



# CAM NC Implementation Monitoring Report

2015

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# Annual Report on Implementation Monitoring of CAM NC

APRIL 2016

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

ENTSOG launched the monitoring process in December 2015 to ensure the timely publication of their results in the 2016 Annual Report.

As a new feature, ENTSOG and ACER decided to develop a joint process for facilitating the collection of the data for CAM implementation monitoring purposes. This process is also used for COMMISSION REGULATION (2014/312/EU) (Balancing Network Code) and COMMISSION DECISION (2012/490/EU), known as “Guidelines for Congestion Management Procedures”.

The data provided by the 41 Transmission System Operators (TSOs) has been used as the basis for the report on implementation monitoring of CAM NC. This data is grouped into two parts: information on how each TSO is to apply CAM NC requirements, as well as how to apply CAM NC requirements at each side of an Interconnection Point (IP).

Thus, this report on implementation monitoring of CAM NC presents an overview of the implementation of the different Articles of CAM NC by TSOs and for both sides of an IP in the European Union. Conclusions about the implementation status and about potential obstacles are drawn as well. Annex I of this report provides detailed information through a question-by-question analysis. 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 CAM NC. The focus of this report is to monitor the implementation of CAM NC requirements that are obligatory for the TSOs. Hence, the following tables show only those Articles containing mandatory requirements in year 2015.

Articles that contain no direct obligations or only optional requirements for the TSOs are not taken into consideration in this monitoring, since their evaluation does not provide any additional value for monitoring the compliance of TSOs regarding the mandatory implementation obligations.

The presented data was collected from 49 TSOs (45 ENTSOG members, two associated partners and two TSOs that are not ENTSOG members). This overview reflects the answers of 41 of these TSOs. Out of the eight missing TSOs, five TSOs are under derogation and three TSOs only have IPs not relevant to CAM NC. 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 and Table 2 provides data on how the relevant Articles are being implemented at all concerned IP sides. Both tables indicate how many TSOs/IPs have fully implemented or not implemented an Article, or where the Article is not applicable.

**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	Comment
Article 4	Coordination of maintenance	41	0	0	
Article 6(1)	Capacity calculation and maximisation	34	0	7	
Article 8(6)	Allocation methodology	37	1	3	
Article 9	Standard capacity products	40	0	1	
Article 10	Applied capacity unit	41	0	0	
Article 11(3)	Annual yearly capacity auctions	36	4	1	
Article 19(1)	Bundled Capacity products	32	7	2	2 NA: border to non-EU-country
Article 19(5)	Bundled Capacity products	36	1	4	
Article 19(7)	Bundled Capacity products	30	10	1	
Article 21(1)	Allocation of interruptible services	33	1	7	4 NI: no demand indicated by Network Users
Article 21(2)	Allocation of interruptible services	41	0	0	
Article 21(4)	Allocation of interruptible services	39	1	1	
Article 21(5) & 21(6)	Allocation of interruptible services	37	1	3	1 NA: derogation
Article 21(7)	Allocation of interruptible services	35	1	2	3 TSOs provided no answer
Article 22(2)	Minimum interruption lead times	40	1	0	
Article 23	Coordination of interruption process	40	1	0	
Article 24(1)	Defined sequence of interruptions	40	1	0	
Article 24(2)	Defined sequence of interruptions	36	1	4	
Article 24(3)	Defined sequence of interruptions	37	1	3	
Article 25	Reasons for interruptions	38	1	2	
Article 26(1)	Tariffs	35	3	3	



**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	Comment
Article 3(7)	318	12	0	-
Article 6(1(a)) Capacity calculation and maximisation	249	25	41+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	259	15	41+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 8(1) Allocation methodology	318	12	0	2 IP sides NI: TSO been granted derogation
Article 9 Standard capacity products	328	2	0	2 IP sides NI: TSO been granted derogation
Article 19(1) & 19(2) Bundled Capacity products	259	29	41+1	1 IP side NI: the adjacent TSO has already sold all firm capacity on a long-term basis
Article 19(5) Bundled Capacity products	246	23	41+20	20 IP sides NI: – All available firm capacity is bundled – Both IP sides are operated by one TSO – Bundling of capacity is not possible because the adjacent TSO has already sold all firm capacity on a long-term basis – Only interruptible capacity is offered
Article 21(1) & 21(3) Allocation of interruptible services	330			
Article 26(2) Tariffs	324	5	1	5 NI: no information was delivered 1 NA: TSO been granted exemption

## SUMMARY AND CONCLUSIONS

The implementation of CAM NC is an important step for the harmonisation and the 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 platforms at any single interconnection point instead of individual TSO websites for the booking procedures.

Moreover, capacity products are harmonised and operational steps are facilitated: with bundling the booking of entry and exit capacity at an IP is done simultaneously in one single step. With the application date of CAM NC in 2015, massive progress was made towards achieving an integrated energy market. The vast majority of TSOs 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 were not yet implemented by some TSOs and/or at some IPs must be completed as soon as possible. A high number of TSOs has mentioned that they will implement those CAM NC Articles that they have not yet applied within 2016 or at the beginning of 2017. The next implementation monitoring report for the year 2016 is therefore expected to show further developments.

