



# **Proposal for the oversubscription and buy-back scheme**

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## **Implementation of Annex I of Regulation 715/2009**

June 2015

## INDEX

<b>1</b>	<b>Introduction</b> .....	<b>3</b>
<b>2</b>	<b>Additional capacity</b> .....	<b>4</b>
2.1	Main Principles.....	4
2.2	Calculation of additional capacity Methodology.....	5
2.3	Update of the Calculation of additional capacity Methodology.....	7
2.4	Offer of additional capacity.....	7
<b>3</b>	<b>Buy-back procedure</b> .....	<b>10</b>
3.1	Main principles.....	10
3.2	Trigger of the buy-back procedure.....	10
3.3	Technical and commercial measures.....	11
3.4	Market-based procedure.....	12
<b>4</b>	<b>Pricing</b> .....	<b>15</b>
4.1	Maximum price TSOs are allowed to pay.....	15
4.2	Clearing price.....	16
4.3	Invoicing of capacity.....	16
4.4	Split of costs.....	16
<b>5</b>	<b>Timeline</b> .....	<b>18</b>

## Proposal for the oversubscription and buy-back scheme

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### **1 Introduction**

The [Regulation \(EC\) 715/2009](#) of the European Parliament and the Council of 13 July 2009 on conditions for access to the natural gas transmission networks regulated the main principles to allocate the capacity and to handle the different congestion situations, among others. Thus, in the Annex 1 of the aforementioned Regulation, the general principles to manage the contractual congestion are assessed by developing 4 different procedures to be implemented at the IPs shared between adjacent entry-exit systems. The four procedures are, as follows: Oversubscription and Buyback, Firm day ahead use it or lose it, Surrender of contracted capacity and Long term use it or lose it mechanism.

The South Gas Regional Initiative (SGRI) coordinated by the Agency for the Cooperation of Energy Regulators (ACER) has the main goal of developing a natural gas regional market. Within this context Enagás, REN and TIGF have been asked to establish a joint and coordinated oversubscription and buy-back scheme.

The French Regulator (Commission de Régulation de l'Énergie - CRE) has already issued a [Deliberation](#) with the high level principles of the OSBB

The Portuguese Regulator (Entidade Reguladora dos Serviços Energéticos - ERSE) has published the basic principles of the OSBB mechanism in the “*Manual de Procedimentos do Acesso às Infraestruturas*”, which is part of the Portuguese Regulatory Framework for the Gas Sector.

The Spanish Regulator (Comisión Nacional de los Mercados y La Competencia – CNMC) has also published a [Circular](#) with the basics of the OSBB.

Without prejudice to the rules which have been already established on the Regulation (EC) 715/2009 and on the Notices of the CRE, ERSE and CNMC, Enagas, REN and TIGF have jointly assessed the Oversubscription and Buy Back procedure by the creation of this document.

The aim of the document is to describe in detail the OSBB at cross-border capacity between Portugal and Spain (VIP Ibérico) and France and Spain (VIP Pirineos), to ensure a coordinated and consistent implementation of the referred procedure. The practical application of the OSBB procedure will follow the rules here established.

## Proposal for the oversubscription and buy-back scheme

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## **2 Additional capacity**

### **2.1 Main Principles**

The methodology for the calculation of additional capacity to be offered proposed in this document will be applied to the VIP Pirineos, between Spain and France and VIP Iberico between Portugal and Spain, and will be the same in both directions.

The additional capacity resulting from the implementation of this methodology will be offered on a daily basis, that is, the calculation resulting from applying this methodology will be developed on one day (D-1) to offer the capacity of the following day D, accordingly to the definition of the gas day.

The calculation and publication of the additional capacity to be offered will be carried out after the confirmation of the last nomination.

