

## Draft position paper for consultation

# Exploring the feasibility of implicit allocation in the (North West) European gas market



Gas Regional Initiative North West

*The Hague, 1 October 2012*

## 1 Introduction

### 1.1 Background

The Council of European Energy Regulators (hereafter: CEER) has – in close cooperation with stakeholders – developed the first European Gas Target Model. The purpose of this document (published in December 2011) is to set out CEER's vision on a target model. In this vision, CEER foresees two measures that should contribute to creating a European internal energy market. Firstly, a series of harmonised liquid and functional regional gas markets within the EU should be created (possibly through zone merging and the implementation of entry/exit zones). In a second step those functioning wholesale gas markets should be connected through the efficient use of interconnector capacity.

With regard to the second objective, stakeholders – both during the drafting of the GTM and the Framework Guideline on Capacity Allocation Mechanisms (hereafter: Framework Guideline on CAM) - have been debating various approaches on how cross border capacity should be allocated. According to the Framework Guidelines on CAM, *explicit* auctions should be the default mechanism for allocating firm and interruptible capacity services for each time interval. However, this Framework Guideline also indicates that it does not prevent Transmission System Operators (hereafter: TSOs) from already implementing day-ahead implicit allocation.

While implicit allocation is a proven concept and an established mechanism in the electricity markets, there is limited experience to date with implicit allocation in gas markets.<sup>1</sup> As such, the costs and benefits of implicit allocation in gas markets have not yet been proven. Accordingly, in its Gas Target model documents CEER has recommended that NRAs shall consider whether measures, such as implicit auctions, would improve the efficiency in the use of interconnection capacity. Also, CEER recommends that Member States, TSOs and market participants should cooperate to conduct pilot projects on implicit allocation between at least two entry-exit zones in different Member States.

### 1.2 Reason for drafting this position paper

In discussions on the Gas Target Model no clear “yes or no” – at least for NRAs within the Gas Regional Initiative North West (hereafter: NRAs within GRI NW) – came forward on the question whether implicit allocation should be introduced in the gas market. At the same time, GRI NW – of all three gas regions – is probably the most advanced region in terms of gas market development and therefore most suitable for a possible implicit allocation pilot. For this reason, NRAs within GRI NW decided to work on a joint position paper which explores the feasibility of introducing implicit allocation in the gas market. This position paper intends – given the fact that implicit allocation requires cooperation between stakeholders and will impact the “rules of the game” in the gas market – to facilitate a regional dialogue. To ensure an open dialogue, the position paper will be up for public consultation and a workshop will be organized so as to provide stakeholders the possibility to share their views.

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<sup>1</sup> In July 2011, the French TSO GRT Gaz has a launched pilot project on market coupling running between the market zones PEG Nord and PEG Sud. Initial feedback was made available in autumn 2011 and showed that liquidity had increased on the PEGs and price convergence had improved since the launch of the pilot project in July 2011.

In the view of NRAs within GRI NW, two important questions need to be answered to determine whether it is feasible to introduce implicit allocation in the gas market:

- ❑ To what extent is there added value, e.g. in terms of allocating cross-border capacity more efficiently and/or increasing liquidity, in introducing implicit allocation in the (North West) European market given the existing proposals to improve the gas market such as CAM and CMP?
- ❑ If there is added value in introducing implicit allocation, how should the implicit allocation mechanism – given the characteristics of the gas market – be designed to suit the (North West) European gas market?

### **1.3 Scope of the position paper**

In this position paper<sup>2</sup>, NRAs within GRI NW will explain whether they see added value (and under what conditions) to introduce implicit allocation in the gas market and – should this be the case – when this coupling mechanism should be introduced. Given the fact that the design of the mechanism is only relevant if there is an added value (and practical experiences seems to be needed to determine the design), this position paper will not answer the question what the implicit allocation mechanism should look like in details. However, the position paper will present the relevant design issues.

Responses received from the consultation will serve as input to NRAs within GRI NW to finalize the position paper. Next, this position paper will serve as a point of departure – provided there is an added value to introduce implicit allocation – for a pilot project to explore the design of the implicit allocation mechanism to suit the (North West) European gas market.

### **1.4 Next steps**

1. This draft position paper is up for public consultation from Monday 1 October 2012 until Friday 2 November 2012 to (GRI NW) stakeholders;
2. On Friday 19 October 2012, a GRI NW workshop will take place in The Hague;
3. Based upon the responses received in writing and at the workshop, NRAs within GRI NW will revise – if necessary – the position paper and present the final version during the Stakeholder Group meeting of GRI NW on Friday 23 November 2012 in Copenhagen, Denmark;
4. The intention is to present this position paper during the March 2013 Madrid Forum.

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<sup>2</sup> In 2011, the Dutch regulator NMa commissioned a study by the Brattle Group (“Gas market integration via implicit allocation: feasibility from the North-West European gas market perspective”) to analyze the feasibility of introducing implicit allocation as a means to integrate the gas markets in North West Europe. This report can be found on the xxx website and has been used as a starting point for discussion by NRAs in the drafting of this position paper.

