Study about models for integration of the Spanish and Portuguese gas markets in a common Iberian Natural Gas Market. Public Consultation Document.

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ACER, CNMC, ERSE

Comments submitted by: IBERIAN GAS HUB

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General comments

IBERIAN GAS HUB welcomes the opportunity to express our views about the alternatives to integrate the Spanish and Portuguese gas markets and thanks ACER, CNMC, and ERSE for launching this public consultation.

We fully agree with the views expressed by ACER, CNMC and ERSE in Section 1 ("Introduction") of the Public Consultation Document that liquidity in the wholesale market is an essential feature of a well-functioning hub and, in combination with non-discriminatory access to the networks, will promote competition at both the wholesale and retail levels and generate fairer price signals.

We would like to stress the importance of defining sound balancing rules and of organizing delivery at virtual trading points and entry-exit areas in order to foster liquidity around OTC and standardized products along the price curve. Also, we would like to stress that liquidity of a product implies not only a significant volume of transactions, but also "depth of market" (i.e., a sufficient number of

buy and sell offers), a minimum trading horizon and relatively low bid-ask spreads.[1]

Two key institutions appear to have been essential in the creation and development of liquidity in European gas markets: the virtual hubs or trading areas and the exchanges or organized markets. Virtual trading hubs are delivery points in title transfers of gas around which market services are offered for all kind of contracts or products (including and mainly over the counter products). Exchanges, on the other hand, are market centers for the organized trade of standardized products only.

The virtual hubs facilitate the trading of all kinds of flexibility products (i.e., products with a geographic or time dimension)[2], offering services to shippers or network users such as registration, tracking, matching and nomination or notification of all types of contracts, whereas the exchanges offer traders the value of anonymity, security and standardization.

Our main concern in relation to the Public Consultation Document is that a strategy to build up a common trading area or a hub in Spain and Portugal by means of firstly establishing an exchange for short-term (day and intraday) products, essentially applying the Implicit Allocation Model without a common regime for daily imbalances and common delivery rules for the entire trading area (Iberia), is like putting the cart before the horse, because it will not necessarily help to increase liquidity in the market and will impose deadweight losses and delays in achieving a common trading area for Iberia.

On the contrary, **we advocate for a roadmap which implies establishing the Iberian gas hub on the basis of an adaptation of the Trading Region Model to improve liquidity and a later implementation of exchanges (one for day**

[1] See Wagner, Elbling & Company (2014), "Functioning of European Gas Wholesale Markets. Quantitative Study", European Gas Regulatory Forum, Madrid, May.

[2] Flexibility is nothing else than network users having the possibility of selling and purchasing local or time products (i.e., short-term locational products or time spreads) to cover their portfolio management needs and particularly the need to minimize the cost of imbalances. The incentives for short-term trading created by the imbalance penalties is the reason why all European virtual hubs have linked their development to the development of a market-based scheme for imbalances in the entry-exit area, which in turn serves as the basis for the growth of liquidity.

and intraday products and another for medium and long term products) when benefits would more than compensate costs. We consider the implementation of a common trading area (first) and exchanges (after that) as interim steps towards the establishment of the Market Area Model in the future. We see three initial milestones to facilitate the integration of the two markets and the growth of liquidity in the early stages of the process: (1) defining a single virtual trading point in Iberia; (2) strengthening the coordination of Enagás in Spain (as GTS) and REN in Portugal (as GTG) to implement common delivery rules for the transfer of titles of gas among balance accounts at both sides of the interconnection and (3) promoting a common definition of daily balancing rules and harmonizing the implementation of Regulation (EU) 312/2014 in both Portugal and Spain.

In the following answers we develop this basic idea and point out what we think is the best way and a potential time schedule to achieve a liquid, common trading area in Spain and Portugal.

Question 1: Would you agree with the analysis made on current market situation and on the major issues affecting the creation of an Iberian market?

We generally agree with the analysis carried out by the Public Consultation Document on the current reality of the Iberian market.