The survey conducted by ENTSOG regarding CAM NC implementation by TSOs shows that out of 41 TSOs for whom the application of the CAM NC is mandatory, 30 TSOs have developed and applied all or at least all mandatory measures required by CAM NC, which means that they fully comply with the obligations defined in the CAM NC.

Eleven TSOs claimed to have partially implemented CAM NC requirements, while 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 operate only IPs that are not CAM NC-relevant.

The situation regarding CAM NC implementation by TSOs is also reflected in the results of the IP survey, which includes 330 IP sides relevant to CAM NC. Generally it has been shown that CAM NC has already been implemented at the majority of IP sides. Standard capacity products have been introduced at all IP sides where TSOs are obliged to do so (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 occur regarding capacity calculation and maximisation (according to Article 6.1) and the offer of bundled capacity products (according to Article 19). Furthermore, the uniform gas day (according to Article 3.7) has not been implemented at all IP sides so far and at some IP sides, auctions have not yet been used.

One obstacle for TSOs regarding the implementation of CAM NC is the necessity of offering all their bundled capacity 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, while in the case of DE-PL and BG-GR, the decision is/was pending. Some TSOs have applied interim measures from the Balancing Network Code and in these cases, certain provisions laid out in CAM NC are not applicable, e.g., the introduction of an over-nomination procedure or the offer of within-day interruptible capacity. Other TSOs face delays, as the auction platform on which they offer their capacity is not yet ready to deal with competing capacity situations, i.e., where a TSO has two adjacent TSOs at one or more IPs and offers its capacity in competition between the two adjacent TSOs.

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.



A photograph of a red gas warning marker in a field of tall grass. The marker has a red conical top and a yellow rectangular sign. The sign features a black triangle symbol, the word "GASLEDNING" in black, and the text "Nova Naturgas AB" and "Tel. 020-73 00 80" in black. A semi-transparent green box is overlaid on the image, containing the title "Annex" and a list of three items.

# Annex

**1 Survey Participants**

**2 Analysis of CAM NC Implementation**

**3 Additional Information on Capacity Booking Platforms**



# 1 Survey Participants

The following European TSOs participated in the survey conducted by ENTSOG and ACER:

<b>AUSTRIA</b>	Gas Connect Austria GmbH TAG 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 Gaze 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 2:** Survey Participants



# 2 Analysis of CAM NC Implementation

## 2.1 TSO SURVEY QUESTION-BY-QUESTION ANALYSIS

The presented data was collected from 49 TSOs (45 ENTSG members, two associated partners and two TSOs that are not ENTSG members). The following analysis reflects the responses from 41 of these TSOs. Out of the eight TSOs not counted, five TSOs are under 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 the TSOs and/or can be implemented on a voluntary basis by the TSOs.

### 2.1.1 Coordination of Maintenance

#### Article 4

All TSOs have established communication channels to adjacent TSOs for exchanging maintenance plans affecting both the available and booked firm capacity. Some TSOs hold annual meetings with their adjacent TSOs to agree on how to cooperate during maintenance and how to minimize the impact on the affected Network Users. A number of TSOs even organise meetings more often according to their needs. The TSOs exchange information on the estimated duration and volume of the planned work/maintenance ahead of planned work/maintenance beginning in order to reduce the related impact on the Network Users.

### 2.1.2 Capacity Calculation and Maximisation

#### Article 6(1)

Jointly with their adjacent TSOs, 13 TSOs analyse their technical capacities including any discrepancies at all relevant IPs on a regular basis. This must be 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 the relevant IP, the TSOs assess the actual results of all auctions for capacity products with durations of one month or longer.

It can be positively mentioned that 14 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.

Unfortunately, Network Users did not report projected nominations or future IPs capacity bookings to 25 TSOs in the previous year.

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

### 2.1.3 Allocation Methodology

#### Article 8(6)

It can be positively highlighted that 37 TSOs have implemented Article 8(7) of CAM NC for allocating capacity. Thirty-five of them set at least 20 % of capacity and two TSOs with less than 20 % available capacity set aside from all of their available capacity to be offered in short-term auctions according to Article 8(7). Only four TSOs do not apply this article yet. For two TSOs the Article is currently not relevant as all technical capacity is fully booked on a long-term basis. Furthermore, one of those four TSOs is under derogation and just one TSO is still working on implementing the requirements as laid out in the Article 8(6).

## 2.1.4 Standard Capacity Products

### Article 9

All TSOs for whom the CAM NC application is mandatory offer standard capacity products, which according to Article 9, include the following:

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

The range of product sets is rather unified among the TSOs with only very little variations. Thirty-six TSOs offer the entire variety of the standard capacity products as defined in Article 9. Only three TSOs do not offer within-day products and just one TSO offers rolling day-ahead and within-day capacity products out of the set of the standard capacity products in Article 9.