## **2 Issues associated with the allocation and use of cross-border capacity**

### ***2.1 Vision of NRAs within GRI NW on the allocation of cross-border capacity***

Non discriminatory and transparent access to cross-border transport capacity – given the fact that gas often comes from far away – is in the view of NRAs within GRI NW essential for a proper functioning of the gas market. Effective Capacity Allocation Mechanisms therefore need to be in place to ensure that market participants can access cross-border capacity in order to serve their costumers thereby facilitating gas transport and gas trading across Europe. NRAs within GRI NW consider that network users should only book cross-border capacity that is needed, ensuring that contractual congestion is avoided and the network is efficiently used. Also, effective Congestion Management Procedures should be in place that will bring any unused cross-border capacity “back to the market” if network users have booked more cross-border capacity than needed. This could be done by offering unused cross-border capacity on the primary market (via an UIOLI mechanism) or by offering network users the opportunity to re-sell their unused contracted cross-border capacity on the secondary market.

Effective capacity allocation and congestion management also gives opportunities for network users to arbitrage providing that the benefits of the trade will be higher than the costs. From an economic point of view, NRAs within GRI NW consider that gas should flow from regions with low gas prices to regions with high gas prices. As a result of the process of arbitrage the liquidity of (adjacent) gas hubs may increase and this in turn boosts competition in the gas market.

### ***2.2 Existing issues related to the allocation of cross-border capacity***

In most countries within (at least) the North West European gas market, network users usually book cross-border capacity on a long term basis. Cross-border capacity is in most cases booked upon the expected peak capacity (the amount of cross-border capacity needed to deliver gas to customers during the hour with the highest demand during a gas year) and not through profiled bookings. As a result of booking cross-border capacity based upon peak capacity, network users possess on average more cross-border capacity than is needed to serve usual customer demand. If all technical capacity is sold out but not fully utilised – which is the case for several Interconnection Points within (at least) the North West European gas market – contractual congestion occurs. Given the fact that network users often book long term contracts, contractual congestion might occur for a long period of time.

Although a TSO is obliged (following article 16 of the Gas Regulation<sup>3</sup>), in the event of contractual congestion, to offer unused cross-border capacity on the primary market, this capacity – if not renominated by the original holder of the cross-border capacity – is only released on a firm basis a few hours before the actual gas hour<sup>4</sup> As such, a network user is unlikely to commit to a cross-border trade because of the uncertainty whether it has obtained firm cross-border capacity. Also, network users are hesitant to re-sell cross-border capacity, because they want to be able to make adjustment – via renominations – in the flow if necessary to balance their portfolio. Even if network users wish to re-sell they find it difficult to do so: most secondary markets do not function properly (or do not exist).

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<sup>3</sup> Regulation (EC) 715/2009 of the European Parliament and of the council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005.

<sup>4</sup> These release times differ per country, e.g. in the Netherlands the release time is two hours before the actual gas hour.

### 2.3 Effects of existing issues on the functioning of the gas market

As long as booked, but non nominated, cross-border capacity is not effectively released back to the market (in case of contractual congestion), network users that want to serve other customers cannot access the market because cross-border capacity is not available. Contractual congestion may also lead to unnecessary investments, because existing physical infrastructure is still available and the risk exists that new infrastructure will be under utilised. In terms of arbitrage, any potential trades – providing that the benefits of such a trade are higher than the costs – between two (virtual) gas hubs might be lost if network users want to make that trade but cannot obtain cross-border capacity. This in turn will have an effect on the liquidity of both (virtual) gas hubs and on competition in the gas market.

#### Boxed example 1: Price differences between hubs

To illustrate the welfare benefits that are related to not using cross-border capacity: the Brattle Group has concluded that in the period 2009 – 2011 price differences for day ahead existed between the Dutch gas hub TTF and neighbouring gas hubs Zeebrugge (Belgium), NCG and Gaspool (both Germany) while cross-border capacity was available. Although the existing price differences were generally small (about 1-2% for 75% of the time that these differences existed), Brattle has estimated that there was always an opportunity to arbitrage. If all price differences would have been arbitrated, the estimated welfare benefits would vary in the range of €15 to €25 million per year for the Dutch borders (not taking into account the Dutch-UK border). Linked to the above, gas sometimes flows from a high price area to a low price areas based on day ahead prices. This is for example the case for the BBL pipeline: the Dutch TSO concluded that this was the case for 83 out of 254 days (33%) in 2011 (Transport Insight 2012).