However some key features of the Iberian gas market, which make it different from the only other European market where the Implicit Allocation Model has been implemented, as is the case of France[3], have not been sufficiently highlighted:

[3] So far, the market coupling solution or implicit allocation model has only been implemented between GRTgaz North and GRTgaz South. There are no plans to implement this model anywhere else. In the French case, the following conditions prevailed: (1) it was implemented between areas under the same TSO, (2) within the same country, with the same legal and regulatory regime, (3) only for day-ahead and within-day products, maintaining explicit allocation for the mid and long-term, (4) applied to a limited amount of capacity, also maintaining explicit allocation in parallel for day-ahead and within-day

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1) the existence of a relatively dynamic OTC market for flexibility products (virtual transportation and storage services) as a valid starting point for the development of a liquid, well-functioning Iberian gas hub, and

2) the existence of two different sets of rules for imbalance and congestion management in Portugal and Spain, which necessarily ought to be harmonized in order to achieve an effective integration of the Portuguese and Spanish markets.

In our opinion, the first step, as it has been the case in almost all European Member-states[4], must be the organization of a common hub as a virtual trading point for delivery of all transactions (starting with OTC transactions and including exchange transactions when standardization would require it). The procedures of simultaneous matching and notification (schedules, limits and formal conditions, as well as the possibility of communicating gas transfers to Enagás and REN by third parties by means of single-sided commercial nominations) have to be implemented at the beginning of the integration process and as soon as possible. Only after that, and when standardization of products appears as a factual demand mainly supported by the daily balancing scheme, the implementation of standardized products and exchanges will make sense.

Regarding the proposed integration models, our view is that, as a matter of fact, the real model is only one (the Market Area Model), whereas the proposed "models", when applied to the Iberian market, refer mainly to different stages in the implementation process of the Market Area Model.

All three integration "models" (or, rather, integration "stages") have advantages and disadvantages of their own, but, in the short run, the focus should be on

products, (5) the two areas connected already had organized and functioning hubs, one of them (PEG Nord) enjoying a fair degree of liquidity, and, more relevantly, (6) there was contractual and physical congestion at the interconnection between the two zones. All these factors make it highly difficult for this integration experience to be exportable to other gas systems around Europe.

[4] For instance, UK, Netherlands, Belgium, Germany and Austria.

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how to deploy them to increase the liquidity of the current Iberian gas market while fully implementing the network codes.

Section 3.1 of the Public Consultation Document appears to favor the Implicit Allocation Model as the starting point, over the Market Area Model and the Trading Region Model, as it concludes that (a) the Market Area Model will be costly on grounds that it "…*will require a full alignment of national legislations and the creation of a single entity to perform the balancing of the system*…" and "…*will need much time and resources from Governments, regulators and TSOs*…", and (b) the Trading Region Model may be difficult to implement, as "…*developing the detailed rules of functioning of this model can be complex*…". In contrast, it concludes that the Implicit Allocation Model "*…can be applied also with limited interconnection capacity…*", "*…does not require a high level of harmonization of national legislations, so the implementation [process] can be faster…*" and "*…will directly promote market liquidity…*".

However, as we pointed out in the introduction, we argue that the implementation of the Implicit Allocation Model without a common trading area or a virtual trading point that support liquidity in the Portuguese and Spanish wholesale gas markets, and particularly in the exchanges required by the model, may generate inefficiency in the short and medium run for various reasons, as explained below.

On the one hand, the costs of implementing the IAM without a common trading area, the required coordination of ENAGAS an REN, and a harmonized unbalance scheme, will not be small:

- Firstly, the direct costs of financing an institution during the period of time required to reach a satisfactory level of liquidity that would justify its existence[5] will have to be supported by some financial mechanism or by regulatory charges. In any case, all these costs will be deadweight losses from the point of view of the market as a whole.

[5] The experience in most financial and commodities markets shows that the establishment of organized market centers or exchanges has usually taken place once the markets reach a minimum degree of liquidity and matureness (i.e., a minimum level of standardization of OTC products and trading arrangements).

- Secondly, the Spanish and Portuguese regulatory bodies could be tempted to promote liquidity by artificial and compulsory measures that usually would drive to market inefficiency, as is almost always the case in this type of solutions.
- Most importantly, the opportunity costs of targeting the regulatory and gas companies efforts to the development of an institution (i.e., investing in IT systems, organizations and operating procedures) before the basis of the market is set up and therefore forgetting where the focus has to be, could be significant. Actually, more often than not it costs more to correct or adapt existing institutions than to start up new ones. The achievement of the Enagás and REN coordination, the Market Area or the Trading Region Model would be postponed (perhaps "ad infinitum") rather than accelerated.

