsible party of the balancing group can allocate several capacity



Image courtesy of NET4GAS

contracts from different owners within a balancing group and only nominate the maximum possible amount of all included contracts. Thus, a TSO cannot know the Network User to which it should allocate an interruptible capacity contract in case of a within-day over-nomination procedure. When nominating more capacity than stipulated in the capacity contract within-day and the firm capacity is sold out, an interruptible capacity right will be created.

If firm capacity has not yet been sold out and the TSO decides to allocate within-day interruptible capacities they are not required to implement the over-nomination procedure, especially when facing the above-mentioned problems.

Another reason for not offering within-day interruptible capacity is that interim measures of the Balancing Network Code apply in some countries. Therefore, the affected TSOs are still involved in the decision-making process regarding the implementation of nomination rules.

Since there was no congestion in its network, one TSO did not offer any forward flow interruptible services, and the TSO does not envisage any congestion in the near future. However, if congestion is indicated at any point, this TSO will put the required processes in place for applying the over-nomination procedure.

One TSO does not allocate within-day interruptible capacity via an over-nomination procedure as the congestion management measure “Day-Ahead Oversubscription and Buy-Back” is implemented in case of congestion. The available oversubscription capacity that was not sold on day-ahead basis will automatically be made available as firm within-day capacity.

Another TSO does not apply an over-nomination procedure, because it has an ex-post capacity validation mechanism in place, called over-runs. The ex-ante over-nomination procedure cannot be aligned with the ex-post over-run regime; however the alternative mechanism also allows the allocation of interruptible capacity.

One TSO does not offer any within-day capacity at the moment, because it has not yet established an automatic connection with the booking platforms in use. Furthermore, the TSO must adjust its capacity management system to meet the requirements for within-day interruptible capacity. But the TSO is working on a solution and is expecting to offer within-day capacity shortly.

Compared to the previous year, one additional TSO has been added to the ‘Not Implemented’ group. This is due to the fact that this TSO has re-evaluated the question and changed its response. However, this TSO still plans to commence allocating within-day products at the beginning of gas year 2017/2018.

Even though the offer of within-day interruptible capacity is not mandatory, the over-nomination procedure is already applied by many TSOs and its impact on the market is currently being analysed in a number of countries.

#### **Article 21(7)**

37 TSOs have already published the amount of interruptible capacity products (with a duration longer than within-day) on offer before the respective auction starts.

Only four TSOs do not follow this procedure. One TSO has not yet implemented capacity auctions. One TSO does not offer any interruptible capacity products. Another TSO cannot offer interruptible capacity product except day-ahead and within-day due to national regulation. The remaining one TSO does not have to apply the provisions described in the Article as its Member State is granted derogation.

## 2.1.9 Minimum Interruption Lead Times

### Article 22(1)

27 TSOs have jointly decided with their adjacent TSOs on a minimum interruption lead time.

14 other TSOs have decided to set individual lead times. In this case, there is a decrease of four TSOs in comparison to the previous year regarding the application of an individual approach. Only one TSO has not applied Article 22(1) of CAM NC since it does not offer bundled interruptible capacity products at its IPs. This is because the TSO is far from selling out its firm capacity.

### Article 22(2)

The lengths of the minimum interruption lead times for Network Users vary between TSOs. Currently the following lead times are applied:

- ▲ One TSO: 1 hour
- ▲ 29 TSOs: 1 hour and 15 minutes (operate on minimum interruption lead time for a given gas hour)
- ▲ 1 TSO: 1 hour and 45 minutes (if possible 3 hours before start of the gas hour).
- ▲ 4 TSOs: 2 hours
- ▲ 2 TSOs: 3 hours
- ▲ 1 TSO: 1 day

None of the TSOs have shortened the minimum interruption lead time jointly with adjacent TSOs in the year 2016, since previous agreements stipulating the lead times were already in place.

Two TSOs stated that this Article is not applicable. One of these TSOs does not offer bundled interruptible capacity at its IPs and the other TSO has not yet implemented the CAM NC provisions.

Two further TSOs did not provide an answer to this question in the survey.

## 2.1.10 Coordination of Interruption Process

### Article 23

In case of interruptions, a high number of TSOs (38 TSOs) notify their adjacent TSO(s) of the respective action. Only three TSOs do not notify their adjacent TSO(s) directly; however two of them use matching messages, which already contain the reduced quantities for informing the neighbouring TSOs. One TSO publishes the interruption information on its website.

36 TSOs reported that they were notified by adjacent TSOs as soon as possible when the neighbouring TSOs initiated an interruption.

Only five TSOs reported that the information on curtailing nominations was not provided by the adjacent TSOs. However, three of those five TSOs did not need this additional message since the applied matching process accounts for any nomination curtailments and all relevant information about the scheduled quantities is provided.

Two TSOs consider this information exchange to be 'Not Applicable' since this situation had not occurred yet. However, the commercial agreements in place with adjacent TSOs include a notification obligation.

39 TSOs notify their respective Network Users as soon as possible, if they are informed by an adjacent TSO initiating an interruption.

One TSO does not consider this information exchange with Network Users as being necessary since, according to its view, Network Users are responsible for exchanging all relevant information with Network Users from adjacent TSOs and thus every Network User in their network shall be informed about any nomination curtailments.

One TSO considers this provision as not yet applicable yet since it is still in process of implementing the CAM NC requirements.

### 2.1.11 Defined Sequence of Interruptions

#### Article 24(1)

All TSOs apply the timestamp approach for determining the interruption sequence as defined in Article 24(1).

#### Article 24(2)

All TSOs already apply a pro-rata reduction in specific interruption cases as stipulated in Article 24(2).

#### Article 24(3)

To accommodate the differences between the various interruptible capacity services across the Member States, 38 TSOs implemented and coordinated the joint procedures mentioned above on an IP-by-IP basis. Only three TSOs are not applying this approach. Nonetheless, two TSOs are currently implementing this procedure and one TSO operates an IP with a Member State that has been granted derogation under Article 49 of the Gas Directive.

### 2.1.12 Reasons for Interruptions

#### Article 25

36 TSOs have included the reasons for interruptions in their general terms and conditions and/or in separate interruptible contracts.

Three TSOs did not include the reasons in the above mentioned contracts. However, one TSO out of the three TSOs includes the reasons in the framework contract and another TSO includes the curtailment reasons in a Memorandum approved by its NRA.