*Please note that Brattle was only asked to make an indication of the expected benefits in order to get a sense how much the estimated welfare benefits would be. As such, the analysis is not intended to precisely calculate the expected benefits (which*

Although NRAs within GRI NW consider that cross-border capacity is to be used in an efficient manner, there are several reasons that may explain why booked cross-border capacity is not used:

1. *Cross-border capacity reserved for other purposes:* Network users who have cross-border capacity might want to make a cross-border trade, but cannot do so because cross-border capacity is reserved for fulfilling contractual obligations (for example gas storages across the border);
2. *Benefits of trade are lower than costs:* Network users who have cross-border capacity face transaction costs, which include having the resources to monitor markets and trade upon price differences. These costs might not outweigh the benefits of making a cross-border trade and network users might feel that the option value of capacity is greater for other purposes than arbitrage;
3. *Various trade unfriendly market arrangements:* these arrangements could be the absence of stable and robust price signals, dominance of long term contracts, balancing rules etc.;
4. *Opportunity costs:* a network user might be hesitant to sell cross-border capacity, because the price it has to pay if it turns out that he needs more cross-border capacity could be higher than the price paid when the original cross-border capacity was booked.

Q1: To what extent do stakeholders agree with NRAs analysis on the current issues related to the allocation of cross-border capacity and its effects on the gas market?

Q2: To what extent do stakeholders agree with the mentioned reasons for not using booked cross-border capacity (and what other possible reasons do stakeholders see)?

### 3 European measures to solve current allocation issues

#### 3.1 (Reasoning for introduction of) CAM and CMP measures

In 2007, the European Commission performed a sector inquiry that concluded – and these conclusions were later confirmed by other studies – that several bottlenecks related to the allocation of cross-border capacity and Congestion Management Procedures hinder the further development of an internal gas market. With regard to allocation of cross-border capacity, the European Commission concluded that cross-border capacity is often allocated for a long period of time, while the used allocation mechanism (usually the First-Come-First-Served principle) can often be qualified as non market based. As for Congestion Management Procedures, the inquiry showed that secondary markets in general do not function well, while the current UIOLI mechanism is not effective. These problems have served as a basis for the European Commission to introduce the third package for an internal EU gas and electricity market (hereafter: the third package).

In the third package, several measures are introduced that are related to the allocation of cross-border capacity and Congestion Management Procedures. These measures have the objective – among other things – to facilitate cross-border trade and reduce transaction costs. In the table below, these CAM and CMP measures and its effects (according to NRAs within GRI NW) are explained:

	MEASURE	DESCRIPTION	EFFECTS
CAM	Bundling of cross-border capacity	Entry and exit cross-border capacity is only sold as a bundled product.	<input type="checkbox"/> Reduction of transaction costs; <input type="checkbox"/> More efficient use cross-border capacity.
	Auctioning	Capacity products (yearly, quarterly, monthly, daily and within day) are auctioned in different timeframes.	<input type="checkbox"/> Network users will book on a profiled basis <input type="checkbox"/> Day ahead cross-border capacity will increase if any non-auctioned short term cross-border capacity will roll over to day ahead auctions.
CMP	Oversubscription & buy back	TSOs shall make available an extra amount of firm cross-border capacity exceeding the technical capacity and – if necessary to maintain system integrity – shall apply a market based buy back procedure.	<input type="checkbox"/> Increase of available (day-ahead) cross-border capacity; <input type="checkbox"/> Reduction of contractual congestion.
	Surrender of Cross-border capacity	TSOs shall accept any surrender of firm cross-border capacity which is contracted by a network user for a duration of one month or longer	<input type="checkbox"/> Increase of available (day-ahead) cross-border capacity; <input type="checkbox"/> Reduction of contractual congestion.
	Limitation of renomination rights	Under certain conditions, rules come into place that limit renomination rights of a network user (a certain amount of cross-border capacity can only be re-nominated on an interruptible basis	<input type="checkbox"/> Increase of available (day-ahead) cross-border capacity; <input type="checkbox"/> Reduction of contractual congestion; <input type="checkbox"/> More efficient use cross-border capacity.
	Long term UIOLI	Under certain conditions a TSO shall withdraw contracted cross-border capacity (partially or completely) for a given period of time.	<input type="checkbox"/> Increase of available long term cross-border capacity; <input type="checkbox"/> Reduction of contractual congestion;

			<input type="checkbox"/> More efficient use cross-border capacity.
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**3.2 Expected effects of the introduction of CAM and CMP on the short term market**

As can be seen in the table above, the proposed CAM measures – through the auction design – ensure that all network users can book cross-border capacity in a non-discriminatory and market based way. Due to the reservation of a minimum amount for short term cross-border capacity and several CMP measures – such as short term UIOLI –, cross-border capacity for the day-ahead and within day timeframe on a firm basis is likely to be available. NRAs within GRI NW consider that access to day ahead and especially within day cross-border capacity – once CAM and CMP measures are implemented – will become more important to network users for at least two reasons:

- In boxed example 1, it was already shown that usually price differences exist between two gas hubs. NRAs within GRI NW consider that the introduction of bundled products will diminish transaction costs and this could result – if the benefits of making a cross-border trade are significant enough – in more cross-border trades (and thus efficient use of cross-border capacity);
- In boxed example 2, it is explained that NRAs within GRI NW consider that network users will make more use of short term cross-border capacity once the share of renewables in the European energy fuel mix will grow:

Boxed example 2: Renewables and the use of gas fired plants as back-up

The share of renewables in the European fuel mix is expected to grow significantly in the upcoming years. Due to their dependence on weather conditions, renewables such as solar and wind have an intermittent character and a “back up fuel” is therefore needed to balance the electricity grid. Because wind and sun power are subject to forecast errors and forecast quality only improves significantly a few hours before real time, the back up fuel should be able to quickly ramp up and down. Given its characteristics, gas fired power plants – compared to coal fired and nuclear power plants – are most suitable for this task.