On the other hand, the benefits from establishing common exchanges early on in the integration process (with all probability the most relevant benefit of the IAM) will not be capitalized for a long time:

- We will observe weak and volatile prices. The existing low level of liquidity in the market (in part linked to the lack of a daily balancing mechanism in Spain and Portugal in line with the Network Code on Balancing[6]) would probably create a volatile and non-representative economic signal for the short-term value of natural gas. In fact, certain analyses of experiences in market integration via implicit allocation of capacity around Europe suggest that at least one of the markets that are going to be integrated via market coupling should feature an adequate level of liquidity for market coupling to be effective[7]. Without the previous

[6] The current balancing system in Spain does not provide sufficient incentives for the trading of short-term products, due to the linepack storage service (AOC) provided with the access to the transmission network. Also, the access to the wholesale market defined by the products with delivery at the AOC balancing zone is limited to companies with a transmission network access contract, thus limiting liquidity for those products.

[7] See, for instance, The Brattle Group (2012), "Gas market integration via implicit allocation: Feasibility from the North-West European gas market perspective. Prepared for NMa", section 6.1 ("Preconditions for implicit allocation"), pages 28-30.

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implementation of a virtual hub and harmonization of imbalance and delivery rules, applicable to all kinds of transactions (including OTC deals), the Implicit Allocation Model would leave aside the main source of liquidity (the OTC market) in the early stages of the implementation of an integrated wholesale Iberian gas market.

- We will have wrong interconnection price signals. Also, the short-term price differentials between the two markets (Spain and Portugal) that will be integrated via implicit allocation of capacity should be large enough for the benefits of market coupling to exceed the implementation costs[8]. There is no strong evidence that the short-term value of natural gas with delivery at the Portuguese transmission network is significantly different from that with delivery at the Spanish transmission network in order to justify the implementation of implicit allocation before supply and demand for standardized short-term products appear.

- We will observe supply and demand price-inelasticity. At present, a large percentage of Portuguese natural gas imports come from Algeria via the Portuguese-Spanish interconnection and on the basis of long-term contracts, making it difficult to implement the Implicit Allocation Model successfully in the short and medium run. The quantity adjustments to the physical flows associated to these contracts will be absolutely inelastic to changes in the spot market prices. In fact, long term contracts with gas and capacity reserve bundled are currently priced at fixed prices indexed to oil prices and non-sensitive to changes in spot prices.

- Enagás and REN will face difficulties in operating the interconnection. Additionally, allocating the capacity at the interconnection between Portugal and Spain exclusively on the basis of the buy and sell orders of short-term standardized exchange products with low liquidity would make it difficult for Enagás and REN to optimize the operation of the interconnection. While spot liquidity grows, the solution of capacity congestions could require the use of longer-term physical products,

[8] See The Brattle Group (2012), op. cit., section 4.

which, furthermore, may help at the same time to foster liquidity along the price curve and integrate the different price horizons. Furthermore, the current low level of usage of capacity at the Spanish/Portuguese interconnection (an average 25%, as stressed in the Public Consultation Document) shows that the implicit capacity price most of the time is actually zero, which means that the allocation of the interconnection capacity cannot be considered a significant problem at present in the wholesale Iberian gas market.

Regarding the Trading Region Model, Section 3.2 of the Public Consultation Document describes its features and main advantages and disadvantages in the context of the Iberian gas market. We do not share part of the analysis presented in this section, particularly where it points out that:

- *"…Shippers can allocate gas from the balancing system of the Trading Region to a specific End User Balancing Zone by nominating the desired transfer quantity from the virtual trading point to the end user balancing zone…"* (Public Consultation Document, page 20).
- *"….In particular, it is necessary to develop a rule to allocate any unbalance in the trading region to the two end-user balancing zones, as there is no entity responsible to balance the trading region. Developing this rule can be complex…"* (Public Consultation Document, page 22).

In our view, the "Trading Region", considered as a common virtual trading point, need not be defined as a "balancing system". All trade notifications (in the sense of Art. 5 of Regulation (UE) 321/2014) coming from the common trading area (i.e., the VTP) are matched by definition and must always be referred to well-identified balancing accounts or portfolios, otherwise they would be refused by Enagás and REN. For this reason an imbalance in the trading region with a well-defined virtual trading point, as suggested in the Public Consultation Document, is not possible.

