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GTE+'s Consultation Document on Capacity Products Coordination

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Rue Ducale 83
B – 1000 Brussels

Tel +32 2 209 05 00
Fax +32 2 209 05 01

gie@gie.eu.com
www.gie.eu.com

Gas Infrastructure Europe (GIE) represents the interest of the infrastructure industry in the natural gas business such as Transmission System Operators, Storage System Operators and LNG Terminal Operators. GTE+ is a working group within GTE set up to indicate the first step towards creating the ENTSOG envisaged by the Third Package.

Executive Summary

Capacity services and procedures have developed throughout Europe over a number of years. This has provided benefits to the market but due to many reasons has been developed over different timeframes and arrangements vary to meet, for example, the market need at that time. European Transmission System Operators (TSOs) have now identified the opportunity to explore options and create collaborative ways in which capacity services and procedures could be made more compatible at a European level.

With the aim of increasing compatibility of cross-border capacity services and procedures across TSOs, GTE+ has launched a dedicated project to identify potential areas for coordination¹ with the objective to develop clearly defined, streamlined and transparent capacity services and procedures which simplify the access and usage of the European gas networks.

The initial focus of this GTE+ review is on the non-domestic primary firm capacity services which are currently offered at European cross-border Interconnection Points (IPs).

Comprehensive analysis has been conducted on the cross-border IP capacity services including capacity products and associated booking arrangements. Data have been collated from 28 TSOs that had responded to a GTE+ questionnaire which has provided an overview of the existing services and the potential for any coordination.

This document is to be considered as the first GTE+ step in:

- Understanding the market needs
- Identification of where possible quick wins may be achieved working towards a more customer friendly and accessible European gas network
- Prioritisation of possible coordination areas within the GTE+ work program, aiming to facilitate the simplification of the market

The TSO members of GTE+ currently work on a voluntary basis and operate under various different regulatory and legal frameworks and the implementation of any of the GTE+ recommendations will require further consultation within these confines.

In this document, GTE+ proposes a number of measures which would enhance European capacity services coordination. Feedback is welcomed from customers on:

- The potential benefit (or otherwise) of the proposed recommendations to the user
- Prioritisation of the recommended proposals
- Other instruments which may aid harmonisation

User involvement is crucial to identify the right measures and focus for further coordination. Therefore a first customer workshop will be held on 26 November 2008.

¹ "Coordination" is to be understood as the process of reaching compatibility.

2. Introduction and aim

With the aim of working on the issue of Capacity Product Coordination a project was initiated within GTE+, the transition organisation of GTE on its way towards ENTSOG.

The overall aim of this project is to enhance compatibility of cross-border shipping services as well as related characteristics and procedures as a first step towards more customer friendliness and a step towards the European single energy market through a more simplified network access.

As a step towards the purpose of this project, an Analysis and Recommendation Report will be developed until the beginning of 2009 which can serve as a compendium of proposals for recommendation to customers of which services should be offered and applied in Europe for primary, non-domestic, existing capacity. Before the finalisation of this report, GTE+ will consult intensively customers about their opinion on identified potential for coordination within cross-border services.

This consultation document describes an identified starting point for coordinating and increasing the level of compatibility of offered capacity services, minimising e.g. lead-times as a first step to be discussed with the market customers. So, to provide a starting base for discussion, the responsible GTE+ Taskforce has elaborated first ideas of a common capacity services offer throughout Europe which also mirrors the customised TSO systems complexity. The legal and regulatory environment, market conditions in place, capacity allocation methodologies are some of the factors which shape the complexity and diversity of the current European TSO offer.

Customers' view on this consultation document will be gathered and discussed during a workshop on the 26th of November 2008 where they are invited to provide concrete opinions on the most significant priority areas. The market is also invited to comment on possible further issues which are currently not included in the coordination work but could be considered in the future.

At this stage the members of GTE+ work voluntarily and the CPC work seeks to increase compatibility within the given regimes and available opportunities at this time. Before the start of ENTSOG in the context of Third Package, changes to systems need to be considered with regards to voluntary GTE+ member contribution and the legal and regulatory environments in place.

Several steps and milestones were identified and concluded as the following:

- Identify and analyse the capacity products range of GTE members, especially the potential for more compatibility between the offered cross-border shipping services, as well as their related characteristics and procedures
- Progress to a common understanding on relevant cross-border shipping services, their related characteristics and procedures
- Identify recommendations for coordination between the capacity products range for a more simplified cross-border shipping
- Identify legal, technical, regulatory or economic barriers of coordination progress

Basis for the accomplished analysis and evaluation was a self-developed questionnaire, which was sent to GTE members – 28 answers were considered for the final outcome.

As an important milestone and short-term outcome of the first phase of the project an Analysis and Recommendation Report will be published at the beginning of 2009. The report will summarise not only the evaluation of the received questionnaires, but will also conclude the evaluation with several proposals for recommendations for cross-border shipping services to be offered and applied in Europe. The report will be completed with TSO identification and

estimation of legal, regulatory, technical and economic barriers, hindering or decelerating the envisaged coordination with intermediate steps defined together with the market.

Building on this information, the second phase will broaden the subject of the report's (shipping) service analysis. A consecutive questionnaire, consisting of new and "follow-up" questions derived out of experiences gained during the first evaluation phase, will be the basis for the second phase evaluations. The aim of the second phase is to facilitate the implementation of agreed recommendations, initiate processes to remove barriers and find additional potential for coordination if necessary. Further relevant information will again be collected and discussed with the market through a second workshop and customer consultation. The outcome of the second phase will be an Extended Analysis and Recommendation Reports with implementation proposals for cross-border service coordination, melting the findings from the evaluation and the workshop.

The final phase aims to assess the "market value" of the existing recommendations. This shall be achieved by collection of information for a survey on Impact Assessment, which will be published as the outcome of this phase.

Continuous and repeating involvement of the market parties paired with detailed analysis procedures will assure that the impact assessment of the recommendations construct an added value for the European single energy market.

3. General approach

Focus and scope

Given the request from the market to facilitate the access to cross-border transmission capacity and the European characteristic of GTE+, the scope of this work is on offered services and access conditions for transporting gas from one country to another

The focal point of the considerations lay within the identification of capacity services and conditions applied by European TSOs when marketing these. Discrepancies of these rules between the countries and different markets are highlighted and tried to be made compatible by establishing commonly applied provisions.

With the aim of simplifying trade between adjacent networks and starting to remove impediments to cross-border trade the focus of the considerations are set primarily on the rules in place to market capacity. As economical matters themselves do not directly hinder trade and because the issued of treating costs are purely regulatory driven, the capacity coordination work area does not cover tariff setting arrangements.

Strategic rationale

To learn what capacity products the European TSOs apply and what the regarding marketing conditions are, an overview has been generated on the basis of the submitted questionnaires and by developing a data base. That information will also facilitate a consideration of the reactions and feedback provided from the market participants during the consultations.

For providing a starting point for discussion on compatible capacity services recommendations were derived from the data. Chapter 6 will in detail explain how the recommendations were identified.

The proposals for recommendations stated in chapter 6 of this document were created for discussions with the market. Detailed feedback and opinions are sought to enable the subsequent establishment of conditions with most achievable merit for the transmission system users.

Using the help and feedback of the market participants resulting recommendations will be identified with the aim to implement them on a European level.

Capacity allocation methodologies

Throughout Europe 3 major capacity allocation methodologies are applied by the TSOs, whereas also others such as lotteries are possible. Among those used methods to market transmission capacity for a network are First Come/Committed First Served (FCFS), Open Subscription Window (OSW) and Auctions. It is also possible that two of them are in place parallel to manage the timely handling of capacity sales.

FCFS: When the FCFS methodology is applied the customer submitting the first request will receive that capacity. Users who request at a later point in time will obtain their demanded capacity if it is available in that extend. In the case no other methodology is applied for contractual congestions, when the full amount of requested capacity is not bookable, the customer's capacity will be cut off at the capacity available. Whereas "first come first served" means that the first party shown an interest has a right but not necessarily a contractually binding obligation, "first committed first served" describes a way where the first one to request automatically enters a legally binding situation. However, regarding the aim of this work the project does not distinguish between the two types.