Image courtesy of Gascade

## 2.1.5 Applied Capacity Unit

### Article 10

All TSOs use energy units per unit of time when publishing their capacity data. 33 TSOs use “kWh/h” (kilowatt-hour per hour), six TSOs use “kWh/d” (kilowatt-hour per day) and two TSOs use both units: “kWh/h” and “kWh/d”. Two TSOs also use alternative units such as “m<sup>3</sup>/d” (cubic metre per day) and “standard m<sup>3</sup>/d”. These alternative units are still available on one TSO’s website as the units have been previously used on the national market and are still preferred by some Network Users or are stipulated by the national regulatory framework. When capacity is expressed also in standard cubic metres per day, a published conversion factor is used. Since all TSOs have already applied energy units per unit of time, no issues or barriers were reported.

## 2.1.6 Annual Yearly Capacity Auctions

### Article 11(3)

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

Furthermore, 36 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 of the standard capacity products;

**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, 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 which is 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 36 TSOs stated that they also apply 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 of the standard capacity products;

**C** is the previously sold technical capacity, adjusted by the capacity which is 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 of the standard capacity products;

**C** is the previously sold technical capacity, adjusted by the capacity which is 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 of the standard capacity products;

**C** is the previously sold technical capacity, adjusted by the capacity which is 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 of the standard capacity products;

**C** is the previously sold technical capacity, adjusted by the capacity which is 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 is granted an exemption for implementing CAM NC. This TSO allocates capacities on the first

committed, first served-basis. For calculating 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 which is re-offered in accordance with applicable congestion management procedures;

**D** is additional capacity, if any.

## 2.1.7 Bundled Capacity Products

### Article 19(1)

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

Two of these nine TSOs mentioned that the adjacent TSO has no obligation to bundle capacity as the country is a non-EU-state or has been granted derogation.

Three TSOs are still in the process of deciding, which capacity platform should be used for the offer of bundled capacity. Due to one auction platform's technical shortfall for competition situations when allocating capacity four TSOs are not yet able to bundle capacity. However, with involvement of the respective NRAs, a solution is currently under discussion.

### Article 19(5)

Thirty-six TSOs auction all of their unbundled capacity according the auction calendar, which means that 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 – third Monday of month-1
  - Interruptible – fourth 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 the auction calendar. However the survey showed that only one of these TSOs has a delay in applying the relevant CAM NC requirements. Two TSOs are not obliged as they are exempted from implementing the CAM NC requirements

or are under derogation and two TSOs currently have no available capacity to offer.

#### Article 19(7)

Thirty TSOs reported that they provide Network Users with the possibility to nominate bundled capacity via a single nomination procedure. Ten TSOs do not provide such a possibility yet and one TSO mentioned that this Article is not applicable.

Nonetheless, as indicated by eight TSOs out of ten TSOs the single nomination procedure will be available until the end of the year 2016.

Some of the eight TSOs are still discussing a single nomination procedure with the adjacent TSOs and have not signed an interconnection agreement so far. One TSO only needs to finalise the IT tests for such a nomination procedure and three TSOs mentioned that due to a national competition situation at some IPs (the used auction platform is not technically able to allocate bundled capacity in competing auctions) they are not offering bundled capacity and thereby no single nomination procedure so far. It was also stated that as the Business Requirement Specifications (BRS) for nomination and matching were published by ENTSOG on 12 October 2015, just one month prior to the implementation deadline of 1 Nov 2015 of CAM NC. The implementation period for the single nomination procedure was too brief. One of the TSOs, which mentioned that Article 19(7) is not implemented, only operates IPs to non-EU-countries and thus does not offer any bundled capacity.

#### Article 19(9)

Even though the implementation of VIPs is not obligatory until 2020, three TSOs have already implemented Virtual Interconnection Points (VIPs). These already created VIPs are:

- ▲ VIP PIRINEOS: IPs Irún-Biriatou and Larrau
- ▲ VIP IBÉRICO: IPs Valença do Minho-Tuy and Badajoz-Campo Maior

But also 16 other TSOs had already started the analysis by the end of 2015 and five of them are already in discussion with adjacent TSOs for creating VIPs. One TSO announced that it will start with the analysis on 1 May 2016 the latest. Six TSOs mentioned that establishing VIPs is not applicable due to their grid conditions (just one IP between countries or only IPs with non-EU-country). The remaining 15 TSOs did not provide any information on their plans to analyse the establishment of VIPs.

## 2.1.8 Allocation of Interruptible Services

#### Article 21(1)

Over two-thirds of the TSOs (33 TSOs) offer interruptible capacity in both directions at their IPs.