Another TSO does not include the reasons in any contract, as the capacity can be disrupted for any reason.

One TSO reported that this Article does not apply to it, since all interruptible capacity has been sold out until the end of Q2 2018; furthermore the reasons for interruptions are stated in its Access Agreement Summary document.

One TSO also reported that the Article is not applicable, since its capacities have been booked out in the long term.

### 2.1.13 Tariffs

#### Article 26(1)

39 TSOs apply the regulated tariffs as reserve prices in all auctions for standard capacity products for firm and interruptible capacity products at all IPs. Only one TSO does not apply this provision, because its Member State is granted derogation.

One TSO mentioned that this Article is not applicable, because the TSO is a merchant operator for which the NRA has not set an allowed revenue or price cap. Thus, this TSO does not have any “regulated tariffs”. However, the TSO is required to submit a charging methodology to the NRA for approval. Based on this approved methodology, the TSO determines the reserve prices for the various capacity products to be offered. The actual prices are not directly approved by the NRA. Therefore, the TSO does not consider its reserve prices as regulated tariffs when compared to the methodology applied by many other TSOs. The prevailing prices are published on the TSO’s website. These are also the reserve prices used for the standard CAM products.

#### Article 26(4)

39 TSOs are offering their capacity products at the reserve price, which also applies to an unbundled product of the same runtime. Since two TSOs do not offer bundled capacities, they do not follow this approach.

However, the reasons behind this situation for the two TSOs are different:

- ▲ 1 TSO has only one IP to a non-EU country and is under derogation
- ▲ 1 TSOs do not offer bundled capacities, because they have been given an exemption for applying certain provisions of the CAM NC

Since the two TSOs do not offer any bundled capacity, there is no need to apply and describe an alternative approach for determining the reference price for unbundled capacity products.

### 2.1.14 Capacity Booking Platforms

#### Article (27)

Currently capacity at almost all IPs is offered solely on one of the three existing booking platforms.

As the analysis shows, there are only two IP GCP GAZ-SYSTEM/ONTRAS PL/DE and Mallnow PL/DE where two different booking platforms are used on the IP sides.

However, the TSOs reported that they are in on-going discussions with the adjacent TSO regarding the preferred booking platform for offering bundled capacity products.

## 2.2 IP LIST QUESTION-BY-QUESTION ANALYSIS

### General Information

For the CAM NC implementation monitoring report, 41 TSO explained that 328 IP sides were operated by them in the European Energy Market. The aim of the report is to monitor the status of the application of the different Articles of the CAM NC at these IP sides.

However, at 37 of the 328 IP sides, it is not mandatory for the TSOs to fulfil all requirements of CAM NC. 35 of the 37 IP sides are located at a border to a non-EU-country and, at two IP sides, an adjacent TSO's Member State has been granted derogation. In both cases, the adjacent TSO has no obligation to collaborate with the European TSO in a way that is intended by the CAM NC. The respective Articles that do not have to be applied by the affected TSOs are Article 6(1), 19(1) & 19(2) and 19(5).

Additionally, at four IP sides, TSOs have been granted exemption from the national Energy Act regarding grid access and tariffs, which means that, at these four IPs, CAM NC rules do not have to be applied.

### Question-by-Question Analysis

#### 2.2.1 Scope

##### Article 2(4)

At 310 IP sides, TSOs do not apply implicit allocation mechanisms. This covers the vast majority of all CAM-relevant IP sides.

At two IP sides, implicit allocation methods were applied, but Articles 8 to 27 of CAM NC are still applied. These IP sides belong to one IP that is located within the network of just one TSO. It was stated that the implicit mechanism only concerns unsold capacity under CAM auctions and a small amount of interruptible capacity.

At further 11 IP sides, the implicit allocation methods were used.

For one IP side, it was stated that Article 2 was not applicable. It can be assumed that an implicit allocation mechanism is not used at this IP side.

#### 2.2.2 Definitions

##### Article 3(5)

At 43 IP sides, competing capacity can be offered. For three out of these 43 IP sides, it is stated that the IP side is set up for competing capacity allocation procedures but no competing allocation has been initiated so far.

##### Article 3(7)

At 319 out of 328 IP sides the uniform gas day is already applied. At five IP sides, the application was made during 2016 and at three IP sides it is expected to be done in the first quarter of the year 2017. Additionally, at two IP sides, it is planned for 1 January 2024



Image courtesy of Gasunie

## 2.2.3 Capacity Calculation and Maximisation

### Article 6(1(a))

Regarding the capacity re-calculation and maximisation, it was reported in the survey that a joint method has been discussed with adjacent TSOs at 203 IPs.

However, for 196 IP sides, it has been stated that no capacity increase was necessary thus far.

At 16 IP sides, the optimisation was conducted in the year 2016. At one IP side, it will be done in 2017, at two IP sides it is being considered for 2019, while at three other IP sides it is expected to take place after 2020.

The following reasons have been stated in case the reason “no need for increase” was not used:

- ▲ Only interruptible capacity is available (6 IP sides);
- ▲ Only counter-flow capacity is offered (3 IP sides);
- ▲ Only interruptible backhaul capacity is in place (1 IP side);
- ▲ The same TSO is the operator at both IP sides (3 IPs);
- ▲ IP side to non-EU-country (33 IP sides);
- ▲ TSO's Member State is under derogation (2 IP sides);
- ▲ No technical capacity available (5 IP sides);
- ▲ Valid exception in place (6 IP sides).

For 51 IP sides, this Article is not applicable without an explanation, or no information was provided at all.

At most IPs, the technical capacity is recalculated either on a yearly and ad-hoc basis (134 IP sides) or on a dynamic basis (119 IP sides). Shorter periods for the re-calculation are used less often (twice a year: 32 IP sides, monthly: two IP sides)

At one IP side the technical capacity is re-calculated on demand, as there is only local supply demand.

For five IP sides, it is stated that this Article is not applicable, because only interruptible capacity is offered.

33 IP sides are connected to non-EU countries where no calculation period/methodology was provided.

The in-depth analysis of technical capacity discrepancies has been finalised already at 193 IPs sides. For 40 IPs sides, it is expected to be finalised in 2017. The in-depth analysis is in process for five IPs sides and pending for two IPs sides.