The objective of the proposed methodology is to make the best forecast of the use of international connections, by studying their historical use from both an endogenous and exogenous perspective. The main conclusions of this study are summarised below:

- Regarding the endogenous variables, the relationship between the physical flow through the interconnection and the relative nomination for the same day D changes on those days when there are commercial flows in both directions (nomination in both directions) or in those cases where there is a special operation previously agreed between the operators of the interconnection. That is why, the physical flow is not considered as an explanatory variable for the use of the interconnection.
- The study of the exogenous variables –such as prices, temperatures, etc.- does not provide conclusive results about the use of the interconnections, either because it does not identify a clear direct relationship or due to a lack of more data or variables that would make it possible to obtain significant conclusions.
- Due the lack of sufficient historical data from VIP Pirineos, the data analysed are related to Larrau Interconnection, but they are considered extrapolable to the joint VIP Pirineos connection.
- The study period that gives the most relevant conclusions begins on 1<sup>st</sup> April 2013, the date in which the capacity of Larrau Interconnection increased its nominal capacity in both directions.

When analysing this methodology, there are some considerations that should be taken into account: the small amount of historical sample available and the fact that the actual interconnection functioning is based on the current system and regulation. Therefore, in view of the uncertainty regarding the behavior of the different variables that define the interconnections under the new regulatory framework established after the implementation of the different Network Codes, and specifically after the implementation of the oversubscription and buy-back mechanism itself, it is necessary to introduce safety margins that might reduce or minimise that mentioned uncertainty. Once the different Network Codes have been

## Proposal for the oversubscription and buy-back scheme

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implemented, a reduction of the safety indexes proposed in this methodology might be reevaluated if appropriate.

### 2.2 Calculation of additional capacity Methodology

#### 2.2.1 Choice of the objective variable and the reference variable

The implicit objective of the calculation method for the additional capacity to be offered developed in this document is to make the best estimation or forecast of the use of an interconnection on a certain day, based on the information available before offering the mentioned additional capacity.

Likewise, the variable that most ideally represents the expected physical flow in the interconnection will be called the **objective variable**, while the variable that provides the best information available to make the forecast of the objective variable will be called the **reference variable**.

After several historical analysis, **the best objective variable is confirmed to be the value of the last confirmed renomination from day D**, considering that this value is the one that the operator must guarantee to the shippers and that does not differ from the shared value.

Again, according to the conclusions provided by the historical analysis of the interconnections, where there is a clear relationship between the nomination on day D-1 for day D and the last confirmed renomination of day D, it can be deduced that **the reference variable** upon which the best forecasts of the objective variable will be based (the last renomination from day D) is the **nomination on day D-1 for day D**.

#### 2.2.2 Risk level quantification

The methodology proposed in this document attempts to define an estimation of the risk that this offer of additional capacity represents to the TSOs, given the special importance of the impact that the implementation of the Network Codes will have on the future performance of the interconnections.

The estimation of this risk will be based on the deviation that might occur between the last nomination on (D-1) for D, which is already known at the time the methodology is activated, and the last confirmed renomination of day D, which is the objective variable and is not known at that time.

Therefore a Risk Index (RI) is defined based on the maximum historical deviation between the nomination made in day D-1 for day D and its last confirmed renomination on the corresponding day D, produced during the period in which it is agreed to study the historical data. An additional safety factor is also considered in order to manage the risk associated with the uncertainty of the performance of the interconnections after the definitive implementation of the various Network Codes and specifically the implementation of the oversubscription and buy-back mechanism of the capacity itself, given that the maximum deviation is based on historical data, related to the current regulatory environment.

The Risk Index is defined as below:

## Proposal for the oversubscription and buy-back scheme

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$$RI = M_D \times f$$

Where,

- $M_D$  = the maximum deviation between the last nomination on day D-1 for day D and the last confirmed renomination of day D within the period of analysis that comprises the historical reference base:

$$M_D = \max |N_i - R_i|$$

$N_i$  → last nomination of each day i

$R_i$  → last confirmed renomination of each day i

i → interval between 1st April 2013 and the last day of the sample

- f = safety factor

### 2.2.3 Trigger Value definition

The calculation of the previously defined risk index RI indicates that there is a value in the last nomination on day D-1 based upon which the supply of additional capacity entails a high risk for the operator of the connection.

