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Working Group: "Changes to the contractual structure of the transmission system" Topic:"Access to the South zone"

Final Report

SUMMARY

This report covers the work done within the "Consultation Transport" (Consultation system on Transmission) by the working group on *Changes to the contractual structure of the transmission system,* with regard to Item 1 "Access to GRTgaz's South zone".

It recalls the background to the establishment of this working group (WG) and provides an update on the current situation and the main subject to be tackled, i.e. access to the South zone in a way that will not inhibit the development of competition on the downstream market. It also provides a summary of the work that culminated in the proposal for two solutions which, if implemented on April 1, 2011, would facilitate access to GRTgaz's South zone. These two solutions essentially entail:

- a merger of the North and South zones on GRTgaz's transmission system by means of flow commitments in the Fos LNG terminals and a mechanism that will enable GRTgaz to balance its transmission system locally, while the global balance is maintained by the shippers;
- retention of the North and South zones with changes to the type of capacity provided at the North-to-South link and capacity allocation rules at the entry points to GRTgaz's South zone.

The purpose of the mechanisms analysed by the working group was not to replace the transmission operators' investments in the transmission systems, but to provide temporary arrangements until those investments are completed.

The working group was unable to reach a consensus on the analysis and the two solutions. This report also sets out the main areas of disagreement and the reservations and objections put forward by the WG participants.

This report constitutes a summary of the working group's activities in order to elucidate the decision taken by the competent authorities regarding the next stage of this work, on the understanding that before any of the chosen mechanisms are implemented, the operational procedures will first need to be studied in detail with all the parties concerned.

CONTENTS

1. Reminder of the background

1.1. Request by alternative suppliers

On October 17, 2008, a group of alternative suppliers[1] submitted to CRE (with copies to GRTgaz and TIGF) a Position Paper identifying negative effects generated by the North-to-South link and asking for GRTgaz's North and South transmission balancing zones to be merged as soon as possible.

The expected positive effects were described in the alternative suppliers' Position Paper of October 17, 2008 (see Appendix 1):

- increased competition in the South,
- enhanced liquidity on the gas wholesale markets in France.

1.2. Establishment of the "Changes to the contractual structure of the transmission system" working group

Through a ruling on September 18, 2008, CRE asked the two transmission operators, GRTgaz and TIGF, to begin consultation with all the market players on transmission pertaining to France's transmission systems. The first Consultation Transport steering committee meeting, held on November 7, 2008, approved a task schedule including a working group (WG) on *Changes to the contractual structure of the transmission system*.

This WG was given the task of studying the regulatory and contractual arrangements that would streamline access to the transmission system across the whole of France. Three specific areas were identified:

- access to GRTgaz's South zone,
- access to TIGF's zone,
- access to GRTgaz's B-zone (i.e. L-gas zone).

The participants assigned to this working group were:

- the TSOs (GRTgaz and TIGF),
- the shippers (Altergaz, ENI, EDF, EON, Poweo, Gas Natural, Gazprom, Rhodia Energy, GDF Suez and TGPL),
- EFET,[2]
- the end customers (UNIDEN),
- CRE,
- DGEC.

Given the topics covered, participation was extended to the LNG terminal operators (Elengy and STMFC) and to the storage operators (Storengy and TIGF).

EDF was given the task of leading the working group.

The working group began with the topic of "Access to GRTgaz's South zone", using the afore-mentioned Position Paper as a starting point.

[1] Poweo, Altergaz, ENI, Gazprom, Gas Natural, Eon, EDF
[2] Did not take part in the meetings

1.3. Objectives and work schedule of the working group on "Changes to the contractual structure of the transmission system"

For this issue, the working group's objectives were:

- to decide and submit to CRE an economically sustainable and efficient solution for improving access to the South zone,
- a target deadline of April 1, 2011 for the implementation of this solution,[3]
- to set appropriate indicators for measuring and tracking improvements in the situation in the South,
- also to study any intermediate solution that would facilitate access to the South zone and that could be implemented before that date.

Two solutions were studied:

- the solution proposed in the alternative suppliers' Position Paper of October 17: merger of the North and South zones, based on regulatory and contractual changes from 2011 (in particular to constraints at certain points on the transmission system), in addition to investments that may be completed from 2013,
- an alternative solution with several variants based on maintenance of the North and South zones with changes to the type of capacity provided at the North-to-South link and capacity allocation rules at the entry points to GRTgaz's South zone.

In the light of the project to develop Franco-Spanish gas interconnections currently under consideration as part of the ERGEG's Southern Regional Initiative, providing for the mid-2009 launch of an Open Season to sell capacity to be created in 2013 and 2015 from the border to the north of France, CRE asked the working group to deliver its first conclusions no later than the end of April. The working group's schedule was established accordingly, and a subgroup was set up to produce a rapid analysis of the main mechanisms whereby the North and South zones could be merged without additional investment. This subgroup was made up of POWEO, GDF Suez, EDF, GRTgaz and CRE.

The working group conducted its activities from December 15, 2008 to April 24, 2009, during which period 9 full group meetings and 5 subgroup meetings were organised. Minutes of all these meetings were recorded and approved by the participants. All the documents provided and the minutes are available on the Consultation Transport website (www.concertationgaz.com).

1.4. Schedule for addressing the "South access" issue

This report will form the basis for a public consultation to be launched by the French Energy Regulatory Commission (CRE) at the beginning of May 2009.

This consultation will guide the decisions taken by the competent authorities in summer 2009 on the main principles to be applied in modifying the contractual structure of the transmission system, in particular to improve access to GRTgaz's South zone in conditions of equal competition for all suppliers.

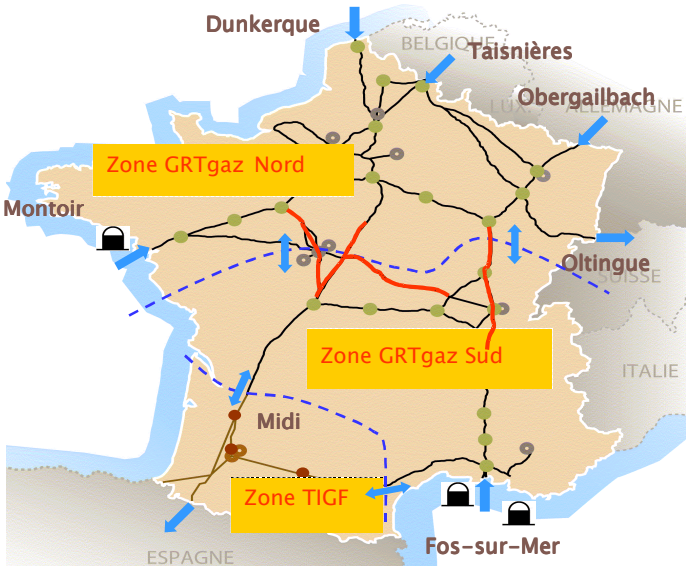
These decisions will also be used to finalise and to launch, during summer 2009, the 2013 Open Season on the development of interconnections between France and Spain.

In this case, the working group will then be required to prepare the groundwork for the operational application of the principles decided. April 1, 2011 has been chosen as the date for the mechanisms described below to be put into operation.

[3] This date corresponds to a possible change in GRTgaz's transmission tariff.

2. Description of the problem

2.1. Physical location of access to the South zone



2.1.1 Entry capacity into the Greater South zone

NB: in the light of existing gas infrastructures, access to the South of France is looked at globally for the GRTgaz and TIGF zones, together subsequently described here as the Greater South, given that specific access to the TIGF zone is not covered in this study.

	Firm entry capacity to the Greater South in GWh/d	Existing physical capacity	Physical capacity by 2011	Physical capacity by 2013	Physical capacity by 2015
Investments decided and *investments planned but not decided*	North →South Link	230	230	230	*430**
	Entry capacity at Fos ***	250	400	400	*400*
	Interconnections Spain → France	5	35 to 60	*225**	*455**
	Total (investments decided and planned)	485	665 to 690	*855*	*1,285*

* On the assumption that all currently undecided projects are completed and commissioned within the intended timeframe.
** Interruptible capacity of 220 GWh/d is also being marketed for the North-to-South link
*** At Fos, entry capacity to the transmission system is lower than the combined capacity of Cavaou and Tonkin (449 GWh/d). The capacity shown in the table is the minimum capacity of the terminals and the minimum firm entry capacity into the transmission system.

Changes in these capacity levels:

- entry from the LNG terminals:
    1) Commissioning of Fos Cavaou: total entry capacity to the Fos PITTM of 400 GWh/d
    2) Uncertainty about the future of Fos Tonkin after 2014
    3) Other projects under consideration: Fos Faster and Le Verdon
- North–South Link: possibility of an increase of 200 GWh/d in 2015 (not decided, see details in paragraph 2.1.6)

Spanish interconnections and GRTgaz South/TIGF interface: 2013 and 2015 (not decided, see details in paragraph 2.1.5)

2.1.2 The Greater South physical balance is mainly a question of annual gas balance

Initial macro-analyses of the Greater South gas balances (Appendix 2) for the 2011 timeframe show that, with the existing gas infrastructures, the physical balance of that portion of the system is fragile and is only possible:

- if gas flows at the Fos PITTM are close to maximum technical capacity, particularly in summer, to replenish the storage facilities in the South zone (Storengy and TIGF). In fact, it is essential that the storage facilities in the South zone should have sufficient inventory levels at the beginning of winter.
- as a result of surplus storage capacity, a surplus which in particular makes it possible to tackle peak demand problems, and above all a failure in LNG emission at Fos in winter.

The high volume of gas storage in the zone makes this balance highly dependent on climatic conditions. In any case, it would appear that the zone cannot offer a high degree of flexibility simultaneously on all these entry/exit points, or even on certain points individually.

This balance is also highly dependent on actual flows between France and Spain. For example, on the basis of historic flows from France and Spain, and maximum flows at Fos and on the North-to-South links, the Greater South's storage facilities could not be replenished if a cold winter were followed by a cold summer. With maximum use of current capacity to Spain, this deficit would arise whatever the climatic conditions. By contrast, if the flows of gas from Spain to France reached maximum technical capacity, gas entries from Fos and from the North could be reduced to a level of only around 55% of their technical capacity. A secure balance requires minimum emission of gas from the Fos terminals with a higher level of constraint in summer.

There are several possible contractual methods for encouraging shippers to bring the gas flows into the Greater South needed to maintain its volume balance:

- the current solution of separating GRTgaz's North and South zones requires every shipper with customers in the South to maintain a daily balance in that zone. In particular, this structure leads shippers possessing entry capacity at Fos to use that capacity either to supply their own customers, or to sell the gas on the wholesale market if the conditions on this Southern market allow and are more favourable than those on other markets accessible with LNG;
- other possible solutions leading to a merger of the North and South zones:
    - either a system which ensures that shippers which hold capacity in the Fos terminals undertake to actually receive there the quantities of LNG needed to maintain the annual balance in the Greater South zone. This solution will be covered in greater detail later in this document.
    - or a system that limits gas entries via the North of France (to around 1,000 GWh/d), which would result, if shippers meet the balancing requirements in the merged zone, in constraints on entry/exit flows via the South being imposed implicitly (in particular Fos terminals). The regulatory and contractual mechanisms of this solution have not been explored.

However, whichever solution is considered, a global balance cannot be achieved without gas being emitted at Fos PITTM.

2.1.3 The essential role of entry capacity from the Fos terminals for supply to the Greater South zone

For the 2011 timeframe, therefore, a study of the Greater South volume gas balances shows that maintaining a balance of usage/resources over a year, under certain climate and flow scenarios, requires the Fos terminals to operate at a high average level of use.

Given the timeframes required to complete upgrades to the transmission system, North-to-South capacity cannot be increased before 2015. Import capacity from Spain could be increased to 225 GWh/d by 2013 if the 2013 Open Season on the Franco-Spanish interconnections planned for summer 2009 is successful.

2.1.4 The essential role of storage facilities in the Greater South zone

Given the limited entry capacity into the whole of the Greater South zone and operational contingencies, in particular those of the LNG chain (emission from the Fos LNG terminals governed by contingencies on the whole LNG chain), securing an annual balance on the Greater South zone depends in particular on the use of the flexibility provided by the storage facilities in that zone.