For other IP sides, more general information has been provided:

- ▲ For 16 IPs sides, the in-depth analysis takes place as a continuous process once a year.
- ▲ For five IPs sides, the in-depth analysis depends on the submission deadlines for capacity needs at IPs in the process of establishing NDPs and TYNDP.

For fourteen IP sides, it was stated that this Article is not applicable, because either only interruptible capacity is available at the IP side (one IP side), or only reverse flow is accepted (two IP sides), or the same TSO operates both sides of an IP (six IP sides), or no technical capacity is available (five IP sides). No information about a finalisation date was given for 25 IP sides. 33 IP sides are connected to non-EU countries. Two IP sides are under derogation.

At 20 IP sides, bundled capacity has not yet been maximised and made available. The reasons for this are:

- ▲ Ongoing discussions about which capacity platform to use (five IP sides).
- ▲ Firm capacity has already been booked on a long-term basis (two IP sides). Hence, these IP sides do not have to apply this Article of CAM NC.
- ▲ No firm capacity but only interruptible capacity/reverse flow capacity is offered (three IP sides). Hence, these IP sides do not have to apply this Article of CAM NC.

### Article 6(1(b))

At 281 IP sides, the parameters for pressure commitments have been jointly assessed with the adjacent TSO. At three IP sides, the respective TSOs have not yet signed an agreement. For 14 IP sides, it was mentioned that this Article is not applicable since only interruptible capacity or reverse flow capacity is offered (eight IP sides) or the IPs are within a network of two TSOs (six IP sides). For three IP sides, no answer was provided.

At 284 IP sides, the relevant supply and demand scenarios have been jointly assessed with the adjacent TSO. At three IP sides this has not happened so far since discussions about the joint method have not yet been finalised. For 14 IP sides, it was mentioned that this Article was not applicable since only interruptible capacity or reverse flow capacity is offered (8 IP sides), or the IPs are within a network of two TSOs (six IP sides). For two IP sides, no answer was provided.

At 285 IP sides, the parameter “calorific value” was jointly assessed with the adjacent TSO. At three IP sides, this has not happened so far because the discussion about the joint method has not yet been finalised.

For 14 IP sides, it was mentioned that this Article was not applicable since only interruptible capacity or reverse flow capacity is offered (98 IP sides), or the IPs are within a network of two TSOs (six IP sides).

For four IP sides, no answer was delivered.

At 47 IP sides, other parameters have been jointly assessed with adjacent TSOs. The parameters are:

- ▲ Assumptions from national investment plans, ENTSOG TYNDP, relevant obligations under applicable national laws and any relevant contractual obligations
- ▲ Technical capacity levels and identification of possible discrepancies
- ▲ Booked capacity levels
- ▲ Capacity offered at other points of the concerned systems
- ▲ Potential capacity maximisation through flow commitments and nomination procedures
- ▲ Available capacities per typologies and related time-horizon
- ▲ Expected offered capacity via congestion management measures
- ▲ Climatic conditions of capacity calculation
- ▲ Special operation conditions in other relevant points of system
- ▲ Any other information made available by Network Users
- ▲ Impact of maintenance program
- ▲ Pressure at border/pressure at certain points of network
- ▲ Supply/offtake pressure
- ▲ Compressor stations operating envelope
- ▲ Gas quality parameters
- ▲ Parameters according to Interconnection Agreement
- ▲ Potential flow commitments and nominations procedures
- ▲ Pressure commitments on demand and supply scenarios

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## 2.2.4 Allocation Methodology

### Article 8(1)

At four IP sides, another method is used for allocating capacity other than an auction. At two of the four IP sides, an allocation mechanism is foreseen in the national regulation that is accordance with CAM NC (auction on BP). However, the mechanism is currently not applicable since no capacity is available due to historical contracts that will apply until 2023. At two other of the four IP sides, the pro-rata allocation system is used for long-term capacity with a duration longer than one year, while capacity with a duration less than one year is allocated based on the 'first committed, first served' principle. However, the Member State of the TSO operating these IP sides has been granted derogation.

At two IP sides, CAM NC auctions will be applied in the first quarter of 2017. **At five IP sides non-standard implementation of the Article has been applied, therefore these sides are recorded as Article Not Implemented.** Only two IP sides were not able to provide any specific date since the TSOs' Member States have been granted derogation.

### Article 8(9)

At all 326 IP sides, the percentage of capacity that is set aside and offered corresponds to the levels as stated in Article 8(7).

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## 2.2.5 Standard Capacity Products

### Article (9)

At 321 IP sides, only standard capacity types are offered by TSOs.

Non-standard capacity products are marketed at only two IP sides. In these cases, yearly capacity products start on 1 January of each year. The Member States of the TSO offering these products is granted derogation and consequently the TSO does not need to apply the provision as foreseen in CAM NC.

At five IP sides non-standard implementation of the Article has been applied, therefore these sides are recorded as Article Not Implemented.

In addition to the standard products on offer, one TSO offered one non-standard none month product starting on 1 January 2017 at one IP side.

## 2.2.6 Bundled Capacity Products

### Article 19(1) & 19(2)

For all relevant IP sides, it was reported that all available capacity was uploaded to the booking platform(s) and part of this capacity was offered as bundled capacity.

The reason given for offering unbundled capacities at five IP sides was that no agreement on a capacity booking platform had yet been reached or the agreement was in progress.

### Article 19(5)

At the majority of IP sides (209 IP sides), excess capacity is offered as unbundled capacity using a combination of the types described in Article 19(5(a)) and Article 19(5(b)). At 38 IP sides, only the type described in Article 19(5(a)) was used, while, at 17 IP sides, only the type described in Article 19(5(b)) was offered.

For 24 IP sides, it has been stated that excess capacity has not been uploaded at all because:

- ▲ All available capacity is marketed as bundled capacity (nine IP sides); hence at these IP sides this Article of CAM NC does not have to be applied.
- ▲ IP sides are all within the network of one TSO (four IP sides); thus the application of this Article of CAM NC is not necessary.
- ▲ At the IP side no bundled product is offered so far (five IP sides).

## 2.2.7 Allocation of Interruptible Services

### Article 21(1) & 21(3)

At 258 IP sides, interruptible capacity products with a duration longer than day-ahead are offered. At all of these IPs, only the standard long-term product types 'monthly', 'quarterly' and 'yearly' are used for the offered interruptible capacity.