This nomination value, above which a high risk is detected is called the Trigger Value  $T_V$ , and is defined as follows:

$$T_V = C_n - RI - OM$$

where:

$C_n$  → Nominal capacity

RI → Risk index

OM → Operating margin, established as a percentage of the OBA

(OM = C% OBA)

Therefore, when the nomination of a day D-1 for a day D is above  $T_V$ , the additional capacity to be offered for day D will be 0.

## Proposal for the oversubscription and buy-back scheme

### 2.2.4 Additional capacity function

Based on the already quantified risk index RI and the value of the Trigger Value  $T_V$ , the following supply function for **additional capacity D** is defined:

$$D = \begin{cases} \min(C_n - RI - OM - X; A * C_n) & X \leq \frac{3}{5} C_n \\ \min(C_n - RI - OM - X; B * C_n) & \frac{3}{5} C_n < X < T_V \\ 0 & X \geq T_V \end{cases}$$

where:

- $C_n$  → Nominal capacity
- RI → Risk index
- OM → Operating margin
- X → Nomination
- A → Cap1 (fixed parameter)
- B → Cap2 (fixed parameter)
- $T_V$  → Trigger value

### 2.3 Update of the Calculation of additional capacity Methodology

Given that this methodology is based on the historical analysis of the interconnections, the variables that comprise the function of the additional capacity to be offered will be automatically recalculated daily, including the information about the nominations and renominations from each day. These variables that will automatically be updated every day are the following:

- Maximum Deviation  $M_D$
- Risk Index RI
- Trigger Value  $T_V$
- Additional capacity to be offered function D

The following values for the fixed parameters are proposed as default values:

- C (% of the OBA for the calculation of the operating margin) = 25%
- f (safety factor) = 1.1 (equivalent to 10%)
- A (Cap1 of the nominal capacity) = 0.1 (which equals 10% of the nominal capacity)
- B (Cap2 of the nominal capacity) = 0.05 (which equals 5% of the nominal capacity)

Before the first practical application of this methodology, the relevant TSOs and NRAs shall agree upon a common set of parameters foreseen throughout the methodology, which shall be updated annually.

### 2.4 Offer of additional capacity

Additional capacity will be always offered at VIP Ibérico and/or VIP Pirineos jointly with the available capacity through auctions. Both additional capacity and available capacity will be treated as firm capacity and there will not be any distinction between them.

The methodology proposed for calculating the additional capacity ensures that the amount of additional capacity to be offered at both sides of the VIP Ibérico and/or VIP Pirineos will be the same.

In order to maximise the offer of bundled capacity, all the additional capacity will be offered always as bundled capacity.

## Proposal for the oversubscription and buy-back scheme

Additional capacity will be offered:

- (1) As a daily standard capacity product through the rolling day ahead capacity auction which takes place at 15:30 UTC (D-1) in winter time or 14:30 UTC (D-1) (day light saving).
- (2) On a firm basis together with the available capacity (no distinction between the additional capacity and the available capacity will be made)

Therefore, the capacity to be offered in the rolling day ahead capacity auction shall be, each day, equal to:

$$\text{Capacity to be offered} = A - C + D$$

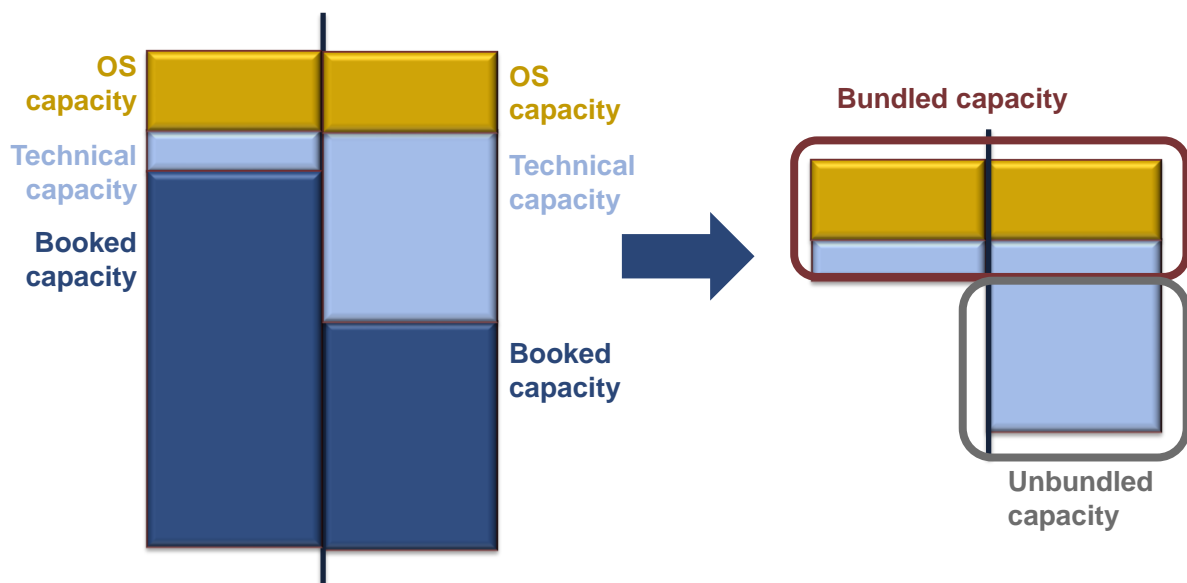
A is the transmission system operator's technical capacity for each of the standard capacity products;

C is the previous sold technical capacity, adjusted by the capacity which is re-offered in accordance with applicable congestion management procedure;

D is additional capacity, for such day, if any

Each TSO will upload the capacity to be offered in the rolling day ahead capacity auction (one value each TSO); then, PRISMA will apply the lesser value to determine bundled capacities. The remaining capacity, if any, will be sold as unbundled.

**Figure 1: Additional capacity to be offered**



*Source: Self-made*

The additional capacity will not be offered in the following cases:



## Proposal for the oversubscription and buy-back scheme

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- If a special operation has been agreed among either the operators or by the interconnection.
- In emergency situations that could activate or deactivate other processes or agreements between the interconnection operators.
- In the event of system failures of the operators or shippers, which could lead to incidents during the additional capacity supply process.
- If the operators take the duly justified decision to intervene in the methodology by lowering the value of the final quantity to be supplied for a certain day D.
- The transmission network operators will prepare and issue a report to the relevant NRAs, including details of the days on which the additional capacity supply process has not been activated, along with the causes of said non-activation.

### 3 Buy-back procedure

#### 3.1 Main principles

The buy-back procedure will be triggered and applied in a coordinated way by adjacent TSOs.

This implies that, if TSOs need to reduce the capacity, it will be always done in bundled way.

#### 3.2 Trigger of the buy-back procedure

TSOs shall need to trigger the buy-back procedure when the sum of the net nominations in the VIP Ibérico and/or VIP Pirineos is higher than the technical capacity.

Buyback procedure if  $\Sigma$  net nominations in the VIP > technical capacity

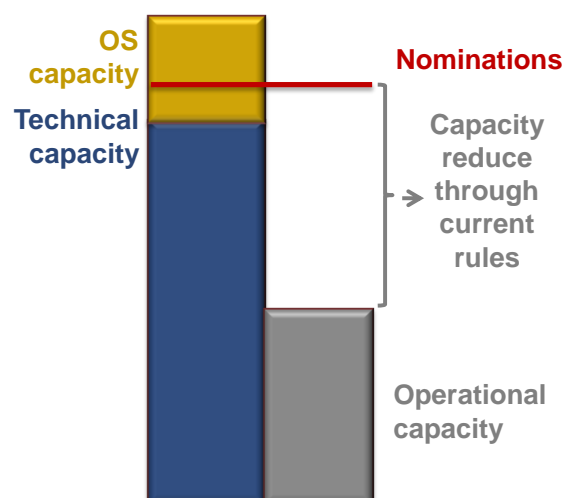
However, there might be situations where the actual capacity (i.e. operational capacity) is below the technical capacity caused by exceptional events such as, failures, breakdowns, etc. If this is the case, no buy-back procedure shall be triggered.