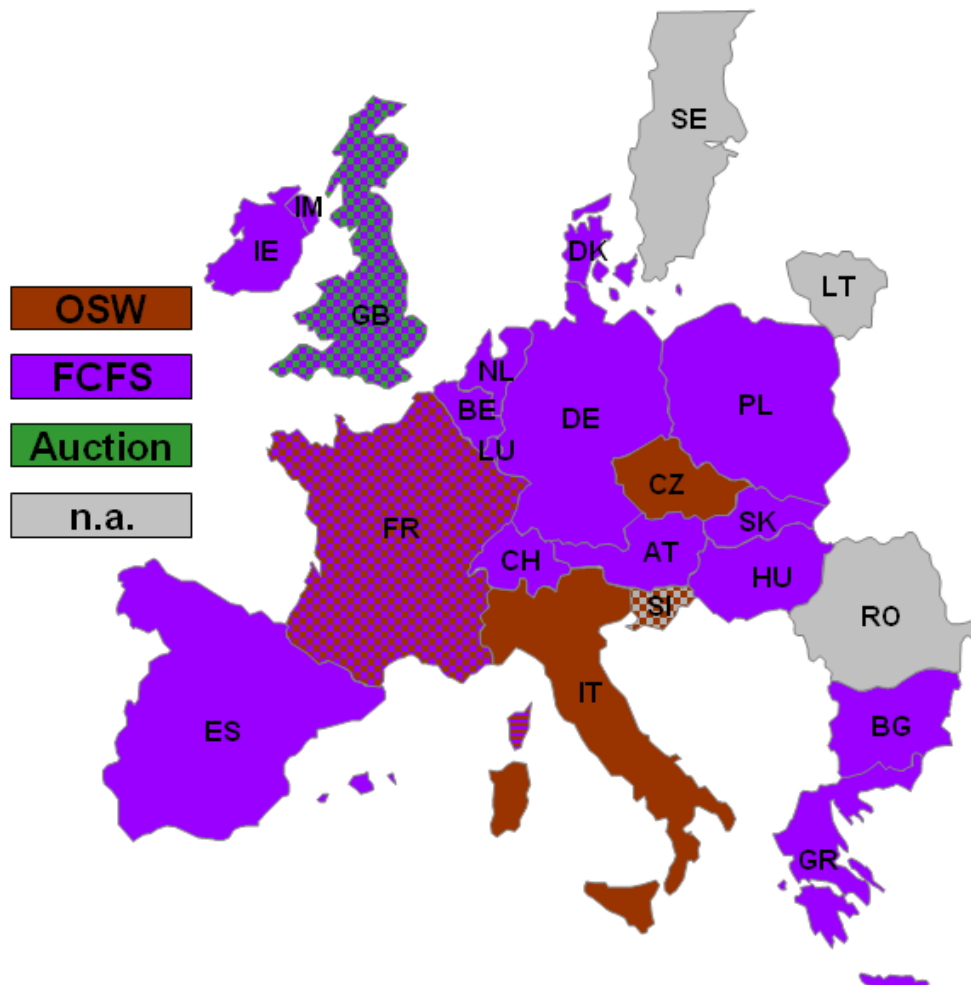
OSW: The methodology of OSW works in a way in which all capacity requests of all applying customers are collected during the defined booking window. In the case more capacities are requested than available the requested capacity of all users will be allocated according to a procedure in place in the system. Such allocation can e.g. be done pro rata where every entity will get an equal share of the overall available capacity.

In order to allow maximum optimisation of use of capacity, OSW for capacity services with longer duration shall take place before OSW for other services. In case of booking procedure windows overlapping, allocation of capacity services with longer duration shall have a higher priority.

Auction: An auctioning system is based upon the principle that certain fix products are offered during fixed periods. The customers with the highest bid will receive the capacity.

To market capacity services a timely combination of the allocation methodologies can be applied by TSOs for one service (e.g. yearly service first by OSW and later by FCFS). Another possibility of having two methodologies in place at the same time can for instance occur by applying separate methodologies for entry and exit capacity.

The application of the allocation methodologies varies between the systems but also one TSO can have a combination in place regarding his offered capacity services. A general overview is provided in the following picture. A detailed list of European IPs and with the there applied capacity allocation methodologies is provided in Annex 1.



More explicit explanations of the methodologies are given in the respective sections in chapter 6.

Project process

At the beginning of the work it was evident that an understanding of the environment of offered capacity services throughout Europe needed to be established. In that regard a comprehensive questionnaire to obtain the needed information was developed. Please refer to chapter 4 to find an illustration of the set-up and structure of the questionnaire in detail.

The data and responses provided in through the questionnaires were extracted and generated into a data base to compare the conditions and to conduct further evaluations. Subsequently the database was discussed with the individual TSOs who responded to assure a correct interpretation of the given answers. The data source was intensively examined for deriving best practicable capacity service recommendations for the market. A more sound explanation of how this evaluation was done is explained in chapter 5.

Differential approach

It is the aim to establish recommendations on capacity services and concerning marketing conditions which should have been applied by all TSOs in Europe. With defining e.g. commonly applied booking lead times and capacity services an overarching compatible solutions was intended to be found regardless what capacity allocation methodology (OSW, Auctions or FCFS) is applied.

However, during the extensive assessment of first results it became evident that defining conditions to be applied all over Europe, regardless of which capacity allocation methodology is in place, is not feasible as a first step.

Therefore, in this phase recommendations are and will be developed for each capacity allocation methodology separately whereas reaching a highest possible level of compatibility even between them is the goal. This document comprises separate recommendations for FCFS, OSW and Auctions.

Regulatory environments in Europe are very diverse. TSOs often have to apply one of the capacity allocation methodologies with respective defined conditions. A possible win for the market in a reasonable time frame is at a first stage only possible focussing on the conditions of each capacity allocation methodology individually. Timely progress would otherwise not be possible.

The situation in place in some markets in terms of up-stream competition and the requirements of the market were developed to reflect the requirements of that market. It may therefore not be the most appropriate way forward to fix rules all over Europe whereas a different approach for a respective market is most likely to have greater realistic merit.

In regard of the above listed circumstances, the coordination of capacity products will start within each capacity allocation methodology separately.

4. Questionnaire

On the 17th of August 2007 a questionnaire was issued to all 34 GTE members whereas 28 responses were received. The status for most data elaborated in the analysis of this consultation document is as of **August 2007**.

The questionnaire itself contained similar questions for non-domestic as well as for domestic transmission. The scope of the capacity product coordination work is firstly focussing on cross-border transportation on a European level and only the non-domestic parts were used for the evaluations at this stage.

Responses were received from 28 TSOs

RWE Transportnetz Gas	Geoplin Plinovodi
ONTRAS	OMV Gas GmbH
E.ON Gastransport	eustream
Wingas Transport	Gaz System
Gasunie Deutschland Transport	TIGF
Enagas	Swissgas
Energinet.dk	Fluxys
Gas Transport Services	Serbiagas
Snam Rete Gas	SOTEG
GRTgaz	Bulgartransgas
Interconnector UK	Transgaz
AB Lietuvos	Swedegas
National Grid	Svenska Kraftnät
RWE Transgas Net	Gaslink

TSOs considered in the analysis

In the examinations described in chapter 6 in most cases the analysis refers to less than the 28 TSOs who have responded. The reasons for that are:

- For some questions, there were no answers from every participating TSOs;
- The system of a TSO may not serve for non-domestic transmission so no respective information could be gathered;
- The TSO may not offer certain capacity services so the number of TSOs for investigating procedures for certain services cannot reflect all 28 TSOs;
- In some cases, it was not possible to map the TSOs answers with respect to the predefined set of possibilities envisaged in the questionnaire;
- TSOs apply different capacity allocation methodologies. The evaluations are done for each separate therefore only a part of all responses could be used.

Project areas

The project is characterised by main areas that appear in all steps of the work (questionnaire, evaluations and proposals for recommendations).

The questionnaire contained various questions starting with identifying what products are offered for every existing access model and procedure including also type and combination possibilities. The second step was focussing on the how capacity is marketed distinguishing between all applied capacity allocation methodology.

The use of those areas logically leads to the structure of this document where first the capacity services are examined, then the way they are marketed.

5. Evaluation process

Data collection and consolidation

Answers from the various TSOs participating to the project have been consolidated and aggregated into a database in order to allow qualitative and quantitative data analysis. Data has been segregated along several dimensions, following the questionnaire structure and the general approach (domestic vs. non-domestic, firm vs. interruptible, type of capacity products available, capacity booking/allocation method ...). This consolidation exercise was also necessary to ensure data quality and consistency (data cleansing) amongst the various GTE members, by reviewing thoroughly the answers.

Data analysis

The general idea that drove the first analysis conducted on the data collected was to identify potential areas for coordination by quantitative analysis. Questions for which the spread of answers was limited (i.e. a high number of TSOs relatively to the total participants that gave the same answer) were classified according to 3 categories, ranging from less than 50 % similarity, more than 65 % similarity, or in between. According to this classification, areas have been identified where coordination seems to be feasible: if a relative high number of TSOs already work the same way, it is indeed plausible, from a quantitative point of view, to seek coordination by extending the solution to others. On the contrary, where the spread of answers is large, the number of differences was itself a hint for difficulties to find coordination. However qualitative analysis was necessary to refine these first results. Indeed a green light does not necessarily mean that a relevant topic is already nearly harmonized at European level. On the other hand, an orange topic could represent an interesting field which is already harmonised at regional level and could be coordinated at a broader level with minimum impact.

With this base information, we developed a first strategy to analyse the data from a more qualitative point of view: trinity tests. The trinity test consists in analysing the questions/areas from the following point of views:

- Based on quantitative analysis, is it feasible to coordinate?
- Is it possible to coordinate for the GTE participants?
- Is added value for customers assumed?

The outcome of the test is to validate the areas where recommendation and change process are to be defined in order to enhance compatibility of services between TSOs, from a rather quick-win point of view (e.g. Gas day definition).

Case studies

In a second phase qualitative analysis of the current situation and the potential compatibility to be reached has been done through case studies of specific aspects. The main focus was shipping services features: how are typical shipping services marketed by the different TSO and is it possible to define a set of standard services with compatible booking parameters.

Following the analysis of the product features, i.e. booking procedures, a first set of four case studies (regular month, calendar year, gas year, any 12 months starting the 1st day of any month) has been produced for firm capacity products (also refereed as shipping services), with extra information requested from the project participants:

- Minimum lead time?
- Maximum lead time?
- In case of several booking procedures, which procedure is predominantly used? Why (legally imposed or company decision)?

In a second stage the case studies have been extended to daily and day-ahead shipping services and in a third stage, they have been prepared for interruptible capacity products.

From these various studies, a set of proposed coordinated shipping services, booking and delivery principles, has been developed and proposed for internal discussion amongst participating TSOs.

Internal evaluation of recommendations

As mentioned above, part of the challenge of coordination comes down to the possibility for operators to move towards compatible services. In order to avoid proposing a set of unachievable recommendations within a reasonable timeframe, the propositions have been first internally evaluated by the different participating GTE members and barriers (being technical, legal etc.) have been identified: this process revealed impediments to change that are not removable by operators' efforts only. These elements have been combined and discussed in joint working groups, leading on the one hand, to the identification of general achievable recommendations.

