BALANCING RULES ON GRTGAZ'S TRANSMISSION SYSTEM FROM MAY 1ST 2011

Sommaire

1. BACKGROUND

In the first half of 2006, GRTgaz has committed to launch an evolution process of its balancing system towards a market-based model.

The key ideas structuring this system are presented in chapter 3, and the successive evolutions that have shaped the system are detailed in chapter 9.

In order to prepare the full implementation in the year 2013 of the principles defined in the framework guidelines on gas balancing, in accordance with the 715/2009 regulation, GRTgaz has launched within the Concertation Gaz process the definition of a system more based on the market. The principles of this target system are defined in chapter 4.

2. PURPOSE

The purpose of this document is to submit for CRE approval the evolutions to the balancing system which will apply to GRTgaz's transmission system from May 1, 2011. These evolutions have been proposed by GRTgaz in the framework of its target system, whose principles have been approved in the CRE deliberation of September 30, 2010.

The principles governing the evolution of the the balancing system have been debated upon with market actors in January and February 2011, in the framework of the dedicated "Concertation Gaz" working group.

These changes are related to :

- The procedures concerning GRTgaz's interventions on the markets (paragraph 6.2)
- The values of tolerances (paragraph 7.2)
- The values of the maximum cumulative imbalance Mid-Range (paragraph 7.3)
- The settlement price of imbalances (paragraph 7.8)
- The transitory measure related to the evolution of the maximum cumulative imbalance Mid-Range (paragraph 7.9)

3. THE CURRENT BALANCING SYSTEM

Until a definitive target balancing system is defined, GRTgaz's balancing process is governed by the following principles:

1. Shippers on GRTgaz's transmission system are balanced on a daily basis.
2. Each shipper's daily imbalance is calculated after the end of the gas day. It may entail GRTgaz purchasing excess gas or selling gas shortfalls on a market-price basis.
3. GRTgaz uses different tools to cover the system's balancing needs: linepack management, use of gas storage services, use of market mechanisms.
4. The price applied to shippers' imbalances reflects the costs borne by GRTgaz in balancing its transmission system through market mechanisms. This price is calculated on the basis of GRTgaz's day-to-day market transactions on the "Powernext Gas Spot" market.
5. The balancing system is economically neutral for GRTgaz. GRTgaz will not incur financial losses or make profits from the mechanisms used to balance the system. The balancing rules will therefore include a mechanism for returning surpluses or passing on losses to shippers.

4. PRINCIPLES OF A TARGET BALANCING SYSTEM

The target balancing system of GRTgaz is based on the key principles of the current system mentioned above, with the addition of the following principles :

- GRTgaz is responsible for the system's residual balancing at any moment of the day
- The shippers will carry out their own daily balancing, relying on a greater amount of data published by the transmission operator
- The data transmitted by GRTgaz the day before, and within day, will allow the shippers to carry out their renominations, for their own balancing, or to contribute to the balancing of the gas system

The implementation of such a system structured by these principles is based on four major evolutions :

- An improvement in the data provided by GRTgaz to the shippers, in terms of both quality and quantity, reflecting the status of the whole network,

- An improvement in the data provided by GRTgaz to the shippers, in terms of both quality and quantity, allowing shippers to estimate more accurately their own imbalances,
- A stronger incentive for shippers to get balanced every day. The shipper's imbalances should be settled on a daily basis. Consequently, cumulative imbalance accounts and allocation difference accounts will have to be suppressed,
- Interventions of GRTgaz on the market in relation with the forecasted or monitored physical stress of the network, aiming to reduce as much as possible the aforementioned stress.

GRTgaz will use the following tools to manage the network's physical imbalance :

- Buying and selling on the market with new intervention rules giving GRTgaz more room for manœuvre. The evolutions to implement could be the following :
    - Interventions of GRTgaz directly related with the forecasted imbalance levels, and more focused on a within-day timing
    - More limited interventions aiming mainly to allow the emergence of a balancing price providing a sufficient incentive to balance the system

- A flexibility contract with storage operators
- The linepack available to cover intra-day market needs (the linepack does not allow to balance the network on a daily basis)
- If necessary, locational balancing products for geographically identified needs, under specific stress conditions.

The use of these different tools could evolve in the years to come, specifically regarding the maturity level of the market.

5. DATA CURRENTLY DELIVERED TO MARKET ACTORS

Since 2007, GRTgaz has implemented many actions and has committed itself to improve the data published to market actors.
The following data and improvements have been provided :

- Concerning the indicators provided by the regulator, an high quality of service :

- Allocation D+1/M+1 : Continuous improvement of the quality of allocations in the framework of the objectives set up in 2007 , in order to reach in 2010 a >95% conformity rate on average
- High level of quality of data telemetered at the PITD, with a non-conformity rate <10% in 2010

- In April 2010, an increase in the frequency of published intraday data for customers directly connected to the network, to five time a day.
- Setting up of the Key Transportation Figures website, with notably the publication of GRTgaz forecasts for each balancing zone.
- Some informations will also be available on an intraday basis from March 1, 2011 :

  - Agregated consumption forecast of shippers by balancing zone, calculated from their nominations on their delivery pool
  - The balancing status of programmed nominations, agregated at each cycle
  - The linepack level, published every hour, by zone

6. PRINCIPLES OF MARKET MECHANISMS FOR THE BALANCING OF THE NETWORK

6.1. Background

Since April 12, 2007, GRTgaz has covered a limited proportion of its daily system balancing needs by buying or selling gas on a daily basis on the PEGs (gas title transfer points). Until recently, these trades were carried out via the electronic "Balancing GRTgaz" platform operated by Powernext.
Once the Powernext Gas Spot exchange was launched on November 26, 2008, the market players wanted to see a merger between the Balancing platform and the Gas Exchange in order to reduce the number of price references in France, and to concentrate liquidity by reducing the number of trading platforms.