Thus:

- (1) If the **technical capacity is above the operational capacity and the net nominations are above the technical capacity**, then TSOs shall not launch the buy-back procedure.

The difference between the net nominations and the operational capacity will be reduced through the mechanism currently in place to tackle these situations, independently of the additional capacity already booked.

**Figure 2: Operational capacity below the technical capacity and net nominations above the technical capacity**



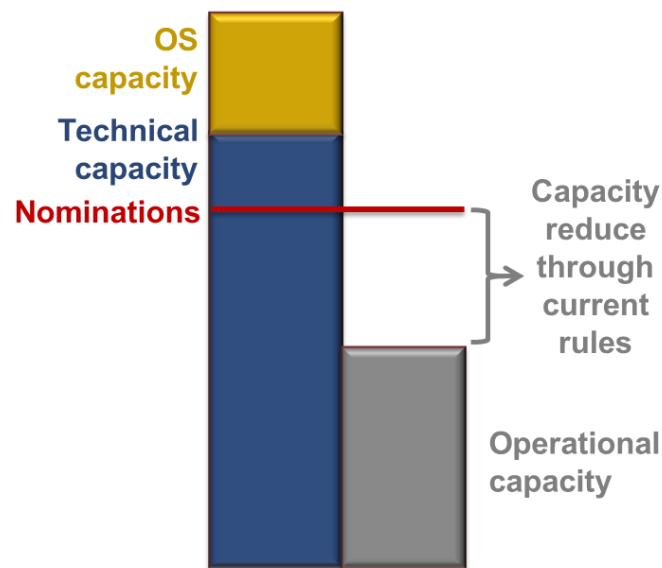
*Source: Self-made*

## Proposal for the oversubscription and buy-back scheme

- (2) If the **net nominations are below the technical capacity, then, TSOs shall not launch the buy-back procedure.**

The difference between the net nominations and the operational capacity will be reduced through the mechanism currently in place to tackle these situations, independently of the additional capacity already booked.

**Figure 3: Operational capacity below the technical capacity and net nominations below the technical capacity**



*Source: Self-made*

### 3.3 Technical and commercial measures

Once the buy-back procedure has been triggered, TSOs shall, before applying a market based procedure, verify whether alternative technical and commercial measures can maintain the system integrity in a more cost-efficient manner.

The technical and commercial measures to be applied shall follow the next merit order:

1. Management of the OBA
2. Interruption of the interruptible capacities under the following order:
  - a. Within day interruptible capacity (overnomination)
  - b. Daily interruptible capacity
  - c. Monthly interruptible capacity
  - d. Quarterly interruptible capacity
  - e. Yearly interruptible capacity

## Proposal for the oversubscription and buy-back scheme

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### 3.4 Market-based procedure

If the measures described in the above point are not enough to maintain the system integrity, TSOs shall trigger a market based mechanism in order to buy-back the capacity.

**As soon as the TSOs have identified the need to trigger the market based mechanism, they will restrict network users renomination rights upwards and downwards in both flow directions** until the end of the gas day. The TSOs shall launch the market-base procedure if:

$\text{Technical capacity} < \sum \text{Net nominations} - \text{OBA} - \text{Interruptible capacity}$
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The market-based procedure will be performed at PRISMA booking platform through **the secondary market functionality and under the Call For Orders (CFO) mechanism**.

#### 3.4.1 Request of buy-back

The TSO that needs to buy-back capacity will immediately communicate the situation to the adjacent TSO.

Then, the TSO will create a “proposal to buy” procedure in the secondary market at PRISMA platform and it contains the following information:

- The amount of capacity that needs to be bought back. This quantity will be always placed as the total amount of the bundled capacity both TSOs have to buy in order to solve the oversubscribed capacity; and
- The maximum price the TSOs are allowed to pay, which shall be the sum of the maximum price each TSO is allowed to pay.
- The updated list of allowed network users for participating in the buy-back procedure

The “proposal to buy” placed by a TSO shall always be approved by the adjacent TSO at PRISMA platform.

