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<b>GRTgaz' answer to CEER's call for Evidence concerning the Gas Target Model</b>		
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The 18<sup>th</sup> Madrid Forum outlined the need for a target model for the gas market. As a consequence, CEER has launched a call for evidence on a « Conceptual model for the European gas market ». GRTgaz supports this initiative and is willing to contribute to the process. GRTgaz is giving the point of view of a specific transmission system operator, according to its understanding of the market situation in France and its neighboring countries.

**1) Main goals to be aimed at by the gas target model beneath the high-level policy goals set out by the 3<sup>rd</sup> package**

The Gas Target Model should provide a global vision of the future organization of the European gas market.

It will ensure **consistency** for all the topics to be dealt with by the network codes (12 different topics listed in EC Regulation 715/2009 with an order list defined by the Commission and starting by Capacity Allocation Mechanisms, Balancing and Tariffs)

It will also allow market players to better anticipate the need for new investments and their design:

- New transmission pipelines or compressor stations in case of merger of market zones;
- Assessment of the size of the market and its potential for a new project such as LNG terminal or a storage facility.

From that perspective, it could be useful to remind the role of gas in the future European energy mix, in order to encourage long term investments in the gas sector.

**2) Anticipated changes in the European gas market for the 10 coming years**

Price convergence is already taking place on the wholesale market in North-West Europe. This is the result of market opening and implementation of gas exchanges. Price convergence is not a consequence of short term transmission contracts (no real demand for short term bundled products presented in North West Gas Regional Initiative and proposed to the market), because spreads between spot prices are very close to 0 in average. Price convergence is happening because of longer term capacity held by shippers for importing gas to the different market zones in North West Europe and because of the marginal arbitrage for buying or selling gas on spot markets. This phenomenon should extend to Central Europe, Italy or Spain with additional interconnection capacities and development of competition. However, if the number of gas exchanges should increase, we should not

expect to have as many gas exchanges as Members States or Entry-Exit zones: therefore, a specific focus should be dedicated to market based mechanisms (balancing for instance) and their feasibility in some countries within the coming decade.

The dual aspect of the European gas market, based on short term needs and long term needs will go on, even if trading activities are developing:

- The increasing need for gas importation compensating the decreasing indigenous production will rely on long term contracts supporting long term investments (Nabucco, Nord Stream, South Stream);
- In order to mitigate risks, most of the gas suppliers are securing their gas portfolio through long term contracts, associated to specific transmission routes, together with trading activities on spot markets;
- The current balance between gas production and gas demand will foster activities on gas hubs, as long as there is enough interconnection capacity between those hubs.

**Long term capacity contracts** are playing and will continue to play an important role in securing new investments that are needed:

- They can secure gas routes associated to long term supply contracts
- They are necessary to decide gas infrastructure investments, with a 50 year lead time, in order to avoid stranded assets. The marketing of newly developed transmission capacities should be performed via transparent open seasons. These open seasons should be fully coordinated between different infrastructure operators (LNG terminal and TSO, multiple TSOs) in order to offer bundled products when needed by the market.

**Hubs and gas exchanges** will continue to develop in parallel with long term contracts, due to competition on the wholesale market. They have to be attractive enough (size of the Market – interconnection with adjacent hubs, storage facilities, LNG terminals, gas producers) and should also be accessible for significant industrial consumers (such as CCGTs). Market coupling between adjacent gas exchanges could be viewed as a preliminary step to the merger of market areas.

### **3) Key elements of the conceptual model**

**Full functioning Entry-Exit Zones** (to be linked to rules related Capacity Allocation Mechanisms)

The different Market areas should be delimited by **full functioning Entry-Exit Zones**, without any restriction, such as “not freely allocable capacity” / “freely allocable capacity”. An Entry-Exit Zone is a geographical part of a physical network, within which all combinations of entry and exit capacities can be used. All combination of reasonable gas flow scenarios within the zone should be possible. Some highly improbable gas flow scenarios have to be excluded from the network design and capacity calculation; this should be made public by the TSO.

**Virtual Trading Points / gas exchanges / wholesale market pricing**

Within each Entry-Exit zone, trading should be first facilitated by the creation of a Virtual Trading Point. Whenever possible in a second stage, trading on a gas exchange should be encouraged to increase transparency and reliability of the wholesale market.

The size and the maturity (liquidity / competition / number of shippers) of a market area are both preconditions for implementing a gas exchange: this is crucial for the design of the Target Model, which cannot rely on 22 gas exchanges in Europe, in the coming decade. Therefore well interconnected market areas will play a key role for market integration and wholesale market pricing.

**A mix of capacity products adapted to market needs** (to be linked to rules related Capacity Allocation Mechanisms)

A mix of hub to hub and existing flange products

Hub to Hub bundled capacity products correspond to a need for arbitrage between gas prices in adjacent market areas and limit the risks for shippers to have inconsistent transmission capacity reservations on the 2 sides of a border. However flange trading should remain in the scope of the target model, as it corresponds to the standard rules for securing gas importation. Importation routes, booked on a long term basis support the development of long term interconnection capacity, security of supply and are definitely playing a key role on existing price convergence in the North West part of Europe.