If the storage facilities in the Greater South zone were insufficiently full, this could threaten the zone's security of supply over the following winter, a risk exacerbated by possible failures in LNG supply over the winter.

A high level of use of these storage facilities in the Greater South compared with the Greater South's final market needs, combined with all the other resources (North-to-South link and terminals), therefore means that the Greater South peak balance is in surplus.

2.1.5 The project for the development of the Franco-Spanish interconnections

The plans to increase capacity at the interface between France and Spain were put forward within the framework of the South Gas Regional Initiative (South GRI) headed by ERGEG. These plans will be put to an Open Season in the summer of 2009 in order to justify the investment required on the basis of long-term market commitments. This Open Season will be conducted in concert by the 4 infrastructure operators involved in the development: Enagas, GRTgaz, Naturgas Energia and TIGF.

The capacity developed as a result by 2013 and 2015 would lead to the influx of new flows of gas into the Greater South zone.

For 2013, the plan is to increase entry capacity into the Greater South zone from Spain to 225 GWh/d (entry capacity to be developed at the existing interconnection points at Larrau and Biriatou).

For 2015, the plan is to increase entry capacity into the Greater South zone from Spain by a further 230 GWh/d, by creating a new interconnection point at Perthus (Eastern Pyrenees).
Exit capacity from the Greater South zone to Spain will also be marketed in this Open Season (an additional amount of around 125 GWh/d by 2013 and an additional 180 GWh/d by 2015).[5]

2.1.6 The system reinforcements required to remove bottlenecks on the North-to-South link

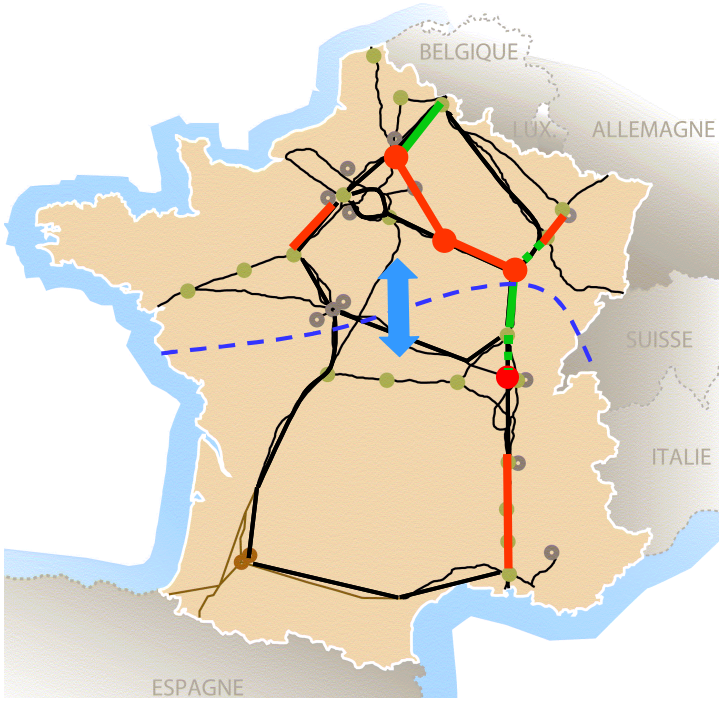
2.1.6.1 Increase in firm capacity at the North-to-South link

Creation of 200 GWh/d of additional capacity from GRTgaz North → GRTgaz South will primarily require the following investments to be made::

[5] For more details on the capacity that may be brought to the market for this Open Season, go to the South GRI section on the ERGEG website

Programme +200 GWh/d North>South:

- Tripling of the Taisnières – Cuvilly pipeline;
- Looping of the Beauce pipeline;
- New Cuvilly – Dierrey pipeline;
- Looping of the Dierrey – Voisines pipeline;
- Partial looping of the North-East pipeline;
- Partial looping of the Bourgogne pipeline;
- Looping of the Rhône pipeline between Saint-Martin-de-Crau and Saint-Avit;
- Upgrading of the Cuvilly, Dierrey, Voisines, Etrez compressor and interconnection stations.



These developments require the laying of more than 800 km of pipelines. The total cost of the development is estimated at €1,600 million at 2008 values. The whole programme can be completed by the end of 2015.

However, some of these structures could be built by the end of 2013, under the programme associated with the Taisnières Open Season.

Other structures featuring in this programme could also meet other needs for increased capacity. This is particularly true of the Rhône pipeline, which has to be looped to allow for the increase in capacity from France to Spain at Perthus, planned for 2015.

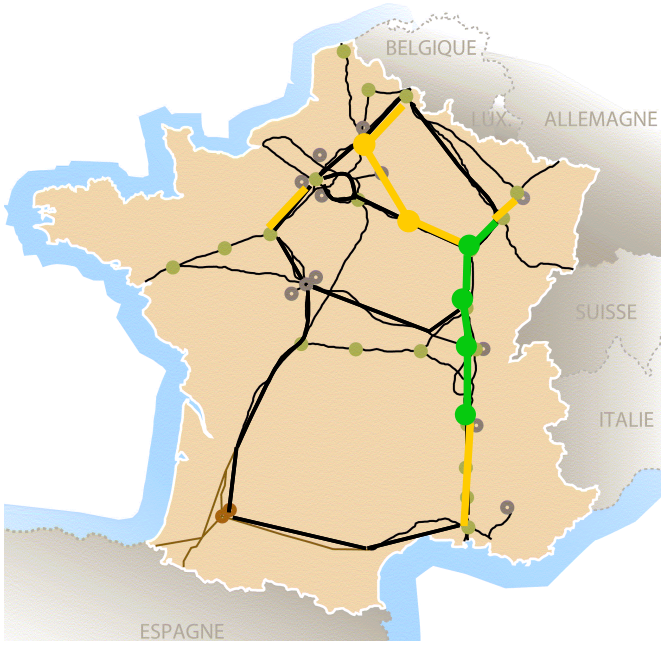
The residual investment required solely for the increase in capacity at the North <> South link could therefore be reduced accordingly. It would correspond to the investment shown in green on the map below, which is estimated at a total of €400 million at 2008 values.

2.1.6.2 Developments that would make it possible to remove all constraints at the North-to-South link

Beyond more than 200 GWh/d, the additional investment required to merge GRTgaz's North and South zones has been estimated at around €1,000 million at 2008 values. The infrastructures needed to achieve this goal are:

“North/South Merger” programme

- Programme +200 GWh/d North>South;
- Completion of the looping of the North-East pipeline,
- Completion of the looping of the Bourgogne pipeline,
- Looping of the Est Lyonnais pipeline,
- Upgrades to the Dierrey, Voisines, Palleau, Etrez and Saint Avit compressor stations.



On completion of such a programme, the resulting fluidity would allow the GRTgaz transmission system to operate as a single large zone. In particular, the system would be able to cover a period of cold without gas arriving at Fos sur Mer.

It should be noted that in this scenario, further increases in entry or exit capacity at the boundaries of this zone could generate further significant upgrade programmes on the core system, in order to maintain the fluidity of the main zone. In other words, questions arise about the sustainability of the fluidity achieved once the programme is completed.

2.2. Contractual and competitive situation of access to the South

2.2.1 The North-to-South link

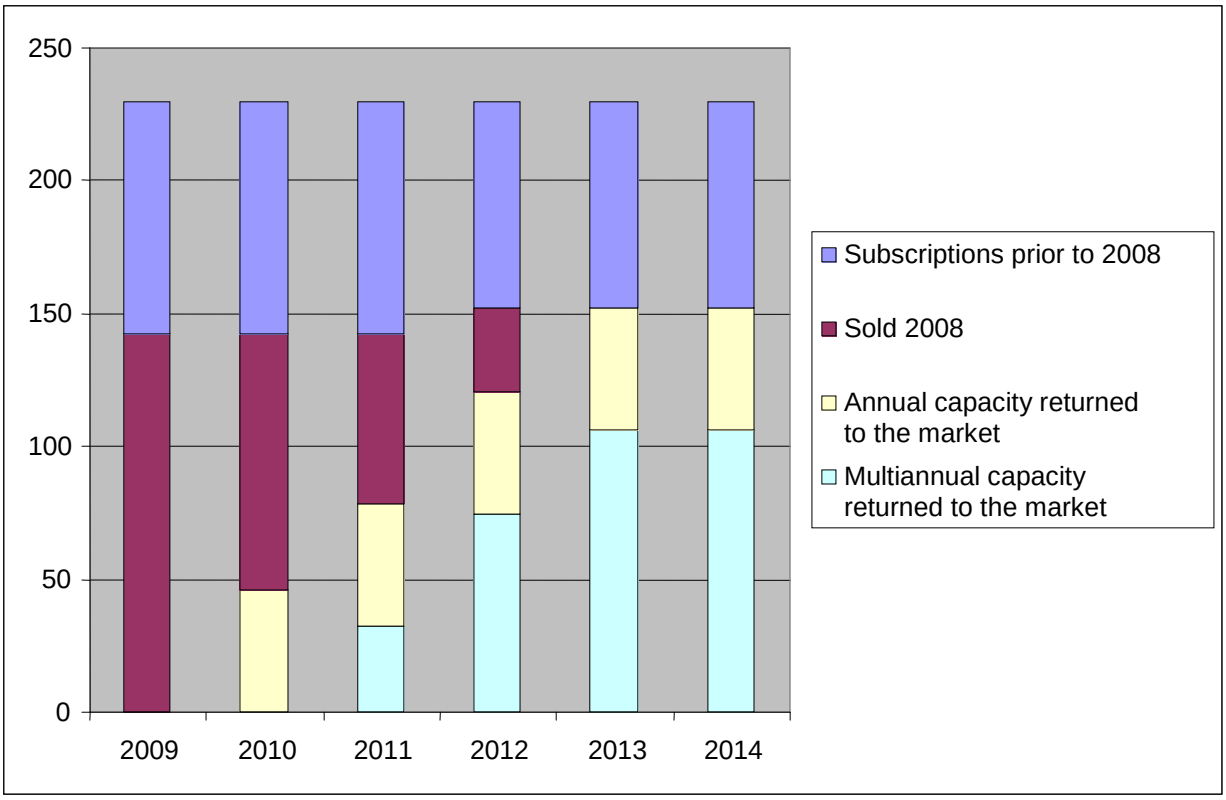
2.2.1.1 Resale of capacity and update on reservations

Marketable capacity on the North-to-South link represents 230 GWh/d of firm capacity and 220 GWh/d of interruptible capacity. It is currently fully subscribed until March 2010.

Capacity on the North-to-South link was sold in 3 phases:

- maintenance of the capacity subscribed before 2008, in accordance with the CRE ruling of October 25, 2007. This consists of 88 GWh/d of firm capacity until November 2011, then 78 GWh/d of very long-term capacity. This capacity was renewed in agreement with most of the market players, consulted by CRE in 2007.
- sale of medium-term capacity in January 2008 for multiannual capacity of 2, 3 and 4 years: 32 GWh/d firm capacity subscribed for each of the periods,
- sale of short-term capacity in spring 2008 for annual capacity: 46 GWh/d of firm capacity subscribed.

In the light of these subscription levels, the firm capacity which will naturally return to the market is illustrated in the graph below:



On April 1, 2011 (start date of capacity availability): 78 GWh/d firm capacity (including 32 GWh/d multiannual capacity) is returned to the market.