As the share of renewables will increase, the impact – in terms of balancing the gas transmission grid – will become more significant. First of all, because of unexpected changes in weather conditions, decisions about ramping up or down gas fired plants to balance electricity portfolio’s are likely to be made only a few hours before the delivery hour. As a result, the producer has only limited time to buy gas in adjacent markets. If the producer can timely buy commodity, he will be able to balance both his electricity and gas portfolio. However, in many countries the within day market is not very liquid and it seems therefore difficult for a producer to timely buy gas. As an alternative, gas can be bought day ahead, but given the unexpected changes in weather forecasts, a producer is likely to either be short or long in his gas portfolio. Regarding cross-border capacity, the producer has no choice but to buy the cross-border capacity day ahead (at the moment it is difficult to buy cross-border capacity within day). As a result, the producer might either buy too much or too little cross-border capacity. Of course, it is possible to arrange flexibility means on a long term basis, for example a gas storage or a contract with a supplier of flexibility, but this has its own disadvantages. It might for example be too costly to have those means standing by when actually they are not needed most of the time.



### 3.3 Issues that come into play due to the introduction of CAM and CMP measures

It is expected that network users will use the day ahead and within day cross-border capacity made available by CAM and CMP for price arbitrage between hubs and as a way to cope with the intermittent character of renewables. However this short term trading and capacity booking introduces its own problems: the coordination problem and transaction costs, which are elaborated below. In the next chapter, it is explained how implicit allocation could solve those issues.

#### *Coordination problem*

In the view of NRAs within GRI NW the coordination problem can be explained as follows:

With an explicit auction to perform a cross border trade shippers must either a) be 'short' on cross border capacity, for example buying gas on one side of the border and selling on the other side before it has obtained cross border capacity or b) go 'long' on capacity, by obtaining cross-border capacity before the trader has carried out any trades that will use the cross-border capacity.

- a. When a network user is short, it might see a potentially advantageous cross-border trade, but be unsure whether to commit to the trade because he/she has not yet secured cross border capacity. These coordination issues could have a chilling effect on market liquidity, because network users do not undertake trades that it would be advantageous to do. Traders might not project their bids and offers into neighbouring markets in an efficient way.
- b. In case a network user is long, risk-averse network users might discount what they are prepared to pay for cross-border capacity in advance of identifying any trades. Alternatively, the trader may accidentally pay more for the cross-border capacity than it turns out to be worth based on differences in the cross-border value of gas. Either outcome does not give an accurate reflection of the true value of cross-border capacity.

The coordination problem becomes in particular relevant when a network user has to obtain both cross-border capacity and commodity in a very limited period of time (only one or two hours before the actual gas hour). This is e.g. likely to occur when a network user is using gas fired plants as a back up fuel if a significant amount of electricity is produced through the use of renewables.

#### *Transaction costs*

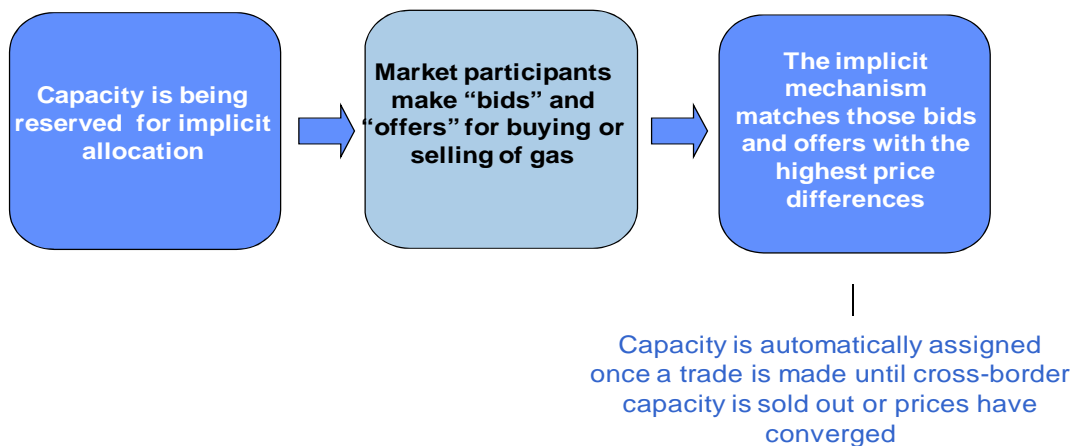
Apart from the coordination problem, there are also certain transaction costs associated with cross border trading. For example, a network user has to monitor the prices in adjacent markets and trade upon cross-border price differences. Network users may consider that hiring traders might cost more than the potential benefits arbitrage delivers. Transaction costs might be higher for within day markets than for day ahead markets, since liquidity is generally lower meaning it is more difficult to find a matching trade and lead times (due to unpredictability of weather conditions) are shorter.