Only six 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 of the TSO vary. One TSO is far from selling out its available firm capacity, but if there is demand expressed, they will offer interruptible capacity. Another TSOs is obliged to offer interruptible capacity if at least 95 % of firm capacity is sold out according to national legislation. However, the TSO has still a higher amount of firm capacity than 5 % available at its IPs. Another TSO gives the possibility to book interruptible capacity when a similar situation as described above occurs, but there has not been any demand for it yet. One TSO has already sold out all interruptible capacity on a long-term basis until the year 2018. One TSO does not have the technical possibilities to offer interruptible capacity, however the TSO is working on the implementing and expects to provide interruptible capacity shortly. And just one TSO has not yet implemented the CAM NC provisions.

Moreover, two TSOs mentioned that this Article is not applicable, as they are exempted from its implementation.

#### Article 21(2)

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

#### Article 21(4)

The TSOs use different approaches for allocating interruptible capacity products. 39 TSOs are already in line with the provisions laid out in Article 21(4) as well as Articles 21(8) and 21(9) of CAM NC. And so the interruptible capacity is offered in auctions that are held on the booking platforms.

Only two TSOs follow differing allocations mechanisms. One TSO applies the first committed, first served-approach and one TSO only needed to interrupt contracts on yearly basis until now, where the TSO applied a reduction of all affected capacity contracts according to the rule that a contract, which was concluded earlier in time, will be interrupted after a contract that was concluded later in time.

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

Thirty-seven TSOs allocate Within-Day Interruptible Capacity via an over-nomination procedure and only once Firm Capacity is sold out.





Image courtesy of GRTgaz

Just four TSOs do not follow this procedure. Three of those four TSOs have still firm capacity to offer (for one of the three TSOs, a threshold of maximum available firm capacity of 5 % has been defined by national legislation); therefore interruptible capacity has not been offered yet. However, the TSOs are analysing the situation and if there would be any demand, the TSO would implement the over-nomination procedure. 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 balancing group responsible party can allocate several capacity contracts by different owners in one balancing group and only nominates the overall possible amount of all included contracts. This means, that the TSO does not know to which Network User 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. On the other hand, the TSO decides to allocate within-day interruptible capacity also in case firm capacity is not sold out yet and thus does not need to implement the over-nomination procedure, especially when facing the above mentioned problems.

Another reason for not offering within-day interruptible capacity is that in some countries interim measures of the Balancing Network Code apply. Therefore the affected TSOs are still in the decision making process regarding implementing the rules for nomination. One TSO is not offering any forward flow interruptible service, since there is no congestion in its network, and the TSO does not envisage any congestion in the near future. However, if there are any indications for congestions the 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 yet. Furthermore, the TSO has to 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.

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 furthermore currently being analysed in a number of additional countries.

#### Article 21(7)

Already 37 TSOs publish the amounts 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 and one 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 it is under derogation.

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## 2.1.9 Minimum Interruption Lead Times

### Article 22(1)

Twenty-two TSOs have jointly decided with their adjacent TSOs on a minimum interruption lead time.

Eighteen other TSOs decided to set individual lead times. Only one TSO is not applying Article 22(1), because it is not offering bundled interruptible capacity at its IPs, because they are far from selling out the firm capacity.

### Article 22(2)

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

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

Two TSOs stated that this Article is not applicable as one TSO is not offering bundled interruptible capacity at its IPs and the other one TSO has not yet implemented CAM NC.

Three TSOs provided no answer to this question in the survey.

None of the TSOs has shortened the minimum interruption lead time jointly with its adjacent TSOs in the year 2015, as the agreements stipulating the lead times have been already in place before the year 2015

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## 2.1.10 Coordination of Interruption Process

### Article 23

In case of interruptions a high number of TSOs (37 TSOs) notify their adjacent TSO(s) of the respective action. Only four 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. And only one TSO has not yet implemented CAM NC.

Thirty-six TSOs reported that they were notified by their adjacent TSOs as soon as possible when the neighbouring TSOs initiated an interruption. Only four TSOs reported, that the information on curtailing nominations was not provided by the adjacent TSOs. However, three TSOs out of those four TSOs do not need this additional message, because the applied matching process takes into account any nomination curtailments and contains all relevant information about the scheduled quantities.

One TSO considers this information exchange as not applicable, as such a situation has not occurred yet. However, the commercial agreements, which are in place with adjacent TSOs, include a notification obligation. Last but not least, one TSO has not yet implemented all the CAM NC requirements.

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 the Network Users as necessary. Network Users are responsible to exchange all relevant information between them and the Network Users in the adjacent TSO's network and thus will be informed about any nomination curtailments.

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

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## 2.1.11 Defined Sequence of Interruptions

### Article 24(1)

Almost all TSOs (40 TSOs) apply the timestamp approach for determining the interruption sequence as defined in Article 24(1). Only one TSO is not using this procedure, as it is still implementing the CAM NC provisions.

### Article 24(2)

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

As one TSOs has not finished its implementation activities, the TSO is not yet compliant with the provision laid out in this Article.