6.2. Rules governing GRTgaz's intervention methods

Every day, GRTgaz performs transmission system scheduling for the next day, followed by successive updates to the current day's schedule. This confirmation process, which works by comparing GRTgaz's consumption forecasts with shippers' nominations, serves to establish the day-to-day status of the transmission system in the South zone and the North Zone (H-gas quality). In each of these balancing zones, if the system is forecast to be "long" (gas surplus), GRTgaz responds by selling on the

balancing market. Conversely, if the system is forecast to be "short" (gas shortfall), GRTgaz responds by buying on the balancing market.

6.2.1. Procedures for market intervention

Today, GRTgaz conducts its market interventions during 2 windows :

- one on the Day-Ahead product (for delivery on the next working day) or Week-End product (for delivery on the week-end of 2 days or more), and
- the other on a Within-Day product (for delivery the same day).

GRTgaz intervenes every day of the Powernext Gas Spot market is open.

- Between 3:45 p.m. and 4 p.m. for Within-Day (WD) producent;
- Between 4:30 p.m. and 4:45 p.m. for Day-Ahead (DA) and Week-End (WE) producent.

New intervention windows could be created in the future, after a consultation of market actors.

During these interventions, random timetables will be used to execute GRTgaz's buy or sell orders. GRTgaz will conduct interventions several times during each intervention window to cover its gas needs for balancing.

6.2.2. Daily quantity of gas purchased or sold by GRTgaz:

The gas amount that GRTgaz can buy or sell is capped to a maximum intervention threshold, by balancing zone and by delivery deadline. These maximum amounts can be modified when new intervention windows will be implemented, following discussions with market actors.

	Intervention volumes during each session :	
Balancing zone	Day Ahead & Week End Session	Within Day Session(s)
North Zone	from 0 to 2000 MWh/j	from 0 to 5750 MWh/j
South Zone	from 0 to 1500 MWh/j	from 0 to 4000 MWh/j

GRTgaz will have the possibility to double the value of the maximum intervention volume during a session, for a given balancing zone, under particular network stress conditions.

Information on GRTgaz's needs, i.e. its type of intervention (purchase or sale) and the quantity on which transactions actually took place, will only be published retrospectively, in order to avoid any risk of price manipulation.

6.2.3. Intervention restrictions

The shippers wanted to set a framework of restrictions on GRTgaz's intervention scope, which was felt to be necessary given the automatic nature of those interventions and the relatively low current level of liquidity on certain products. These restrictions may be changed as feedback comes in on Gas Exchange interventions.

For Day-Ahead and Week-End interventions, GRTgaz's buy (respectively sell) bids must not exceed by more than 15 €cent/MWh in the North, and 25 €cent/MWh in the South, the best bid present in the sell (respectively buy) order book.

On the Within-Day market, on the other hand, no spread restriction will be set between the best buy and sell prices.

The price of interventions conducted by GRTgaz on a given D day on WD contracts is restricted by the following limits since February X 2011 :

- the buy price is at most equal to X times the lastest reference of day-ahead "End-of-Day" (EOD) price published by Powernext, X being a decimal value superior to 1 ;
- the sell price is at least equal to Y times the latest day-ahead "End-of-Day" (EOD) price published by Powernext, Y being a decimal value between 0 and 1;

The X and Y values are proposed by GRTgaz to the CRE and are not communicated to the market. These values can be modified as many times as necessary without notice.

Given anonymity and the pre-existing market rules on the Gas Exchange, no market share restriction applies. However, two rules exist to maximise the number of participants in the price discussion:

- For so-called "iceberg" orders, i.e. bids for which part of the volume is visible and the rest is hidden, the intervention will only apply to the visible part, and will then move to the subsequent best bid.
- The intervention will only include "All-or-Nothing" (indivisible) bids if the volume of those bids is less than or equal to the quantity still to be executed, after execution of any best limit orders.

In addition, the shippers did not want any restriction on order-book volumes or orders, considering that these indicators are irrelevant to deciding whether or not to carry out an intervention.

6.2.4. Summary

	DA / WE intervention (D-1)	WD (D) intervention
Requirement for each product and each timeframe	PEG North: 0 to 2,750 MWh/d PEG South: 0 to 1,750 MWh/d Not published in advance	
Intervention time (Paris time, GMT +1)	Arbitrary time between 4:30 p.m. and 4:45 p.m.	Arbitrary time between 3:45 p.m. and 4:00 p.m.
Intervention strategy	GRTgaz only places orders only in the form of order books ("price taker"), it does not act as a price maker. The volume is executed in one go, by selecting the best successive limit orders. If the need is not fully covered, 3 new timetables are set to carry out up to 3 additional interventions in the remaining time.	
Price constraints*	Ask: X x EOD reference Bid: Y x EOD reference	
Bid-ask spread restrictions	PEG North: 15 €cent/MWh PEG South: 25 €cent/MWh	None
Order book volume restrictions / Order number restrictions	None	
Market share restrictions	None	
Backup price (only if the volume handled by GRTgaz = 0)	Powernext Gas Spot DA End-Of-Day price reference	Powernext Gas Spot WD End-Of-Day price reference**

**The backup price is the Powernext Gas Spot End-Of-Day price for the Within-Day deadline set by Powernext provided that a Price Committee is not needed. In this case, the reference price P1 used will only include a Day-Ahead reference.

6.2.5. Market trading strategy:

The strategy for buying/selling on the exchange is determined with market players. It is executed by an automatic system, under the following rules:

Automatic selection of the best limit order

Every intervention in the window is designed to ensure that the algorithm always selects the best prices. In certain cases (which could arise with "all or nothing" orders), this could result in a failure to source the full requirement, despite the presence of sufficient volumes in the order book. This rule is applied to ensure that small orders are selected in their entirety when they are the most competitive, which might not happen if volumes were optimised. This mechanism enables all shippers, even those with low flexibility, to contribute to the formation of a balancing price.