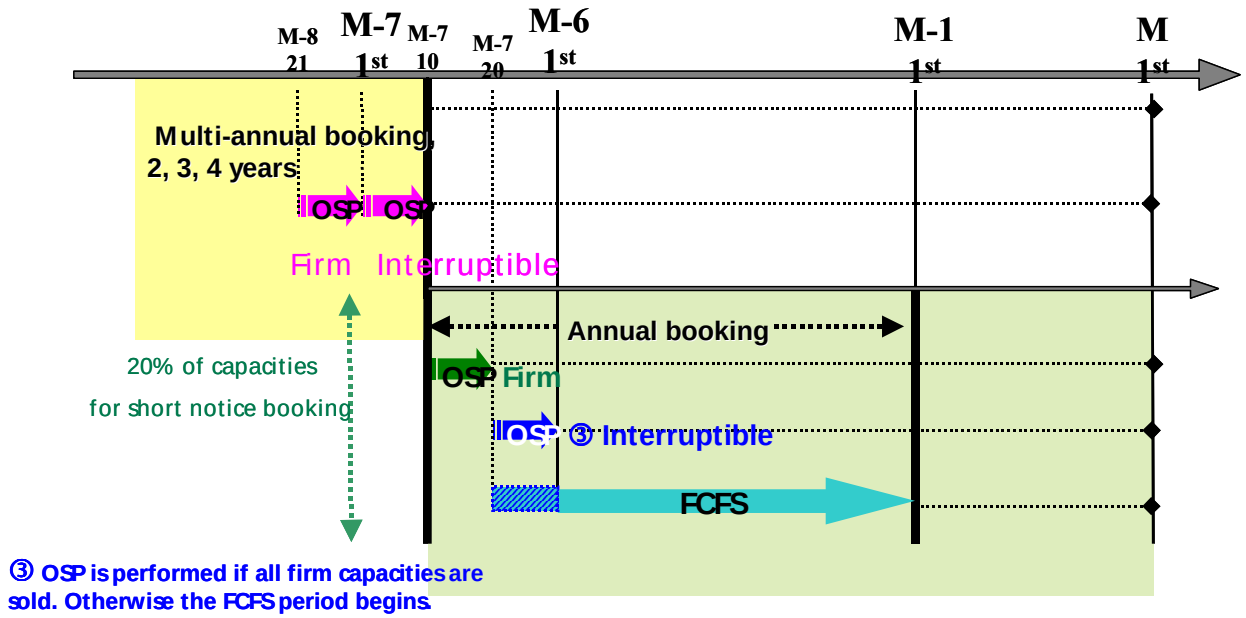
From April 1, 2012 (start date of capacity), the firm capacity returned to the market reaches 120 GWh/d.

2.2.1.2 Current allocation rules

The rules for subscribing and allocating capacity currently in force on the North-to-South link are similar to those on the System Interconnection Points and reflect feedback from the first open seasons conducted in 2008.

They consist of a succession of Open Subscription Periods, following which, in the event of a shortage, capacity is allocated proportionally to the amount requested. The First-Come First-Served rule is only applied if capacity remains available after all these periods.

Finally, the Long-Term Use It or Lose It rule is designed to prevent capacity hoarding.



Since the January 2008 open season, several changes have been introduced:

- the rule on linked companies, obliging companies that belong to the same group to submit a request during an OSP as a single entity, which prevents the allocation being influenced by the structure of the different groups,
- the division of OSPs into separate sales of firm and, respectively, interruptible capacity, so that shippers know their firm capacity allocation when they submit their request for interruptible capacity.
- in response to requests by certain shippers, the allocation of short-term capacity in spring 2008 (46 GWh/d firm capacity from April 2009 to March 2010) was, on a one-off basis, conducted in two phases:
    1) 50% of capacity was first reserved for shippers possessing a licence to supply to end customers or who were themselves end customers,
    2) the remaining 50% was accessible to all shippers.

2.2.2 Entries into Spain

Available entry capacity for the 2011 timeframe was made available in an OSP at the end of 2008 on a similar basis to that described above for the North-to-South link. Capacity to be developed for 2013 and 2015 will be allocated through Open Seasons planned for May 2009, on principles currently being established.

2.2.3 Fos LNG terminals and entry into the transmission system at the Fos PITTM

As regards the LNG terminals, in 2011, 14% of regasification capacity will be available, 6% of it at Fos Cavaou and 8% at Fos Tonkin. The capacity available at the Fos Tonkin terminal is hard to access because of the restriction on the size of vessels (maximum 75,000 m^3) and the difficulty of ensuring LNG supply with this size of ship (producer constraints).

Firm entry capacity into the transmission system from the Fos PITTM (400 GWh/d) is less than the total regasification capacity of the Fos LNG terminals (449 GWh/d with 358-day load matching for Fos Tonkin and 361-day load matching for Fos Cavaou). This entry capacity into the transmission system from the Fos PITTM is automatically allocated to shippers on the basis of the regasification capacity they hold in the Fos terminals.

90% of Fos Cavaou's long-term capacity is reserved by GDF Suez and Total. The balance can only be sold on a short-term basis (3 years)

NB: entry capacity into the transmission systems from LNG terminals is allocated automatically to each shipper, on the basis of the regasification capacity they hold. Shippers that are signed up for the "band" (uniform capacity) service have priority on emission, and so are not affected by transmission constraints at the Fos point.

2.2.4 Summary

By 2011, firm entry capacity into the Greater South zone (TIGF and GRTgaz South) will be divided as follows:

Firm entry capacity in GWh/day	Maximum contractual capacity	Capacity subscribed for long-term (more than 4 years)	Capacity sold for short-term (4 years or less)	Number of subscribers in 2009
North/South link:	230	78	152	21
Fos PITTM	400	342	25	6
France/Spain interconnection	35 to 60	0	35 to 60	9
Total	665 to 690	420	212 to 237	

Firm capacity on the North-to-South link sold regularly on the market represents 22% of the total technical entry capacity into the Greater South zone.

In conclusion, there is limited firm technical entry capacity into the Greater South zone. Eighty-six per cent of long-term entry capacity from the LNG terminals is held by GDF Suez and Total. In addition, GDF Suez holds 34% of the firm capacity on the North-to-South link on a very long-term basis to provide third-party transit services. Other entry capacity (from the North-to-South link and from Spain) is held by a large number of shippers, but represents only around half of the entry capacity into the Greater South zone. In addition, the way this capacity is sold through Open Subscription Periods and the application of a proportional distribution method when demand exceeds available capacity, means that shippers do not know precisely how much capacity they will be allocated and results in that capacity being highly fragmented. By way of example, in the OSPs organized in 2008 to sell firm capacity on the North-to-South link, the average reduction rate was 5.7.

2.3. Summary of the problem to be tackled

Given the nature of the problem as described above, the working group's goal is to identify the solution or solutions that will make it possible for all suppliers to access the South of France on equivalent competitive terms.

3. Groundwork

The working group began its work with:

- a discussion about setting indicators that could be used to quantify and track the "degree of accessibility to the South zone";
- an analysis of the contractual arrangements set up by transmission system operators in Europe to maintain smooth operations and manage bottlenecks;
- an analysis of the system constraints that could be used to model with equations the conditions for merging the North-South zones.

3.1. Indicators of accessibility to the GRTgaz South and TIGF zones

The WG studied three indicators for measuring accessibility to the GRTgaz South and TIGF zones:

- an indicator for the semi-wholesale end market at the exit from the transmission system;
- a wholesale market indicator;
- an indicator on entry capacity.

These indicators are being studied by CRE, and are described in Appendix 3.

3.2. Analysis of the European regulatory and contractual arrangements set up by the TSOs to keep transmission systems operating in the event of bottlenecks

The working group produced benchmarks in a certain number of European countries with the aim of describing the contractual and regulatory mechanisms used to make third-party access function over the widest possible area and to facilitate access to bottleneck zones.

With the assistance of the participants named below, these benchmarks were produced for the following countries:

- Belgium (GRTgaz)
- Germany (Eon and CRE)
- United Kingdom (Total)
- Spain (Gas Natural)
- Netherlands (GDF Suez)
- Italy (ENI and Altergaz)
- French electricity grid (EDF)

The benchmarks were used to identify the arrangements below, though the possibility of applying them to the French transmission systems was not explored.

More detailed documents are available on the Consultation Transport website:

- 10 or 15-year transmission system development plans and maintenance policies;
- contractual agreements with third parties to act on entry/exits on the system:
  - flow constraints:
    - guaranteeing certain gas flows at one point or between one point and another, or
    - for preset use of reserved capacity;
  - on-demand flows;
- operational rules imposing constraints for a given period:

- flow constraints on a point, or globally on a zone;
- minimum inventory levels in LNG terminals or underground storage facilities, globally on one facility or globally for a given shipper;
- setting of security rules to cover consumption surpluses during very cold snaps;

- widening of the transmission operator's range of action:
  - market-based (real-time) adjustment mechanism on physical points or hub;
  - establishment of a single gas system operator;
- capacity available:
  - interruptible capacity at entry and/or exit points, and/or customer points;
  - exclusion of certain entry or exit points from the list of points where gas can be freely subscribed;
  - entry or exit capacity combined with certain conditions on gas flows;
- methods of allocating entry capacity other than First Come First Served:
  - auctions;
  - buyback (or Use it or Sell it) mechanism;
- handling of bottlenecks:
  - releasable capacity;
  - UIOLI.

3.3. Modeling with equations the conditions for merging the GRTgaz's North and South balancing zones

For the purposes of the working group, GRTgaz has conducted a study to model with equations the conditions for merging the GRTgaz's North and South balancing zones.

This study identified two possible approaches:

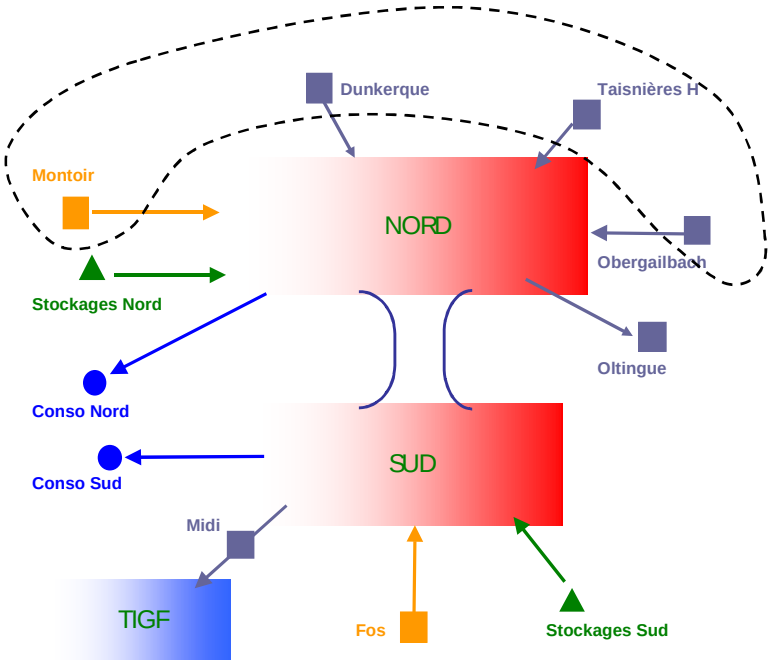
- first approach: constraining entries to the North (2011 timeframe)
- second approach: forcing supplies by the South (2011 timeframe)

First approach: constraining entries to the North (2011 timeframe)

The studies conducted by GRTgaz on a large number of day-to-day system configurations show the following set of constraints:

To maintain fluidity in the new North + South zone while guaranteeing deliveries, entry capacity to the North (Montoir + Dunkerque + Taisnières H + Obergailbach) must be limited to between 800 and 1,000 GWh/d.

The range between 800 and 1,000 GWh/h corresponds to assumptions that can be made about certain exit terms (stable exit to Oltingue, minimum injection in summer …).



Total firm capacity by 2011 at the Northern boundary points is:

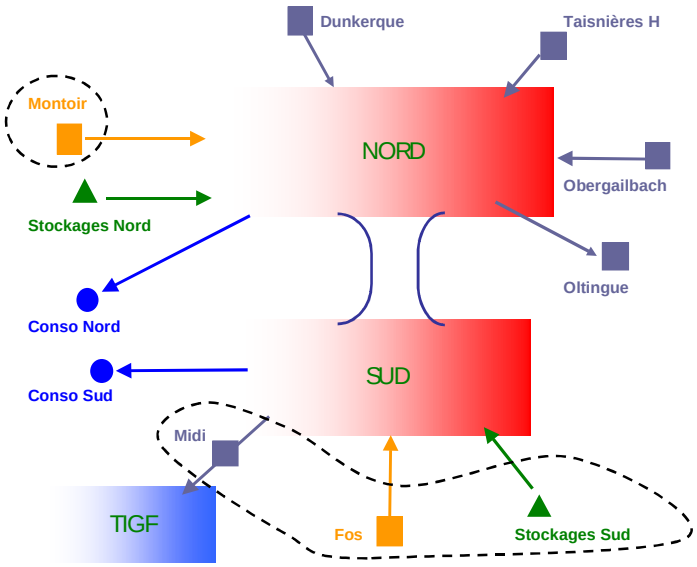
- E North = 370 (Montoir) + 570 (Dunkerque) + 590 GWh/d (Taisnières) + 620 (Obergailbach)
- E North = 2,150 GWh/d

If equally distributed across all the entry points, the constraint would therefore entail limiting firm entry capacity from the North by between 37% and 46%.