In the Trading Region Model, the main problem, in our opinion, is not how to allocate imbalances but, rather, how to solve congestions at the interconnection

and to establish a sensible an efficient cost allocation scheme for congestion costs. And the way to solve congestions is twofold: either as it is carried out at present, through specific decisions of Enagás and REN affecting specific flows of gas, or via market procedures (with Enagás and REN buying and selling locational or physical products with delivery at the entry/exit points or short-term standardized products in exchanges). In none of these cases a rule to allocate the "…*unbalance in the trading region…*" is required.

We propose to solve the congestions at the interconnection in the same way as any congestions in Spanish and Portuguese transport networks would be solved and according to current European congestion management rules: by means of market tools. In an initial phase using locational options to increase or decrease flows of gas in identified local entry-exit points. After that, physical options (these options, different from locational, give the right to increase or decrease flows of gas in the entry-exit area which supports the virtual trading point but without identifying the specific entry or exit point) would be mostly used. Finally, when a high level of liquidity would be in force, the use of title transfers of gas in the VTP would suffice to solve the congestions. This is the road followed by NBP at the end of the 1990s, and by almost all other European virtual hubs afterwards.

Question 2: Do you agree with the implementation of the wholesale market with implicit allocation of capacity as a step for market integration, but aiming for an even more integrated market in the longer term?

We agree with the goal of aiming for a greater level of integration than that which may be brought about by the Implicit Allocation Model as a way to gain liquidity.

As argued in the previous answer, implementing a wholesale market with implicit allocation of capacity as an initial step will likely cause inefficiency in the short and medium run, given the current state of liquidity in the Iberian gas market and the current regulatory framework.

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Additionally, such a solution would not be in line with the known experiences of natural gas hub development around Europe. In other European gas markets, the process to set up a natural gas hub started by laying the contractual (e.g., NBP 97 contract with delivery clauses applied to all kind of transactions) and regulatory basis (e.g., definition of a virtual trading point, an entry-exit system and a daily balancing scheme) to generate liquidity around short-term contracts used mainly for balancing purposes. Only when liquidity picked up were exchanges introduced as a way to strengthen the economic signals from trading of standardized products, leading to the development of liquidity in the forward markets.

For all the reasons above, we argue that the initial model that would best foster the integration of the Portuguese and Spanish gas markets would be an adaptation of the Trading Region Model with a progressive implementation of the Network Code on Balancing, a later introduction of exchanges (one for day and intraday products and other for forward, longer term products) with full implementation of the Market Area Model at the end of the process. The starting point should then be to establish the basis of a common trading area, rather than to set up a common spot exchange with the objective of implementing the Implicit Allocation Model. The easiest way to start integrating markets is not always, and particularly in this case, the best route to increase liquidity.

In our answers to questions 4 and 6 we elaborate in detail on how the Trading Region Model should be adapted in the Iberian case.

Question 3: What are the most important aspects to take into account and to harmonize from a regulatory point of view for the creation of the wholesale market with implicit allocation?

In our answer to Question 4, we elaborate on the adapted Trading Region Model, which we believe is the right model to be implemented in Iberia as an interim step towards the establishment of the Market Area Model in the future.

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In our answer to Question 6 we present a roadmap for the implementation of this adapted model and which would imply, as initial measures:

(a) Establishing a well-defined common Virtual Trading Point.

(b) Achieving a given, although minimum, level of coordination of REN in Portugal (as GTG) and Enagás in Spain (as GTS) in order to facilitate the integration of the two markets.

(c) A progressive implementation of a daily balancing scheme in line with Regulation (EU) 312/2014.

Question 4: Which is the best model for the integration of Iberia in the longer term? Market area model, trading region or others?

In our opinion, the most adequate model to start and develop a liquid Iberian gas hub is an adapted Trading Region Model, with the appropriate adjustments to account for the current reality of the Iberian gas market.

The proposed model would imply the existence of two balancing zones (Portugal and Spain) and a single, common virtual trading point for both markets. This would require a correct legal definition of the virtual trading point and the establishment of a common entry-exit area with harmonized tariffs, thus eliminating Spanish–Portuguese interconnection tariffs.

In addition, the implementation of the Trading Region Model will require from the beginning a stronger coordination between Enagás and REN than in the case of the Implicit Allocation Model, although it would mean a real step forward in increasing liquidity. The management of congestions at the interconnection would be carried out in a highly coordinated way by both Enagás and REN using the same procedures and tools than for other congestions in the Spanish and Portuguese network (i.e., using physical and locational products and charging the corresponding costs to network users as other balancing costs).