Handling of "Iceberg" orders (hidden quantity)

Hidden quantities are not included for a given intervention, in order to encourage participants to reveal their volumes. Only visible quantities are executed for a given intervention deadline. This is consistent with the fact that the intervention is deemed to be instantaneous.

Handling of "All-or-Nothing" orders

In the event that one (or more) excessively large "All-or-Nothing" orders is (are) at the top limit, the algorithm will automatically select the best subsequent limit orders.

In the case of an "All-or-Nothing" order which is not at the best limit, the intervention stops when the proposed "all-or-nothing" quantity is precisely greater than the residual quantity of the need (i.e. the quantity of the need not covered by the best limit orders, nor by a previous intervention on the contract in question).

6.2.6. Specific cases: week-ends and public holidays

As a general rule, GRTgaz intervenes in the market every day the Powernext Gas Spot market is open, as listed in the document "Trading Timetable" available on the Powernext website.

In certain conditions, it will not be possible to determine GRTgaz's requirement using the current method for assessing Day-Ahead /Within day need, partly based on shippers' nominations, which are only available at 4 p.m. on day D-1:

- Determination on the Friday (or the last working day before the week-end) of the Day-Ahead requirement for the Monday (or for the next working day after the week-end) ;
- Determination of the Day-Ahead requirement for the next day in the event that Powernext should decide to close the market early, for example on Christmas Eve.

6.2.7. Publication

Information on transactions that resulted in a delivery on a given day D is posted on working day D + 1 on GRTgaz's public website in the "Key Transmission Figures" section: http://www.grtgaz.com/module-chiffres/index.php

- Daily balancing prices

- GRTgaz's requirements (volume and type [purchase/sale])
- The volumes of transactions and price used in each component of the daily balancing price.
- Agregation of buy/sell volumes at the P1 and P2 prices

6.3. Monitoring of the activity

Every month, GRTgaz will provide CRE with a report on balancing activities. There will be a particular focus on:

- explanations of cases where the requirement communicated to Powernext was zero;
- the neutrality of the balancing account.

Powernext will provide CRE with a daily report of the result of interventions (counterparties, price of completed transactions, coverage of need or reason for partial or total non-coverage, status of the order book at transaction times).
NB: Like every other member of the exchange, GRTgaz will not know the identity of the counterparties either in the order book, or after transactions.

7. BALANCING RULES FOR SHIPPERS ON GRTGAZ'S TRANSMISSION SYSTEM

7.1. General framework

The balancing rules are based on two principles:

1. Balancing is calculated on a one-day timeframe, with the possibility of accumulating part of the daily imbalances over a longer period:
   - a proportion of daily imbalance quantities is cashed out at daily balancing market price;
   - quantities that exceed the daily tolerance are cashed out at a penalty price;
   - quantities that exceed cumulative tolerances are subject to a penalty (but not cashed out).

2. Shippers must be balanced on each of GRTgaz's balancing zones and, on the North zone, for both gas quality zones (H-gas and L-gas).

The balancing offering proposed by GRTgaz to shippers holding delivery capacity for end customers is based on two services, designed to cover any uncertainties in the forecast consumption levels of end customers:

- a standard tolerance service, provided as part of the transmission package;

- an optional tolerance service.

Each service gives these shippers a right to a daily and a cumulative imbalance tolerance.

7.2. Daily imbalance tolerance

Standard imbalance tolerance:

All shippers that book capacity to deliver gas from the GRTgaz transmission system directly to industrial customers or to Transmission/Distribution Interface Points (PITD), have an automatic right to a daily tolerance expressed in MWh/d. On each of the balancing zones, this daily tolerance is calculated for each tranche of delivery capacity booked by the shipper, on the basis of percentages applicable to each of the tranches of delivery capacity.

From May 1, 2011 the standard daily tolerance service proposed by GRTgaz for each of the balancing zones is defined in the table below:

Standard daily tolerance	Daily delivery capacity subscribed in the zone concerned				
	Up to 500 MWh/d	From 500 to 1000 MWh/d	From 1,000 to 2,000 MWh/d	From 2,000 to 50,000 MWh/d	Above 50,000 MWh/d
North zone (L-gas quality)	+/- 30%	+/- 20%	+/- 5%	+/- 5%	+/- 5%
North zone (H-gas quality)	+/- 30%	+/- 20%	+/- 20%	+/- 5%	+/- 3.5%
South zone	+/- 30%	+/- 20%	+/- 20%	+/- 5.5%	+/- 4%

For example:

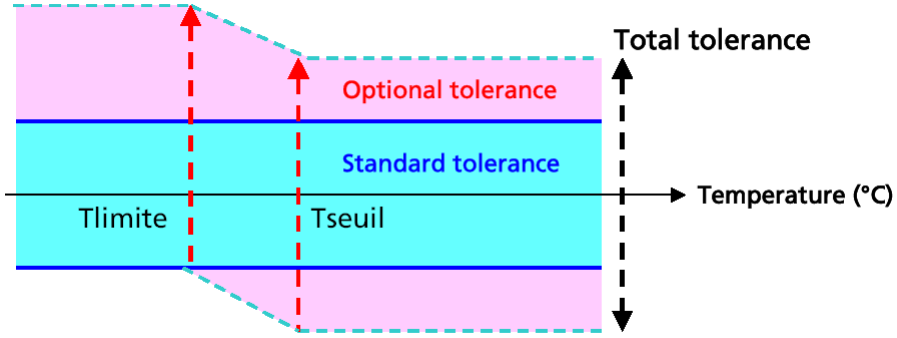
- A shipper with delivery capacity of 5,000 MWh/d in the North zone (L-gas quality) will have a standard daily tolerance of 30% on 500 MWh/d, of 20% from 500 to 1,000 MWh/d, and finally of 5% from 1,000 to 5,000 MWh/d, i.e.: 30%*500 + 20%*(1,000-500) + 5%*(5,000-1,000) = 450 MWh/d;
- A shipper with delivery capacity of 5,000 MWh/d in the South zone will have a standard daily tolerance of 30% on 500 MWh/d, of 20% from 500 to 2,000 MWh/d, and finally of 5.5% from 2,000 to 5,000 MWh/d, i.e.: 30%*500 + 20%*(2,000-500) + 5%*(5,000-2,000) = 615 MWh/d.