Second approach: forcing supplies by the South (2011 timeframe)

The studies conducted by GRTgaz on a large number of day-to-day system configurations show the following set of constraints:

• imposing a flow at Fos of 250 GWh/d in winter and 300 GWh/d in summer;
• imposing a flow at Montoir of 200 GWh/d in summer;
• imposing emission from the Salins storage facilities in cold periods;
• reducing firm capacity to the TIGF zone (100 GWh/d in winter / 150 GWh/d in summer);
• ensuring uniform geographical distribution of entries and exits on the storage facilities.



Since the set of constraints is more complex than in the first approach via the North, it is harder to develop an indicator for its impact on capacity in the South. However, it can be concluded that the use of capacity at Fos would be constrained to a level of between 62% and 75%, and that capacity at Montoir would be constrained to over 50% in summer.

Sustainability of the two approaches in 2013 and beyond

Beyond 2011, it is likely that there will be new sources to increase supply to the Greater South zone:

- development of capacity from Spain (2013: Larrau / Biriatou; 2015: Perthus);
- new LNG terminal projects (Verdon, Fos).

The flow constraints described in the previous paragraph in the "via the South" approach to the problem of merging the zones, could be revised and mitigated by distribution over a larger number of sources. Indeed, some of the constraints could be borne by the holders of newly created entry capacity.

By contrast, the development of additional exit capacity in the Greater South zone, and in particular the development of capacity to Spain, would increase the constraints to be imposed on the sources to maintain the fluidity of the North + South perimeter.

It should also be pointed out that with the development of new sources in the South, bottlenecks could arise in the South > North direction in winter, making it necessary to give contractual expression to the constraint so far expressed through capacity from GRTgaz South > GRTgaz North. In particular, one possibility this time might to "force" certain entries by the North or to "limit" entries by the South, in order to limit flows from South to North to levels that the structures are actually able to achieve.

Details of this study are given in Appendix 4.

4. Proposed solutions

With the aim of facilitating competitive access to the South zone and enabling all suppliers to develop their customer portfolio without constraint on the end market, the WG studied two solutions:

- the measures required to merge GRTgaz's North and South zones by April 2011 without investment;
- maintaining the North and South zones with changes to the type of capacity provided at the North-to-South link and capacity allocation rules at the entry points to GRTgaz's South zone.

4.1. Merger of GRTgaz's North and South zones by April 2011

GRTgaz's North and South zones can only be merged by April 2011 on the basis of contractual and regulatory arrangements, since this timeframe is not compatible with developments to gas infrastructures.

In consequence, the WG focused on tackling the main mechanisms that could lead to the merger of these zones without investment, while at the same time exploring their feasibility. For these mechanisms to be implemented, additional studies are required. These studies will be conducted as part of the process of consultation with all the market players, in the event that the decision-makers should decide in favour of this solution.

4.1.1 General principles

GRTgaz's North and South zones could be merged by April 2011, without additional upgrades to the transmission system, on the basis of the two mechanisms below, which make it possible to pool all the existing gas infrastructures (transmission system, storage facilities, LNG terminals):

- a mechanism entailing a commitment to unload minimum quantities of LNG in the Fos terminals; and
- a mechanism enabling GRTgaz to obtain, at certain physical points, the gas flows required to maintain the local daily balances of the transmission system, with the global balance continuing to be maintained by shippers (geographical balancing mechanism).

4.1.2 Mechanism entailing a commitment to unload LNG at the Fos terminals

For it to be possible to maintain a seasonal gas balance in the Greater South zone by 2011, entry capacity to the Greater South must be maintained at a high level over the year.

Although, in the event of a merger of the North and South zones, GRTgaz itself could fully use the North-to-South capacity, that is not the case for gas entries via the Fos terminals.

Indeed, with the current structure of separate North and South zones on GRTgaz's transmission system, every shipper must be balanced on each of the 2 zones. However, if the North and South zones merge, this requirement disappears in so far as each supplier would be able to supply its customers located in the South by entry points located in the North, since the balancing requirement would be a global North + South requirement. In these circumstances, if no additional requirement is established, gas flows from the Fos terminals would depend solely on choices made by shippers holding capacity on those infrastructures. Therefore, merging the North and South zones primarily requires an assurance that sufficient overall volumes of gas will be injected into the transmission system by the Fos LNG terminals, in order to maintain an annual volume balance on the Greater South zone. In practice, because the needs of the Greater South zone differ in each season, the level of commitment to unload LNG was analysed on a seasonal basis (summer/Winter). A monthly breakdown can then be made to refine the calculation. It is true that requirements differ between summer and winter, in particular because of the role of the storage facilities. In summer, for example, the levels could be adjusted in such a way that the Greater South storage facilities would be full at the

end of summer, in order to maintain maximum security of supply over winter.[6] This rule would result in a higher LNG flow constraint in summer than in winter.

Finally, the obligations would relate to the quantities of LNG to be unloaded rather than the quantities of gas to be emitted from the terminal, since the LNG terminals have limited storage capacity.

4.1.2.1 Minimum total quantities of LNG to be received in the Fos terminals

The minimum quantities of LNG unloaded at Fos would be decided by GRTgaz, in concert with TIGF, on the following principles:

- on the basis of a seasonal analysis of the South + TIGF balances, covering a 1-in-50 cold risk, and with prudent and reasonable assumptions about the availability of the gas infrastructures and inventory levels in the South zone's storage facilities (Storengy and TIGF) at the beginning of each season,
- with monthly adjustments resulting in minimum monthly quantities of LNG to be unloaded at Fos,
- divided between the Tonkin and Cavaou terminals in proportion to each terminal's existing long-term capacity,
- adjusted periodically:
  - every year, with the minimum quantities of LNG to be unloaded at Fos being decided for the seasons of the next 6 years (conservative assessment) primarily on the basis of decisions about the development of gas infrastructures,
  - at the beginning of each season, then of each month, the values could be adjusted. Indeed, these volumes could be adjusted before each month and each season on the basis:
    - of actual inventory levels in the South + TIGF storage facilities
    - of updated consumption forecasts (allowing for contingencies)
- up to a maximum boundary value defined on a monthly basis for 6 rolling years, i.e. initially:
  - In summer: 10.8[7] TWh/month (which corresponds to average emission of 360 GWh/d by the terminals), calculated as the maximum quantity that can be emitted over a season by the Fos terminal, allowing for an operational margin (e.g. 10% in summer) relating to the average availability of the transmission system and terminals (maintenance, etc.).
  - in winter: 7.5[8] TWh/month, i.e. average emissions of 250 GWh/d, calculated so as to maintain the South zone's winter balance at a historically cold temperature.**Definition of shippers affected by commitments on minimum LNG unloading quantities at Fos**

The following rules are envisaged:

- several variants are possible for customers of the Tonkin and Cavaou terminals to which the commitments to offset unloading quantities apply:
  - Responsibility with shippers holding existing long-term subscriptions, or
  - Responsibility with all shippers holding long-term subscriptions, or
  - Responsibility with all shippers holding continuous service subscriptions.
- at Cavaou, any commitments by short-term shippers would mitigate the commitments of long-term shippers,
- short-term capacity at Fos Cavaou (10 TWh/year from April 1, 2011) could be allocated first to shippers undertaking to use the continuous service and to schedule regular unloading operations (e.g. minimum unloading of [90%] of their capacity over the year),

[6] To cover climate risk but also to allow for significant LNG failures.
[7] This is a maximum corresponding to infrastructures as planned for 2011, on the understanding that the actual value should be less (for example, in the summers of 2008 and 2009, average entry flows at Fos of 160 GWh/d made it possible to balance the Greater South zone).
[8] ditto

- the distribution of the total commitment between the shippers concerned also needs to be set, taking into account any additional subscriptions with flow commitments. In fact, there are several possible variants for this division, depending in particular on the size of subscriptions, for example:
  - proportional to the capacity subscribed at Fos,
  - calculation of the proportion as above, including a reduction for a certain capacity threshold,
  - any other method, notably including any methods agreed between the shippers concerned.
- these undertakings would be expressed as a minimum quantity of LNG to be unloaded per month,
- these undertakings would apply for 6 rolling years, with different values per season, this duration being compatible with the timeframes required to bring new infrastructures on stream,
- provisions must be included in the corresponding contracts for access to the LNG terminals to ensure that the shippers concerned will effectively do all they can to fulfil their obligations,
- given that these undertakings would be made by users of the Cavaou and Tonkin terminals, it would be the operators of these terminals (Elengy and STMFC) which, in concert with GRTgaz, would convert the overall requirement into individual requirements for each terminal's customers, on the basis of the above rules.

It was decided not to use a market mechanism for these commitments on LNG unloading quantities, given the very small number of players that would have been likely to respond to such a market proposal, since most of the capacity in the Fos terminals is actually reserved on a long-term basis.

An incentive mechanism could be considered to reflect the benefits to the system and the constraint generated for shippers involved in these commitments. This mechanism will need to be examined in detail, in order not to create windfall profits for these shippers.

4.1.2.3 Response to failures in gas emissions from the Fos terminals

These failures could arise for all kinds of reasons, such as problems on the terminals or the inability of shippers to unload the expected minimum quantities of LNG.

Below is an example of a response to these failures, a point that will be explored in subsequent detailed studies.

- short-term failures (a few hours to a few days) by shippers:

The quantities of natural gas not emitted from the terminal would be offset by the failing shipper(s) at the entry points from the interconnections or from storage facilities in the South.

- medium-term failures (more than a few days) by a shipper notified sufficiently in advance

If this risk is considered to be sufficiently serious, one possibility would be to establish a last-resort LNG supplier to consolidate this system. In the existing structure, there is no arrangement in place to tackle such a failure.

- failure of entries at Fos (transmission systems, terminals)

Apart from the operational margin arising from the commissioning of a second terminal for the same PITTM with the combined emission capacity of the 2 terminals being greater than the entry capacity to the transmission system, it will only be possible to tackle these failures by means of the geographical balancing mechanism described below. Just as with the current structure, there is no solution for such a long-lasting failure.

4.1.2.4 Changes to the contractual chain relating to commitments to offset quantities of LNG for unloading at Fos

A contract between GRTgaz, STMFC and Elengy is to be established, in particular specifying:
- the procedures for notifying minimum monthly flows and the distribution rules between terminals and shippers, on the different timeframes,

- the procedures for notifying GRTgaz of access contracts to the LNG terminals with commitments to offset minimum quantities for unloading,
- any transfers of responsibility between GRTgaz and the terminal operators arising out of shippers' flow commitments.

Amendments to the existing LNG terminal access contracts also need to be provided for, notably specifying:

- the procedures by which the terminal operator notifies shippers with flow commitments at Fos of the total minimum quantities (notified by GRTgaz and with the same timeframes), and the individual minimum quantities,
- the commitments of the shippers concerned on the minimum quantities of LNG to be unloaded, with the associated guarantees,
- changes in the scheduling rules for cargoes to be unloaded.

The liability clauses in the LNG terminal access contracts also need to be amended to ensure that shippers with an obligation to unload actually do all they can to fulfil their obligations.

4.1.3 Geographical balancing mechanism

The purpose of this mechanism is to give GRTgaz a tool for modifying daily gas flows at different physical points on its transmission system, so that it can handle any transmission bottlenecks (primarily between the North and the South). The working group studied a possibility inspired by France's electricity grid: on the basis of bids to buy/sell gas submitted every day by each supplier, GRTgaz would be able to ask shippers to adjust their schedules at physical points on its transmission system (Network Interconnection Points or "PIR"; Transport-Storage Interface Points or "PITS"; LNG Terminal Interface Points or "PITTM").