## Article 24(3)

To accommodate the differences between the various interruptible capacity services across the Member States, 37 TSOs implemented and coordinate the joint procedures mentioned above on an interconnection point by interconnection point basis. Only five TSOs are not applying this approach. Nonetheless, two TSOs are currently implementing this procedure and one TSO operates an IP to a Member State that has been granted derogation under Article 49 of the Gas Directive. And one TSO is still in the general implementation process of the CAM NC.

### 2.1.12 Reasons for Interruptions

#### Article 25

Thirty-seven 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 included 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.

Just one TSOs reported that this Article is not applicable for it, as all interruptible capacity is sold out until the end of Q2 2018; furthermore the reasons for interruptions are stated in their Access Agreement Summary document.

### 2.1.13 Tariffs

#### Article 26(1)

Thirty-eight TSOs apply the regulated tariffs as reserve prices in all auctions for standard capacity products for firm and interruptible capacity at all IPs. Only two TSOs are not applying this provision: One TSO is not applying the regulatory tariff as reserve price, as CAM NC is not fully implemented yet, and the other TSO is under derogation.

One other 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 really 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 derives 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 their 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)

Thirty-five TSOs are offering their capacity products at the reserve price, which also applies to an unbundled product of the same runtime. Since six TSOs don't offer bundled capacities, they don't follow this approach. However, the reasons behind this situation for the six TSOs are different:

- ▲ One TSO has only one IP to a non-EU-country and is under derogation
- ▲ Two TSOs do not offer bundled capacities, because they have been given an exemption for applying certain provisions of the CAM NC
- ▲ Two TSOs are currently under discussion regarding the implementation of bundled capacity due to existing national competing capacity
- ▲ One TSO has not implemented CAM NC yet

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

### 2.1.14 Capacity Booking Platforms

#### Article (27)

Currently capacity at more than 95 % of all IPs is offered on one of the existing three booking platforms.

At a limited number of IPs the decision on which booking platform should be used for offering bundled capacity is not finalised yet:

- ▲ Kulata BG/Sidirokastron GR, Negru Voda I RO/Kardam BG
- ▲ Negru Voda II, III RO/Kardam BG
- ▲ Mosonmagyaróvár AT/HU
- ▲ Kamminke PL/DE
- ▲ Gubin PL/DE
- ▲ Lasów PL/DE
- ▲ Mallnow PL/DE

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

## 2.2 IP LIST QUESTION-BY-QUESTION ANALYSIS

### General Information

For the CAMNC implementation monitoring report, 41 TSOs explained that 330 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 CAMNC at these IP sides.

However, at 37 of the 330 IP sides it is not mandatory for the TSOs to fulfil all requirements of the CAMNC. 35 out of the 37 IP sides are located at a border to a non-EU-country and at two IP sides the adjacent TSO is under derogation. In both cases the adjacent TSO has no obligation to collaborate with the European TSO in a way that is intended by the CAMNC. 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 the TSOs have been granted exemption from the national Energy Act regarding grid access and tariffs, which means that at these four IPs the rules of CAMNC do not have to be applied.

### Question-by-Question Analysis

#### 2.2.1 Scope

##### Article 2(4)

At 311 IP sides, TSOs do not apply implicit allocation mechanisms. This covers the vast majority of all CAM-relevant IP sides.

Four IP sides mention using implicit allocation methods but nevertheless Articles 8 to 27 of CAMNC are applied. All 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 capacities under CAM auctions and a small amount of interruptible capacities.

Fifteen IP sides stated that the Article was not applicable. It can be assumed that implicit allocation mechanisms are not used at these IP sides.

#### 2.2.2 Definitions

##### Article 3(5)

At 50 IP sides competing capacity can be offered. For five out of these 50 IP sides it is stated, that the IP side was set up for competing capacity allocation procedures, but no competing allocation has been initiated so far.

##### Article 3(7)

At 318 out of 330 IP sides the uniform gas day is already applied.

At eight IPs, sides the application will be made during 2016 and at two IPs sides on 1 January 2017. Additionally, at two IP sides it is planned for the 1 January 2024.



Image courtesy of National Grid

## 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 at 180 IPs a joint method has been discussed with adjacent TSOs.

However, 137 IP sides stated that no capacity increase was necessary thus far. At 50 IP sides this optimisation already took place at the end of 2015 at the latest. At 14 IP sides, the optimisation will be conducted in the year 2016, at four IP sides in 2019 and at one IP sides it is expected to take place after 2020.

Five IP sides stated that the joint method for a cross-border capacity alignment is applied on a dynamic basis. At six IP sides, both the joint method and thereby also the optimisation is in effect.

Fifteen IP sides stated that this Article is not applicable, because either only interruptible capacity or counter-flow capacity is offered (nine IP sides) or the same TSO is the operator at both IP sides (six IP sides).

For 57 IP sides, this article is not applicable without an explanation or no information is provided.