Optional imbalance tolerance:

In addition to the standard tolerance, for each balancing zone where it has delivery capacity, every shipper can pay for a further optional tolerance of up to 3% of the delivery capacity booked by that shipper on the balancing zone. This annual

quantity, expressed in MWh/d, is calculated as a percentage of the delivery capacity booked on the balancing zone. The corresponding rights are recalculated at the end of the month, as defined by the Gas Working Groups on standardised subscriptions (the percentage of delivery capacity corresponding to the optional tolerance remains fixed, whereas the monthly result, expressed in MWh/d, is recalculated every month).

In order to take account of the physical constraints of the system in conditions of extreme cold, this optional tolerance depends on the effective temperature. The rule is as follows:



With the following temperature limits:

Balancing zone	$T_{threshold}$=T50%	T_{limit}
North (L-gas quality)	-4.0°C	-8.8°C
North (H-gas quality)	-2.4°C	-6.6°C
South	-3.7°C	-7.8°C

For each balancing zone, the effective temperature on a given day D is defined as follows:

T_{eff} (D) = 0.12 T(D-2) + 0.24 T(D-1) + 0.64 T(D)

Where T(D) = the temperature of the reference weather station for the balancing zone on day D.

The reference weather stations used by GRTgaz for the different balancing zones are:

Balancing zone	Reference weather station
North (L-gas quality)	Lille
North (H-gas quality)	Paris

South	Lyon

Establishing and notifying optional tolerance limits for a given day D:

On the basis of the actual temperature for day D-2 and predicted temperatures for days D-1 and D, on day D-1 GRTgaz calculates the optional tolerance level for day D. GRTgaz publishes the result of this calculation for each shipper before 11 a.m. on day D-1, and the result is used to calculate the balance for day D.

Pricing of the optional tolerance service:

This service is provided at a cost of €17 per MWh/d per year and can be built in the form of annual "bands" (uniform capacity).

7.3. Mid-range of cumulative imbalances

The daily balancing price used in billing imbalances to shippers is progressively applied by adjusting a mid-range of cumulative imbalances set for each balancing zone, and expressed as a percentage of the daily tolerance (standard + optional).
Every day, and for each balancing zone, a shipper's daily imbalances are processed as follows:

1. The proportion of the daily total imbalance which is less than or equal to the mid-range of cumulative imbalances is aggregated in the Cumulative Imbalance Account ("EBC" account).
2. The proportion of the daily imbalance beyond the mid-range of cumulative imbalances is covered by a purchase/sale between GRTgaz and the shipper, under the following rules:
    - the amounts between the mid-range of cumulative imbalances and the daily tolerance (standard + optional) are covered by a purchase or sale transaction at price P1 (using the same P1 price for purchase and sale). P1 is defined in paragraph 7.8.
    - the quantities outside the daily tolerance are covered by a purchase or sale transaction at price P2.P2 is defined in paragraph 7.8.

The daily imbalance values used for billing purchases and sales of gas at price P1 and P2 are the definitive values, calculated and published during month M+1.

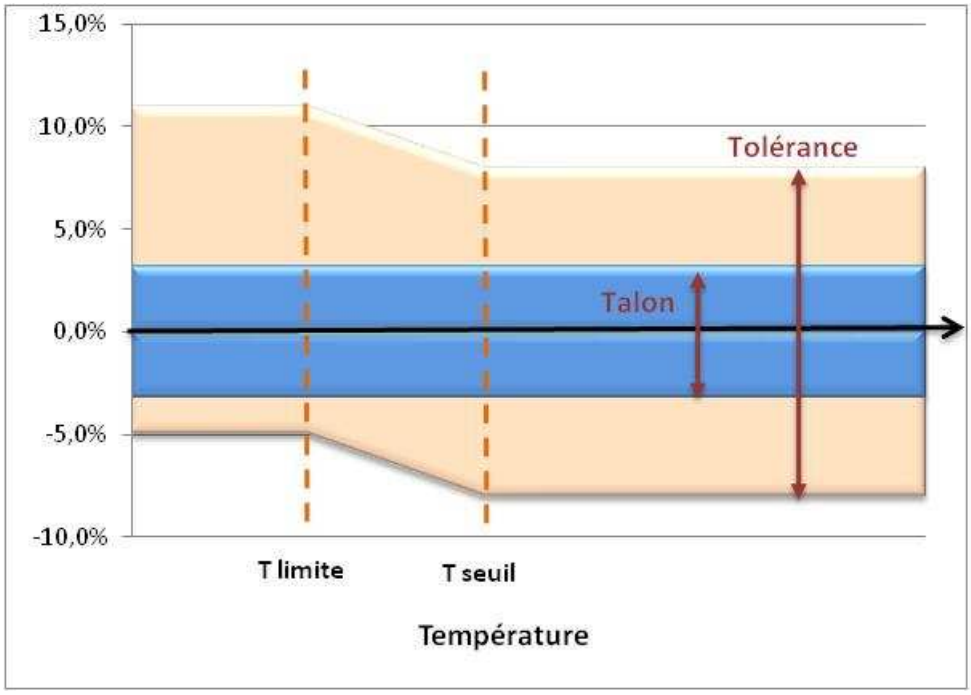
Level of the mid-range of cumulative imbalances:

The following table defines the proposed level of the mid-range of cumulative imbalances in the different zones :

	From May 1 to September 30 2011	From October 1 2011 to April 30, 2012
North Zone	20%	40%
North zone, B perimeter	35%	40%
South Zone	35%	40%

Low-temperature conditions:

On days when the effective temperature forecast is below the threshold limit ("T_{limit}") as defined in paragraph 7.2, the size of the mid-range of cumulative imbalances is modified as follows.