All shippers would be obliged to take part, on criteria still to be decided, although prices would remain free under all circumstances. In addition, and on a voluntary basis, this mechanism could be opened up to industrial customers wishing to take advantage of their interruptibility.

It should be noted that GRTgaz would need to introduce such a mechanism in order to balance the transmission system physically in the event of a merger of the North and South zones without infrastructure investment, in particular to tackle the emission problems from the terminals described in 4.1.2.4. Indeed, the purchases/sales of gas to which GRTgaz has access on the PEG, which is a nonphysical point, would not enable it to tackle the geographical constraints it would encounter.

The practical procedures for implementing such a mechanism need to be analysed. A detailed example is given in Appendix 5.

4.1.4 Impact of the development of the France/Spain interconnections on the merger of GRTgaz's North and South zones

In order to analyse the impact of the development of the interconnections between France and Spain, we need to distinguish between the direction of gas flows, given that these developments are intended to be two-directional but that capacity in each direction will be marketed separately.

- additional capacity from Spain to France:

The flows corresponding to this capacity would mitigate the balance in the Greater South zone and therefore the actual level of flow offset commitments at Fos.

- additional capacity from France to Spain:

In the absence of system reinforcement from North to South, the flows corresponding to this capacity would increase the imbalance in the Greater South zone and therefore the actual level of flow offset commitments at Fos. It should be noted that on the 2013 timeframe, the permanent use of this

additional extra capacity would not create a balance in the Greater South zone, since it will not be possible to reinforce other entry capacity on that timeframe.

Flow commitment mechanisms could also be considered at the interconnection points with Spain.

4.1.5 Sustainability of the merger system with regard to changes to the gas infrastructures

The need to plan medium and long-term investment and to develop the gas infrastructures would remain, since contractual arrangements could not deal with any infrastructure needs required to maintain security of supply on the national market:

- need for annually reviewed 10-year investment plans showing the fundamental infrastructure development requirements within decision timeframes (N+4 to N+6 depending on the infrastructure type);
- inclusion of plans to develop interconnections (France/Spain, Belgium/France, etc.) or entry points (LNG terminal project) in order to set the right level of flow commitments at each of these points.

The minimum flow constraints are adjusted regularly to take account of changes to the transmission system, to infrastructures and to consumption forecasts. In the long run, they could be eliminated in the event of sufficient infrastructure development.
For example, the impact of infrastructure changes on the system could be ascertained if the Fos Tonkin terminal ceased operations at the end of 2014 and no replacement solution was implemented. The risk would be an inability to meet all the needs of the South of France.

4.1.6 Impact of merging the North and South zones on security of supply in France

The impact of a merger of the North and South zones (development of the wholesale market) and of its underlying procedures (geographical balancing mechanism, new tasks for GRTgaz, last-resort LNG supply, minimum flow offset commitments) on the security of gas supply to the Greater South zone and to the whole of France, will need to be analysed in detail.

4.1.7 Required legislative and regulatory changes

Several changes to the law will be required for this solution to be implemented:

- a reinforcement of GRTgaz's tasks:

  In order to implement the changes envisaged, GRTgaz's activities would be extended to monitoring France's gas balance over a medium-term timeframe, so that it has all the information it needs to calculate it, and can determine and inform the companies concerned of the commitments they need to make on the minimum quantities of LNG to unload.

- the establishment of regulatory powers in order to include commitments on minimum quantities of LNG to be unloaded with certain subscriptions on the Fos terminals. This change will be necessary if the shippers concerned refuse to make these commitments voluntarily.
- obligation on suppliers to submit bids for the geographical balancing mechanism.
- obligation on the South terminal operators (Elengy and STMFC) to:
  - transpose the global requirement issued by GRTgaz into individual requirements for each customer on each terminal,
  - to make sure that the minimum programmes requested by GRTgaz are implemented.

4.2. Solution: "Modification of capacity types on the North-to-South link and of the allocation rules for entry capacity into GRTgaz's South zone"

4.2.1 General principles

In this solution, separate North and South zones are retained.

The proposed adjustments to the allocation rules apply mainly to North-to-South capacity and access to the Fos Cavaou terminal.

The detailed procedures for the implementation of the mechanisms below will need to be established. The advantage of these mechanisms will need to be reassessed as infrastructures are upgraded and capacity created.

4.2.2 Conditional North-to-South capacity

The mechanism would entail releasing currently subscribed firm North-to-South capacity and replacing it with conditional capacity, the availability of which could be managed by the capacity holders themselves. This conditional capacity would be available to its holder once the latter nominated sufficient quantities at certain points on the transmission system to have a direct impact on interruptible North-to-South capacity.

The points in question are Fos, Montoir and Obergailbach.

4.2.2.1 Advantage of the concept

This solution would improve the overall transmission service by distributing the different types of capacity optimally and making it easier to manage the availability of North-to-South capacity. Shippers that only have marginal control over this availability would have rights to firm capacity, whereas those with genuine control over the conditions of this availability could use it to their advantage via conditional capacity.

4.2.2.2 Segmentation of North–South capacity

In order to avoid over-complicating the management of priorities between different types of capacity, it would seem that conditional capacity should entirely replace the current interruptible capacity. This point will need to be analysed in that not all shippers are necessarily able to manage gas flows at the Fos, Montoir and Obergailbach entry points simultaneously.

In other words, there would be two categories of capacity at the North > South link:

- firm capacity (230 GWh/d);
- conditional capacity (190 to 220 GWh/d, to be specified).

The UIOLI service could be maintained (conditions to be specified) for holders of firm and conditional capacity.

4.2.2.3 Quantities, availability parameter

For 190 GWh/d of conditional capacity to be available at all times, flow levels will need to fit within the following range, in the current state of the transmission system and demand:

- minimum flow of around 200 GWh/d at Montoir;
- minimum net flow of around 250 GWh/d at Obergailbach;
- minimum flow of around 100 GWh/d at Fos plus the value of the exit flow to TIGF.

Some details need to be added on these flow levels:

- since the flow values include different scenarios of transmission system use, it is rarely necessary for all of them to be maintained at the same time. The contractualisation of conditional capacity could be combined with a series of charts specifying the levels of availability on the basis of the flows scheduled at the four points.
- they are likely to change in line with consumption in the zone.

The practical arrangements for implementing such a mechanism will need to be analysed in detail, especially as regards the following points:

- tariff for conditional capacity;
- the handling of interruptible exit capacity to Sediane Littoral and interruptible entry capacity from Serene Sud, where availability correlates with interruptible North > South capacity: A simple solution would be to give the holder of the conditional capacity the interruptible capacity on the PITS where availability correlates with North > South capacity and thereby to make that capacity also conditional;
- effects of the schedules of the other shippers at the Obergailbach, Fos & Montoir points: As an initial approach, it could be considered that when the holder of the conditional capacity agrees to give up firm capacity, they should automatically have the right to benefit from the available conditional capacity, regardless of where that capacity comes from.
- nominations of backhaul capacity by the other shippers at Obergailbach;
- distribution of unavailable capacity into firm and conditional capacity;
- prior notification of the availability of this conditional capacity.

4.2.3 Adjustment of allocation rules for access to the South

These allocation rules should primarily apply to North-to-South capacity and access to the Fos Cavaou terminal.

4.2.3.1 Allocation of North-to-South capacity

Several mechanisms have been identified for streamlining the distribution of North-to-South capacity on the basis of each shipper's real needs.

- "standardised" allocation of North-to-South capacity:

The fundamental principles for a standardised allocation of capacity on the North-to-South link would be to prioritise allocations on the basis of each supplier's customer portfolio.

The needs associated with supplying the downstream Greater South market would be "standardised" on the basis of the Greater South portfolio and capacity at other entry points to the South zone, this standardisation being based on similar principles to those applied for the allocation of storage rights (rights to North-to-South link capacity attached to each customer on the basis of a snapshot of their portfolio at time T, releasable capacity; a proportion of releasable capacity could be established to manage portfolio changes between each allocation).

The arrangements for the transition between the current system and the "standardised" system will also need to be decided.

- other methods of allocation:

Two other non-exclusive methods could be envisaged to further improve the process of allocating capacity on the North-to-South link to the benefit of new entrants:

- giving the new entrants priority in acquiring the capacity sold, which could apply either to firm capacity alone, or to both firm and interruptible capacity. Existing suppliers would have only secondary priority in accessing capacity. Or possibly, first priority would only be granted to one category of shippers, for example those who actually deliver to customers in the GRTgaz South and/or TIGF zone.

- allocating capacity through auction.
  Such a mechanism would make it possible to guarantee shippers the possibility of accessing the quantity of capacity they want at a given price. It would also generate the price signal associated with bottlenecks. The additional revenue for GRTgaz could be partly earmarked for its investment in debottlenecking the South zone. A similar mechanism would need to be set up at the other entry points in order not to give special competitive advantage to shippers holding other entry capacity into the South zone and not to create distortions or windfall profits through the exercise of market dominance.

- other improvement mechanisms on short-term timeframes

Whatever capacity allocation rule is chosen for the annual and multiannual timeframes, North-to-South capacity remains a scarce resource, whose use needs to be streamlined through shorter-term mechanisms. Such mechanisms include:

- an effective secondary capacity market, enabling shippers to value unused capacity hold by them, and reciprocally giving shippers with a shortage of capacity a second way of acquiring more: the capsquare platform was put into operation in January 2009 for this purpose;

- a Use It Or Lose It service guaranteeing maximum use of capacity on a day-to-day basis: a service like this came into operation on January 1, 2009. However, it remains risky for shippers who acquire capacity in this way. One possibility would be to turn all or part of the capacity acquired into firm capacity from a given time.

- a gas market in the South zone enabling players to trade gas in the zone on satisfactory market terms and which would encourage optimum use of the North-to-South link by means of a price signal: the Powernext Gas Exchange, also active on the South PEG and started in November 2008, contributes to the operation of this market;

- a Use It or Sell It mechanism allowing shippers to release capacity they have reserved and resell it to GRTgaz, which can then put it on the market.

4.2.3.2 Allocation of short-term capacity at the Cavaou terminal

If demand exceeds supply, the available capacity would be first allocated to a shipper possessing:

- a contract in the Greater South zone corresponding to its request, and
- LNG supplies corresponding to its request (verification by CRE), and
- commitment to unload each year a minimum of [X%] of its capacity in the terminal,[9]
- commitment to use the continuous service.

4.2.3.3 Releasable capacity at the Cavaou terminal

A mechanism for releasing capacity in the Cavaou terminal would be implemented:
- in the event of bottlenecks in the terminal and the refusal of a request for access to the terminal to supply the downstream Greater South market,
- for a request for a term of 1 year or more,
- provided that the requesting party held LNG supplies corresponding to the request (verification by CRE) and undertook to unload each year a minimum of [X%] of its capacity in the terminal,[10]

[9] This condition could be removed if capacity on the North-to-South link is standardised.
[10] Ditto

- with minimum notice of 3 months,
- for continuous service operation in the terminal.

5. Comments by working group participants

5.1. Comments by EDF

5.1.1 The facts

With the opening up of the natural gas markets, EDF moved into the business of supplying natural gas in France, with the goal of supplying customers throughout the country. After a few years of experience in this market, EDF has reached the conclusion that it is not really an open market in the South of France, since alternative suppliers have real and serious difficulties in accessing this part of the country on competitive economic terms. Yet such access is a necessary condition for supplying natural gas to all customers, whether in transmission or distribution. These difficulties are of a physical nature (limited available capacity), but they are above all economic, since conditions of access are less competitive for alternative suppliers than for the historic operators. Indeed, alternative suppliers essentially have indirect access to GRTgaz's South zone (access to the North zone, then use of the congested North-to-South link). The result for them is, for example, an extra cost to their customers for access to the South zone which is at best comparable to the historic supplier's average profit margin, as revealed by access to their accounts

5.1.2 Characteristics of an efficient natural gas market, open to all suppliers

The conditions that need to be met for the emergence of an efficient natural gas market in France, open to all suppliers, are as follows:

- to supply the end market, suppliers must have access to entry capacity into the zone concerned through a transparent and reliable mechanism. In particular, this means that if internal links are maintained within France, the allocation of entry capacity must match what suppliers need for supply to their end market. In addition, the economic terms for this access should not be discriminatory, whether for gaseous gas or for LNG,
- it must be possible for the end market in natural gas to be coupled directly with the natural gas wholesale market, in particular so that suppliers can match their portfolio to their sales and so that a representative reference price is generated for all stakeholders, whether end users, traders or gas producers,
- this wholesale market must be at least national in scale, with the potential for subsequent extension to a higher scale. Such coupling with the wholesale market on a national scale is an essential factor for market unity and development (liquidity, convergence, etc.). In addition, the possibility of convergence between the tariff structures for gas and electricity transmission is also an important factor in encouraging dynamic development in France's gas markets,[11]
- the market design choices must be based on fundamental criteria:
  - proven economic efficiency of existing investment,
  - early planning of long-term investment in gas infrastructures needed for a smoothly running single French market (the reinforcement of North-to-South capacity needs to be studied for this purpose),
  - assessment of the organisational solution for the market in terms of its contribution to France's security of supply and its contribution to the attractiveness of the gas market at both national and European level, whether for customers, traders or gas producers.