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The model could be implemented incrementally. The starting point would be the two existing entry-exit areas (Portugal and Spain) with explicit allocation of capacity at the Portuguese-Spanish interconnection, as is carried out at present. The progressive application of procedures for the coordinated management of congestions at the interconnection between REN and Enagás would have to be coupled by (1) the progressive reduction of interconnection tariffs till their disappearance (in order to treat the congestions at the interconnection as any other congestion in the Portuguese and Spanish systems), (2) a simultaneous adaptation of the entry-exit tariffs at both sides of the interconnection, to avoid distortions, and (3) the implementation of a congestion management cost recovery method that guarantees revenue sufficiency for both Enagás and REN.

The coordination of Enagás and REN would cover in a progressive way the following areas:

- Provision of general information about the overall status of the transmission networks in Spain and Portugal.
- Definition of common rules for the participation of Enagás and REN in the markets to solve congestions at the interconnection via the purchase and sale of physical or locational products.
- Rules for assessing and charging interconnection congestion management costs to entry and exit flows at both sides of the interconnection (as if they were internal congestions).
- Common rules and time schedules for the reception of acquiring and disposing of gas transfers at the virtual trading point between balancing portfolios (i.e., Art. 5 of Regulation (UE) 312/2014).
- Common rules and schedules for defining the net balance of acquiring and disposing trade notifications submitted by network users.

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- Definition of common schedules for the submission of intraday information on imbalances to network users under Art. 32 of Regulation (EU) 312/2014.

- Harmonized procedures for the estimation of non-daily metered off-takes (i.e., which variant of the information model under Regulation (EU) 312/2014 is to be applied) and definition of flow allocation rules to be applied at such exit points.

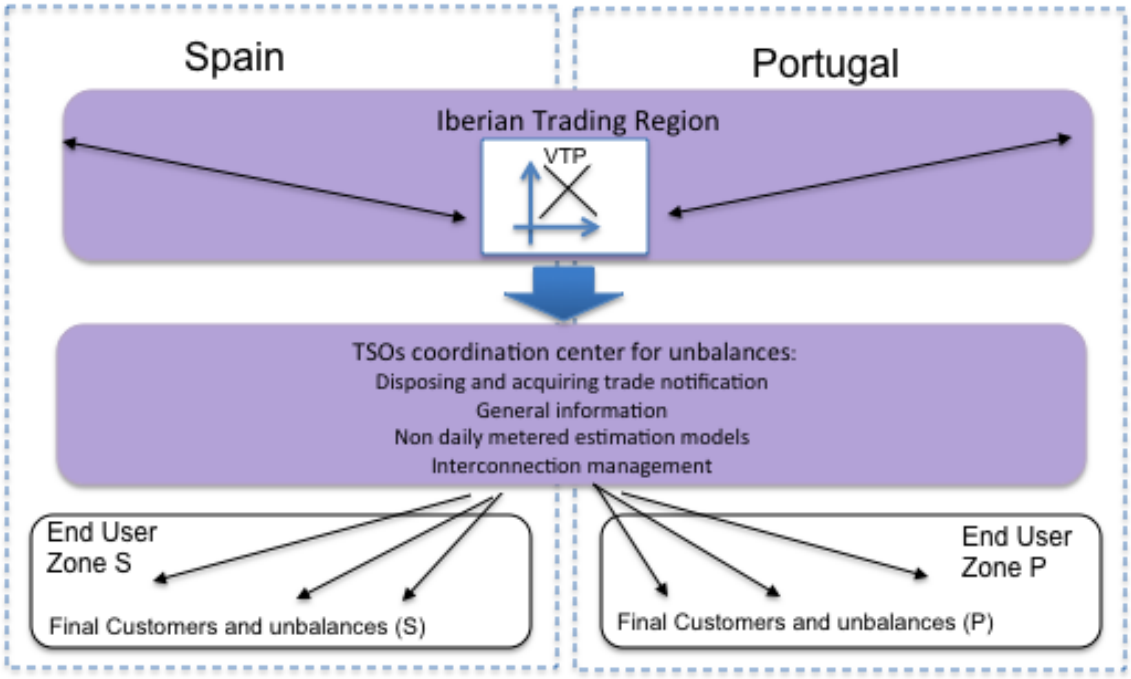
In our view, most of these tasks to define and harmonize rules are in European Regulations and constitute the key to a successful implementation of the adapted Trading Region Model. The key is not only how to allocate imbalances or share imbalance management costs in the trading area between two retail balancing zones, as it is mentioned in the Public Consultation Document, but defining how to jump-start the real coordination of Enagás and REN. Our suggestion is to achieve two balancing accounts for users operating on both sides of the interconnection (one for Portugal and the other for Spain) but with a common trading area (Virtual Trading Point) as soon as possible. Each account would include the entry-exit points on each side of the interconnection, while the interconnection would not be an entry-exit point[9].