In the example above:

- The shipper has a standard tolerance of 5%
- It also has an optional tolerance of 3%, i.e. a total tolerance for the zone of 8%
- The mid-range is 40%

The blue section represents the proportion of daily imbalances for the zone in question that can be placed in the Cumulative Imbalance Account. The yellow section is the proportion of daily imbalances for the zone in question that is cashed out at price P1.

The size of the mid-range for each shipper is published by GRTgaz on its ECT website, in the same way as the daily imbalance tolerances.

7.4. Cumulative imbalance accounts and cumulative imbalance tolerances

In each balancing zone where it has booked delivery capacity, a shipper also has a right to a Cumulative Imbalance Account ("EBC" account). This account is used to aggregate the proportion of the total daily imbalance that is less than or equal to the mid-range of cumulative imbalances.
The limits of each shipper's Cumulative Imbalance Account (cumulative imbalance tolerances) for each balancing zone are 5 times the value of the mid-range of cumulative imbalances.
The initial value of the cumulative imbalance, for a given month M, is set definitively on the first day of month M as the value of the Cumulative Imbalance ("EBC") published in the allocation notice of the last day of month M-1.
Every day and for each balancing zone, if the cumulative imbalance is above the maximum limit or below the minimum limit of the cumulative imbalance for the zone, the surplus or shortfall is subject to a penalty. This penalty is calculated by multiplying the amount over the tolerance level (surplus or shortfall) by price P3 (defined in paragraph 7.8). The penalty actually borne by the shipper for a given day will be determined as follows:

- GRTgaz will calculate the penalty corresponding to the value of the cumulative imbalance (EBC) on day D, as published in the allocation notice on D+1.
- GRTgaz will calculate the penalty corresponding to the value of the cumulative imbalance (EBC) on day D, as published in the definitive allocation notice for month M;
- the penalty actually borne by the shipper is the lower of these two values.

7.5. Allocation Difference Account

In order to limit the subsequent impact of differences between provisional and definitive allocations, GRTgaz has set up an Allocation Difference Account ("CEA"). The way the CEA operates is described below.
For each balancing zone, the difference between the value of the EBC account in the allocation notice for the last day of month M and the actual value of the EBC account calculated for that same day, with the final allocations in month M, is credited or debited on the 20th day of month M+1 in the CEA.
Each shipper then has a month (until the 19th day of month M+2) to bring the balance of the CEA back to zero by nominating on this account. The daily nominations on the CEA must fit the profile defined by GRTgaz below, although the shipper keeps the

day-to-day option of nominating a profile that will bring the balance back to zero more quickly:

- between the 20th day of month M+1 and the end of month M+1: the balance of the CEA can remain unchanged;
- in the first 19 days of month M+2, the CEA balance is gradually brought back to 0 with a minimum daily reduction of 1/19th of the balance of the account on the last day of month M+1.

Nominations by a shipper which bring the CEA balance back to zero more quickly but do not match the profile defined above, will be accepted by GRTgaz, provided that they are feasible. In the event of a feasibility problem, GRTgaz will notify the shipper, at the latest by 6 p.m. on the previous day.

A shipper's nominations on the CEA are considered to be an entry/exit of gas to/from the balancing zone originating from / going to the CEA of the balancing zone.

7.6. Calculation of daily and cumulative imbalances:

Every day, GRTgaz calculates each shipper's Daily Imbalance ("EBJ"). The daily imbalance is calculated for each balancing zone as being the difference between the quantities allocated at the entry to the balancing zone (from the adjacent balancing zone[1], the adjacent transmission systems, storage groups, PEG of the zone, …) and the quantities allocated at the exit from the balancing zone (to delivery points, the PEG of the zone, the adjacent balancing zone, adjacent transmission systems, storage groups, …).

For each day and each balancing zone, the cumulative imbalance is calculated as the sum of the previous day's cumulative imbalance (possibly adjusted following corrections to allocations on values recorded since the beginning of the month) and of the imbalance for the day, provided that this is within the mid-range of cumulative imbalances. If it exceeds the threshold, only the quantity corresponding to the mid-range of cumulative imbalances is added to the previous day's cumulative imbalance.