In this respect, we feel that any solution that consists in dividing France in 2 (e.g. creation of a Greater South zone) is not what is needed.

[11] Note that in electricity, EDF some years ago did what was needed to unify the zones.

5.1.3 The approach

We wanted to make a contribution to the search for the best economic solution, which will result in a real opening up of the natural gas market throughout France in accordance with the principles described above, and which will produce rapid results. We therefore got actively involved in the "Consultation Transport" process and proposed possible solutions for a merger of GRTgaz's North and South zones, on the basis of regulatory and contractual mechanisms.

At this stage, we are convinced that a merger of GRTgaz's North and South zones, on the basis of the regulatory and contractual mechanisms envisaged, can be achieved. Indeed, each of these mechanisms has been implemented successfully on other transmission systems (notably in Germany for flow constraints, in France on the electricity grid for the adjustment mechanism, similar to the proposed geographical balancing mechanism). Of course, there are differences in the environments, but we think that the fundamentals are nevertheless fully transposable to the gas transmission system in France, and that the large number of possible options for this transposition will make it possible to find an appropriate solution when the detailed studies are undertaken.

However, if CRE should decide in the end that these potential mechanisms make it impossible to apply this kind of solution, we would ask it to put forward solutions that provide the conditions for an efficient natural gas market, which is open to all suppliers and contains within it the potential for development towards integration on a higher scale, as described above. We will study these solutions and carefully check that they meet the prerequisites for a properly functioning gas market in France, on the understanding that at this stage we believe that marginal adjustments to the existing system are unlikely to achieve such results.

In this respect, we doubt that the solution entailing "Adjustments to the operation of the North South zoning system" will produce the intended results.

Finally, as part of our contribution to the quest for a structural and sustainable solution, you will find attached a few additional comments that CRE may find useful in its deliberations.

5.1.4 Appendix to EDF's comments

5.1.4.1 Recap of difficulties in access to the South for alternative suppliers

Access by Fos

Under the current circumstances, the possibilities for unloading LNG are extremely limited at Fos for alternative suppliers.

- available capacity at Fos Tonkin is very limited in both volume and duration (uncertainty about the terminal after 2014, maintenance work in 2010 and 2011 significantly reducing terminal capacity, subscribed capacity in the two Fos terminals equal to entry capacity into the transmission system). In addition, the limits on ship size substantially restricts the use of this terminal to "historic" LNG chains. Outside these chains, it is in practice very difficult and uneconomical to get producers to agree to load small LNG tankers.
- at Fos Cavaou, unsubscribed long-term capacity is very limited (10 TWh/year which corresponds to a quantity that is hardly compatible with the exercise of the continuous service, which is the only way to supply an end market); it is sold solely on a short-term basis, and its scarcity produces bottlenecks.

Access via Spain

The routes via Spain are limited – and subscribed – until 2013, and for access to the South zone entail a significant additional cost compared to unloading at Fos. Beyond 2013, additional capacity may be created (OSP 2013), but its economic competitiveness compared with unloading at Fos still remains to be proven.

Access by the North-to-South link

The commercialisation of North-to-South link capacity through an OSP system with allocation proportional to subscription requests when demand exceeds supply results firstly in uncertainties about capacity allocation, and secondly in significant fragmentation of that capacity, which is all the more unacceptable in that it arises from the priority given to reservations by the historic operators. In addition, the cost of this capacity represents a competitive disadvantage compared with operators holding direct entry capacity into the South zone (i.e. In the Fos terminals) for supplying that zone.
An analysis presented in the working group tried to quantify the capacity requirement. However, the approach used is reductive, since it leaves out a certain number of flow constraints arising from the nature of the infrastructures in the South zone (zone lacking flexibility tools for managing flows) and a certain number of other factors arising, amongst other things, from changes in consumer typology:

- firstly, some suppliers do not agree with the market share assumptions used, but consider that this raw data cannot be disclosed as part of the consultation process, though such disclosure can subsequently be made to the regulator.
- secondly, the synthetic approach employed underestimates two factors:
  - one specifically regarding the portfolio of industrial customers, which has very few storage rights and which needs the same level of entry capacity as delivery capacity;
  - the other regarding the scale effect on portfolios, which is more limited than stated, because of maintenance work and the low levels of activity on the wholesale markets in the South zone, which oblige operators to subscribe more than their net required capacity, in order to limit risks at times of reduction.
- finally, the growth in gas consumption in the South of France will come primarily from the combined cycle power plants, which are tools for which unit delivery capacity is high and the

pattern of third-party access to storage facilities unrepresentative. For example, three 400 MW cogeneration units supplied from the North would potentially require around 60 GWh/day of North → South transit capacity, which would need to be added to the capacity mentioned in the point above.

On the basis of the example given, leaving out the first comment, this situation leads to a requirement that is much higher than the figure given, demonstrating that adjustments to the allocation of firm North-to-South capacity would not be sufficient to resolve the problems.

5.1.4.2 Solution: "Merger of the North and South zones"

5.1.4.2.1 Général points

Merging the North and South zones would make it possible to develop competition in the South zone substantially, firstly by eliminating constraints on physical access and secondly by creating equivalent economic conditions of access for all suppliers.

This merger is achievable in the short term and without immediate investment on the basis of an undertaking by the parties operating at Fos to receive a minimum quantity of LNG at the terminals. This merger is an economically efficient solution, it would lead to the rapid convergence and development of the wholesale gas market in France and would enhance security of supply. These points are explored in detail below, with the technical comments on the merger mechanisms being covered in the final part.

5.1.4.2.1.1 The merger leads to a more efficient use of infrastructures

The proposed mechanism will lead to a more efficient use of France's gas infrastructures and LNG chains (optimisation of seagoing distances and hence costs). It therefore contributes to the competitiveness of the country, of customers and of gas suppliers.

It should be noted that with the development of the transmission systems, and therefore of new entry points and of extensions to existing entry points, and with the development of the wholesale market, there is no essential reason for the flow commitment mechanism at Fos to be durable over time, whether in principle or in terms of the levels of commitment required. It should be possible to reduce them gradually as the system is upgraded, and replace them with a market mechanism.

5.1.4.2.1.2 Convergence and development of the French market

By establishing a balancing zone containing more than 90% of France's H-gas consumption, merging the North and South zones would contribute significantly to the growth of the gas market in France, both on the end market and on the wholesale market. In particular, it should result in the development of a credible reference price on the French wholesale market and, together with the interconnection developments planned for the relevant timeframes (Spain, Belgium), should contribute to the emergence of a NWE reference price.[4] This would further contribute to the attractiveness of the market. In addition, developing this liquidity will lead to additional market flexibility, benefiting all parties.

5.1.4.2.1.3 Enhanced security of supply

We emphasize that implementing the proposed system as a whole would also enhance security of gas supply to the Greater South zone as well as to the whole of France, for the following reasons:

- the geographical balancing market: giving GRTgaz a management tool for streamlining the geographic movements of gas, a tool that can notably be used in special circumstances (maintenance work, unexpected infrastructure downtime, supply crisis, etc.). In its absence, the

[4] NWE - North West Europe

TSO has no instrument for influencing shippers' gas movements. As a result, security of supply would be reinforced and achieved at optimum cost for the community if shippers were required to offer their supply or storage flexibilities through a market mechanism ultimately controlled by the regulator in its monitoring role;

- the new roles assigned to GRTgaz, required for the smooth running of the system (establishment and management of gas balances, volume forecasts on different timeframes, etc.), would give France a permanent operational instrument for monitoring and managing its security of supply on all timeframes;
- the development of liquidity on the wholesale gas markets and the emergence of a credible price reference for NWE natural gas in an additional factor in security of supply. It will promote the development of gas infrastructures, make this market more attractive to suppliers and offer all suppliers substantial market flexibility.

5.1.4.2.2 Technical comments on the proposed merger mechanisms

5.1.4.2.2.1 Capacity covered by flow commitments

The operators affected by flow commitments must be holders of long-term (i.e. more than 5 years) capacity on the Fos terminals using the continuous service. The reason for this is the central role of these terminals in the operation of the Greater South zone and the fact that almost all their capacity is reserved on a long-term basis. However, different variants are possible in distributing these commitments between the shippers concerned, in particular on the basis of the size of their subscriptions.

What we have here is a mechanism that can be used to resolve a problem specific to the South zone and that is not necessarily extendable to other zones, in that they do not experience the same access difficulties. However, the question could be explored subsequently if similar difficulties appear in the North.

When it goes on the market (in principle following OSPs), shippers that undertake to use the continuous service could receive priority allocation of the short-term capacity that remains available at Fos Cavaou.

The impact of these measures would notably be that they would not affect the sale of direct entry capacity to the South, and therefore the future development of capacity, including for the Fos terminals.

Finally, the contractual chain of responsibility for flow commitments (embodied in the terminal access contracts for the shippers concerned, and in the contract between GRTgaz and the operators of these terminals), could be handled in such a way that the LNG terminal operators act in a pass-through role between GRTgaz and shippers with flow commitments.

5.1.4.2.2.2 Flow commitments at Fos are not a new constraint

The flow commitments at Fos needed for a merger of the North and South zones are only an adaptation of the constraint that currently exists on the North-to-South link at the entry to Fos.

At present, in order to maintain the balancing constraint in the South zone, since North-to-South capacity is limited, flows must necessarily be brought to Fos. Balance assessments show that the Fos terminals have to operate at a high rate of use, especially in summer.

The flow commitments at Fos are only a reflection of the existing implicit constraint: the level of flows at Fos will be exactly the same as if the two separate North and South zones and the link between them were retained. The only change lies in the fact that the holders of long-term capacity at Fos would retain the commitments associated with that capacity, even if their market were reduced to the South of France. However, with the merger of the North and South zones, they can firstly use this

capacity to supply all their needs on these 2 zones, and secondly retain the option of offering to transfer part of their capacity in those terminals to other suppliers, thereby reducing their obligation.

Therefore, if we globally consider the level of flow commitments required for the whole of France compared with the long-term capacity subscribed by the shippers concerned in the French terminals (which would then all serve the same balancing zone), their ability to make arbitrage between French LNG and other markets remains very great (overall at least around 50% of their regasification capacity in France).

Finally, any commitment by the shippers concerned that exceeds existing constraints (whether implicit or explicit) and that would entail a real reduction in their flexibility, leading to a real loss of value, could be combined with incentive mechanisms (bonuses/penalties) in order to offset this loss of flexibility and guarantee that the commitments are met.

5.1.4.2.2.3 Case of failure at Fos

In the event of a failure at Fos, the flow commitment mechanism in no way threatens security of supply to the south of France. Balance assessments show that flows are necessary at Fos (up to the commitment levels mentioned in this report) to supply customers in the South zone. Currently, if one supplier fails at Fos, the latter is obliged – in order to fulfil the balancing requirement – to draw on alternative sources (storage facilities, flows with Spain, commercial interruption of interruptible customers). If it is unable to offset the missing flows at Fos, there is already a physical risk of not fully supplying the South zone.