- Q3: Do stakeholders agree that there will be a shift to short term trading and capacity booking due to the introduction of CAM and CMP, price arbitrage and the need to cope with the intermittent character of renewables?
- Q4: Do stakeholders agree that the above effect increases the coordination problem and transactions costs?
- Q5: Do stakeholders think that the coordination problem and transaction costs are barriers to cross-border trade?

## 4 Added value of Implicit Allocation

### 4.1 The Principle of implicit allocation

An implicit allocation mechanism will allocate cross-border capacity<sup>5</sup> on the basis of the bids and offers to buy and sell gas on either side of the border. That is, the TSO or Market Operator (MO) would see a bid to buy gas on one side of the border, and a bid to sell gas on the other side. The MO would then allocate cross-border capacity which would enable the maximum increase in welfare. More specifically this involves allowing the buyers with the highest willingness to trade with the sellers that will accept the lowest price. The implicit allocation approach is explained in the picture below:



### 4.2 How does implicit allocation solve issues related to the shift to short term trading

#### *Coordination problem and transaction costs related to arbitrage in case price differences exist*

When a network user sees an interesting offer of commodity in the adjacent gas market, it can place a bid. If the price difference is sufficient the implicit allocation mechanism will allocate cross-border capacity to the trade. Because a network user is thus assigned cross-border capacity by the allocation mechanism, it does not need to worry about buying cross-border capacity first and then doing the trade or vice versa. As such, a network users can make a cross-border trade within a very limited period of time and there is no risk of either being “long” or “short” on cross-border capacity. In that sense the coordination problem is solved. In addition, transaction costs are reduced, as – among other reasons – network users do not need to look for the best commodity prices in the adjacent market, nor do they have to react on an offer in the adjacent market. Their bid or offer is automatically linked by the implicit allocation mechanism to a profitable bid or offer across the border.

#### *Coordination problem in relation to the increase of renewables*

As already explained in chapter 2 (due to unexpected changes in weather conditions) decisions about ramping up or down gas fired plants to balance electricity portfolio's are likely to be made only a few

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<sup>5</sup> Note that capacity should be made available to the implicit allocation mechanism. The mechanism will work until all available capacity is implicitly allocated.

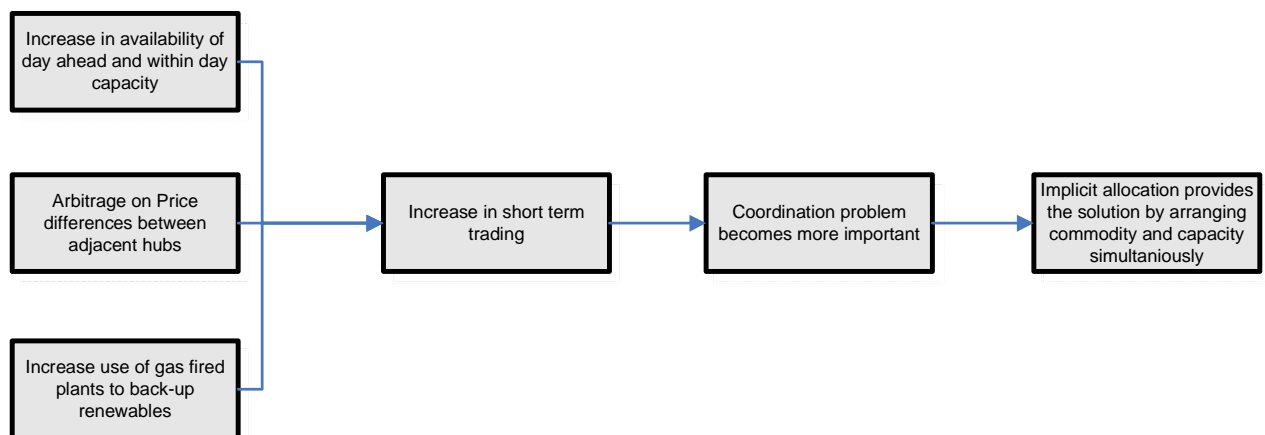
hours before the delivery hour (thus: within the within day timeframe). As a producer has only limited time to buy commodity in adjacent markets and – if needed – also to buy capacity, they are faced with a coordination problem.