On the other hand, challenges in the change process have been identified, that led to the definition of a specific set of recommendations. The most important aspect is the capacity allocation principles which are either legally imposed in some countries, either legally restricted in others. The recommendations have been therefore revised to take into account, the natural differences that come with the 3 major models for capacity allocation methodology.

These sets are further detailed in the next chapter of this report.

External consultation

The third step of the trinity test referred to relevancy and prioritisation of the coordination proposal for the market. This will be evaluated through external workshops with customers from various countries and business areas, based on the information summed up in this document.

6. Analysis and recommendations

This chapter describes the data collected per topic, the conducted analysis and outlines derived proposals for recommendations.

In the first section, general considerations for recommendations are illustrated which embrace all European systems. In the following parts of this chapter, detailed proposals for recommendations which build upon respective analysis are done separately for each currently applied capacity allocation methodology.

6.1 General proposals for recommendations

Firm and interruptible capacity

When marketing their capacity to the market most TSOs (14 out of 21 TSOs → 67 %) offer besides firm also interruptible capacity in the same manner.

To simplify the understanding of coordinated capacity services and for a clearer structure this analysis (through the entire process) did not differentiate between the offering of firm and interruptible capacity.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR1:** The condition applied in a European system for marketing the capacity services in terms of booking procedure, lead times, contract durations etc, should be the same for firm and for interruptible capacity services.
- **PR2:** The calculation of interruptible capacity can be based on very different parameters such as pressure scenarios, probability of being interrupted and many others which may not allow a long-term prediction. Therefore the application of those same rules for firm and interruptible capacity shall at least apply for shorter-term services (up to one year) and if possible also for the longer-term services.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Entry-Exit services

For TSOs who apply the Entry/Exit capacity booking model the evaluation showed that most TSOs do not differ in rendering their capacity services regarding entry and/or exit points. The result of the investigation is that 10 out of 13 TSOs (77 %) apply the same conditions for their entry and exit services.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR3:** When an Entry/ Exit model is in place the conditions in terms of booking procedure, lead times, contract durations etc, applied within a European system should be the same for entry and exit capacity services.

Gas day

There are some differences in the choice of the gas day, but they occur only on the borders of the European single gas market and are most probably occurred by an alignment with important shipper and/or supplier.

Regarding the undertaken evaluation 73 % of the TSOs apply a gas day from 06:00 Local Time to 06:00 Local Time of the following day. Only 13 % have a gas day in place lasting from 08:00 Local Time to 08:00 Local Time of the following day. Another 13 % apply even different start and end times for gas days.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR4:** In every system at least the possibility should be offered to apply a gas day from 06:00 Local Time to 06:00 Local Time. Where the involvement of other parties does not allow a gas day from 06:00 Local Time to 06:00 Local Time then for the respective border to the system which prohibits the recommended gas day, a second gas day may apply in parallel. In such case there would be two different gas days applied in one network.
- **PR5:** The gas day shall be the same for all offered services (services described in following sections).

Daily capacity service

Regulation 1775: *“Transmission system operators shall offer firm and interruptible services down to a minimum period of one day.”*

With regards to the evaluation, 16 out of 23 of the European TSOs (68 %) offer a specific bookable daily product.

For marketing daily capacity services three different allocation methodologies are applied by the 15 TSOs.

- FCFS is applied by 14 TSOs – 86 %
- OSW is applied by 1 TSO – 7 %
- Auctions are applied by 1 TSO – 7 %

Remark: For 10 of the 16 TSOs (62 %) the allocation methodology is imposed through national primary or secondary legislation.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR6:** It is recommended that in all European systems customers have the possibility to book a daily capacity service,.

Capacity service with the duration of one month

Based on the received answers, a monthly service is offered by 21 out of 24 (88 %) of the EU TSOs (87 %).

For rendering monthly services four different capacity allocation methodologies are applied. 21 TSOs offer such a service according to the meaning of this examination.

- FCFS is applied by 17 TSOs – 80 %
- OSW is applied by 2 TSOs² – 10 %
- OSW together with FCFS is applied by 1 TSO – 5 %
- Auctions are applied by 1 TSO – 5 %

Remark: For 14 of the 21 TSOs (67 %) the allocation methodology is imposed through national primary or secondary legislation.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR7:** It is recommended that in all European systems customers have the possibility to book a capacity service with the duration of one month.

Capacity service with the duration of one year

A yearly service (12 consecutive months) is offered by most of the TSO. From 23 TSOs with a respective response to the questionnaire 22 (96 %) offer such a service.

Those 22 TSOs apply four different booking procedures for marketing yearly services

- FCFS is applied by 17 TSOs → 74 %,
- OSW is applied by 3 TSOs → 13 %,
- OSW combined with FCFS is applied by 1 TSO → 4 %
- Auctions are applied by 1 TSO → 4 %).

Remark: For 14 of the 22 TSOs (64 %) the allocation methodology is imposed through national primary or secondary legislation.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR8:** It is recommended that in all European systems customers have the possibility to book a capacity service with the duration of 12 consecutive months.

² TSOs can sometimes offer combined allocation methodologies (OSW combined with FCFS) for specific services. The analysis will therefore possibly take up to 4 TSOs for OSW into account.

Combination of different allocation methodologies

When a TSO applies different allocation methodologies, a priority shall be given to a methodology. The priority rank could be different for each capacity service's duration.

2 (where one is about to implement) TSOs apply a combination of OSW together with FCFS in a timely follow-up for marketing capacity services with the duration of one month or year (12 consecutive months).

Proposal for recommendation

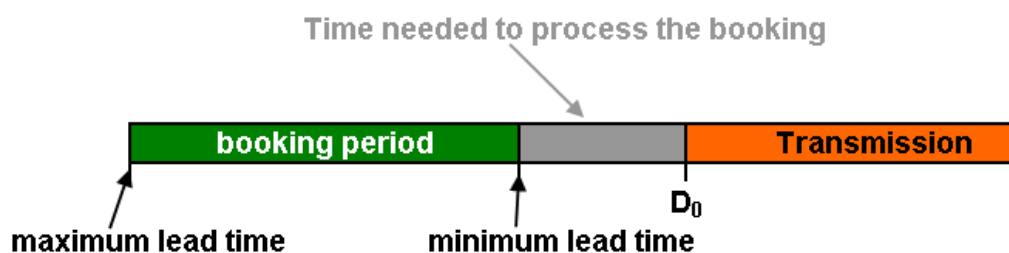
- PR9: This main allocation procedure shall respect all relevant recommendations. The secondary allocation procedure features shall be as close as possible to its relevant features without preventing the primary procedure to respect its recommendations.

6.2 Recommendations - in particular

The following sections will in detail describe what booking conditions in terms of minimum and maximum lead times and also for possible start times of recommended services are examined.

Lead times

The booking period in which customers can request for transmission capacity is defined by minimum and maximum lead times as shown in picture below. Maximum lead time describes when capacity can be requested at the earliest where as minimum lead times indicate the latest time when a booking can be requested by a customer for a certain capacity services. Regarding for how long such capacity is booked, the booking period and the respective lead times can vary. Recommendations for these lead times are described hereunder.



Lead time preconditions

The lead times which are described in chapters 6.2.1 to 6.2.3 should be applied in respective networks (according to the capacity allocation methodology) with the pre-condition that sufficient capacities are available. Congestion management and Open Season procedures are not covered by this report in this phase.

Furthermore, those conditions (e.g. lead times) should be relevant to transmission customers who are in any applied form registered or licensed to use the booking system applied by the TSO. In most networks, prior to book capacity, it is required that transmission customers have to go through a process to be able to use the booking system of a TSO. For instance, such processes can comprise manual integration of customer details into the capacity

management IT system, communication tests, set-up of balancing arrangements, liability checks, conclusion of system usage agreements, appointing representatives who are authorised to book etc.

Hence, all conditions stated in the next paragraphs should be applied for registered users and when sufficient capacity is available.

6.2.1 FCFS marketing for shipping services

Taking into account the constantly growing demand on more flexibility of transportation services offered on the market for transportation service the “first come/committed first served” (FCFS) principle, as the most widely used allocation mechanism in the European transportation market, is a suitable solution in order to meet this particular market demand.

Combined with a customer (user friendly) Online System for capacity booking it has the ability to satisfy both the customers’ needs of more flexibility of the services offered on the one hand as well as the request for a steadily decreasing of the reaction time of the selling TSO on the other hand.

By doing so the demand from the developing gas market is not only met but the development itself is fostered by the combination of the FCFS principle and respective Online booking facilities.

Characteristics of FCFS

The main feature of the First Come/Committed First Served principle is the fact that a requesting customer is receiving immediate response whether his requested service is available and can be booked or not. Furthermore services are allocated straight to the requesting party independently from pending requests from other parties. This characteristic is fostering the development of gas markets as it assures that the customers right away get the information if a requested transportation service is feasible. Therefore it assists perfectly in speeding up the decision making process if businesses affecting two different markets requiring a respective transportation service can be concluded or not. This fact is especially important as developing hubs for example are mostly aligned with increasing spot market deals.

In order to provide to the market with as much flexibility as possible it is necessary that different service qualities (e.g. “firm” or “interruptible”) – not being limited with any restriction as far as the period is concerned – are offered to the market. This kind of marketing of capacity assures that the customer only selects the quality requested and is afterwards – ideally at any given time – free to choose the required period.

Combined with reducing the minimum lead times maximum flexibility is achieved as the requesting customer is able to book at any time any (available) type of capacity over a customized period of time.