With the system envisaged for flow commitments at Fos, the risks associated with an entry failure at Fos (terminals, transmission system) and with the failure of a supplier with flow commitments at Fos, are in no way increased. Moreover, the geographical balancing mechanism would be an additional instrument for tackling these failures.

5.1.4.3 Solution: “Adjustments to the North and South zones”

Unless we accept a lasting North/South split in the French gas market, which we consider unacceptable for the reasons given in the comment section, this could only offer a temporary solution pending the intended merger of the zones. However, implementing this temporary phase would notably imply that it had been demonstrated that the North and South zones could not be merged within the intended timeframes, that adjustments to the North and South zones corresponding to genuine market operation were themselves achievable, and that a method and schedule had been established to achieve this target solution of a single zone.

Maintaining the North-South zoning system would inhibit the development of liquidity on France’s wholesale gas market, both in the North and the South of France.

The strong constraint hindering entry capacity could result in the wholesale market in the South remaining at its current level, in other words with limited liquidity and restricted to spot terms. At best, we would see the emergence of a different gas reference price in the South from that in the North of France.

If it was decided not to merge the North and South zones, then adjustments to the current system will really be necessary, very soon, to obtain access to entry capacity in the South of France that provides conditions of free competition.

These adjustments will need to be based on the following principle: allowing operators access to all the desired capacity to supply the South zone on equivalent economic terms for all market players.

They will need to cover the conditions of physical and economic access, both in gaseous gas (North-to-South link) and in LNG (Fos terminals).

In particular, new entrants will need to be guaranteed access to the LNG terminals for what they need to serve their end market in the Greater South zone. Indeed, this direct access to the South zone is fundamental:

- it opens up the whole of the international trade in LNG as a source of supply, offering a significant and diverse range of resources;
- it prevents suppliers being penalised by having to use a link or complicated arrangements with third parties, both in terms of rationing capacity and of "toll".

We would like these adjustments to include:

- the introduction of releasable capacity in sufficient quantities at Fos Cavaou;
- for the North-to-South link: extended firm capacity from North to South offered to all suppliers, and a review of the allocation principles on the North-to-South link.

We stress that this increase in capacity and this review of the allocation principles, although they will physically improve access to the South, in no way resolve on their own the question of the competitive disadvantage compared with companies possessing access via Fos.

Finally, we understand that the mechanism envisaged for conditional capacity would be based (for a capacity of 190 GWh/d) on cumulative flow commitments of some 550 GWh/d at Fos, Montoir and Obergailbach, which is significantly higher than the level envisaged for the North/South merger. For this reason, we question its feasibility, or at least its real impact, if it were also decided that the flow commitments necessary for the North/South merger were not achievable. Finally, if – as proposed – these flow commitments only applied to shippers holding conditional capacity, this system would ultimately result in the market strength of the historic operator being increased.

Different capacity allocation mechanisms could be envisaged, but they need to be closely analysed before any decision is taken.

5.2. Comments by ELENGY

- In particular, Elengy is highly sceptical about the confusion of responsibilities caused by the mechanism envisaged under which GRTgaz will manage flows at Fos.

  Ultimately, the superimposition of constraints via infrastructure operators that only have a partial view of supply chains will inevitably result at best in a deterioration (by what criterion or streamlining function will GRTgaz be able to impose a flow 1 to 3 months in advance without knowing anything about arbitrage options that might be more relevant, such as using interruptible customers or a reduction in transits to Spain?) or even a total break in supply in the South.

  A Terminal Operator is not the right level at which to "contractualise" shippers' flow commitments, since what could we do to prevent a failure to meet this commitment?

  Heavy penalties are not an option: they would be easy to oppose on the grounds that they are totally disproportionate with the damage suffered by the Operator or its other customers. The entities damaged would be downstream and would have no contractual link with the Terminal Operator.

  In general terms, the proposal underrates the difficulty of altering all the contracts affected and the problems of legal feasibility. Elengy does not currently have the resources to implement these modifications.

- Elengy is also concerned about the obstacles to selling the new regasification capacity in the South that the flow commitment and releasable capacity mechanisms will generate.

  Indeed, although the study primarily looks at the medium-term picture, the mechanism is likely to be applicable beyond 2014, a timeframe that also underlies the intended commitment period of 6 years. It creates a bias in favour of the new terminals in the North zone which will impose no constraint of this kind on their customers for access to the the same unified GRTgaz zone. In the end, it will put a brake on investment in capacity in the South zone.

  In addition, the combined scheduling mechanism between Cavaou and Montoir creates a degree of uncertainty about the final destination terminal for cargoes that potential Montoir customers might want to unload. There is no guarantee that these customers would be happy to be diverted to Cavaou. This could have the effect of disadvantaging Montoir if this constraint is not also applied to all the Atlantic coast terminals.

- the report underestimates the possibilities of accessing Fos Tonkin's free short- and medium-term capacity: the maritime capacity exists and several modern ships of less than 75,000 m^3 seem underused pending the retirement of the oldest vessels. Several third parties have already unloaded at Tonkin (and they were not all card-carrying LNG operators).

- we also have doubts about the non-discriminatory nature of the proposed rules for prioritised capacity allocation in 4.2.1.3, which is also likely to be imposed at Tonkin.

Even if it is accepted by CRE, there is a possibility that it could be contested by the Commission.

5.3. Comments by EON

5.3.1 Solution: "Merger of the North and South zones"

We are in favour of a merger of the North and South zones. This is achievable in the short term without immediate investment, on the basis of a commitment by companies operating at Fos to receive a minimum of LNG there and the introduction of a geographical balancing mechanism that would reinforce security of supply by giving GRTgaz a way of monitoring shippers' gas movements.

This mechanism would prevent overinvestment in the transmission system. Indeed, the creation of new capacity on the North-to-South link would increase the flexibility of suppliers holding capacity at Fos with a substantial cost to the community. In addition, combining the North and South zones would develop the gas market in France.

5.3.2 Solution: "Adjustments to the North and South zones"

This solution could only be temporary measure, pending a merger of the zones.

We are against the conditional capacity mechanism based on a combined flow commitment at Fos, Montoir and Obergailbach. Firstly, the level of cumulative commitments for the creation of this capacity is markedly higher than the estimated level for the merger of the North and South zones. Secondly, this conditional capacity would be allocated to shippers which committed to these flows.

Different capacity allocation mechanisms could be considered, but they need to be carefully analysed before any decision is taken.

5.3.3 Conclusion

At this stage, we believe that a merger of GRTgaz's North and South zones, on the basis of the regulatory and contractual mechanisms envisaged, can be achieved. Indeed, every one of these mechanisms has been successfully implemented in other transmission systems, notably flow constraints in Germany. Of course, there are differences in the environments, but we think that the fundamentals are nevertheless fully transposable to the gas transmission system in France, and that the large number of possible options for this transposition will make it possible to find an appropriate solution when the detailed studies are undertaken.

However, if CRE should decide in the end that these potential mechanisms make it impossible to apply this kind of solution, we would ask it to put forward solutions that provide the conditions for an efficient natural gas market, which is open to all suppliers and contains within it the potential for development towards integration on a higher scale, as described above.

5.4. Comments by ENI

5.4.1 The facts

With the opening up of the natural gas markets, ENI moved into the business of supplying natural gas in France, with the goal of supplying customers throughout the country. After a few years of experience in this market, ENI has reached the conclusion that it is not really an open market in the South of France, since alternative suppliers have real and serious difficulties in accessing this part of the country on competitive economic terms. Yet such access is a necessary condition for supplying natural gas to any customer, whether in transmission or distribution. These difficulties are of a physical nature (limited available capacity), but they are above all economic, since conditions of access are less competitive for alternative suppliers than for the historic operators. Indeed, the access that alternative suppliers have to GRTgaz's South zone is essentially indirect (access to the North zone then use of the congested North-to-South link). The result for them is, for example, an extra cost to their customers for access to the South zone which is at best comparable to the historic supplier's average profit margin, as revealed by access to their accounts.

5.4.2 Characteristics of an efficient natural gas market, open to all suppliers

The conditions that need to be met for the emergence of an efficient natural gas market in France, open to all suppliers, are as follows:

- to supply the end market, suppliers must have access to entry capacity into the zone concerned through a transparent and reliable mechanism. In particular, this means that if internal links are maintained within France, the allocation of entry capacity must match what suppliers need to supply their end market. In addition, the economic terms for this access should not be discriminatory, whether for gaseous gas or for LNG,
- it must be possible for the end market in natural gas to be coupled directly with the natural gas wholesale market, in particular so that suppliers can match their portfolio to their sales and so that a representative reference price is generated for all stakeholders, whether end users, traders or gas producers,
- this wholesale market must at least be national in scale, firstly to ensure that it is consistent with the choice of tariff equalisation in France, and secondly with the need for convergence between the gas and electricity markets.[12] It must also lay the foundations for subsequent extension to a higher scale. This coupling with the wholesale market on a national scale is an essential factor for market unity and development (liquidity, convergence, etc.). In addition, the possibility of convergence between the tariff structures for gas and electricity transmission is also an important factor in encouraging the dynamic development of France's gas markets.[13]
- the market design choices must be based on fundamental criteria:
  - proven economic efficiency of existing investment,
  - early planning of long-term investment in gas infrastructures needed for a smoothly running single French market (the reinforcement of North-to-South capacity needs to be studied for this purpose),
  - assessment of the organisational solution for the market in terms of its contribution to France's security of supply and its contribution to the attractiveness of the gas market at both national and European level, whether for customers, traders or gas producers.

In this respect, we feel that any solution that consists in dividing France in 2 (e.g. creation of a Greater South zone) is not what is needed .

[12] Note that in electricity, EDF some years ago did what was needed to unify the zones.
[13] Note that in electricity, EDF some years ago did what was needed to unify the zones.

5.4.3 The approach

ENI wishes to contribute to the search for the best economic solution, which will result in a real opening up of the natural gas market throughout France in accordance with the principles described above, and which will produce rapid results.

At this stage, we are convinced that a merger of GRTgaz's North and South zones, on the basis of the regulatory and contractual mechanisms envisaged, can be achieved. Indeed, each of these mechanisms has been implemented successfully on other transmission systems (notably in Germany for flow constraints, in France on the electricity grid for the adjustment mechanism, similar to the proposed geographical balancing mechanism). Of course, there are differences in the environments, but we think that the fundamentals are nevertheless fully transposable to the gas transmission system in France, and that the large number of possible options for this transposition will make it possible to find an appropriate solution when the detailed studies are undertaken.

However, if CRE should decide in the end that these potential mechanisms make it impossible to apply this kind of solution, we would ask it to put forward solutions that provide the conditions for an efficient natural gas market, which is open to all suppliers and contains within it the potential for development towards integration on a higher scale, as described above. We will study these solutions and carefully check that they meet the requirements for a properly functioning gas market in France, on the understanding that at this stage we believe that marginal adjustments to the existing system are unlikely to achieve such results.

In this respect, we doubt that the solution entailing "Adjustments to the operation of the North South zoning system" will produce the intended results.

Finally, as part of our contribution to the quest for a structural and sustainable solution, you will find attached a few additional comments that CRE may find useful in its deliberations.

5.4.4 Appendix to ENI's comments

5.4.4.1 Recap of difficulties in access to the South for alternative suppliers

In pointing out the difficulties of access to the South zone for new entrants, we would again like to emphasise the need for investment in the North-to-South link so that access to the South zone, or else a merger of the zones, is physically possible in the long-term.

We would therefore stress our wish that CRE should conduct a survey with the operators to establish the real needs for capacity on the link.

This survey should be carried out by means of an *Open Season* procedure that is binding on the operators (in terms of prices and quantities). This will make it possible to determine not only the capacity requirements on the North-to-South link, and therefore the level of investment required, but also the willingness of the operators to finance the necessary investment.

Access by Fos

Under the current circumstances, the possibilities for unloading LNG are extremely limited at Fos for alternative suppliers.