The “proposal to buy” must be created and validated by the TSOs at PRISMA platform at 19:30 UTC at latest (or 18:30 UTC daylight saving). If no proposal has been created or no validation has been done, then TSOs will apply pro-rata rule to all firm capacity already sold.

#### 3.4.2 CFO mechanism

Once the “proposal to buy” has been validated by TSOs, network users will be allowed to place “offers to sell” bundled capacity starting at 19:30 UTC (or 18:30 UTC daylight saving) and finishing at 20:00 UTC (or 19:00 UTC daylight saving).

Each “offer to sell” shall contain at least the following information:

- The identity of the network user applying,
- The concerned interconnection point and direction of flow,

## Proposal for the oversubscription and buy-back scheme

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- The amount of capacity to sell, and
- The price, which shall not be higher to the maximum price specified by the TSOs in the “proposal to buy”. Offers to sell with a price higher than the maximum price shall not be accepted. The price will be considered as the maximum price the buyer is willing to pay.

Network users may submit as many “offers to sell” as they wish. Each “offer to sell” shall be treated independently from other “offers to sell”.

Network users shall only be allowed to place bundled “offers to sell”. From 20:00 UTC (or 19:00 UTC daylight saving) “offers to sell” may not be amended or withdrawn. All “offers to sell” will be considered binding.

TSOs shall only consider valid “offers to sell” that fulfill both conditions below:

- The “offer to sell” has been place from a network user who have nominated their booked capacity, and
- The amount of capacity included in the “offer to sell” is equal to or lower than the nominated capacity

Then, the TSO that has place the “proposal to buy” will rank all “offers to sell” according to the price, the lowest the price ranking first.

Following the ranking of the “offers to sell”, the adjacent TSO shall validate the final allocation of capacity to each successful network user and capacity shall be bought back in function of their price ranking.

When an “offer to sell” by a network user exceeds the “proposal to buy”, TSOs shall bought back this capacity up to amount of capacity included in the “proposal to buy”. This means that not all the capacity included in the “offer to sell” will be bought back (TSOs will partially bought back this capacity).

When two or more “offers to sell” contain the same price and the amount of capacity proposed to sell in aggregate under such “offers to sell” exceeds the remaining capacity to be bought-back, the remaining capacity to be bought back shall be allocated pro rata to the amounts of capacity included in each “offer to sell”. The clearing price shall be defined as the price of the lowest successful “offer to sell”. TSOs shall pay all successful network users the clearing price.

The final results of the CFO mechanism shall be published at PRISMA at 20:30 UTC (or 19:30 UTC daylight saving).

If users do not offer enough capacity in the buy-back procedure (i.e there are not enough “offers to sell” to satisfy the “proposal to buy”), TSOs will reduce all firm bundled .and unbundled capacities according to pro-rata rule up to the amount of capacity that needs to be bought back. TSO shall pay network users the regulated tariff for this capacity

## Proposal for the oversubscription and buy-back scheme

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No other market based procedure shall be performed afterwards, if the TSOs need to buy-back capacity after 20:00 UTC (or 19:00 UTC daylight saving), pro-rata rule shall be applied. TSOs will reduce firm bundled and unbundled capacities according to pro-rata rule

When a pro-rata rule is applied, this shall be based on the valid nominations of each network user for that period, except where otherwise defined.

Following this capacity reduction, the affected network user's nominations shall be reduced accordingly.

## Proposal for the oversubscription and buy-back scheme

### 4 Pricing

#### 4.1 Maximum price TSOs are allowed to pay

At **VIP Ibérico** the capacity to be bought back will be always a bundled capacity; thus the maximum price the TSO will upload to PRISMA will be the addition of the maximum prices that both TSOs are allowed to pay according to their national rules, as it is shown below:

$$C = A + B$$

**A is the maximum price that REN is allowed to pay:** shall not exceed the reserve price for firm day-ahead capacity multiplied by a factor of 1.20<sup>1</sup>.

**B is the maximum price that Enagas is allowed to pay:** the price is set as a multiplier of the tariffs to be applied; thus, the price is the reference price + 25% of the reference price<sup>2</sup>.