The following paragraphs are an attempt to improve the FCFS marketing of capacities throughout Europe by giving recommendations concerning the features of transportation services over certain periods in general as well as recommendations concerning lead times in particular.

The idea behind the recommendations on lead times is to provide as a first step the European shippers with certain “time windows”, defined by maximum and minimum lead times, assuring the customer that at least within said windows transportation services with equal durations are available independent of which European country is affected by the requested transportation service.

Combination of various transmission periods within one booking

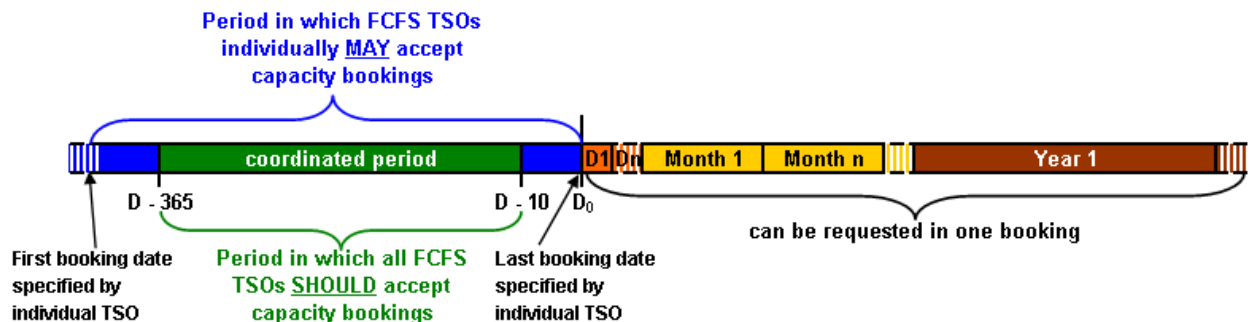
A TSO may not specifically offer a certain capacity service duration (e.g. a quarterly product) but that TSO may offer the possibility to its customers to book a combination (adding-up) of a shorter-term fraction capacity service duration. The combination of service periods is to be understood as connecting several service durations following after each other into one step (one booking).

From the 18 TSOs that have the FCFS system in place 11 (61 %) allow a combination of their services in on booking.

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Proposal for recommendation

- **PR10:** When applying FCFS, and in case of offering transportation services differing in terms of duration as particular services, it is recommended that each capacity service can be combined, starting with the shortest duration and ending with the longest duration, within one booking, with respect to the proposed lead times for each individual service.
- **PR11:** When applying FCFS and if several capacity service durations are combined within one booking, the longest identifiable transmission period shall determine the lead time for the entire “combined” booking.



Transportation services with the duration of one day

The minimum and maximum lead time to book daily capacity services differ among TSOs. An overview is given in the table below.

Max. lead time	# TSOs	%
5	2	14
7	1	7
10	1	7
15	1	7
20	5	36
45	1	7
90	1	7
365	1	7
unlimited	1	7
(working or calendar days)		
Total	14	100

Min. lead time	# TSOs	%
0 ³	1	7
1	5	36
5	2	14
10	5	36
15	1	7
(mostly working days)		
Total	14	100

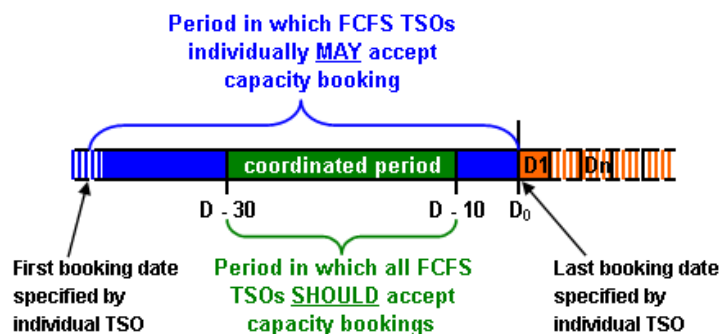
³ Response: “05:59 on D-1 which is one minute prior to start of day D”

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Please note that the processing time of each TSO necessary for answering a particular request is not included in the booking periods proposed below.

Proposal for recommendation

- **PR12:** When applying FCFS for daily services, the recommended maximum lead time will be at least 30 calendar days before the start of the transportation service
- **PR13:** When applying FCFS for daily services, the recommended minimum lead time will be at maximum 10 calendar days before the start of the transportation service



It is the aim to reduce lead times for requesting services. Over time the move will be stepwise closer towards the last day before transmission (day-ahead). This will require intermediate steps.

Transportation services with the duration of one month

The start time of transmission services in FCFS systems with the duration of one month is for 13 out of 17 TSOs (76 %) the first day of the calendar month. However, 4 TSOs (24 %) are offering a monthly service from any day in the month. For all TSOs the monthly transmission service lasts one month.

Start time	# TSOs	%
1 st day of any calendar month	13	76
Any day within a month	4	24
Total	17	100

The transmission services with the duration of one month can be booked with lead times as illustrated in the following tables:

Max. lead time	# TSOs	%
10	1	6
30	2	12
37	1	6
90	6	35
183	1	6
365	3	18
Unlimited	3	18
(working or calendar days)		
Total	17	100

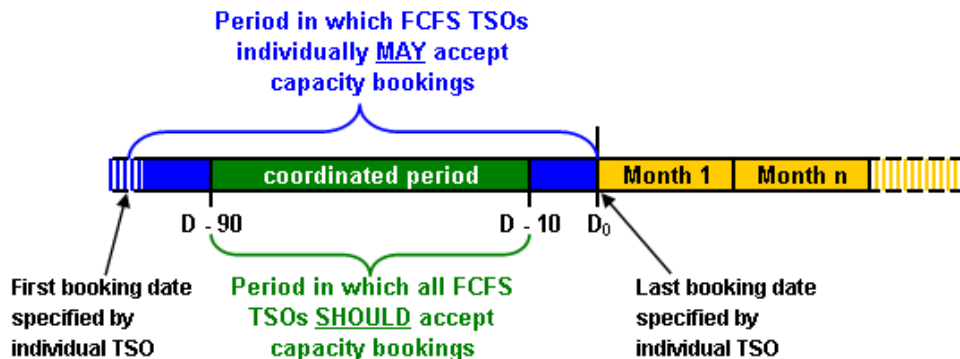
Min. lead time	# TSOs	%
1	3	18
5	3	18
8	1	6
10	6	35
15	3	18
30	1	6
(mostly working days)		
Total	17	100

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Please note that the processing time of each TSO necessary for answering a particular request is not included in the booking periods proposed below.

Proposal for recommendation

- **PR14:** When applying FCFS, the transportation service with a duration of one month shall preferably start at any day but at least on the first day of each calendar month
- **PR15:** When applying FCFS for monthly services, the recommended maximum lead time will be at least 90 calendar days before start of the transportation service
- **PR16:** When applying FCFS for monthly services, the recommended Minimum lead time will be at maximum 10 calendar days before the start up of the transportation service



It is the aim to reduce lead times for requesting services. Over time the move will be stepwise closer towards the last day before transmission (day-ahead). This will require intermediate steps.

Transportation services with the duration of one year

The start time of transportation services differs among TSOs as illustrated in the following table:

Start time	# TSOs	%
1 st day of any calendar month	6	35
Any day within a year	8	47
1 st of October	2	12
1 st day of summer or winter period	1	6
Total	17	100

Currently a variety of minimum and maximum lead times are applied by European TSOs. The table below provides an overview of the lead time in indicative days:

Max. lead time	# TSOs	%
10	1	6
30	1	6
90	1	6
183	1	6
365	3	18
1440	1	6
unlimited	9	53
(working but mostly calendar days)		
Total	17	100

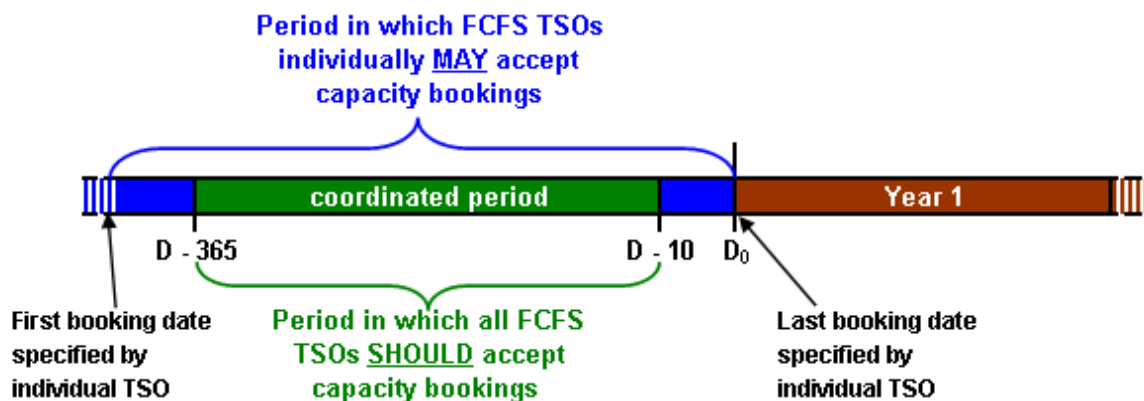
Min. lead time	# TSOs	%
1	3	18
5	3	18
8	1	6
10	6	35
15	2	12
30	1	6
40	1	6
(mostly working days)		
Total	17	100

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Please note that the processing time of each TSO necessary for answering a particular request is not included in the booking periods proposed below.