At most IPs, the **technical capacity is recalculated** either on a yearly and ad-hoc basis (127 IP sides) or a dynamic basis (120 IP sides). Shorter periods for the re-calculation are used less often (twice a year: 30 IP sides, monthly: two IP sides)

At two IP sides, the technical capacity is re-calculated on demand, where 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.

For three IP, sides no information is provided.

The **in-depth analysis of technical capacity discrepancies** has been finalised at the latest at the end of 2015 for 176 IPs sides. For 51 IPs sides it shall be finalised in 2016 and for two IPs sides by January 2017 (this IP is not in operation so far). The in-depth analysis is in process for six 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 four IPs sides, the in-depth analysis depends on the submission deadlines for capacity needs at IPs in the process of establishing NDPs and TYNDP.

Fifteen IP sides stated that this article was not applicable because either only interruptible capacity is available at one IP

side, or only reverse flow is accepted (nine IP sides) or the same TSO operates both sides of one IP (six IP sides).

No information about a finalisation date is given for 17 IP sides.

At 40 IP sides **bundled capacity has not been maximised and made available yet**. The reasons for this are:

- ▲ Ongoing discussions about which capacity platform to use (seven IPs sides).
- ▲ Ongoing negotiations between the relevant TSOs including the NRAs to solve the problem of how to deal with the bundling at IPs where at one IP side national competing capacity exists. Due to this specific situation the current bundling algorithm of the capacity platform is not working any more. (16 IP sides).
- ▲ Connection to a capacity platform, but implementation not yet finalised due to tough timescale (one IP side).
- ▲ Firm capacity is already booked on a long term basis (2 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 (13 IP sides). Hence, these IP sides do not have to apply this article of CAM NC.
- ▲ For one IP side, no reason has been presented.

### Article 6(1(b))

At 263 IP sides the parameters for pressure commitments have been jointly assessed with the adjacent TSO. At eight IP sides, the respective TSOs have not yet signed an agreement. For 15 IP sides, it was mentioned that this Article was not applicable, because only interruptible capacity or reverse flow capacity is offered (9 IP sides) or the IPs are within the network of 1 single TSO (6 IP sides). For 3 IP sides no answer was delivered.

At 259 IP sides the relevant supply and demand scenarios have been jointly assessed with the adjacent TSO. At 10 IP sides this has not happened so far, as the discussions about the joint method have not been finalised yet. For 15 IP sides it was mentioned that this Article was not applicable, because only interruptible capacity or reverse flow capacity is offered (9 IP sides) or the IPs are within the network of 1 TSO (6 IP sides). For 5 IP sides no answer was delivered.

At 261 IP sides the parameter “calorific value” has been jointly assessed with the adjacent TSO. At 10 IP sides this has not happened so far because the discussion about the joint method has not been finalised yet. For 15 IP sides it was mentioned that this Article was not applicable, because only interruptible capacity or reverse flow capacity is offered (9 IP



sides) or the IPs are within the network of 1 TSO (6 IP sides). For 3 IP sides no answer was delivered.

At 36 IP sides other parameters have been jointly assessed with the adjacent TSOs. The parameters are:

- ▲ Assumptions from national investment plans, ENTSG TYNDP, relevant obligations under the 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 the calculation of the capacity,
- ▲ Special operation conditions in other relevant points of the system
- ▲ Any other information made available by Network Users;
- ▲ Impact of the maintenance program
- ▲ Pressure at the border/pressure at certain points of the network
- ▲ Supply/offtake pressure
- ▲ Compressor stations operating envelope
- ▲ Gas quality parameters
- ▲ Parameters according to the IA,
- ▲ Potential flow commitments and nominations procedures in order to maximise the bundled capacity

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## 2.2.4 Allocation Methodology

### Article 8(1)

At 12 IP sides another method than an auction is used for allocating capacity.

At five of the 12 IP sides, a pro rata system is applied. At two further IP sides out of the 12 IP sides the pro-rate allocation system is used for long-term capacity with duration longer than one year and capacity with duration less than one year is allocated based on the first-committed, first-served principle. However, the TSO operating these IP sides is under derogation.

At six of the 12 IP sides that have not fully applied CAM NC auctions so far, auctions will be applied during the year 2016. At three IP sides it will be applied on 1 January 2017. At one IP side the full application of CAM NC auctions is planned for 1 January 2024. And only for two IP sides no concrete date could be provided as the TSO is under derogation.

### Article 8(9)

At all 330 IP sides the percentage of capacity, which was 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 328 IP sides only standard capacity types are offered by the 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 TSO offering these products is under derogation and consequently does not need to apply the provision as foreseen in the CAM NC.