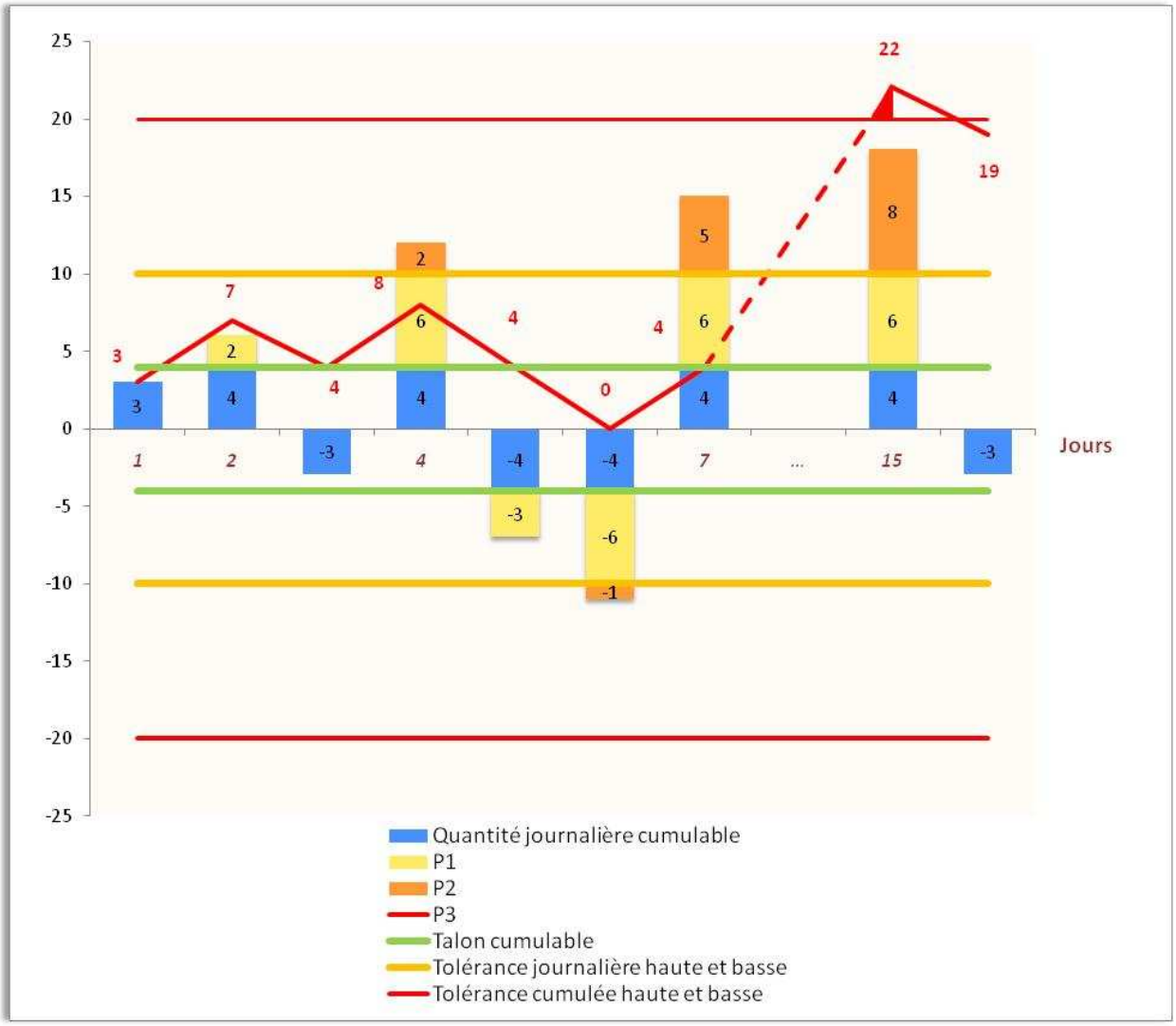
7.7. Concrete example

The graph below shows a shipper which, on a given balancing zone, has:

- a daily tolerance of +/-10

[1] It should be recalled that from January 1, 2009, the method of allocation on the North-South link was modified: shippers nominate the quantities they wish to transport on this link, and are allocated confirmed quantities. The method of allocation between H- and L-gas quality zones in the North zone remains unchanged.

- in this example, the mid-range is 40%. Its cumulative mid-range is therefore 0.4 x 10 = +/- 4
- and its cumulative tolerance is: 5*4 = +/-20.



The daily changes in imbalances can be interpreted as follows:

- the proportion of daily imbalances in the zone situated above the mid-range limit is aggregated in the Cumulative Imbalance Account (EBC): blue zones
- The proportion situated between the mid-range limit and the daily tolerance is cashed out at price P1: yellow zones
- The proportion outside the daily tolerance is cashed out at price P2: orange zones
- Quantities that exceed the cumulative tolerance are subject to penalties at price P3: red zones

7.8. Defining imbalance cash-out prices P1, P2 and P3

Defining the Reference price P1

If Day D is a Week Day, with trading on Powernext Gas Spot: for each Balancing Zone Z, the Reference Price for each Week Day – P1(D,Z) – is the arithmetical mean of the Day-Ahead component and the Within-Day component defined below.

X% of the *Day-ahead* component and Y% of the *Within-day* component as defined below,
Where :
X% expresses the percentage ratio between the maximum Day Ahead intervention volume and the sum of maximal intervention volumes in Day Ahead and Within Day
Y% expresses the percentage ratio between the maximum intervention volume in Within Day and the sum of maximum intervention volumes in Day Ahead and Within Day

For illustration purposes only, and according to the 5.2.2 paragraph, X% equals to 26% and Y% equals to 74% in the North Zone.

The Day-Ahead component is equal:

- for the North Balancing Zone – H-gas Balancing Zone and for the South Balancing Zone:
    - to the mean weighted by the prices of transactions concluded by GRTgaz for delivery on Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point) for the Day-Ahead timeframe,
    - in the absence of transactions concluded by GRTgaz, to the Powernext Gas Spot End-Of-Day (EOD) reference price for the Day-Ahead timeframe corresponding to delivery on Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point);
- for the North Balancing Zone – L-gas Balancing Zone:
    - to the sum of the price defined above for the North Balancing Zone – H-gas Balancing Zone and €0.16/MWh.