## 2.2.8 Tariffs

### Article 26(2)

At 258 IP sides, interruptible capacity products with a duration longer than day-ahead are offered. At all of these IPs, only the standard long-term product types 'monthly', 'quarterly' and 'yearly' are used for the offered interruptible capacity.



Image courtesy of GRTgaz

# Annex 3: Additional Information on Capacity Booking Platforms

The implementation of the NC CAM provisions involves the auctioning of bundled capacity products at all IPs within the European Union. To be CAM NC-compliant, all auctions should follow the rules specified in the Network Code. Auctions are run on booking platforms, which enable Network Users to book capacity for IPs connecting market areas, based on the choice of the respective TSOs about which platform to use.

As of January 2017, all relevant TSOs are connected to a booking platform. There is only one TSO that has not yet been connected: Amber Grid (LT), however, is the only TSO IP whose Member State has been granted derogation.

There are only two IPs for which no agreement on a booking platform has been reached so far. They are at the German-Polish border. Regarding the Austrian-Hungarian border, the adjacent TSOs, FGSZ and GCA, reached an agreement in

December 2016 to start a pilot project to allocate yearly capacities at the Mosonmagyaróvár IP (AT>HU) on RBP in March/April 2017 in compliance with the CAM NC. A project related to the automated connection is currently ongoing. As soon as this project becomes finalised, all products concerning the Mosonmagyaróvár IP will be auctioned via RBP.

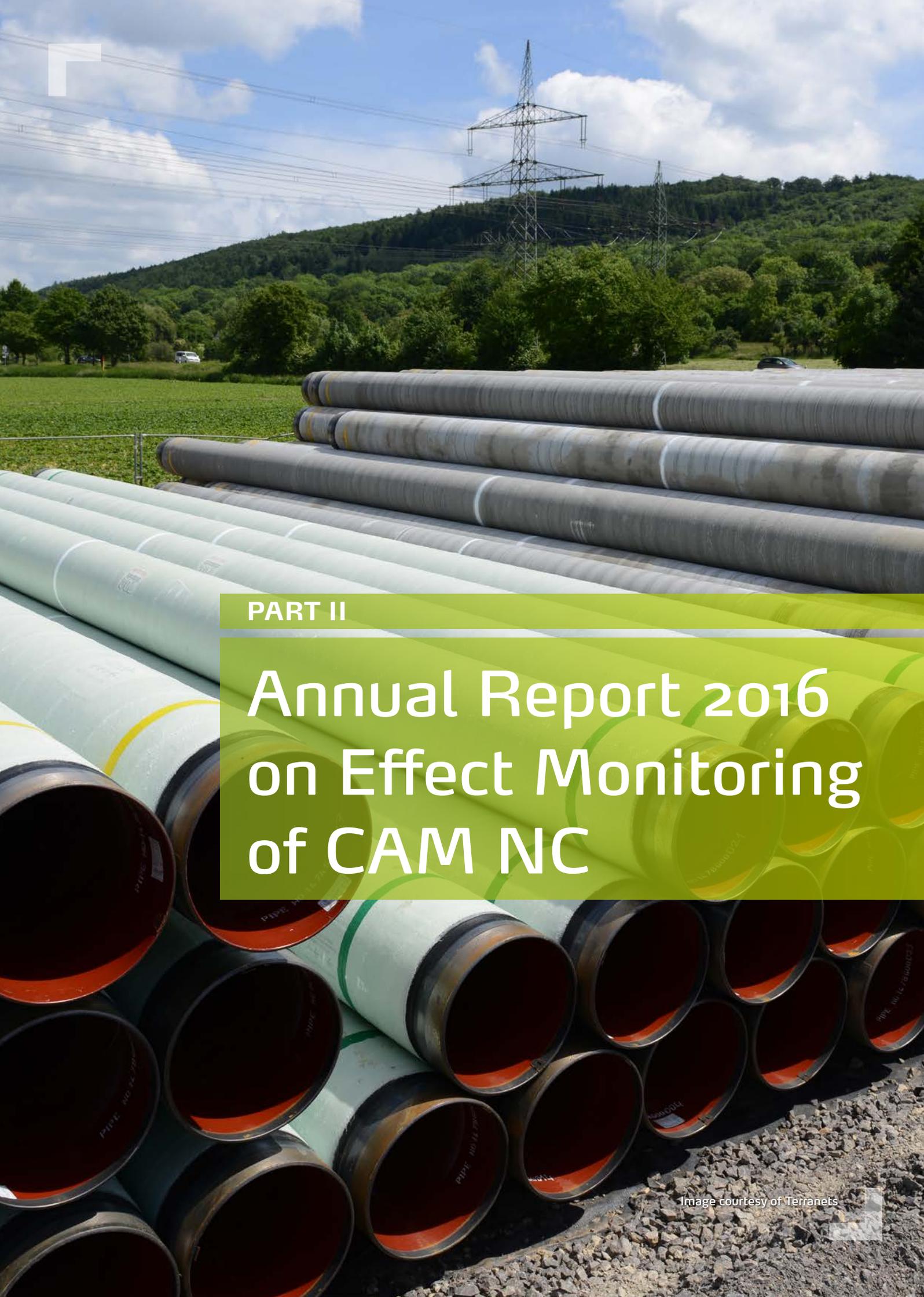


Image courtesy of Elering



**Figure 1:** Use of capacity booking platforms within the EU in 2016





PART II

# Annual Report 2016 on Effect Monitoring of CAM NC

Image courtesy of Terranets

# 1 Introduction

The Network Code for Capacity Allocation Mechanisms (CAM NC) was developed by ENTSOG (European Network of Transmission System Operators for Gas) based on the Framework Guideline on Capacity Allocation Mechanisms by ACER (Agency for the Co-operation of Energy Regulators) during 2011 and 2012.

The Network Code was approved by the EU Gas Committee on 14 October 2013 as Commission Regulation (EU) No 984/2013.

Both ACER and ENTSOG are required to publish monitoring reports – on implementation as well as on effects of the network codes.