The only requirement, at this point, should be that the daily notifications associated with trades at the Virtual Trading Point should be extended to include the case of transfers of gas between a user's balancing Spanish and Portuguese accounts (although no actual trades would back these transfers of "own gas" across own accounts). In this way, the additive property between both balancing accounts would continue to apply and the network users would be able to "move" gas between balancing areas.

[9] Although both balancing accounts would use analogous accounting criteria and time schedules (for trade notifications, etc.), each of them would have its own sources of information (either with the Spanish GTS or the Portuguese GTG) and its own rules for registering trades, matching counterparties and quantities and allocating estimated quantities. The network users would have two identification numbers for their balancing accounts (one for Portugal and the other for Spain) and could transfer gas from one account to the other only by way of valid trade notifications submitted to the relevant operator.

Figure 1 illustrates the starting point for the coordination of Enagás and REN and the establishment of a common Virtual Trading Point via an adaptation of the Trading Region Model.

Figure 1. Adaptation of the Trading Region Model to the Iberian case.



Source: Own elaboration based on the figures included in the Public Consultation Document.

The advantages of this adaptation of the Trading Region Model to the Iberian case are the following:

- It departs from the current state of development of the Iberian wholesale (OTC) market and the current regulatory framework to gradually achieve liquidity growth, while being compatible with the full adoption of the CAM (access to capacity), CMP (solution to contractual congestion) and Balancing network codes and the use of a Europe-wide capacity booking platform. The subsequent results can be taken as a test for the integration of the Portuguese and Spanish markets before implementing a (more expensive) implicit allocation model, which requires two liquid

spot markets at both sides of the interconnection, should a cost-benefit analysis show that it may create added value.[10]

- It requires enforcing a minimum level of coordination between Enagás and REN that is considered essential in order to advance in the creation of a virtual trading point (virtual hub) or a common trading area defined on an entry-exit zone.

- It helps to maintain a single price per product for the entire Iberian wholesale market, avoiding the problems derived from liquidity asymmetries that undermine the quality of the economic signals implicit in market prices and increase the costs of hedging.

- The interconnection congestion management costs may be treated as other imbalance costs, such as neutrality costs (i.e., Art. 29 of Regulation (EU) 312/2014) or other costs (i.e., Art. 11 of Regulation (EU) 312/2014) without affecting explicit wholesale prices or generating different price signals in Spain and Portugal. These costs would have to be charged to the net entry or exit flows (depending on the direction of the congestion) both in Spain and Portugal as is the case with any other congestion cost.

Last but not least, an additional factor that would favor the growth of liquidity in Iberia under the adapted Trading Region Model (and, in fact, under any integration model) would be to facilitate the linkage of the Iberian market to the liquidity pools in Northwestern Europe (i.e., the TTF, PEG Nord and German hubs). Given that the planned increase in interconnection capacity between France and Spain in the coming years will foster cross-border trading between the Iberian gas system and the TIGF balancing zone, a further requirement for greater convergence between the Iberian hub and the Northwestern hubs would

[10] This is in line with the conclusions of NRAs within GRI NW after analyzing the viability of implicit allocation in the region, which imply that the choice to implement implicit allocation – whether introduced for arbitrage in case of price differences or to solve coordination issues – should be made once the CAM and CMP measures have been introduced and the effects of these measures are known and provided a cost/benefit analysis shows that the implementation of the Implicit Allocation Model has added value. See http://www.acer.europa.eu/Gas/Regional_%20Intiatives/North_West_GRI/Public%20Consultation/GRI_NW_Implicit_Allocation/Pages/Conclusions.aspx.

be a greater level of market and physical integration between the French Northern and Southern gas systems, which is expected to happen by 2018[11].

Question 5: When and how the Balancing Network Code and the Interoperability Network Code should be implemented to contribute to the goal of the Iberian market?