A mix of both kinds of transmission products will contribute to better satisfy the different needs of network users. A total ban on flange capacity products will not improve market integration and will most probably create contractual uncertainty among the different market players.

A mix of temporal products

Capacity products should be consistent with gas purchase contracts and with gas commodity traded products. Therefore annual, monthly, and daily product should be considered.

Price signals related to those products should encourage an efficient use of the networks.

Both firm and interruptible capacity products should be proposed to the market, which allows for an increase of available capacity. However, when no contractual congestion is expected, the sale of firm capacities should take place first.

**Efficient Market Based Capacity Pricing** (to be linked to rules related Capacity Allocation Mechanisms)

Capacity pricing can be market based (auctions) but strong attention should be paid to the level of reserve prices.

EU policy concerning market integration and security of supply should lead to interconnection capacities exceeding the need of network users (room for potential new market players, room for arbitrage between different gas sources, “n – 1” rule for Security of Supply). Such a situation will lead, together with price convergence between gas hubs, to a **market value of short term interconnection capacity close to zero**. This situation should not be in contradiction with the development of new capacities in order to remove existing physical congestions.

It is suggested to set a reserve price, which could be the long term marginal cost of development. Without any reserve price, the costs of transmission would have to be borne mostly by end consumers due to low revenues resulting from cross border transmission (situation close to a postage stamp model, without any cost reflectivity and incentive to develop the most efficient transmission routes).

Thanks to a reserve price corresponding to long term marginal cost of development, the market will have a correct price signal and transmission system operators will be able to assess demand for developing additional interconnection capacity (when existing interconnection is fully booked).

For assessing long term demand for new interconnection capacity, it is recommended to rely on the Open Season procedure, which has to be technically and commercially coordinated between adjacent operators, in order to offer bundled long term products, if requested by market players. Auction mechanisms can also be implemented when developing long term capacities in order to support the investment decision:

- if not enough capacity is developed, the auction process is a way to allocate the new capacity;

- if the demand is lower than the capacity to be developed and if network users are willing to pay for a higher price (compared to the long term marginal cost of development), the investment can still be decided.

### **Congestion Management Procedures**

GRTgaz considers that the combination of the following mechanisms is efficient:

- Short term interruptible UIOLI
- Secondary capacity market
- Surrendering and secondary market for capacity.

However, capacity congestion should not be considered as a normal situation. Enough interconnection capacities should be developed in order to ensure the security of supply of Europe and in order to support competition and price convergence.

### **Efficient daily market based balancing using a mix of flexibility tools**

The balancing systems should be daily, because daily balancing implies operational simplifications for shippers (especially new comers) and it is coherent with traded short term products: Day Ahead, Within Day. However some large consumers (especially CCGTs), require very significant intraday flexibility, due to their load profile. If the transmission system cannot support totally free intraday profiles, within day limitations could be introduced as an alternative to additional investments (improving the line pack) or to additional costs (storage capacity reservation).

TSOs should have a mix of flexibility tools at their disposal to take into account the different load profiles of final consumers. Sources of flexibility should be developed in order to enable the development of gas fired power production the EU needs, especially as a backup for renewable intermittent energy sources.

The mix of flexibility sources available to the TSO should include:

- Standard wholesale market products traded on gas exchanges;
- Balancing market based products (to be delivered at a specific location in the transmission system and/or at a specific time, because of physical balancing, gas flows and pressure limits)
- Direct access to physical flexibility (line pack and/or storages)

Shippers should be responsible for taking actions to balance their portfolio within the balancing period. To adjust their position to updated demand forecasts within day, shippers need to be able to re-nominate quite freely. **This may not be compatible with strict re-nomination rules associated to firm UIOLI mechanisms.**

### **Gas quality standards, including standards for gas odorization:**

Because of France historical choice for a centralized odorization system, gas coming from France or Spain cannot be exported to the North West of Europe. Nevertheless these two countries present real opportunities to improve EU's Security of Supply through new sources of LNG.

Different solutions should be studied and discussed to remove this barrier to new LNG for North West Europe:

- Generalization of non odorized gas within the EU
- Definition of gas quality standards compatible with deodorized gas, enabling countries using centralized odorization to export gas after a deodorization process
- "conversion" services as they exist between H and L gas market areas

From a similar perspective, L gas Market zone is an issue as well, because of the physical barrier between L and H gas market zones. Stakeholders could either consider the merger of existing L gas

national market zones into one European L gas market area, or merging L and H domestic market areas. Merger of L and H gas market areas rely mainly on conversion services based on agreements between transmission system operators and gas suppliers being able to swap L and H gas.

### **Main interactions identified**

Strong interactions are identified between the following arrangements:

- Investments and tariff visibility (tariff visibility is necessary both to shippers and TSOs for long term commitments)
- Tariffs and capacity allocation methodologies (if capacity are to be allocated via auctions)
- Capacity allocation and congestion management procedures (two ways of dealing with capacity scarcity)
- Congestion management procedures and balancing rules (if shippers are to use their re-nomination rights to balance their portfolio)
- Balancing and trading hubs (market based balancing needs liquid hubs and specific balancing products).