ENTSOG decided to start the first Effect Monitoring survey for CAM NC, for gas year 2015/2016 (1 October 2015 at 6:00 to 1 October 2016 at 6:00), since its effects have been manifested in the market since 1 November 2015. ENTSOG has aimed for producing reports which can be considered supplementary to ACER's reports. Regarding the effect monitoring, ENTSOGs focus has in particular been to identify to which extent the main aims of the network codes have been achieved.

ENTSOG launched the annual effect monitoring process in December 2016 to ensure the timely publication of results in the 2016 Annual Report.

To measure the effects of the CAM NC on the European market, ENTSOG introduced three indicators that show the impact of the mechanisms.

To monitor the effects of CAM NC, the data was requested from all TSOs using any of the booking platforms for capacity allocation during the gas year 2015/2016.

# 2 Effect Monitoring Indicators

## CAM INDICATORS

The booking platforms (BPs) have been requested to provide data for particular TSOs using their tools for capacity auctions. The BPs generated the data sets and sent them to the TSOs for verification. After TSO confirmation, BPs sent the data to ENTSOG.

ENTSOG has decided to further develop the following indicators.

### CAM.1: Share of capacity sold as part of a bundled product in total sold capacity

Time period monitored is gas year 1 Oct 2015 – 30 Sep 2016.

Each of the indicators shows the ratio of allocated firm capacity as part of a bundled product in total allocated firm capacity as an average volume of all the participating TSOs. One indicator is calculated per one standard capacity product (yearly, quarterly, monthly and daily firm capacity products).

The outcome (number itself) is hard to interpret but the trend (more years in a row) might give a better picture of the development in the future.

In the interpretation text below, “x” in CAMx is replaced by the following numbers:

- 1 stands for Yearly product
- 2 stands for Quarterly product
- 3 stands for Monthly product
- 4 stands for Daily product

#### Calculation formula:

$$CAM_x = \frac{TCSB}{TCS} \times 100$$

#### Where:

**CAMx:** returns a ratio of total firm bundled capacity sold in total firm capacity

**TCSB:** bundled firm capacity allocated

**TCS:** firm capacity allocated

#### Interpretation:

**CAMx = 100:** means all firm capacity allocated is bundled

**CAM1 < 100:** This shows the share of firm bundled capacity among the total firm capacity allocated.

### **CAM.2: Share of secondary market-traded bundled capacity to secondary market traded unbundled capacity**

Time period monitored is gas year 1 Oct 2015 – 30 Sep 2016.

This indicator CAM.2 might be used to measure the desired effect of CAM NC to enhance secondary trading of (bundled) capacity. For clarification, ENTSOG's understanding is that the total basis for the calculation of the % of bundled capacity sold is the total volume of unbundled and bundled (firm) capacity sold on the secondary market.

#### **Calculation formula:**

$$\text{CAM2} = \frac{\text{TGSSMB}}{\text{TCSSM}} \times 100$$

#### **Where:**

**CAM.2:** a ratio of total firm bundled capacity traded on secondary market in total firm capacity traded at secondary market

**TCSSMB:** bundled capacity traded at the secondary market

**TCSSM:** capacity traded at the secondary market

#### **Interpretation:**

**CAM.2 = 100:** all capacity exchanged on the secondary market is bundled.

**CAM.2 < 100:** This shows share of bundled capacity exchanged on the secondary market among all capacity exchanged on the secondary market.

Exchange of unbundled capacity will be a clear indication that network users are trying to bundle their LT contracts. The indicator should tend to 100 in the long run.

### **CAM.3: Increase of market participants in a system**

ENTSOG uses an integer number of active participants and starts building historical data. Continuous increases in market participants do not always reflect the increase of competition on the particular market. There might be a situation where a stable but low number of participants is natural and the best situation for the particular market. This should be carefully evaluated and explained in the report and in future reports. Therefore, this is considered to be an auxiliary indicator.

# 3 Survey Participants

<b>AUSTRIA</b>	Gas Connect Austria GmbH
	Trans Austria Gasleitung GmbH
<b>BELGIUM</b>	Fluxys Belgium S.A.
<b>BULGARIA</b>	Bulgartransgaz EAD
<b>CROATIA</b>	Plinacro d.o.o.
<b>CZECH REPUBLIC</b>	NET4GAS s.r.o.
<b>DENMARK</b>	energinet.dk
<b>ESTONIA</b>	Elering Gaas AS (derogation)
<b>FINLAND</b>	Gasum Oy (derogation)
<b>FRANCE</b>	GRTgaz SA
	TIGF SA
<b>GERMANY</b>	Bayernets GmbH
	Fluxys TENP GmbH
	GASCADE Gastransport GmbH
	Gasunie Deutschland Transport Services GmbH
	GRTgaz Deutschland GmbH
	Gastransport Nord GmbH
	JordgasTransport GmbH
	NEL Gastransport GmbH
	Nowega GmbH
	Ontras Gastransport GmbH
	Open Grid Europe GmbH
	terranets bw GmbH
	Thyssengas GmbH
OPAL Gastransport GmbH (no ENTSOG member) (exemption)	
Lubmin-Brandov Gastransport GmbH (no ENTSOG member) (exemption)	
<b>GREECE</b>	DESFA S.A.
<b>HUNGARY</b>	FGSZ Zrt.
<b>IRELAND</b>	Gas Networks Ireland Ltd.
<b>ITALY</b>	Snam Rete Gas S.p.A.
	Infrastrutture Trasporto Gas S.p.A. (only IPs that are not CAM relevant)
	Società Gasdotti Italia S.p.A. (only IPs that are not CAM relevant)
<b>LATVIA</b>	Latvijas Gāze Ltd. (derogation)
<b>LITHUANIA</b>	AB Amber Grid
<b>LUXEMBOURG</b>	Creos Luxembourg S.A. (derogation)
<b>NETHERLANDS</b>	BBL Company V.O.F.
	Gasunie Transport Services B.V.
<b>POLAND</b>	GAZ-SYSTEM S.A.
<b>PORTUGAL</b>	REN - Gasodutos S.A.
<b>ROMANIA</b>	Transgaz S.A.
<b>SLOVAKIA</b>	eustream a.s.
<b>SLOVENIA</b>	Plinovodi d.o.o.
<b>SPAIN</b>	Enagas S.A.
	Regasificadora del Noroeste S.A. (only IPs that are not CAM relevant)
<b>SWEDEN</b>	Swedegas AB (derogation)
<b>UNITED KINGDOM</b>	Interconnector Ltd.
	National Grid Gas plc
	Premier Transmission Ltd.
	GNI (UK) Ltd.