Proposal for recommendation

- PR17: When applying FCFS, the transportation service with a duration of one year shall preferably start at any day but at least on the first day of each calendar month
- PR18: When applying FCFS for yearly services, the recommended Maximum lead time will be at least 365 calendar days before the start up of the transportation service
- PR19: When applying FCFS for yearly services, the recommended Minimum lead time will be at maximum 10 calendar days before the start up of the transportation service



It is the aim to reduce lead times for requesting services. Over time the move will be stepwise closer towards the last day before transmission (day-ahead). This will require intermediate steps.

6.2.2 OSW marketing for shipping services

Characteristics of OSW

Open Subscription Windows (or Periods) are based on the pro rata allocation procedures acknowledged by the EU Commission (cf. “*Commission staff working document on capacity allocation and congestion management for access to the natural gas transmission networks*”, 12.06.2007).

During a booking window shippers will submit capacity requests. Then shippers are allocated capacity:

- equal to their demand if offered capacity exceeds total demand,
- according a fraction of their demand by application of a pro rata rule on their request in relation with the total requests and the available capacity.

This allocation procedure helps to ensure that new capacity requests can be accommodated in a non-discriminatory and transparent manner allowing enhanced access to the available capacity to all market participants. Some anti-hoarding mechanisms can be included in the allocation procedure in order to prevent unfair requests.

Coordination between TSOs using OSW

As a shipper’s allocation depends on other shippers’ requests, some kind of coordination is necessary to assure allocation consistency on both sides of an IP. In case a high level of coordination is achieved, the same amount of capacity could be booked on both sides of IPs a single request.

Proposal for recommendation

- PR20: If OSW is the allocation method applied on both sides of the same IP, the systems shall seek coordination of their procedures in order to facilitate allocation consistency on both sides of the IP.

Combination of services

An Open Subscription Window has to be linked to well specified capacity durations in order to align the capacity requests coming from the shippers and, if needed, apply a pro rata on all requests. Moreover, in order to guarantee optimisation of available capacity and prevent “blocking” of capacity bookings for longer duration with early bookings of short duration services, in some systems allocation of capacities for different durations take place in different time windows or use separate allocation procedures if they occur during the same window. Usually OSW for longer duration capacity services take place before OSW for shorter duration capacity services.

- PR21: For this reason it is not sensible to foresee the combination of services of different duration through one single booking in case OSW procedure is applied.

Transportation services with a duration of one day

OSW is applied by only one TSO to allocate transmission services with the duration of one day. It can be booked with lead times as illustrated in the following tables (indicative days):

Max. lead time	# TSOs	%
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Min. lead time	# TSOs	%
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35 ⁴ (calendar days)	1	100
Total	1	100

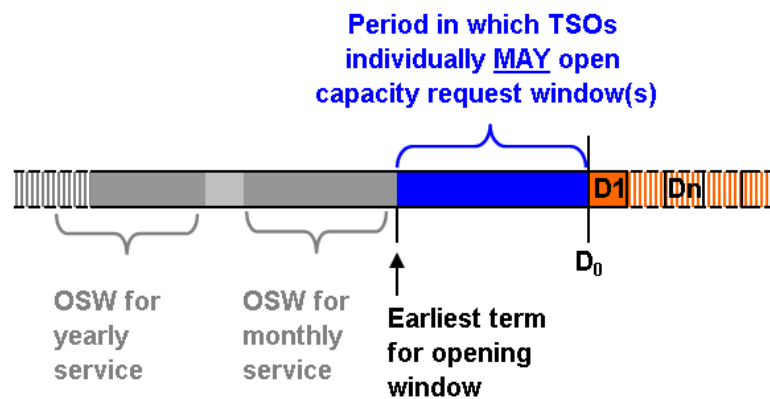
1 (working day)	1	100
Total	1	100

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

As there is the need to guarantee that allocation of capacities for different durations takes place in different time windows, the time windows dedicated to the booking of daily capacity services should not interfere with the windows dedicated to monthly and yearly capacity services.

Proposal for recommendation

- PR22: When applying OSW maximum lead time for daily transportation services should not take place before the minimum lead time set for monthly and yearly transportation services.



Transportation services with the duration of one month

The start time of transmission services in OSW systems with the duration of one month is the first day of the calendar month. The monthly transmission service lasts one month.

Start time	# TSOs	%
1 st day of any calendar month	3	100
Total	3	100

The transmission services with the duration of one month can be booked with lead times as illustrated in the following tables (indicative days):

Max. lead time	# TSOs	%
30	1	33
40	1	33
90 ⁵	1	33
(mostly working days)		
Total	3	100

Min. lead time	# TSOs	%
15 ⁵	1	33
20	1	33
30	1	33
(mostly calendar days)		
Total	3	100

⁴ OSW opens the fifth day before the start of the month in which the daily transportation service takes place

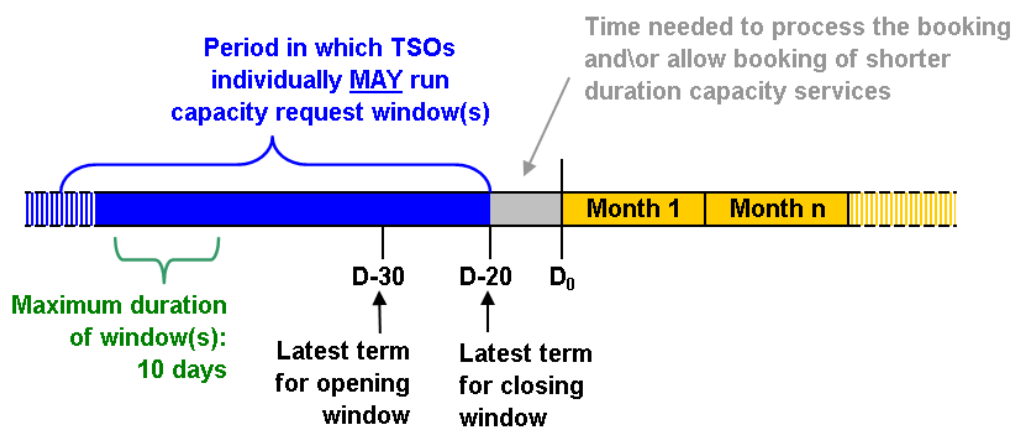
⁵ successive windows for the same service

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Please note that the processing time of each TSO necessary for answering a particular request is not included in the booking periods proposed below.

Proposal for recommendation

- **PR23:** When applying OSW, a transportation service with a duration of one month shall start on the first day of each calendar month
- **PR24:** When applying OSW for monthly services, the recommended Maximum lead time (opening of the window) will be at least 30 days before start of the transportation service
- **PR25:** When applying OSW for monthly services, the recommended Window width to submit requests will be at maximum 10 days



Transportation services with the duration of one year

The start time of transmission services in OSW systems with the duration of one year is the first day of the calendar month. The yearly transmission service lasts one year (12 consecutive months).

Start time	# TSOs	%
1 st day of any calendar month	2	40
1 st day of October	1	20
1 st day of April	1	20
1 st day of November and April	1	20
Total	5	100

The transmission services with the duration of one year can be booked with lead times as illustrated in the following tables (indicative days):

Max. lead time	# TSOs	%
60 ⁶	1	20
150	1	20
150/199 ⁷	1	20
199	1	20
1825 ⁶	1	20

Min. lead time	# TSOs	%
20 ⁶	1	20
30	1	20
136	1	20
136/180 ⁷	1	20
180 ⁶	1	20

⁶ successive windows for the same service
⁷ two marketing calendars for two different IPs

(mostly calendar days)		
Total	5	100

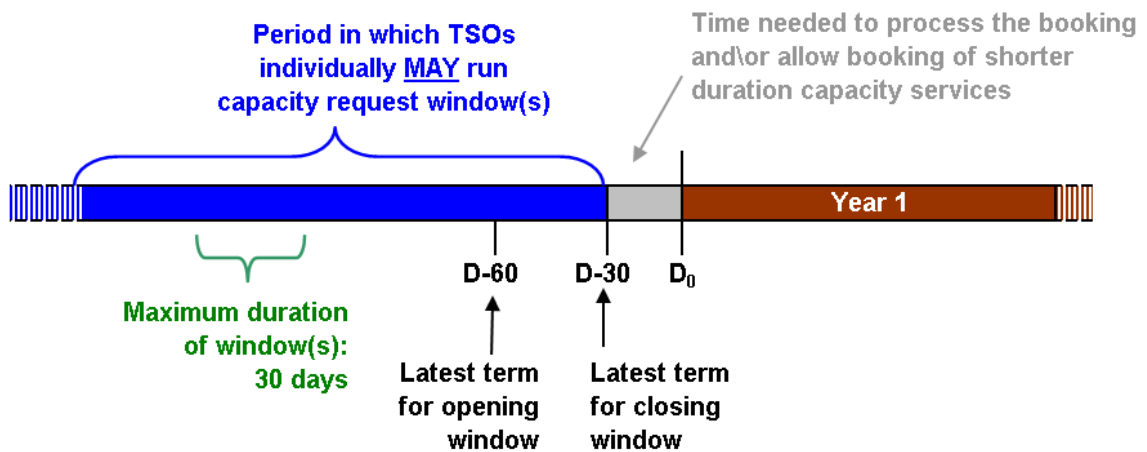
(mostly calendar days)		
Total	5	100

Not all 28 TSO responses could have been taken into account for this evaluation. Please refer to the explanation in chapter 4.

Please note that the processing time of each TSO necessary for answering a particular request is not included in the booking periods proposed below.

Proposal for recommendation

- PR26: When applying OSW, transportation service with the duration of one year shall start preferably on the 1st of each month but at least on the 1st of October.
- PR27: When applying OSW for yearly services, the recommended Maximum lead time (opening of the window) will be at least 60 days before start of the transportation service
- PR28: When applying OSW for yearly services, the recommended Window width to submit requests will be at maximum 1 month



6.2.3 Auctions marketing for shipping services

The use of auctions is to offer to the market various primary capacity products and durations which facilitates the maximisation of capacity bookings, creates certainty for users and underpins future⁸ investment in the TSO network.