The within-day component is equal:

- for the North Balancing Zone – H-gas Balancing Zone and for the South Balancing Zone:
    - to the mean weighted by the prices of transactions concluded by GRTgaz for delivery on Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point) for the Within-Day timeframe,
    - in the absence of transactions concluded by GRTgaz, to the price reference determined by Powernext for the Within-Day timeframe corresponding to delivery on Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point); (This price reference will be determined using Powernext Gas Spot EOD price reference method with parameters specific to the Within-Day timeframe, but only insofar as the market conditions allow, i.e. if it is not necessary to set up a price committee)
- for the North Balancing Zone – L-gas Balancing Zone:
    - to the sum of the price defined above for the North Balancing Zone – H-gas Balancing Zone and €0.16/MWh.
    - If the Within-Day component cannot be determined (no transactions conducted by GRTgaz and market conditions not being met to determine a price reference), the Reference Price P1 (D,Z) is equal to the Day-Ahead component as previously defined.
- **If Day D is a Week-End Day** with trading on Powernext Gas Spot, for each Balancing Zone Z, the Reference Price for each Week-End Day P1(D,Z) is equal:
- for the North Balancing Zone – H-gas Balancing Zone and for the South Balancing Zone:
    - to the mean weighted by the prices of transactions concluded by GRTgaz for the Week-End period containing Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point),
    - in the absence of transactions concluded by GRTgaz, to the Powernext Gas Spot (EOD) reference price for the Week-End containing Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point);
- for the North Balancing Zone – L-gas Balancing Zone:
    - to the sum of the price defined above for the North Balancing Zone – H-gas Balancing Zone and €0.16/MWh.
- **If Day D is a Day with no trading on Powernext Gas Spot**, for each Balancing Zone Z, the Reference Price for that Day P1(D,Z) is equal:

- for the North Balancing Zone – H-gas Balancing Zone and for the South Balancing Zone:
    - to the Powernext Gas Spot EOD reference price determined by Powernext (via a Price Committee) for delivery on Day D at the North Gas Title Transfer Point (respectively South Gas Title Transfer Point);
- for the North Balancing Zone – L-gas Balancing Zone:
    - to the sum of the price defined above for the North Balancing Zone – H-gas Balancing Zone and €0.16/MWh.

Setting of price P2:

The P2 price is modified to take into account, on one side, of the greater exposition of shippers to P1 following the lowering of the values of the cumulative imbalance mid-range, and on the other side, of the lowering of tolerance thresholds for major portfolios.

Price P2 is set as follows:

- P2 = 120%P1 (instead of 130%), if GRTgaz is selling, and
- P2 = 80%P1 (instead of 70%) if GRTgaz is buying.

Setting of price P3

The P3 penalty price (which does not constitute a discharge from obligations) for exceeding the limits of the Cumulative Imbalance Accounts is set as follows:

- P3 = 30%P1

7.9. Transitory measure during the modifications of the mid-range of cumulative imbalances

In order to facilitate the transition to lowered values of the mid-range of cumulative imbalances, the following rules apply during 12 calendar days, as from the modification date of May 1, 2011.

For each balancing zone, North & South and for the B perimeter of the North zone, penalties applying to the cumulative imbalance accounts are cancelled for overruns

ranging between 5 times the new value of the mid-range, and 5 times the former value of the mid-range
For instance, if the value of the mid-range is lowered from 70% of the daily tolerance to 20% of the daily tolerance, the amounts ranging between 5*20% and 5*70% of the daily tolerance will not be penalized.

7.10. Operational handling rules

Nominations to the Cumulative Imbalance Account:

Nomination allows shippers to manage the level of their Cumulative Imbalance Accounts by maintaining a balance of nominations across the whole contract.
It is possible for nominations to the Cumulative Imbalance Account to be higher than the daily imbalance tolerance for nominations sent on day D-1 for day D. However, from 9 a.m. on a given day D, nominations to the Cumulative Imbalance Account for the current day must be less than or equal to the daily imbalance tolerance for each balancing zone.
In a given zone, on days when the effective temperature (as defined in paragraph 7.2) is less than the threshold temperature (as defined in paragraph 7.2), nominations to the Cumulative Imbalance Account are accepted by GRTgaz on the following conditions:

- nominations that lead to an increase in the surplus on a Cumulative Imbalance Account which is already in surplus are accepted, within the limits of the daily imbalance tolerance;
- nominations which bring the balance of a cumulative imbalance surplus or deficit account closer to break-even are accepted, within the limits of the daily imbalance tolerance;
- nominations which further increase the shortfall on a Cumulative Imbalance Account that is already in deficit are rejected.

Determination and notification of nomination limits on a Cumulative Imbalance Account:

On the basis of the actual temperature for day D-2 and forecast temperatures for days D-1 and D, on day D-1 GRTgaz calculates the effective forecast temperature for day D in each balancing zone. If the effective forecast temperature for a balancing zone is lower than the balancing zone's threshold temperature, then at 1 p.m. on D-1, GRTgaz will notify the shippers concerned that the nomination rights on that zone's EBC account will be restricted for day D.

Balance of nominations:

The rules and timetables for handling nominations and requests for a revision of these nominations on a given day remain the same as the rules applied in 2008.
GRTgaz asks each shipper, as part of the process of managing their balances, to ensure that their nominations are balanced for each balancing zone, and for each gas quality area in the North zone.

A shipper's nominations are balanced when the sum of the quantities nominated at entry point(s) into a balancing zone is equal to the sum of the quantities nominated at exit point(s) from that same balancing zone. This calculation takes into account all the nominations carried out on the contractual transmission system:

- at transmission system entry/exit points
- at delivery points
- on the North-South link
- on gas quality conversion
- on Title Transfer Points (PEGs)
- on Cumulative Imbalance Accounts
- on Allocation Difference Accounts.

Shippers whose nominations and confirmations are not balanced are alerted to this by GRTgaz, via their confirmation notice.