**Table 1: Survey Participant**

TSOs included in the report are those who confirmed the correctness of the data provided by booking platforms.

# 4 Results of Effect Monitoring Exercise

## CAM.1: SHARE OF BUNDLED CAPACITY TO SOLD CAPACITY

As shown in the table and depicted in the graphs, about one-third of the total firm capacity booked at European IPs in gas year 2015/2016 was booked as part of a bundled product.

The ratio of bundled capacity to firm capacity booked for yearly and daily products was the highest at 31.36% of overall sold yearly capacity and 31.86% for daily capacity. Next to having the highest ratios, these two standard products contain the largest share of booked firm and bundled capacities. This means that yearly and daily products are preferred by network users, and that the balance between long-term and short-term bookings promoted by the European Commission through the Third Energy Package is becoming a reality in Europe.

At the same time, quarterly and monthly products at 8.15% and 27.86% respectively are lower than the yearly and quarterly products (especially quarterly capacity). Monthly bookings are not far away from the daily values (booking of bundled capacity and booking of firm capacity), while the quarterly product seems to be the least preferred product but it still is relevant.

The lower bookings of quarterly capacity could be attributed to the fact that auctions for this product used to be held on the first Monday of June of year “y”, auctioning capacity from October “y” to September “y+1”. Thus, there are four months between the moment when the auction takes place, and the runtime of the first quarterly product, seven months with the second product, ten with the third and thirteen months with the fourth product. This problem is solved by the amendment to CAM NC, which moves this auction from the first Monday of June to the first Monday of August for the four quarters, as well as the inclusion of three additional dates to auction the remaining quarters on the first Monday of November, first Monday of February and first Monday of May.

	YEARLY	QUARTERLY	MONTHLY	DAILY
<b>BUNDLED CAP.</b>	25,369.2 MWh/h/y	1,054.1 MWh/h/y	6,408.7 MWh/h/y	9,056 MWh/h/y
<b>FIRM CAP.</b>	25,369.2 MWh/h/y	1,054.1 MMWh/h/y	6,408.7 MWh/h/y	9,056 MWh/h/y
<b>RATIO</b>	31.36%	8.15%	27.86%	31.86%

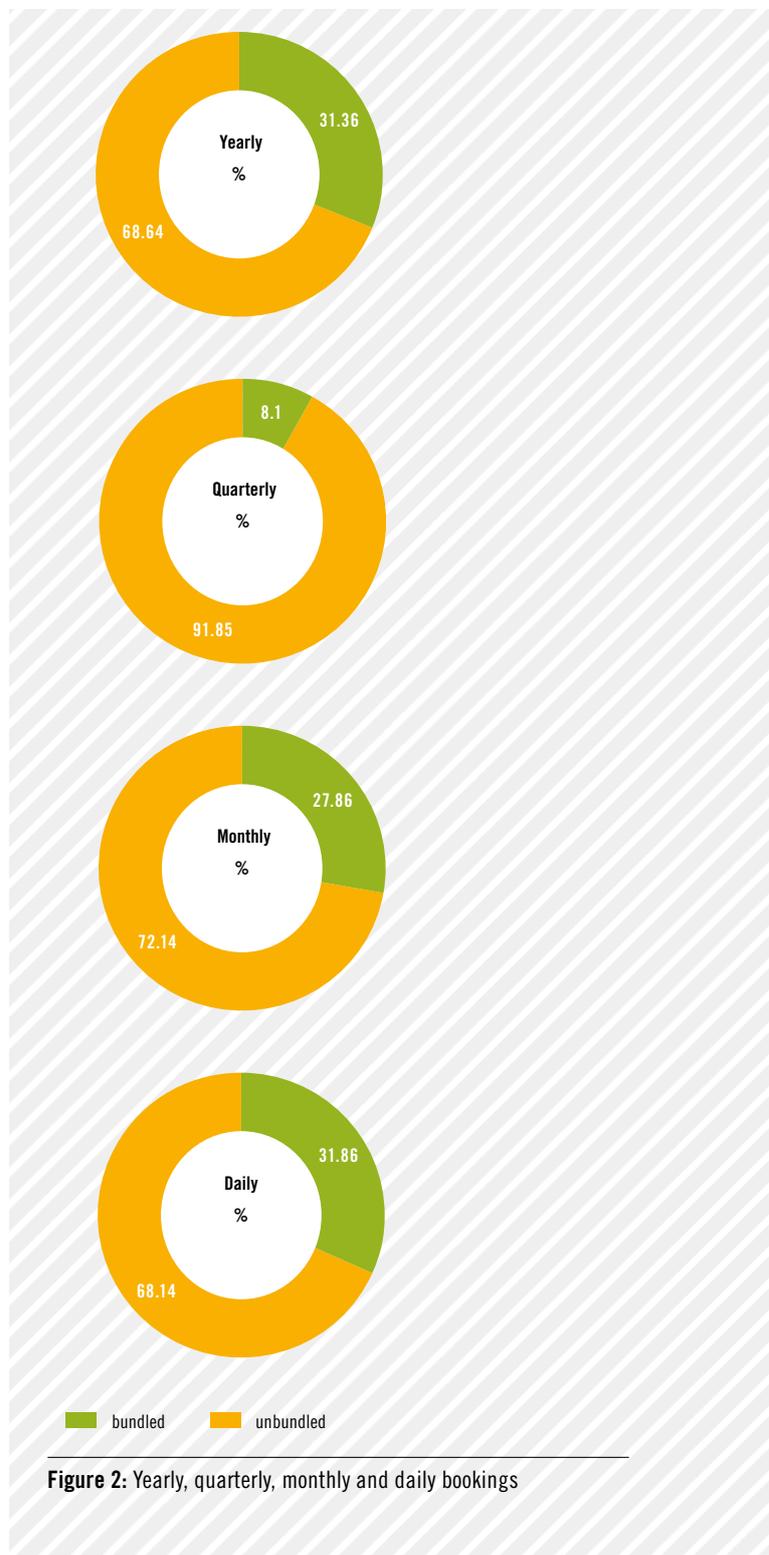
Table 2: Share of bundled capacity to sold capacity

This is the first year where the effects of the applicable rules of CAM NC have been monitored. It is a rather complex manner to interpret the standalone ratio numbers; however this situation and the relatively low ratios can be explained as follows:

1. The IP is not CAM-relevant since it connects to a third/exempted country, but the relevant NRA nonetheless decided to apply CAM NC. The TSO offers the capacity in the booking platform, but there is no capacity offered in the same platform in the other side of the IP, so it is impossible to bundle the capacity.