We believe that full implementation of Regulation (EU) 312/2014 in both Portugal and Spain should be a milestone in order to develop and achieve a liquid Iberian natural gas market. A sound, well-defined and well-functioning balancing system is at the heart of the development of short-term (daily) supply and demand of natural gas, as has been shown at all European virtual hubs.

Likewise, the full adoption of the Interoperability Network Code is also a necessary condition for achieving an adequate level of coordination between Enagás and REN and, thus, for the implementation of the Trading Region Model.

Given the regulatory issues to be resolved both regarding the balancing scheme (definition of an entry-exit zone with a virtual trading point and the corresponding access and tariff schemes, participation of Enagás and REN in the market to solve congestions and information provision models and harmonized daily balance schemes) and the harmonization of data exchanges and operational rules between Enagás and REN (rules on flow control, measurement principles, matching processes, allocation of gas quantities and management of exceptional events), and given the roadmap presented by the Spanish System Technical Manager (Enagás GTS)[12], we would expect full implementation of Regulation (EU) 312/2014 (in Spain) and the Interoperability Network Code before the end of 2015, assuming all of the identified

[11] See, for instance, EFET's response to the French energy regulator's "Public Consultation on the Creation of a Single Gas Marketplace in France in 2018" at http://www.cre.fr/en/documents/public-consultations/creation-of-a-single-gas-marketplace-in-france-in-2018/read-public-answers.

[12] See presentation of Enagás GTS at the 51st meeting of the Comité de Seguimiento del Sistema Gasista (Gas System Monitoring Committee), 21st May 2014, page 54.

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requirements to create a common trading region discussed in the answer to Question 4 are fulfilled in advance.

Question 6: Identify any issue you think is important to achieve further integration. How would you set the timing and prioritization for the discussion/implementation on these issues?

In our opinion and as argued in previous answers, the integration of the Portuguese and Spanish markets makes the most sense when the basic regulatory and operational building blocks of the Iberian gas hub have been laid out and a given, minimum threshold of liquidity has been reached in the wholesale market.

In this sense, we believe that it is essential to adopt regulatory and operational changes along four lines of work in order to foster liquidity at the Iberian gas hub:

A. Changes in the legal framework to foster liquidity at the hub (beginning of 2015).

- Regulatory definition of a virtual hub (i.e., a virtual trading point, with easy access to all kinds of traders, including non-physical traders) associated to a set of transmission network infrastructures free of congestions.
- Definition of the corresponding entry-exit system, including:
    a. Definition of the balancing zones.
    b. Definition of the corresponding entry-exit points and tariffs.

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- Definition of a regulatory framework conducive to fostering the provision of hub operator-like services (i.e., title tracking, matching, notifications, "back-up, back-down" and rounding services[13]).

B. Increased coordination between Enagás and REN in order to guarantee a single-price market area (starting at the beginning of 2015 and beyond).

- Harmonization of provision of general information to market participants, congestion management at the interconnection and at the internal networks.
- Harmonization of delivery rules in Spain and Portugal:
    a. Development of appropriate operating procedures for the reception of acquiring and disposing gas transfers notifications at the single Iberian virtual trading point (i.e., the Iberian gas hub) up to close to the end of the gas day.
    b. Establishing last minute and one-sided trade notifications to Enagás and REN as a guarantee of firmness of transactions at the hub for both OTC and exchange transactions.
    c. Defining common procedures and schedules to allow an equal treatment of all transactions to transform them into the net balance of acquiring and disposing trade notifications to be submitted to Enagás and REN.
- Harmonized rules for the existence of two different balance portfolios for a single network user operating in both markets, one for Spain and the

[13] Title tracking refers to the identification, at every point in time, of the holder of the title to a contract. Matching refers to the confirmation of counterparties and quantities for all acquiring and disposing trade notifications. Back-up, back-down services guarantee the automatic (full or partial) coverage of net positions at the VTP (whether long or short) by the hub services provider in order to avoid imbalances and on the basis of market buy and sell orders. Rounding services also guarantee the automatic coverage of net positions at the VTP due to rounding errors (for instance, due to a change in units) or up to a given threshold. Find more information on the definition of these services, for instance, in Huberator's "Hub Services Agreement 2012".

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other for Portugal. All transfers between balancing accounts (including those of gas owned by the same network user and, consequently, without being backed up by a contract or a trade) should be correctly notified to the corresponding operator.