Inherent within the auction process is to make quantities available to those that value it the most by deriving the optimum price for a finite product. The TSO offers the capacity for sale as a right to flow gas at a uniform 1/24th flow rate over a day. The level of obligated capacity is set so that it reflects as close as reasonably possible the physical capability of the point / aggregated points.

Users are offered the chance to bid for capacity for long term, medium term and short term periods. This allows users to book capacity as their supply portfolio increases, whilst allowing for the trading of capacity to other users when that capacity cannot be utilised. Users may also bid for capacity up to and above the obligated level, in the long term signalling a potential investment in the network, provided it meets a strict economic test.

Characteristics of Auctions

There are three main auction types:

Long term = from years 2 – 17 ahead (held every year)

Firm capacity offered in quarterly strips

The long term auction offers to the market 90 % of the obligated capacity up to 17 years ahead by a cleared price auction. All users are invited to participate well in advance of the auction and prices (including incremental price steps and quantities) are published within the invitation. Users would need to bid appropriately based on their willingness to pay for that capacity at that point(s). Incremental capacity can be generated via the long term auctions.

Medium term = from years 1 & 2 ahead (held every year)

Firm capacity offered in monthly strips

Medium term auctions offer to the market the remaining 10 % of the obligated capacity and any quantities unsold from the long term auction. This capacity is offered on a pay as bid basis.

The full 10 % is offered for the first 18 months of the two year period, whilst 10% is withheld for the months 18-24. All users are invited to participate well in advance of the auction and the reserve price and quantities are published within the invitation. This auction covers the constrained period in that the TSO is offering only currently available capacity as incremental capacity cannot be built during this time period.

The TSO can also offer discretionary non obligated capacity up to a year ahead.

To optimise the use of the system the TSO carries out a monthly Transfer & Trade auction whereby any capacity unsold is calculated at each entry point and offered to the market; also Users may also offer to surrender back booked capacity at a particular entry point. An auction is opened and bids are invited from all users. Where bids cannot be satisfied at a point where it is sold out, then the TSO can consider transferring capacity (using an exchange rate) from neighbouring entry points to satisfy the requirement.

⁸ The reference to incremental capacity is a feature of the Auction mechanism. The Capacity Product Co ordination Consultation Document only relates to currently available primary capacity offered by TSOs.

Short term = daily

Firm capacity – offered D-1 and on the day

Short term auctions offer to the market the opportunity to finely tune the capacity requirements based on the latest current information such as customer portfolio changes and supply / demand conditions. Any firm capacity unsold from previous auctions and any additional quantities the TSO can offer is made available in the auction up until 07:00 on D and then at the TSOs discretion.

The TSO can also offer discretionary non obligated capacity close to the day.

Interruptible capacity – bids placed from D-7 to 13:00 D-1

The TSO offers capacity derived from the Use-it-or-lose-it (UIOLI) calculation and can at its discretion offer further quantities to the market on an interruptible basis. The auction is allocated between 13:00 – 15:00 D-1. Users securing interruptible quantities do face a risk that the TSO removes or scales back that capacity due to system conditions and therefore generally the price reflects such a potential.

Both firm and interruptible capacity quantities are offered to the market on a pay as bid basis.

Users may trade capacity between parties at the entry point for any of the above quantities once the capacity has been allocated by the TSO.

By offering the market the above auction methods, users are provided with the flexibility to book many years in advance and also provides the continual option of a year-on-year adjustment of their capacity position until and during the gas day itself. Where there is a requirement for incremental capacity on the network such as a new entry / import site users signal the potential investment via the long term auction process for the desired start period. The TSO will commit to that additional capacity via a number of options including investment on the network providing the economic test is passed and the regulator approves the project and agrees to the revenue allowance.

Combination of various transmission periods within one booking

The Auction method used by one TSO offers the possibility of adding up a combination of multi year and yearly strips (in quarterly tranches) / monthly blocks and daily / within day periods. The bookings are made at different times thus the 'period' covered is not bookable in one contract due to the different product types.

- PR29: If users only bid in one Auction type then this could be considered as one contract i.e. the periods connect (however the price and quantity may be different when comparing to other periods and auctions). This provides for a flexible booking process meeting the needs of an advanced market which is also linked to users triggering incremental capacity for network investment and the TSO incentivised via a risk and reward scheme to maximise the use of the transmission network.

Transportation services with the duration of one day

Any day is applicable for transmission services in Auction systems.

Daily service start time	# TSOs	%
Any day 06:00	1	100
Total	1	100

The maximum lead time for a daily service in Auction systems for 1 TSO is 7 days in advance although the first allocation by the TSO does not occur until the day ahead.

The minimum lead time for a daily service is the day ahead including on the day up until 02:00 Local Time.

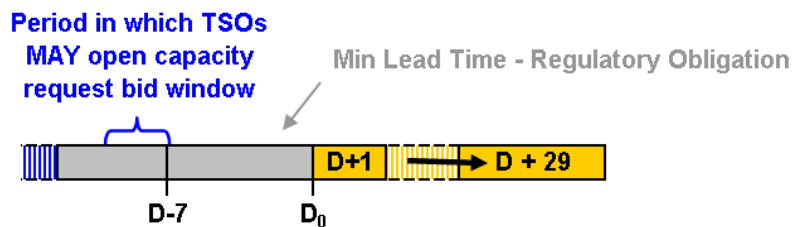
Max. lead time	# TSOs	%
7	1	100
Total	1	100

Min. lead time	# TSOs	%
1 / D0	1	100
Total	1	100

Proposal for recommendation

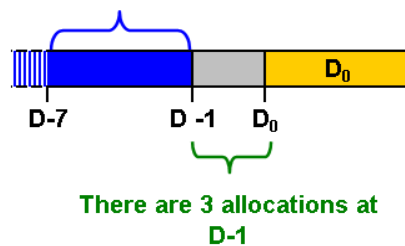
- PR30: In systems where capacity services are marketed via Auctions, these capacity services shall be offered as detailed above.

Short Term Discretionary Release System Entry Capacity



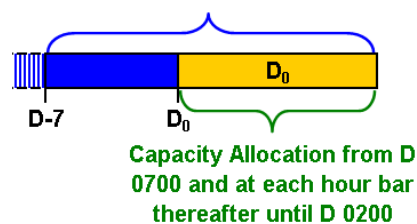
Daily System Entry Capacity

Period in which Users may place bids for capacity



Within Day System Entry Capacity

Period in which Users may place bids for capacity



Transportation services with the duration of one month

The start time of transmission services in Auction systems with duration of one month is for 1 TSO the first day of the calendar month.

Monthly service start time	# TSOs	%
1 st day of any calendar month	1	100
Total	1	100

The maximum lead time for a monthly service via an annual auction in Auction systems for 1 TSO is 730 days (24 months) in advance.

The minimum lead time for a month-ahead monthly service is =<20 days in advance.

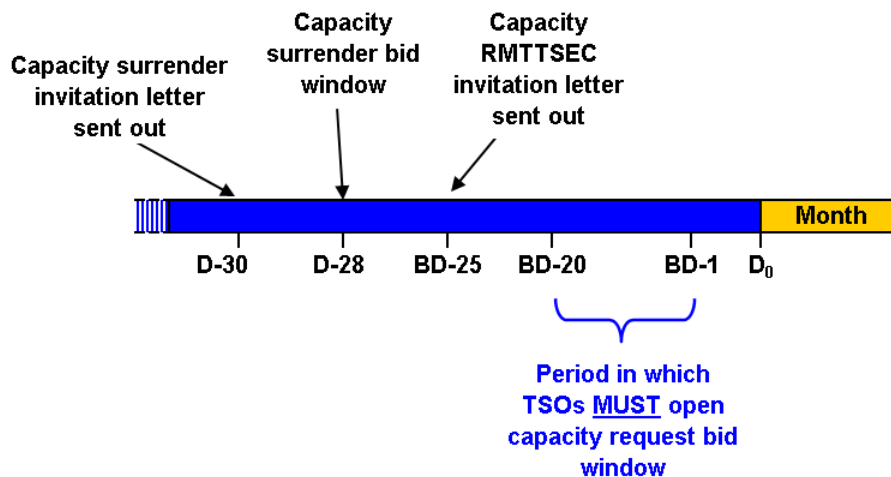
Max. lead time	# TSOs	%
730 (calendar days)	1	100
Total	1	100

Min. lead time	# TSOs	%
=<20 (calendar days)	1	100
Total	1	100

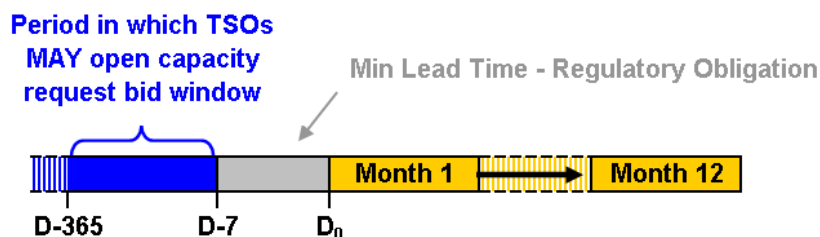
Proposal for recommendation

- PR31: In systems where capacity services are marketed via Auctions, these capacity services shall be offered as detailed above.

Rolling Monthly Transfer and Trade System Entry Capacity



Long Term Discretionary Release System Entry Capacity



Transportation services with the duration of one year

The start time of transmission services in Auction systems with duration of a year is for 1 TSO the 1st of the month** of the start of the quarterly tranche (assuming a consecutive four quarters have been booked). However 12 consecutive monthly strips of capacity can be obtained via the annual monthly auctions process (see details).