## 2.2.6 Bundled Capacity Products

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

For 30 IP sides it is reported that not all available capacity is uploaded to the booking platform offeror being offered as bundled capacity. The reasons stated are the following:

- ▲ At 11 IP sides not all available capacity is uploaded for bundling due to an unsolved issue deriving from the application of a national competing capacity scheme.
- ▲ For 18 IP sides problems regarding the booking platform are mentioned
  - For 16 IP side no agreement on a capacity platform could be reached yet or is in progress
  - For two IP sides the late connection to a capacity platform is the reason that so far not all capacity was uploaded for bundling.
- ▲ For one IP side it was said that not all available capacity is uploaded for bundling because there is a part of the technical capacity at the IP that is booked as long-term capacity at the other IP side. Thus, this part of the capacity is offered as unbundled capacity, although it can only be purchased by the long-term capacity holder on the other side of the IP. Thus, the unbundled capacity part could be considered as capacity reserve for the long-term capacity holder and may not be contracted by any other Network User.

### Article 19(5)

At the majority of the IP sides (202 IP sides) exceeding capacity is offered as unbundled capacity by using a combination of the types described in Article 19(5(a)) and in Article 19(5(b)). At 25 IP sides only the type as described in Article 19(5(a)) and at 19 IP sides only a type as described in Article 19(5(b)) is offered. It is stated for 24 IP sides that exceeding capacity is not 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
- ▲ Technical capacity on the other side of the IP is higher and therefore no exceeding capacity can be offered as unbundled (two IP sides); consequently on these two IP sides Article 19(5) of CAM NC cannot be applied
- ▲ At the IP side no bundled product is offered so far (five IP sides)
- ▲ There are still ongoing discussions about the bundling contract due to the application of a national competing capacity scheme (four IP sides)

For 19 IP sides no answer is provided or it is mentioned that the article is not applicable.

- ▲ At five IP sides only interruptible capacity is offered



Image courtesy of DESFA

## 2.2.7 Allocation of Interruptible Services

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

At 240 IP sides interruptible capacity products with duration longer than day-ahead are offered. At all of these IPs, only the standard long-term product types for interruptible capacity are used: monthly, quarterly and yearly.

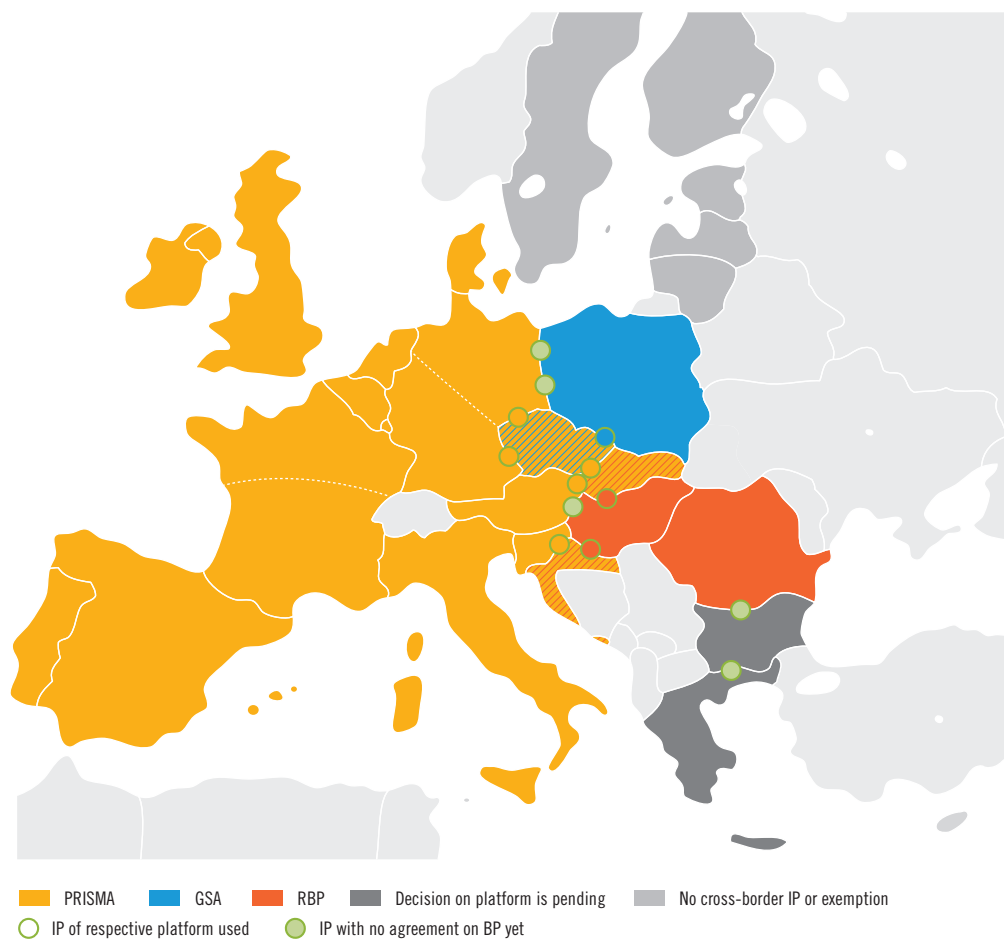
## 2.2.8 Tariffs

### Article 26(2)

At 285 IP sides the payable price is variable, and at 39 IP sides a fixed price is used. For one IP side it was stated that this Article is not applicable because the TSO has been granted exemption from applying the CAM NC provisions. Unfortunately no information has been delivered for five IP sides.