Data publication scheduling

GRTgaz calculates and notifies each shipper of their daily and cumulative balancing positions for day D of month M on each of the zones where they are present, at the following intervals:

- on D+1, GRTgaz publishes provisional values on these two positions (daily imbalances, cumulative imbalances);
- between D+1 and the last day of month M, the values are updated if necessary (mainly the allocations on the delivery points), and the balance positions (daily and cumulative imbalances) are re-calculated;
- during month M+1, GRTgaz calculates and publishes definitive allocations for each shipper (including daily and cumulative imbalances) for the whole of its portfolio. It is these allocations (entry and exit points, inter-zone links, deliveries to consumption points, transactions on the PEGs, daily imbalance, etc.) which are used for monthly billing, and to process purchases/sales of gas in the event that a shipper should exceed the mid-range of cumulative imbalances. It is the provisional and definitive

allocations which are used to calculate overrun penalties for the Cumulative Imbalance Account.

Handling of adjustments

If GRTgaz has to make an adjustment on a shipper's allocations, i.e. a correction to a definitive allocation, the adjustment will be made by means of a purchase or sale of the corresponding quantities between GRTgaz and this shipper, valued at the average of the P1 prices for the month in which the allocations are adjusted.

7.11. Publication and reporting

GRTgaz provides the market players with a certain amount of information, which can be accessed at www.grtgaz.com . Under this system, GRTgaz publishes the following information on a daily basis:

- gas consumption for the previous day, by balancing zone and, for the North zone, by gas quality zone;
- consumption forecasts for the following day, by balancing zone and, for the North zone, by gas quality zone;
- updated consumption forecasts for the current day, by balancing zone and, for the North zone, by gas quality zone;
- the sum of the quantities traded on the previous day on each balancing zone's PEG and, for the North PEG, by gas quality zone;
- the flows recorded on the previous day at the Dunkerque, Taisnières H, Taisnières B, Obergailbach, Montoir and Fos entry points;
- the flows recorded for the previous day at the Midi and Oltingue exit points;
- the flows recorded for the previous day, in each direction, on the North-South link;
- the effective temperature recorded the previous day and on each balancing zone's weather station and, for the North zone, for each gas quality;

In addition, GRTgaz publishes on its private Customer Information Extranet (ECT) the next-day forecasts of the effective temperature for each balancing zone's reference weather station and, for the North zone, for each gas quality.

8. FINANCIAL NEUTRALITY OF BALANCING FOR GRTGAZ

8.1. Principles

The balancing system must, on the one hand, be financially neutral for GRTgaz and, on the other, make it possible to pass on to shippers the real cost of the resources used in providing it.

GRTgaz has therefore set up a balancing statement, recording what it spends and earns in the balancing process. The principle is to restore the physical balance of the balancing account to zero at regular intervals, and to distribute the balancing result to all the shippers present over the period.

8.2. Implementation from 2009

The balancing statement is made up of the following elements:

- Balancing costs, defined as the sum of GRTgaz's total Day-Ahead and Within-Day purchases of balancing gas, including the variable proportion of transaction costs on the Gas Exchange[2], and of the total amount of gas purchased under the balancing rules of the transmission contract.
- Balancing revenues, defined as the sum of GRTgaz's total Day-Ahead and Within-Day sales of balancing gas, minus the variable proportion of transaction costs on the Gas Exchange[2], and of the total amount of gas sold under the balancing rules of the transmission contract and the penalties charged by GRTgaz for balancing.
- The valuation of the physical balance resulting from the difference between the quantities of gas purchased and the quantities sold. The precise procedures for managing the physical balance will be established subsequently by GRTgaz and discussed in consultation with the shippers.

The balancing result will be allocated to shippers as a proportion of the quantity of delivery capacity booked for the calendar year.

[2] (Powernext Trading Fees and clearing house's and clearing bank's Clearing Fees)

9. THE EVOLUTION OF THE BALANCING SYSTEM – BACKGROUND HISTORY

- 1st half of 2006 : Proposition from GRTgaz to the CRE to launch the evolution of its balancing system towards a "market based" target system
- June 2006 : CRE Deliberation of June 26 following a public consultation, structured by the market based approach proposed by GRTgaz. This decision requires GRTgaz to implement a dialogue process with market actors, to define new and detailed balancing rules, in the framework of a gradual evolution towards a market-based approach.
- August 2007 : Proposal by GRTgaz, based on a consultation process, of a set of balancing rules, in force from September 1, 2007. These rules have been approved by the CRE deliberation of August 23, 2007.
- October 2008 : a few parameters of the « Balancing GRTgaz » platform are changed, in order to be applicable from the launch of the Powernext Gas platform, aiming to maintain the quality of market prices provided by the platform. This evolution has been approved by the CRE deliberation of October 23, 2008.
- September 2008 : integration of the consultation working group related to balancing rules to the « Concertation Gaz » process, creation of the « Balancing » working group.
- November 2008 : Proposal of GRTgaz concerning an adjustment of the distribution of standard tolerances in order to take into account the constraints related to the size of the shippers' portfolio and to the balancing zone. This evolution has been approved by the CRE deliberation of November 26, 2008.
- October 2009 : Proposal by GRTgaz to conduct interventions from December 1, 2009 on Powernext Gas to cover a part of the gas needed to balance its network, integrating GRTgaz's intervention procedures, and GRTgaz's pricing methods used to determine settlement prices. These elements are described in the CRE proposal of October 8, 2009.
- March 2010 : Following the work led within the Concertation Gaz process, proposal by GRTgaz to suppress the balancing platform. A positive feedback has been given concerning interventions conducted in the last 3 months on Powernext Gas. The stakeholders have decided to increase these intervention volumes, to reduce the value of the mid-range of cumulative imbalances for the time period between May 1 and September 31 2010. These evolutions have been approved by the CRE deliberation of April 15, 2010.
- June 2010 : Proposal by GRTgaz concerning principles towards a more market-based balancing system, that should apply in 2013, in the framework of

european rules defined in the regulation 2009/715. These principles are confirmed in the CRE deliberation of September 30, 2010. This decision states that the Concertation Gaz will define before June 30, 2011, the path to the target and its accurate description.