In these cases, there is no possible solution, since this will continue to happen unless the third or exempted country also decides to apply CAM NC.

2. Old unbundled booking difference with the adjacent TSO. There are still a significant number of old unbundled contracts booked on a long-term basis, which are being matched at the moment by booking unbundled capacity at the other side. This situation will disappear when old contracts expires.
3. Differences in technical capacity volumes on the IP sides. The differences in technical capacity make it possible for one TSO to offer more capacity than the other one. This extra capacity can only be offered and booked in an unbundled way. The only solution to reduce the offer of this capacity is aligning the technical capacity in the IP by either reducing the side with the largest amount on offer to the level of the other side of the IP, or by increasing the capacity via investment or optimisation on the side with the lowest capacity. Of course, the mechanisms of reducing or increasing the capacity shall be market-based. This means that this situation can last forever if there is no need of new investments and TSOs are obliged to maximise their offer of capacity. This difference in technical capacity is sometimes combined with old unbundled bookings, which leads to the problem of capacity mismatch.



**Figure 2:** Yearly, quarterly, monthly and daily bookings

4. Different booking platforms on both sides of the IP. It is necessary to agree between adjacent TSOs on which booking platform shall be used in their “shared” IPs to book capacity. In specific cases, difficulties in agreeing on a platform were already observed by ENTSOG, ACER and the Commission, and this was tackled in the amendment of CAM NC (Article 37).

This problem is affecting a low number of TSOs in the Eastern Europe, and even if most TSOs in Europe have already solved the issue by agreeing on the platform to use for those specific IPs, some TSOs have not yet reached an agreement. The new agreement of CAM NC solves this issue within 12 months since entering into force (6 April 2017).

Hence, this issue will be solved by 6 April 2018 at the latest and involved TSOs will be able to maximise the offer of bundled capacity in these specific IPs.

5. Network users matching unbundled capacity in one side of the IP with interruptible capacity at the other side of the IP.

Sometimes, the offer of capacity at one side of the IP is only interruptible (no firm capacity offer).

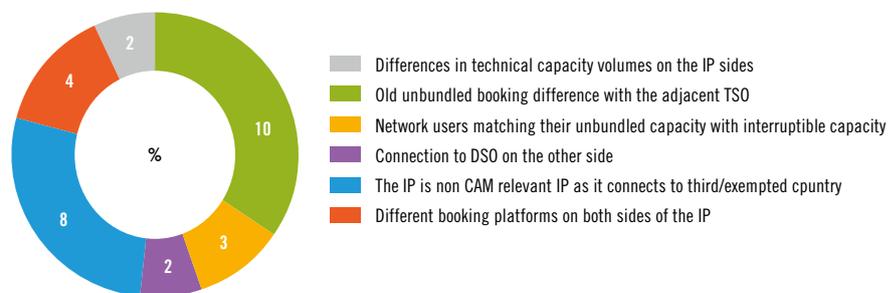
6. Connection to DSO on the other side, but relevant NRA decided to apply CAM NC to this point. Equal situation to the connection with third/exempted countries.

Due to these reasons, TSOs are obliged to offer capacity in an unbundled manner (obligation from CAM NC to maximize the offer of capacity). The following graph shows the number of TSOs affected by the mentioned reasons:

From those reasons, as shown in the graph, the most common ones are “connection with exempted/third countries” and specially “old unbundled bookings in one side of the IP”, which, as explained previously, will be solved when the affecting contracts end.

Therefore, year after year, we will see that unbundled capacity offer and bookings are decreasing as far as the old contracts will be ending.

**Reasoning to Offer Unbundled Capacity**



**Figure 3: xx**

## CAM.2: SHARE OF SECONDARY MARKET-TRADED BUNDLED CAPACITY TO SECONDARY MARKET TRADED UNBUNDLED CAPACITY

From the table [above](#), it is obvious that the share of bundled capacity reallocated due to secondary market trades is marginal at only 0.38%. This is caused by the historical dominance of unbundled capacity.

Before CAM NC entered into force, all contracts were unbundled and the predominance of unbundled capacity is still very clear over bundled capacity. At the same time, the offer of capacity in the secondary market normally comes from old contracts, and CAM NC only entered into force in 2015.

In the past few years, there has also been a tendency of network users booking capacity on a short-term basis rather than long-term behaviour. Thus, long-term bookings are becoming less common than before CAM NC came into effect and hence, before the existence of bundled capacity.

However, it is important to see that some bundled capacity is already being traded on the secondary market. The expectation for following years is that this ratio will increase exponentially since old unbundled contracts will end and potentially become replaced by bundled capacity.

CAM.5	SECONDARY MARKET
BUNDLED CAP.	511.4 MWh/h/y
FIRM CAP.	135,329.1 MWh/h/y
RATIO	0.38 %

Table 3 : xx



Image courtesy of REN

### CAM.3: INCREASE OF MARKET PARTICIPANTS IN A SYSTEM

The importance of this indicator is directly related to the facilitation that CAM NC is trying to provide to network users to access different European markets (due to the harmonisation of capacity allocation rules).

The indicator CAM.3 shows an important increase of both, “all participants” and “active participants” in the European market.

- Number of all participants: this indicator has increased from gas year 2014/2015 to gas year 2015/2016 in almost 350 new network users approved in European systems to participate in the gas market. This means an increase of 15% in one year.

Nevertheless, even if it is interesting to check this value, this indicator only shows new participants that can act in the market, but in a significant number of occasions, new participants will not participate in the market, and only register themselves for potential future opportunities.

- Number of active participants: the increase of this indicator is even clearer, since the number of active participants in European markets has increased by 31% compared to the previous year. In other words, there are 220 new network users that are now active on the European market.

Since one of the goals of CAM NC is to facilitate the access to new network users so that they can actually become active on the European gas market, this indicator is more appropriate than the number of all participants.