- Elimination of the need to reserve capacity and the associated tariffs at the interconnection considering the neutrality principle applied to TSOs. (i.e., translating the revenue coming from congestion rates to entry-exit tariffs).

- Definition of rules for the participation of Enagás and REN in the markets to solve congestions at the interconnection and at the transmission networks via the purchase and sale of physical products.

- Establishment of a common cash-out mechanism for the settlement of imbalances.

- Implementation of an information provision model in line with Regulation (EU) 312/2014 and definition of gas allocation rules to be applied at non-metered off-take points.

C. A common and coordinated roadmap to the full implementation of a daily balancing scheme in line with Regulation (EU) 312/2014 (before the end of 2015).

- A progressive implementation of Regulation (EU) 312/2014 in Portugal and Spain could follow, for example, the following timeline:

    a. Approval of the basic balancing model before the end of 2014 if possible (i.e.; separation of imbalances at regasification plants from imbalances at the entry-exit balancing zone).

    b. Gradual implementation of the balancing model (Jan. 2015-Dec. 2015) implying:

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i. A gradual reduction of flexibility at the entry-exit area and a gradual increase of imbalance penalties (Jan. 2015-Dec 2015).

ii. Development and gradual deployment of the balancing information provision mechanism (Jan. 2015-Dec 2015).

iii. Testing the participation of Enagás and REN in the market to carry out balancing actions (second half of 2015).

iv. Implementation of a market-based imbalance cash-out scheme and full participation of Enagás and REN in the market (first half of 2016).

v. Definition of a guarantees scheme for imbalance costs[14] (first half of 2016).

D. Implementing trading platforms to increase the transparency and security for spot and longer term deals (when liquidity requires it).

- Fostering contract standardization and liquidity along the entire price curve (i.e., spot and forward contracts) by facilitating the implementation of commercial trading platforms compliant with Art. 10 of Regulation (EU) 312/2014.

- Prioritizing contracts of day-ahead and intra-day products by Enagás and REN as a way to solving imbalances.

- Fostering the implementation of a Central Counterparty and Clearing Entity to supply services mostly in standardized forward and futures products and also in intra-day and day-ahead products.

[14] As an example, see, for instance, the model implemented in the UK: "Uniform Network Code, Transportation Principal Document, Section X: Energy Balancing Credit Management", available at http://www.gasgovernance.co.uk/sites/default/files/TPD%20Section%20X%20-%20Energy%20Balancing%20Credit_6.pdf.

E. Assessment of the need to use an implicit allocation mechanism to further integrate the Portuguese and Spanish markets.

It is at the end of this process, instead of at the beginning, when we think it will make sense to evaluate the IAM as a way to improve the integration of Spanish and Portuguese markets.

Only once a minimum level of liquidity has been reached in the wholesale market, the implementation of the CAM, CMP and Balancing Network Codes has been completed and tested, and exchanges or trading platforms for day and intraday as for forward and future products are fully working, will it be possible to soundly evaluate via a cost-benefit analysis, as recommended by NRAs in GRI NW, whether implicitly allocating part of the capacity at the interconnection between Portugal and Spain and thus reducing the use of physical and locational products by Enagás and REN as a result of interconnection congestions, will generate more benefits than costs.

We would like to end up stressing that this roadmap (especially the measures outlined in sections A, C and D) is generally in line with the views expressed by EFET about how to foster liquidity in illiquid or maturing gas markets[15]. The scoring mechanism proposed by EFET for evaluating the maturity and degree of development of natural gas hubs around Europe also points in this direction, providing greater weight to hub features such as the existence of an entry-exit system with a single virtual trading point, a cash-out mechanism for imbalances, accessibility to the hub for non-physical traders, market-based firmness of trades at the hub or a well-defined role for a hub operator[16].

[15] See, for instance, EFET (2014), "European Gas Hub Development", 25th European Gas Regulatory Forum, Madrid, May, page 5, stating that the most common "next steps" for illiquid hubs are (1) to establish a consultation process accessible in English language, (2) to implement entry-exit regimes with a (preferably) single virtual trading point, (3) to ensure that the virtual trading point is firm – through market based rules, with a transparent reference cash out price—and (4) to make sure the roles of TSO, hub operator, exchange, etc. are clearly defined with appropriate governance arrangements.

[16] See, EFET (2014), op. cit., page 2.