### **4) Level of Harmonization of the target model**

The CEER vision paper should remain at a high conceptual level, details should be dealt with within the network codes. Gas day harmonization on a 6 am/6 am basis would be a positive evolution but should be treated and discussed in the specific network code dealing with the definition of capacity products.

The target model should however be detailed enough to ensure consistency between different connected areas (capacity allocation methods, congestion management procedures, balancing systems, transmission tariffs), when developing the corresponding network codes.

Some increased harmonization, in terms of gas quality (including gas odorization) is essential to reach a better market integration and should be discussed at an early stage.

The integration of the DSOs in the scope of the target model may not be relevant in countries like France where the DSOs have no access to physical flexibility and therefore have no role in balancing the system. However information provided by DSOs concerning off takes at the TSO-DSO interface are necessary to balance the system.

### **5) Areas to be affected by the target model**

The target model should cover the 12 areas where network codes have to be prepared, according to the 715 EU regulation. The focus should be on the following areas, strongly interacting with each other and of particular importance for the market design:

- Capacity allocation methods
- Congestion management procedures
- Balancing systems
- Transmissions tariffs
- Investment (how tariff structure interfere with investment decisions)

Moreover, the ambitious high level EU policy goals and their implementation within the Gas Target Model and the Network Codes will necessitate thorough and innovative changes in the commercial

services offered by TSOs. It is therefore suggested that national regulatory authorities implement appropriate incentives in order to support this evolution.

Some constraints should be kept in mind in the development of a gas target model, which may impose transitional steps towards the target:

- existing long term supply contracts
- existing dominant producers (eastern part of the EU)
- limited wholesale market liquidity and absence of gas exchanges (in some member states)

## **6) Areas to be excluded from the target model**

It is suggested that the target model focuses on a consistent implementation of the 3<sup>rd</sup> energy package. As described previously, the target model should mainly deal with the issues related to the design of the new network codes, with the exception of topics which are not interfering with other network codes and which can be discussed independently.

## **7) Options to enhance European markets integration**

GRTgaz is currently studying and discussing with market players the following options to enhance market integration.

### **Mergers of market areas:**

Merger of existing market areas will probably go on. It already took place in France (merger of 3 market areas in the North part of France) as well as in Germany recently. According to discussions with shippers, such a trend should continue in order to support competition. However, in many (but not all) cases, merger of market areas require either new investments or a limitation of former entry and exit capacities (see “freely” and “not freely allocable capacities” in Germany)

Merger of entry-exit zones is the most straight forward mechanism to enhance market integration. Bigger entry-exit zones foster competition (expected price decrease on the wholesale market); it may require additional investments but has a positive impact on the security of supply of the new market area. Therefore zones should be merged whenever it is technically feasible at reasonable costs, without any deterioration of the products offered (real firm entry-exit capacities). It should also be kept in mind that enlarging Entry/Exit zones may have an impact on the long term marginal costs for developing interconnection capacities with adjacent entry-exit zones. The larger the zone, the larger the number of flux scenarios to deal with in order to maintain a full functioning entry-exit zone.

The size of a full functioning entry-exit zone has to be discussed among markets players, on the basis of a cost / benefit analysis:

The example of the evolution GRTgaz’ market structure since 2009 is quite illustrative. In 2009, 3 zones were merged in the north part of France, this merger was made possible by investments (300 M€). Both shippers active on the French market and the French Regulatory Office considered it as a benefit for the French market. Thanks to the additional investments, the newly merged zone in France remains a full functioning entry/exit zone, without any limitation of entry and exit capacities.

GRTgaz also studied the possibility to merge its south entry-exit zone with the one of its adjacent transmission system operator. This could have been done without additional investments but raised some other difficulties related to company strategies.

The next structure evolution within GRTgaz network could be a merger of the two remaining north and south zone. The total investments required for such a merger were estimated at 2,4 billion € (if no other development in France).

In the short term, it was decided to study another mechanism to enhance integration between these two markets: market coupling.

### **Market coupling a tool to foster price convergence:**

In well integrated markets, prices of two adjacent zones should converge whenever the interconnection points between the two markets are not physically congested. This price convergence could be improved within the EU. Market coupling experiences in the electricity market proved to be efficient in accelerating price convergence. Although the mechanism applied for the coupling of electricity markets cannot directly be applied.

Electricity short term trading is fundamentally based on a day ahead fixing mechanism. This fixing reflects both the generation merit order and the demand forecast for the next day. Because electricity cannot be stored the match between programmed generation and demand has to be perfect. To reflect this, both explicit and implicit (market coupling) transmission capacity auctions were developed on a day ahead basis through a fixing mechanism for the electricity markets.

Because gas is a much more flexible commodity there is no need for such rigorous day ahead planning as in electricity, gas is traded in a continuous manner (not through fixing mechanisms). If the concept of market coupling is to be adapted to gas, it should be consistent with the fundamentals of trading of this commodity.

A market coupling concept has been discussed between market stakeholders in France and will be experimented between the north and south market zones of GRTgaz. GRTgaz will be pleased to share the results of this experimentation with CEER.