OCTOBER 2014 – SEPTEMBER 2015		OCTOBER 2015 – SEPTEMBER 2016	
Number of active participants	Number of all participants	Number of active participants	Number of all participants
494 Network Users	1892 Network Users	714 Network Users	2233 Network Users

Table 4: xx

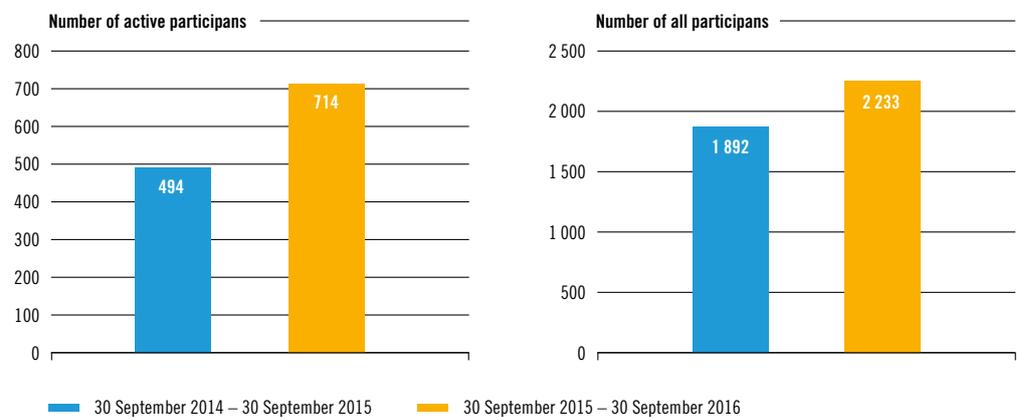
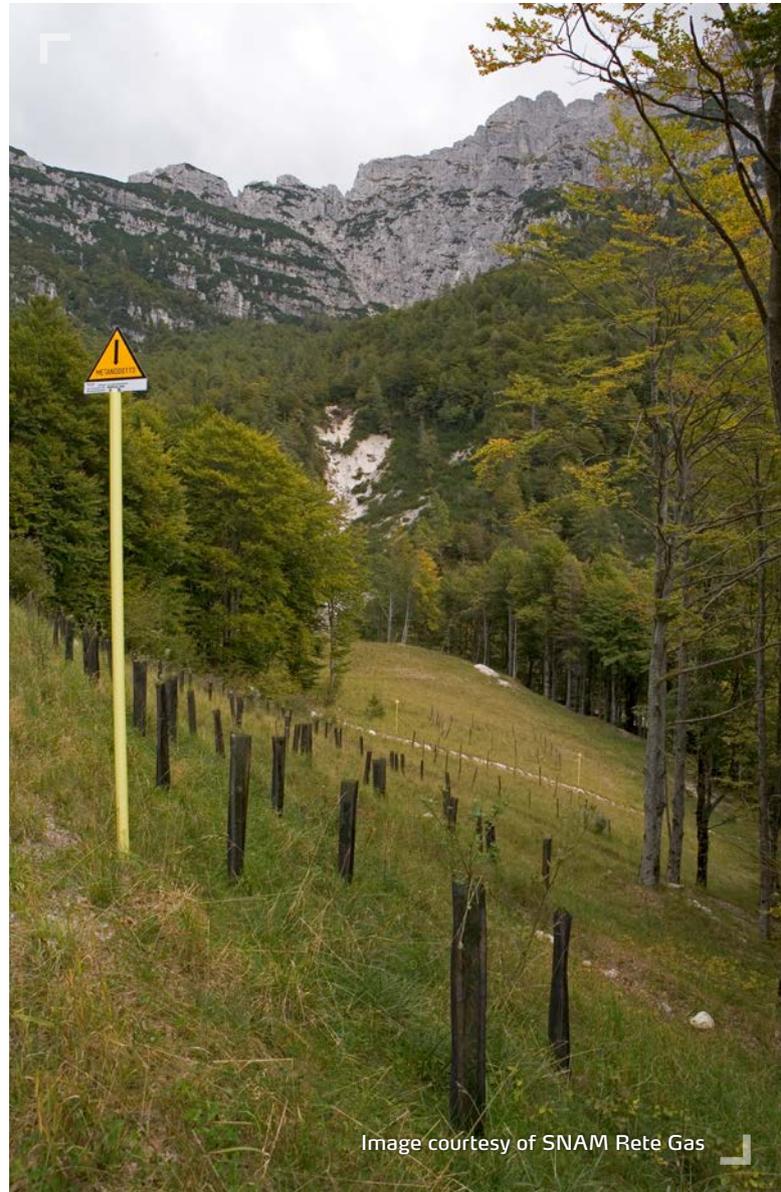


Figure 4: xx

# 5 Conclusions

The following conclusions can be drawn from the completed analysis:

- ▲ Bookings of bundled capacity are going to increase in upcoming years, especially once older unbundled contracts expire but also as TSOs complete agreements on which platform to use for booking capacity.
- ▲ The booking profile of network users shows that the booking behaviour of the network users is moving step-by-step from long-term to short-term booking behaviour. The goal proposed by the Commission of balancing long-term and short-term booking appears to be coming closer to fruition.
- ▲ Even if the ratio of utilised secondary market to traded bundled capacity is marginal, it is important to see that there is already some bundled capacity being traded on the secondary market. The expectations for upcoming years are that there will be a clear increase in this ratio, as older unbundled contracts expire.
- ▲ The increase of market participants (both active and non-active) shows that the harmonisation of capacity allocation rules is providing more clarity and facilitating access of network users to different European markets.





# Abbreviations

<b>ACER</b>	Agency for the Cooperation of Energy Regulators
<b>BP</b>	Booking Platform
<b>CAM NC</b>	Network Code for Capacity Allocation Mechanisms
<b>ENTSOG</b>	European Network of Transmission System Operators for Gas
<b>EU</b>	European Union
<b>GSA</b>	Gas-System Auction platform
<b>IP</b>	Interconnection Point
<b>LT</b>	Long-Term
<b>NRA</b>	National Regulatory Authority
<b>RBP</b>	Regional Booking Platform
<b>TSO</b>	Transmission System Operator

A graphic element consisting of a green L-shaped block, with the vertical bar on the left and the horizontal bar on top.

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