Yearly service start time	# TSOs	%
1 st day of any calendar month**	1	100
Total	1	100

The maximum lead time for a yearly service in Auction systems for 1 TSO is 6205 days (17 years) in advance. (This includes the 730 days during years 1&2 where annual monthly capacity is offered).

The minimum lead time for a yearly service via the annual monthly auction is an assumed 60 days in advance of the earliest start date of April in years 1 and 2.

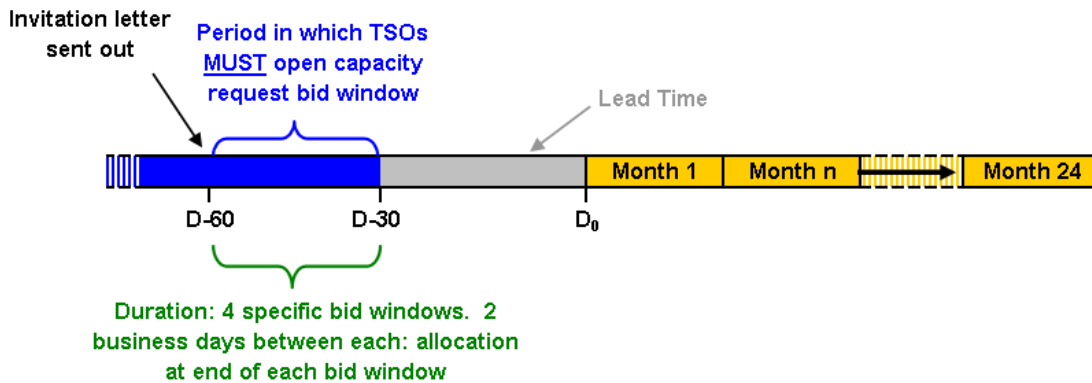
Max. lead time	# TSOs	%
6205 (calendar days)	1	100
Total	1	100

Min. lead time	# TSOs	%
60 (calendar days)	1	100
Total	1	100

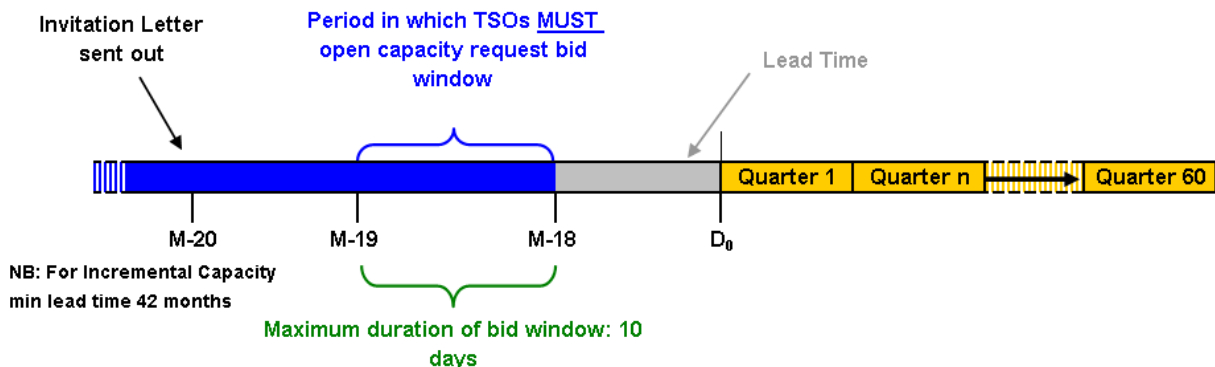
Proposal for recommendation

- PR32: In systems where capacity services are marketed via Auctions, these capacity services shall be offered as detailed above.

Annual Monthly System Entry Capacity



Quarterly System Entry Capacity



7. Dialog with customers

General

To start the dialog with customers on a best practicable way forward GTE+ is appreciating the opinion of market. Feedback is sought individually on each recommendation with interest for you.

Please prioritise the proposals for recommendations. In that regard detail 5 issues described in this Consultation Document in order of importance to users.

Regarding each proposed recommendation, what could in your view be improved?

For future considerations:

Regarding currently offered capacity services what other proposals not included in this document should be added?

Furthermore, customers are invited to provide their opinion about what characteristic is wanted in terms of a day-ahead service and what are the features such a capacity service should have.

During the customer workshop on the 26th of November 2008 GTE+ representatives are present to outline the proposals for recommendations described in this consultation document and to provide answers to questions of customers where additional demands for clarification may exist.

GTE+ is inviting transmission customers to submit written responses to this paper with regards what is considered as adequate for GTE+ to set its priorities on according to the scope of this consultation. Feedback is highly welcomed by the 15th of December 2008 and to be sent to gte@gte.eu.com or frank.roessler@ontras.com.

Annex 1 – Capacity allocation methodologies at IPs

TSO 1		Allocation	NAME LOCATION	Allocation		TSO 2
BOG	AT	FCFS	Oberkappel	FCFS	DE	E.ON Gastransport
OMV Gas	AT	FCFS	Burghausen (AT) / Überackern (DE)	FCFS	DE	Bayernets
OMV Gas	AT	FCFS	Mosonmagyaróvár	FCFS	HU	FGSZ
TAG	AT	FCFS	Tarvisio (IT) / Arnoldstein (AT)	OSW	IT	Snam Rete Gas
OMV Gas	AT	FCFS	Murfeld (AT) / Ceršak (SI)	OSW	SI	Geoplin Plinovodi
Bieltransgaz	BY	-	Kondratki	-	PL	EuRoPol GAZ
Interconnector	UK	-	Zeebrugge IZT	FCFS	BE	Fluxys
Fluxys LNG	BE	FCFS	Zeebrugge LNG	FCFS	BE	Fluxys
Fluxys	BE	-	Zeebrugge Hub	-	BE	Huberator
Fluxys	BE	FCFS	Quévy (H) (BE) / Taisnières (H) (FR)	OSW/FCFS/AUC	FR	GRTgaz
Fluxys	BE	FCFS	Blaregnies (H) (BE) / Taisnières (H) (FR)	OSW/FCFS/AUC	FR	GRTgaz
Fluxys	BE	FCFS	Eynatten Wingas Transport	FCFS	DE	Wingas Transport
Fluxys	BE	FCFS	Eynatten E.ON Gastransport	FCFS	DE	E.ON Gastransport
Fluxys	BE	FCFS	Zelzate Zebra Gasnetwerk	FCFS	NL	Zebra Pijpleiding
Fluxys	BE	FCFS	Zelzate GTS	FCFS	NL	Gas Transport Services
Bulgartransgaz	BG	FCFS	Kula (BG) / Sidirokastron (GR)	FCFS	GR	DESFA
RWE Transgas Net	CZ	OSW	Hora Svaté Kateřiny (CZ) / Deutsch-Neudorf (DE)	FCFS	DE	ONTRAS
RWE Transgas Net	CZ	OSW	Waidhaus	FCFS	DE	E.ON Gastransport
RWE Transgas Net	CZ	OSW	Waidhaus	FCFS	DE	E.ON Gastransport
DONG	DK	FCFS	Nybro	FCFS	DK	Energinet.dk
Energinet.dk	DK	FCFS	Ellund	FCFS	DE	E.ON Gastransport
Energinet.dk	DK	FCFS	Dragør	FCFS	SE	Swedegas
Gaz de France	FR	OSW/FCFS	Montoir de Bretagne	-	FR	GRTgaz
GRTgaz	FR	OSW/FCFS	Cruzy/Hérault	OSW/FCFS	FR	TIGF
TIGF	FR	OSW/FCFS	Larrau	FCFS	ES	Enagas
GRTgaz	FR	OSW/FCFS/AUC	Oltingue	FCFS	CH	ENI G&P CH
E.ON Gastransport	DE	FCFS	Medelsheim (DE) / Obergailbach (FR)	OSW/FCFS/AUC	FR	GRTgaz
E.ON Gastransport	DE	FCFS	Remich	FCFS	LU	SOTEG

E.ON Gastransport	DE	FCFS	Wallbach	FCFS	CH	Swissgas
DESFA	GR	FCFS	Revythoussa	FCFS	GR	DESFA
GNL Italia	IT	-	Panigaglia	OSW	IT	Snam Rete Gas
Snam Rete Gas	IT	OSW	Gorizia (IT) / Šempeter (SI)	OSW	SI	Geoplin Plinovodi
SAGANE	MA	FCFS	Tarifa	FCFS	ES	Enagas
Gassco	NO	FCFS	Zeebrugge ZPT	FCFS	BE	Fluxys
Gassco	NO	FCFS	Dunkerque	OSW/FCFS/ AUC	FR	GRTgaz
Gassco	NO	FCFS	Emden (NPT)	FCFS	DE	E.ON Gastransport
Gassco	NO	FCFS	Emden (NPT)	FCFS	DE	Gasunie Deutschland Transport Services
Gassco	NO	FCFS	Emden (EPT1)	FCFS	DE	E.ON Gastransport
Gassco	NO	FCFS	Emden (EPT1)	FCFS	DE	Gasunie Deutschland Transport Services
Gassco	NO	FCFS	Dornum / NETRA	FCFS	DE	E.ON Gastransport
Gassco	NO	FCFS	Emden (NPT)	FCFS	NL	Gas Transport Services
Gassco	NO	FCFS	Emden (EPT1)	FCFS	NL	Gas Transport Services
EuRoPol GAZ	PL	FCFS	Mallnow (PL) / Frankfurt am Oder (DE)	FCFS	DE	Wingas Transport
ONTRAS	DE	FCFS	Lasów (PL) / Görlitz (DE)	FCFS	PL	Gaz System
REN Gasodutos	PT	FCFS	Valença do Minho (PT) / Tuy (ES)	FCFS	ES	Enagas
Gazprom	RU	-	Imatra	FCFS	FI	Gasum
Eustream	SK	FCFS	Baumgarten	FCFS	AT	OMV Gas
Eustream	SK	FCFS	Lanžhot	OSW	CZ	RWE Transgas Net
Enagas	ES	FCFS	Badajoz (ES) / Campo Maior (PT)	FCFS	PT	REN Gasodutos
Enagas	ES	FCFS	Barcelona	FCFS	ES	Enagas
Enagas	ES	FCFS	Cartagena	FCFS	ES	Enagas
Enagas	ES	FCFS	Huelva	FCFS	ES	Enagas
ENI G&P CH / Swissgas	CH	FCFS	Griespass (CH) / Passo Gries (IT)	OSW	IT	Snam Rete Gas
Gas Transport Services	NL	FCFS	Hilvarenbeek (NL) / Poppel/Zandvliet L (BE)	FCFS	BE	Fluxys
Gas Transport Services	NL	FCFS	Bocholtz	FCFS	DE	ENI / E.ON Gastransport
Gas Transport Services	NL	FCFS	Zevenaar	FCFS	DE	E.ON Gastransport