An implicit allocation mechanism could help producers in arbitraging between the electricity balancing and gas balancing market. If a producer needs gas for its gas fired plant to react on an electricity imbalance, through implicit allocation it could automatically match its bid to an offer at the other side of the border and arrange cross-border capacity, thus automatically arranging cross-border capacity and commodity in a very short timeframe. A network user does not have to buy cross-border capacity day ahead and risking to either buy too much or too little cross-border capacity.

*Increase in liquidity*

Implicit allocation will increase liquidity in markets, simply because of the fact that trades which otherwise would not be done, will be effected by the implicit allocation mechanism<sup>6</sup>. Especially for within day markets gains in liquidity are expected when commodity (for gas fired plants) can be easily bought across the border.

The figure below gives an overview of the arguments used to explain why implicit allocation has added value when short term trading increases.



Q6: To what extent do stakeholders consider that implicit allocation will solve the coordination problem and reduce transaction costs?

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<sup>6</sup> A good example of this can be found in the French market where liquidity increased between PEG Nord and Peg Sud due to the introduction of implicit allocation.

## 5 Considerations on the introduction of implicit allocation

In the previous chapter, it was concluded that the introduction of implicit allocation could help solve the coordination problem (and reduce transaction costs) that exists if a network user a) wants to make a cross-border trade in case price differences exist and b) buy cross-border capacity and commodity in a very limited time period (e.g. in case of ramping up a gas fired plant that serves as back-up fuel for renewables). As such, NRAs within GRI NW consider that the introduction of implicit allocation is not a means to itself, but can contribute to solving a number of issues that are related to the allocation of cross-border capacity in the gas market. In this chapter, it is explained **when** (in terms of timing and conditions) implicit allocation should be introduced in the gas market and what important characteristics of the gas market should be taken into account when defining the mechanism.

### 5.1 *When should implicit allocation be introduced*

#### *Introducing implicit allocation to solve issues related to arbitrage in case of price differences*

The introduction of implicit allocation will have a positive effect on liquidity and can lead to price convergence. However, it can be expected that the introduction of CAM and CMP measures will also ensure that liquidity will increase and that price convergence will take place. It can also be expected that several requirements in the network code for CAM – such as bundling of capacity– could reduce transaction costs, which in turn could result in network users executing a cross-border trade that they now do not make. As a consequence, it could be expected that price differentials (the spread between two markets) will also (as a consequence of less transaction costs and thus more trades) be limited.

At this point in time – as the CAM and CMP measures are not yet implemented – it is difficult to predict to what extent the introduction of these measures will lead to lower price differentials between hubs and thus whether there would still be an added value for the introduction of implicit allocation.<sup>7</sup> NRAs within GRI NW are therefore of the opinion that the choice to implement implicit allocation – if introduced for arbitrage in case of price differences – is to be made once the CAM and CMP measures have been introduced and the effects of these measures are known.

#### *Introduction of implicit allocation to solve issues related to increase in renewables*

As already explained, gas fired plants will serve as back up fuel for renewables and decisions about ramping up (or down) gas fired plants, due to unexpected changes in weather conditions, are likely to be made only a few hours before the delivery hour. As network users need to buy cross-border capacity and commodity in the adjacent gas market in a very limited period of time, network users will face a coordination problem. Given the fact that this coordination problem is expected only to increase in the future (as the share of renewables will increase), NRAs within GRI NW are of the opinion that there is an added value (based upon a physical need) to introduce implicit allocation to solve the coordination problem.

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<sup>7</sup> An important aspect in this decision is the costs that are related to the actual implementation of implicit allocation in the gas market. Although these costs are not known, it is expected that these will be lower than for electricity, as the implicit allocation for gas is technically more simple. For example existing gas exchanges are used for the bids and offers and no complicated algorithms are needed to match the bids and offers.

## 5.2 Gas characteristics that need to be into account when introducing implicit allocation

### *Introduction of implicit allocation should not unnecessarily disturb business as usual*

When implicit allocation was introduced in the electricity market, there was a clear need to do so because network users had to commit to flows in the morning, while the prices in each market zone became known in the afternoon. Given the fact that no opportunity existed to turn flows around, flows could go in the wrong direction (that is: away from the market with the highest prices). In the gas market, trading is continuous and through renomination rights network users have the possibility to change flows. As such, this problem is less severe in the gas market. At the same time, cross border gas flows are much larger and represent significant larger values than cross border electricity flows. These two examples are relevant characteristics of the gas market and NRAs within GRI NW consider that such characteristics need to be kept in mind when introducing implicit allocation in the gas market. Below, (other) relevant characteristics that NRAs within GRI NW consider to be important are presented:

- ❑ *Continuous trading and the ability to renominate:* Gas trading is usually continuous and balancing periods are more flexible than in power markets. Typically network users only need to balance their inputs and outputs of gas over a 24 hour period. Gate closures as in electricity are thus generally not needed and renominations are allowed with lead times of two hours or less. Renomination is an important instrument for shippers to adjust their gas flows to demand changes during the gas day.
- ❑ *Cross-border flows and the security of supply:* Most Member States have little or no indigenous gas production, and so are almost entirely dependent upon gas imports. This means that import pipelines may be sized so that they are rarely or never congested, especially if gas storage within the country is impractical or expensive. Although contractual congestion frequently occurs at Interconnection Points, it is expected that this will no longer be the case once cross-border capacity is auctioned in an explicit allocation: network users will not likely book more cross-border capacity than needed if the auction price is rising. Also, if a market coupling mechanism in analogy of market coupling at electricity would be applied for gas, congestion will rarely happen.
- ❑ *Long-term investment:* Investments in the gas industry tend to be long-term and irreversible (regardless whether an explicit or implicit allocation mechanism is in place). This means that gas infrastructure projects are rarely built unless either the regulator ensures that the TSO will be allowed to recover the costs from customers in the TSOs designated monopoly area (usually a country) or the project is underwritten by long-term contracts with customers.

Q7:	To what extent do stakeholders agree with the NRA's analysis on the question when implicit allocation should be introduced (both for arbitrage in case of price differences and renewables)?
Q8:	To what extent do stakeholders agree with the NRA's analysis of the relevant characteristics in the gas market?
Q9:	To what extent do stakeholders believe that the costs for (implementing) implicit allocation would be much lower than the benefits?

## 6 Design Issues related to the implicit allocation mechanism

As already explained in the first chapter, NRAs within GRI NW will not answer the question what the implicit allocation mechanism should look like in details. However, exploring the design issues could give an early indication of the feasibility of the introduction of implicit allocation in the gas market. NRAs within GRI NW would like to understand stakeholders' opinion on the design issues that should (at least) be taken into consideration when designing the implicit allocation mechanism. As such, the relevant design issues that NRAs within GRI NW consider to be relevant are presented below.

### 6.1 *Pre-conditions for introducing implicit allocation*

- ❑ *Available cross-border capacity:* An obvious but fundamental step in the process of implementing an implicit allocation mechanism will be to make firm cross-border capacity available for allocation. With regard to this pre-condition, NRAs within GRI NW consider that the recently adopted Congestion Management Procedures (CMP guidelines) play an important role in this matter. For example, through the limitation of renomination rights, an amount of firm day ahead cross-border capacity will be freed up every day that can be used for the implicit allocation mechanism. Next to that, through the oversubscription & buy back mechanism, TSOs can also ensure that short term cross-border capacity is available for the implicit allocation mechanism. As such, there will always be cross-border capacity available for the implicit allocation mechanism.
- ❑ *Bundling of cross-border capacity:* An implicit allocation mechanism can only allocate cross-border capacity between two markets. It cannot distinguish between alternative pairs of physical entry and exit points between two markets. Therefore NRAs within GRI NW consider the creation of virtual interconnection points a desirable feature for the implementation of implicit allocation, and should simplify the mechanism.
- ❑ *Product Compatibility:* For implicit allocation to work smoothly, NRAs within GRI NW consider that gas products should be easily tradable across borders. For example, the terms and conditions of the contracts on either side of the border should be sufficiently harmonised that e.g. a day-ahead gas product in country A is in essence the same as a day-ahead gas product in country B. Otherwise, differences in terms and conditions would introduce additional risks to cross-border trading. Gas product specifications are sufficiently harmonised already so that this issue would not be a barrier to the implementation of implicit allocation mechanisms in NWE.
- ❑ *Liquidity:* NRAs within GRI NW consider that allocating cross-border capacity between a liquid and a less liquid or illiquid market could result in some mis-pricing of cross-border capacity at first. This is because the bids and offers in the illiquid market will not represent the true value of gas at any point in time. However, this is also true under any other allocation mechanisms, such as explicit auctions. But implicit allocation will at least help build up trading volumes in the less liquid market, so that the issue is resolved over time. As such, NRAs within GRI NW consider that both markets do not need to be liquid to establish an implicit allocation mechanism.

### 6.2 *Important design issues*

*Time period*

As described in the previous chapter, network users that use gas fired plants as a back up fuel have to obtain cross-border capacity and commodity in a very limited period of time (only one or two hours before the actual gas hour). From this point of view, it could be argued that the implicit allocation mechanism should focus on short term capacity products. Next to that, if the allocation mechanism is used for arbitrage, the value of the gas, from an economic point of view, is determined by the value of gas when it is used. It is most efficient to allocate cross border capacity based on the most accurate estimate of its value, which is the estimate closest to the flow date. As such, the main choices when determining the time period seem to be between day ahead and/or within day-ahead.

*Dual system or only implicit allocation*

An important design question is to what extent an implicit allocation should serve as the sole allocation mechanism in the gas market (for the cross-border capacity that is offered through this mechanism). If an implicit allocation mechanism is introduced to solve issues related to arbitrage in case of price differences, the decision to solely allocate cross-border capacity via an implicit allocation mechanism will depend on the belief that the implicit mechanism has an overview of (almost) all available bids and offers in the market. If this is not the case, there are less bids and offers to choose from when matching bids and offers, (likely) resulting in less welfare benefits.