C is the maximum price that TSOs are allowed to pay

At **VIP Pirineos** the capacity to be bought back will be always a bundled capacity; thus the maximum price the TSO will upload to PRISMA will be the addition of the maximum prices that both TSOs are allowed to pay according to their national rules, as it is shown below:

$$C = A + B$$

**A is the maximum price that TIGF is allowed to pay:** it is the average of the clearing prices of the quarterly, monthly, and day ahead auction weighted by the booked quantities during these auctions, plus 25%, for the type of capacity (bundled or unbundled). In case of an implementation of the default rule, the buy-back price will be equal to the above mentioned price without an increase of 25%. When the TSO does not offer day-ahead products, the clearing price considered will be equal to the regulated price of the concerned day-ahead product<sup>3</sup>.

**B is the maximum price that Enagas is allowed to pay:** the price is set as a multiplier of the tariffs to be applied; thus, the price is the reference price + 25% of the reference price.

C is the maximum price that TSOs are allowed to pay

<sup>1</sup> ERSE , « Diretiva n.º 14/2014 Aprova o Manual de Procedimentos de Acesso às Infraestruturas e os prazos de anúncio, solicitação e de atribuição de capacidade e prazos de previsão de consumo e utilização de capacidade para 2014-2015 ». Available at : <http://www.erse.pt/pt/gasnatural/regulamentos/acessoasredesinfraestruturaseasinterligacoes/Documents/Diretiva%2014.2014%20MPAI.pdf>

<sup>2</sup> CNMC, «Circular 1/2013, de 18 de diciembre, de la Comisión Nacional de los Mercados y la Competencia, por la que se establecen los mecanismos de gestión de congestiones a aplicar en las conexiones internacionales por gasoducto con Europa ». Available at : [http://www.cnmc.es/Portals/0/Ficheros/Energia/Circulares/CircularCNMC%201\\_2013.pdf](http://www.cnmc.es/Portals/0/Ficheros/Energia/Circulares/CircularCNMC%201_2013.pdf)

<sup>3</sup> CRE, «Délibération de la Commission de régulation de l'énergie du 27 juin 2013 portant décision relative à la mise en œuvre de l'annexe I au règlement (CE) n° 715/2009 sur les procédures de gestion de la congestion». Available at : <http://www.cre.fr/documents/deliberations/decision/gestion-de-la-congestion/consulter-la-deliberation>

## Proposal for the oversubscription and buy-back scheme

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### 4.2 Clearing price

The price (i.e clearing price) to be paid by the TSOs will depend on the network users and the price that they are willing to earn because of selling their capacity.

The clearing price shall be defined as the price of the lowest successful “offer to sell”. TSOs shall pay all successful network users the clearing price.

D = final price to be paid by both TSOs = clearing price
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### 4.3 Invoicing of capacity

The TSOs will invoice all network users the regulated tariff, and, if applicable the corresponding premium, as it is estipulated in the contract or in national regulation, for the whole amount of booked capacity without taking into consideration any capacity reduction.

However, if the TSO has bought back capacity, then the TSOs will reimburse all successful network users the clearing price.

If pro-rata is to be applied due to the lack of enough successful “offers to sell”, then the TSOs will reimburse network users the regulated tariff.

### 4.4 Split of costs

The cost of the buy-back procedure (i.e. clearing price of the CFO) needs to be split between Enagás and REN, no matter who has placed the “proposal to buy”. Cost of the CFO shall be attributed to the TSOs pro-rata the maximum price TSOs are allowed to pay.

This means that each TSO shall pay successful network users of the CFO mechanism a proportion of the clearing price.

An example of how to split the costs is shown in the figure below.