Gas Transport Services	NL	FCFS	Winterswijk	FCFS	DE	E.ON Gastransport
Wingas Transport	DE	FCFS	Bunde (DE) / Oude Statenzijl (H) (NL)	FCFS	NL	Gas Transport Services
E.ON Gastransport	DE	FCFS	Bunde (DE) / Oude Statenzijl (H) (NL) I	FCFS	NL	Gas Transport Services
Gasunie Deutschland Transport Services	DE	FCFS	Bunde (DE) / Oude Statenzijl (H) (NL)	FCFS	NL	Gas Transport Services
E.ON Gastransport	DE	FCFS	Bunde (DE) / Oude Statenzijl (H) (NL) II	FCFS	NL	Gas Transport Services
TPMC	TN	-	Mazara del Vallo	OSW	IT	Snam Rete Gas
NationalGrid	UK	FCFS	Moffat	FCFS	IE	Gaslink
BGE (UK)	IE	FCFS	Twynholm	FCFS	UK - N.Irl.	Premier Transmission
Ukrtransgaz	UA	-	Uzghorod (UA) / Velké Kapušany (SK)	FCFS	SK	Eustream
Gas Transport Services	NL	FCFS	Julianadorp (GTS) /Balgzand (BBL)	FCFS	UK	BBL company
RWE Transgas Net	CZ	OSW	Hora Svaté Kateriny (CZ) / Olbernhau I (DE)	FCFS	DE	Wingas Transport
Wingas Transport	DE	FCFS	Hora Svaté Kateriny (CZ) / Olbernhau II (DE)	OSW	CZ	RWE Transgas Net
Gas Transport Services	NL	FCFS	Obbicht (NL) / Dilsen/'s Gravenvoeren (BE)	FCFS	BE	Fluxys
Gas Transport Services	NL	FCFS	Zandvliet H-gas	FCFS	BE	Fluxys
Fluxys	BE	FCFS	Bras/Pétange (Aggregate Cap BE-LU)	FCFS	LU	SOTEG
GDF Deutschland Transport	DE	FCFS	Medelsheim (DE) / Obergailbach (FR)	OSW/FCFS/AUC	FR	GRTgaz
Eni G&P Deutschland	DE	FCFS	Wallbach	FCFS	CH	ENI G&P CH
Eni G&P Deutschland	DE	FCFS	Wallbach	FCFS	CH	Swissgas
E.ON Gastransport	DE	FCFS	Wallbach	FCFS	CH	ENI G&P CH
OMV Gas	AT	FCFS	Burghausen (AT) / Überackern (DE)	FCFS	DE	Wingas Transport
Reganosa	ES	FCFS	Mugardos	FCFS	ES	Enagas
Geoplin Plinovodi	SI	OSW	Rogatec	FCFS	HR	Plinacro
Saggas	ES	FCFS	Sagunto	FCFS	ES	Enagas
Lietuvos Dujos	LT	FCFS	Sakiai	-	RU-KAL	Gazprom
REN Atlantico	PT	FCFS	Sines	FCFS	PT	REN Gasodutos
Bieltransgaz	BY	FCFS	Tieterowka	FCFS	PL	Gaz System
Gaz de France	FR	FCFS	Fos Tonkin	-	FR	GRTgaz
Gas Transport Services	NL	FCFS	Vlieghuis	FCFS	DE	RWE Transportnetz

						Gas
Bieltransgaz	BY	-	Wysokoje	FCFS	PL	Gaz System
Bulgartransgaz	BG	FCFS	Zidilovo	FCFS	MK	Makpetrol
Srbijagas	RS	FCFS	Zvornik	FCFS	BA	BH-gas
Ukrtransgaz	UA	FCFS	Beregdaróc	FCFS	HU	FGSZ
BBG	ES	FCFS	Bilbao	FCFS	ES	Enagas
TIGF	FR	OSW/FCFS	Biriadou (FR) / Irun (ES)	FCFS	ES	Naturgas Energia Transporte
Terminale GNL Adriatico	IT	-	Cavarzere	OSW	IT	Snam Rete Gas / Edison Stoccaggio
Ukrtransgaz	UA	FCFS	Drozdowicze	FCFS	PL	Gaz System
Energinet.dk	DK	FCFS	Ellund	FCFS	DE	Gasunie Deutschland Transport Services
Gassco	NO	FCFS	Emden (EPT1)	FCFS	DE	RWE Transportnetz Gas
Gassco	NO	FCFS	Emden (NPT)	FCFS	DE	RWE Transportnetz Gas
Gaz de France	FR	OSW/FCFS	Fos Cavaou	-	FR	GRTgaz
GreenStream Network	LY	-	Gela	OSW	IT	Snam Rete Gas
Ukrtransgas	UA	-	Isaccea	FCFS	RO	Transgaz
Eesti Gaas	EE	FCFS	Karksi	FCFS	LV	Latvijas Gaze
Latvijas Gaze	LV	FCFS	Kiemenai	FCFS	LT	Lietuvos Dujos
FGSZ	HU	FCFS	Kiskundorozsma	FCFS	SB	Srbijagas
Gazprom	RU	-	Korneti	FCFS	LV	Latvijas Gaze
Bieltransgaz	BY	-	Kotlovka	FCFS	LT	Lietuvos Dujos
Bulgartransgaz	BG	FCFS	Malkoclar	FCFS	TK	Botas
Ukrtransgas	UA	FCFS	Mediesu Aurit	FCFS	RO	Transgaz
Transgaz	RO	FCFS	Negru Voda I	FCFS	BG	Bulgartransgaz
Transgaz	RO	FCFS	Negru Voda II	FCFS	BG	Bulgartransgaz
BOG	AT	FCFS	Oberkappel	FCFS	DE	GDF Deutschland Transport
RWE Transgas Net	CZ	OSW	Waidhaus	FCFS	DE	GDF Deutschland Transport
BOG	AT	FCFS	Oberkappel Penta West	FCFS	AT	OMV Gas
TAG	AT	FCFS	Weitendorf	FCFS	AT	OMV Gas
Gasunie Deutschland Transport Services	DE	FCFS	Bunder-Tief	FCFS	DE	E.ON Gastransport

E.ON Gastransport	DE	FCFS	Duisburg-Sued	FCFS	DE	RWE Transportnetz Gas
Gasunie Deutschland Transport Services	DE	FCFS	Emsbueren	FCFS	DE	RWE Transportnetz Gas
Wingas Transport	DE	FCFS	Mallnow / EWE-VNG	FCFS	DE	ONTRAS
E.ON Gastransport	DE	FCFS	Reckrod	FCFS	DE	Wingas Transport
ONTRAS	DE	FCFS	Steinitz	FCFS	DE	Gasunie Deutschland Transport Services
E.ON Gastransport	DE	FCFS	Steinitz	FCFS	DE	ONTRAS
E.ON Gastransport	DE	FCFS	Verlautenheide	FCFS	DE	RWE Transportnetz Gas
TIGF	FR	OSW/FCFS	Dordogne	OSW/FCFS/ AUC	FR	GRTgaz
GRTgaz	FR	OSW/FCFS/ AUC	Link BZ N-S	OSW/FCFS/ AUC	FR	GRTgaz
EuRoPol GAZ	PL	-	Lwówek	FCFS	PL	Gaz-System
EuRoPol GAZ	PL	-	Wloclawek	FCFS	PL	Gaz-System
Wingas Transport	DE	FCFS	Lampertheim	FCFS	DE	E.ON Gastransport
Wingas Transport	DE	FCFS	Gross Koris	FCFS	DE	ONTRAS
Wingas Transport	DE	FCFS	Kienbaum	FCFS	DE	ONTRAS
E.ON Gastransport	DE	FCFS	Duelmen - Im Weddern	FCFS	DE	RWE Transportnetz Gas
E.ON Gastransport	DE	FCFS	Werne-Stockum, Bockumer Strasse	FCFS	DE	RWE Transportnetz Gas
E.ON Gastransport	DE	FCFS	Ochtrup	FCFS	DE	RWE Transportnetz Gas
Wingas Transport	DE	FCFS	Broichweiden Süd	FCFS	DE	RWE Transportnetz Gas
Eustream	SK	FCFS	Baumgarten	FCFS	AT	BOG
Eustream	SK	FCFS	Baumgarten	FCFS	AT	TAG