# 3 Additional Information on Capacity Booking Platforms

The implementation of the NC CAM involves the auctioning of bundled capacity products at all IPs within the European Union. To be CAM-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 connection market areas, based on the choice of the respective TSOs about which platform to use.



**Figure 1:** Current use of capacity booking platforms within EU



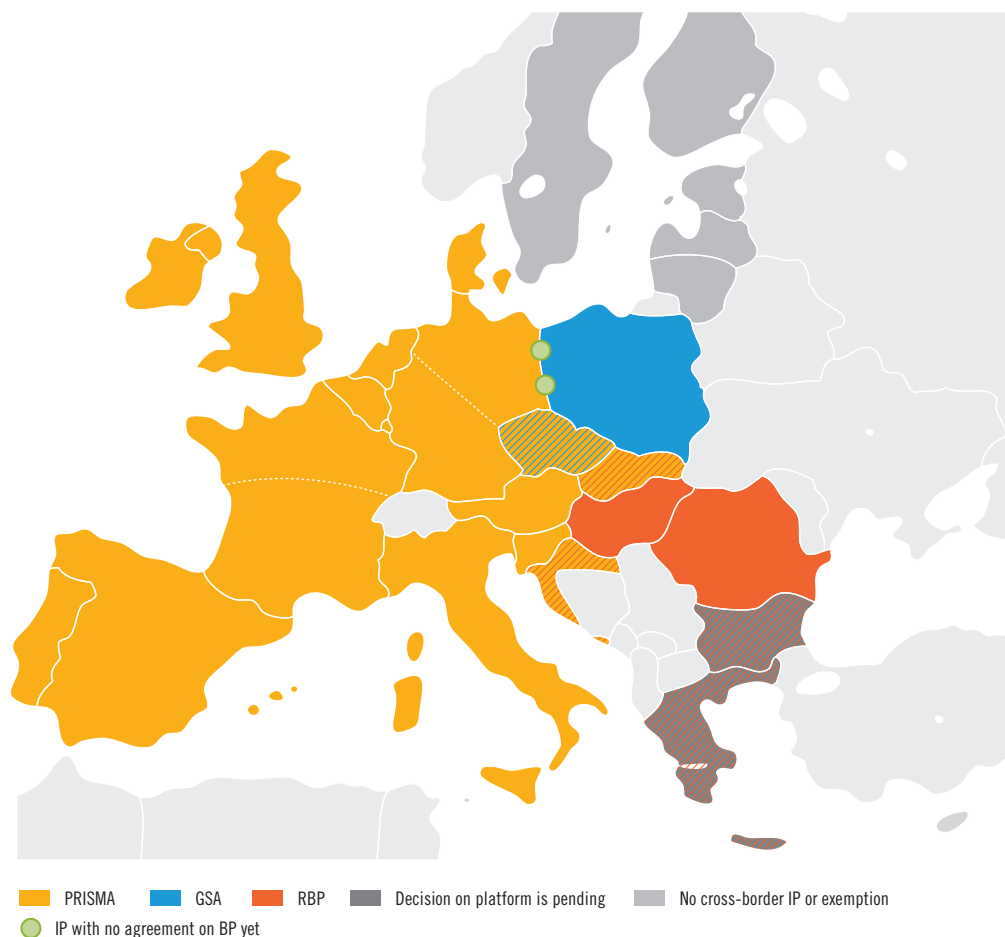
In the European Union, three different booking platforms (BPs) have been established: PRISMA, Gas-System Auction platform (GSA) and the Regional Booking Platform (RBP).

As of January 2016, three TSOs are not yet connected to a booking platform: Amber Grid (LT) (under derogation), DESFA (GR) and Bulgartransgaz (BG).

There are four IPs for which no agreement on a booking platform has been reached so far. Two of them are at the German-Polish border, one is at the border between Romania and Bulgaria and the last one is at the border between Bulgaria and Greece (see Figure 1).

However, progress regarding the implementation of the obligation to auction capacity via a booking platform can be expected in the year 2016.

Bulgartransgaz is planning to sign a contract with RBP in the second quarter of 2016 and to auction the first capacity for the Gas year 2016/2017 in late summer or autumn of 2016. Thereby, the capacity at the IP with Romania will be auctioned via the RBP. The capacity at the IP with DESFA is also planned to be auctioned via RBP (see Figure 2). However, the negotiations between DESFA and Bulgartransgaz and also between DESFA and a capacity platform provider are not finalised yet.



**Figure 2:** Expected use of capacity booking platforms within EU in 2016



# 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 green graphic consisting of two nested L-shaped blocks, one slightly offset from the other.

# Imprint

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