Proposal for the oversubscription and buy-back scheme

**Table 1: Different possibilities to split the costs between TSOs**

	TSO 1	TSO 2	TOTAL	
	25%	20%		
Regulated tariff	5,0	20,0	25	
Max. Price	6,2500	24,0000	30,25	
CFO result			30,2	
<b>Cover of costs by TSOs</b>				
Pro-rata max. price	Split	6,24	23,96	30,2

*Source: Self-made*

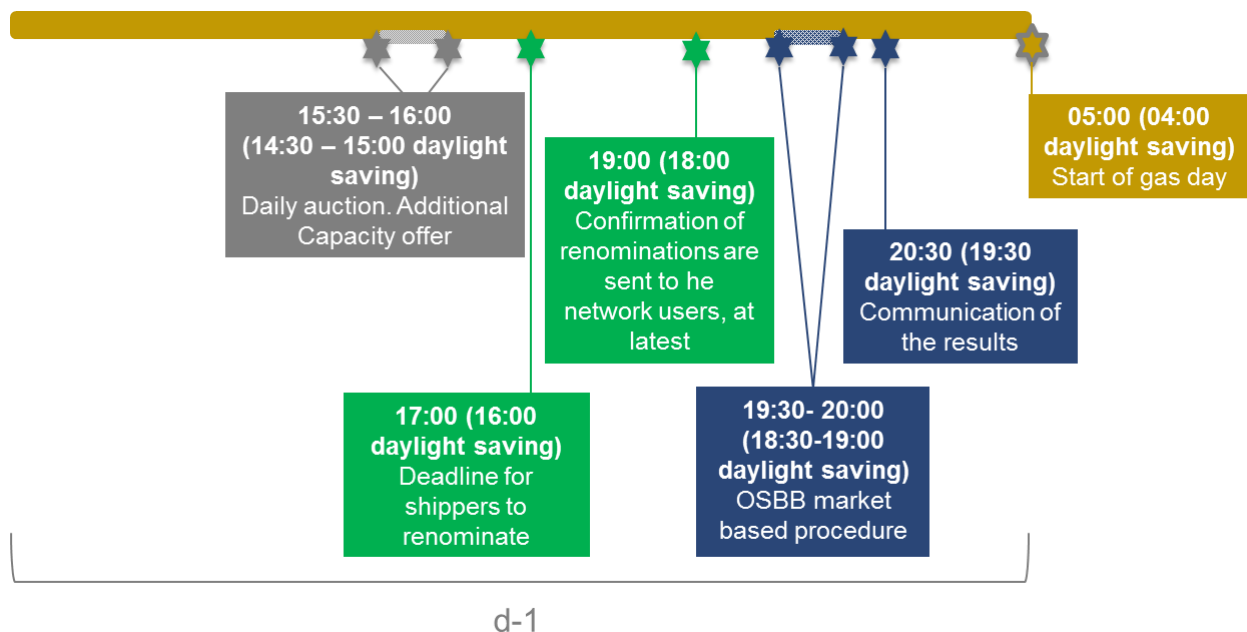
Proposal for the oversubscription and buy-back scheme

## 5 Timeline

The following timeline shall apply for the oversubscription and buy-back procedure:

1. 15:30 UTC (D-1) (or 14:30 UTC daylight saving): opening of the bidding window for the rolling day ahead capacity. If additional capacity is accessible, it will be offered in this auction.
2. 16:00 UTC (D-1) (or 15:00 UTC daylight saving): closing of the bidding window for the rolling day ahead capacity.
3. 17:00 UTC (D-1) (or 16:00 UTC daylight saving): deadline for network users to renominate for the first time the day ahead capacity.
4. 19:00 UTC (D-1) (or 18:00 UTC daylight saving): deadline for the TSOs to launch the market based procedure to buy back capacity (i.e. deadline to create a “proposal to buy”). No other market based procedure shall be performed afterwards, if the TSOs need to buy-back capacity after 20:00 CET, pro-rata rule shall be applied. TSOs will reduce firm bundled and unbundled capacities according to pro-rata rule.
5. 19:30 UTC (D-1) (or 18:00 UTC daylight saving): starting of the CFO mechanism. TSO creates the “proposal to buy”
6. 20:00 UTC (D-1) (or 19:00 UTC daylight saving): End of the CFO mechanism.
7. 20:30 UTC (D-1) (or 19:30 UTC daylight saving): Publication of results.

**Figure 4: Timeline of the oversubscription and buyback process (in UTC)**



*Source: Self-made*