If this situation would occur, a dual system could be in place, meaning that capacity can be allocated via an implicit allocation mechanism according to the bids and offers in the commodity market, but also allow traders – providing that sufficient safeguards are in place – to make direct offers for a given amount of cross-border capacity in a ‘rolling explicit auction’.<sup>8</sup> Allowing direct offers for cross-border capacity could help raise confidence in the early stages of implicit allocation. Once confidence in the implicit allocation mechanism is established (and/or (almost) all available bids and offers in the market are offered in the implicit allocation through a grow-in effect), the explicit auction mechanism could be phased out to make way for all cross-border capacity to be allocated by the implicit mechanism.

*Reserve price and rent allocation*

Contrary to electricity (where cross-border capacity is free of charge), network users in (almost) all countries currently pay an entry and (or) exit tariff when booking cross-border capacity in gas. Although in an implicit allocation mechanism network users do not book cross-border capacity, the costs that a TSO incurs that are related to cross-border capacity still need to be recovered (as is the case in explicit allocation). NRAs within GRI NW consider it an important question what entry and- or exit tariff a TSO is able to charge to recover these costs in an implicit allocation mechanism. The issue of cost recovery (and thus what entry- and/or exit tariff a TSO will charge) is currently being discussed within the Framework Guideline for harmonised tariff structures for gas. NRAs within GRI NW consider that the issue of cost recovery in implicit allocation is no different from explicit allocation. Given the fact that the Framework Guideline for harmonised tariff structures for gas will state ACERs view on cost recovery, NRAs within GRI NW – in this position paper – will not further elaborate on this issue. More specifically, the Framework Guideline will define what regulated tariff (or reserve price) will be in place when allocating short term cross-border capacity. This is also a relevant issue for the implicit

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<sup>8</sup> In the pilot project on market coupling of GRTgaz, it is possible to make explicit offers for capacity at the same time as GRTgaz is allocating capacity using implicit allocation. If a network user signals a higher offer for capacity – outside the implicit allocation mechanism – the capacity will be allocated via explicit allocation to that network user.

allocation mechanism. Because this issue is also currently discussed in the Framework Guideline on harmonised tariff structures for gas, NRAs within GRI NW – in this position paper – will not further elaborate on this issue.<sup>9</sup> This also holds for the issue of how rents should be used.<sup>10</sup>

#### *OTC or the use of an exchange*

The OTC market and the exchange have different characteristics. An important consideration is the fact that the volumes of gas traded OTC are, compared to the exchange, higher. As such, more bids and offers would be available for the implicit allocation of capacity and potentially more economic welfare can be generated. At the same time, trades on the exchange are cleared and the exchange acts as the counter party to both sides of a trade, and guarantees payment to the counterparty if the other counterparty defaults on delivery.

In the OTC market, counterparties arrange their own collateral requirements for deals that are not cleared via an exchange. The entity responsible for running the implicit allocation mechanism is likely to pre-qualify potential market participants in terms of credit risk. This entity would likely also specify a specific form of OTC contract that was acceptable for implicit allocation. These requirements could narrow the set of bids and offers available for implicit allocation. As a final consideration, the process of matching bids and offers could be fully automated by the exchange (as all bids and offers are made through the exchange), while it would be more difficult to automate the implicit allocation process if it was carried out in the OTC market. This is explained because bids and offers can come from multiple broker systems (or by telephone).

#### *Continuous trading or discrete auctions*

Trading in gas markets tends to be continuous, rather than as a series of discrete auctions as in electricity markets. That is, traders will ‘post’ a bid to buy or an offer to sell, and wait an undefined period of time before the bid or offer is accepted. In the gas market, this is possible because some mismatches between supply and demand can be managed by storing gas in the pipeline’s linepack. In gas markets, the TSO can manage the system as long as supply and demand balance more-or-less over the day, and planning can be more flexible. One of the implications of continuous trading is that in gas markets the flow associated with a specific short-term trade will always go from the low price area to the high price area (this however does not mean that the total gas flow goes from a low price area to a high price area). Traders can see what the price of potential trades will be before making a commitment to a trade and a flow. If it became attractive later in the day to flow gas in the opposite direction, traders can trade out their previous commitments and reverse flows because trade is continuous, and they can re-nominate their flows.

- Q10: To what extent do stakeholders agree with the view of NRAs within GRI NW on pre-conditions and design issues?
- Q11: To what extent do stakeholders a) agree that the design issues as presented in this chapter are the most important ones and b) share the considerations of NRAs within GRI NW?

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<sup>9</sup> However, the choice of the reserve price could impact the number of trades made (if the price difference for the commodities is equal or lower than the reserve price trades would decrease) and this would impact an important aim of implicit allocation.

<sup>10</sup> The options discussed are that the rents can be used to lower a) tariffs in subsequent periods or b) physical congestion.