- available capacity at Fos Tonkin is very limited in both volume and duration (uncertainty about the terminal after 2014, maintenance work in 2010 and 2011 significantly reducing terminal capacity, subscribed capacity in the two Fos terminals equal to entry capacity into the transmission system). In addition, the limitation on ship size substantially restricts the use of this terminal to "historic" LNG chains. In practice, it is very difficult and uneconomical to get producers to agree to load small LNG tankers.
- at Fos Cavaou, capacity that is not subscribed in the long term remains very limited (10 TWh/year which corresponds to a quantity that is hardly compatible with the exercise of the continuous service, which is the only way to supply an end market); it is sold solely on a short-term basis, and its scarcity produces bottlenecks.

Access via Spain

The routes via Spain are limited – and subscribed – until 2013, and for access to the South zone entail a significant additional cost compared to unloading at Fos. Beyond 2013, additional capacity may be created (OSP 2013), but its economic competitiveness compared with unloading at Fos still remains to be proven.

Access via the North-to-South link

The commercialisation of North-to-South link capacity through an OSP system with allocation proportional to subscription requests when demand exceeds supply results firstly in uncertainties about capacity allocation, and secondly in significant fragmentation of that capacity, which is all the more unacceptable in that it arises from the priority given to reservations by the historic operators. In addition, the cost of this capacity represents a competitive disadvantage compared with operators holding direct entry capacity into the South zone (i.e. In the Fos terminals) for supplying that zone.

5.4.4.2 Solution: "Merger of the North and South zones"

5.4.4.2.1 General points

Merging the North and South zones would make it possible to develop competition in the South zone substantially, firstly by eliminating constraints on physical access and secondly by creating equivalent economic conditions of access for all suppliers.

This merger can be achieved quickly and temporarily (pending the development of capacity on the North-to-South link), on the basis of an undertaking by the parties operating at Fos to receive a minimum quantity of LNG at the terminals.

Given that the commitments that entail subsequent constraints, compared with the current existing constraints to guarantee balancing, cannot be imposed and must be voluntarily agreed and chosen by the operators, we would like incentives for such virtuous behaviour to be introduced.

This merger would lead to the rapid convergence and development of the wholesale gas market in France and would enhance security of supply. These points are explored in detail below, with the technical comments on the merger mechanisms being covered in the final part.

5.4.4.2.1.1 The merger leads to a more efficient use of infrastructures

The proposed mechanism will lead to a more efficient use of France's gas infrastructures and LNG chains (streamlining of seagoing distances and hence costs). It therefore contributes to the competitiveness of the country, of customers and of gas suppliers.

It should be noted that with the development of the transmission systems, and therefore of new entry points and extensions to existing entry points, and with the development of the wholesale market, there is no essential reason for the flow commitment mechanism at Fos to be durable over time, whether in principle or in terms of the levels of commitment required. It should be possible to reduce them gradually as the system is upgraded, and replace them with a market mechanism.

5.4.4.2.1.2 Convergence and development of the French market

By establishing a balancing zone containing more than 90% of France's H-gas consumption, a merger of the North and South zones would contribute significantly to the growth of the gas market in France, both on the end market and on the wholesale market. In particular, it should result in the emergence of a credible reference price on the French wholesale market and, together with the interconnection developments planned for the relevant timeframes (Spain, Belgium), should contribute to the development of a NWE reference price.[14] This would further contribute to the attractiveness of the market. In addition, developing this liquidity will lead to additional market flexibility, benefiting all parties.

5.4.4.2.1.3 Enhanced security of supply

We would emphasise that implementing the proposed system as a whole would also enhance security of gas supply to the Greater South zone as well as to the whole of France, for the following reasons:

- the geographical balancing market: giving GRTgaz a management tool for streamlining geographical movements of gas, a tool that can notably be used in special circumstances (maintenance work, unexpected infrastructure downtime, supply crisis, etc.). In its absence, the TSO has no instrument for influencing shippers' gas movements. As a result, security of supply would be reinforced and achieved at optimum cost for the community if shippers were required to offer their supply or storage flexibilities through a market mechanism ultimately controlled by the regulator in its monitoring role;

[14] NWE - North West Europe

- the new tasks assigned to GRTgaz, required for the smooth running of the system (establishment and management of gas balances, volume forecasts on different timeframes, etc.), would give France a permanent operational instrument for monitoring and managing its security of supply on all timeframes;
- the development of liquidity on the wholesale gas markets and the emergence of a credible price reference for NWE natural gas, is an additional factor in security of supply. It will promote the development of gas infrastructures, make this market more attractive to suppliers and offer all suppliers substantial market flexibility.

5.4.4.2.2 Technical comments on the proposed merger mechanisms

5.4.4.2.2.1 Capacity affected by flow commitments

The parties concerned by flow commitments must be holders of long-term (i.e. more than 5 years) capacity on the Fos terminals using the continuous service. What we have here is a mechanism that can be used to resolve a problem specific to the South zone and that is not necessarily extendable to other zones, in that they do not experience the same access difficulties. However, the question could be explored subsequently if similar difficulties appear in the North.

When it goes on the market (in principle following OSPs), shippers that undertake to use the continuous service could receive priority allocation of the short-term capacity that remains available at Fos Cavaou.

5.4.4.2.2.2 Flow engagements at Fos are not a new constraint

The flow commitments at Fos required for a merger of the North and South zones simply comes down to transferring the current constraint on the North-South link to the Fos entry point.

At present, in order to maintain the balancing constraint in the South zone, since North-to-South capacity is limited, flows must necessarily be brought to Fos. Balance assessments show that the Fos terminals have to operate as basic production units, at a high rate of use, especially in summer.

The flow commitments at Fos are only a reflection of the existing implicit constraint: flow levels at Fos will be exactly the same as if the two separate North and South zones and the link between them were retained. The only change lies in the fact that the holders of long-term capacity at Fos would retain the commitments associated with that capacity, even if their market were reduced to the South of France.

Finally, any commitment by the shippers concerned that exceeds existing constraints (whether implicit or explicit) and that would entail a real reduction in their flexibility, leading to a real loss of value, could be offset by incentive mechanisms (bonuses/penalties) which would compensate for this loss of flexibility and guarantee that the commitments are met.

In addition, it should be emphasised that since the proposed mechanism entails a commitment to offset minimal flows at Fos (cf. Section 4.1.2.2) for the parties involved, LNG arbitrage capacity remains very high (at least around 50% of their regasification capacity in France).

5.4.4.2.2.3 Compatibility of the geographical balancing market with public service obligations

Certain members of the working group expressed concerns about the compatibility of the geographical balancing market with suppliers' public service obligations, and in particular wondered whether the obligation on suppliers to submit a bid could not force them to sell gas to GRTgaz from some of their storage facilities, thereby reducing their gas inventory levels and hence potentially their capacity to meet their public service obligations.

For the reasons explained above, we think that the geographical balancing market is fully compatible with suppliers's public service obligations.

First of all, the price freedom on bids submitted by suppliers, combined with the fact that points other than the storage facilities (PIR, PITTM, even PLT) are part of the system, and the presence of "fast" storage facilities in both the North and the South,[15] give shippers a sufficient number of levers to ensure that changes in their gas inventory levels – which might arise from the operation of the geographical balancing market – remain compatible with their public service obligations.

In addition, there are a number of measures that can be taken to ensure that the ability of suppliers to meet their public service obligations is not affected:

- additional bid selection rules by GRTgaz.

  In the criteria GRTgaz uses to select bids, it could be specified that for all the PITS in France, total withdrawal (or injection) will not be increased (or reduced), since overall the PIR and PITTM only have a positive impact in terms of resources for GRTgaz. An additional level of constraint would be for this rule to apply individually to each shipper.

- rules waiving the obligation to submit a bid in certain cases.

  In the event that a supplier should be unable to meet its public service obligations, if its bid to withdraw gas or limit its injection into the storage facilities had been accepted by GRTgaz, then it would be allowed not to respond to GRTgaz's invitation to submit bids. The onus would be on that supplier to provide evidence. It would be the task of CRE, on the basis of the information provided by that supplier, to assess whether the failure was objectively justified.

5.4.4.2.2.4 Case of failure at Fos

The flow commitment mechanism in no way threatens security of supply to the south of France. Balance assessments show that flows are necessary at Fos (up to the commitment levels mentioned in this report) to supply customers in the South zone. Currently, if one supplier fails at Fos, the latter is obliged – in order to fulfil the balancing requirement – to draw on alternative sources (storage facilities, flows with Spain, commercial interruption of interruptible customers). If it is unable to offset the missing flows at Fos, there is already a physical risk of not supplying the South zone as a whole.

With the system envisaged for flow commitments at Fos, the risks associated with an entry failure of the installations at Fos (terminals, transmission system) and with the failure of a supplier with flow commitments at Fos, are in no way increased.

As has been said, any subsequent commitment by the operators should be voluntary and encouraged by an incentive mechanism (e.g. bonuses/penalties).

As regards long-term reductions or interruptions in the unloading of LNG at Fos arising from the failure of a supplier, if this risk is considered to be sufficiently serious, one possibility would be to establish a last-resort LNG supplier to consolidate the system further.

5.4.4.3 Solution: "Adjustments to the North and South zones"

Unless we accept a lasting North/South split in the French gas market, which we consider unacceptable for the reasons given in the comment section, this could only offer a temporary solution pending the intended merger of the zones. However, implementing this temporary phase would notably imply that it had been demonstrated that the North and South zones could not be merged within the intended timeframes, that adjustments to the North and South zones that would be required for genuine market operation were themselves achievable, and that a method and schedule had been established to achieve this target of a single zone.

[15] Storage facilities which have both high injection and withdrawal rates relative to inventory levels, and therefore offer significant flexibilities in withdrawal and injection scheduling.

Maintaining the North-South zoning system would inhibit the development of liquidity on France's wholesale gas market, both in the North and the South of France.

The strong constraint hindering entry capacity could result in the wholesale market in the South remaining at its current level, in other words with limited liquidity and restricted to spot terms. At best, we would see the emergence of a different gas reference price in the South than in the North of France.

If it was decided not to merge the North and South zones, then adjustments to the current system will really be necessary in the short term to obtain access to entry capacity in the South of France that is compatible with a free market.

These adjustments will need to be based on the following principle: allowing operators access to all the capacity they need to supply the South zone on equivalent economic terms for all market players.

They will need to cover the conditions of physical and economic access, both in gaseous gas (North-to-South link) and in LNG (Fos terminals).

In particular, new entrants will need guaranteed access to the LNG terminals for what they require to serve their end market in the Greater South zone. Indeed, direct access to the South zone is fundamental:

- it opens up the whole of the international trade in LNG as a source of supply, offering a significant and diversified range of resources;
- it prevents suppliers being penalised by having to use a link or complicated arrangements with third parties, both in terms of rationing capacity and of "toll".

We would like these adjustments to include:

- the introduction of releasable capacity in sufficient quantities at Fos Cavaou;
- for the North-to-South link: extension of the North-to-South capacity offer to all suppliers;
- a review of the allocation rules on the North-to-South link.

We stress that this increase in capacity and this review of the allocation principles, although they will physically improve access to the South, are in no way sufficient to resolve the question of the competitive disadvantage compared with companies possessing access via Fos.

Finally, we understand that the mechanism envisaged for conditional capacity would be based (for a capacity of 190 GWh/d) on cumulative flow commitments of some 550 GWh/d at Fos, Montoir and Obergailbach, which is significantly higher than the level envisaged for the North/South merger. For this reason, we question its feasibility, or at least its real impact, if it were also decided that the flow commitments necessary for the North/South merger were not achievable.

Different capacity allocation mechanisms could be considered, but they need to be closely analysed before any decision is taken.

5.5. Comments by GAZPROM MARKETING & TRADING (GM&T)

With the opening up of the natural gas markets, GM&T moved into the business of supplying natural gas in France, with the goal of delivering to customers throughout the country. After a few years of experience, GM&T has reached the conclusion that the market in the South of France is not really open, since alternative suppliers have real and serious difficulties in accessing this part of the country on competitive economic terms. Yet such access is a necessary condition for supplying natural gas to all customers, whether in transmission or distribution. These difficulties are of a physical nature (limited available capacity), but they are above all economic, since conditions of access are less competitive for alternative suppliers than for the historic operators. Indeed, the access that alternative suppliers have to GRTgaz's South zone is essentially indirect (access to the North zone then use of the congested North-to-South link).

To supply the end market, suppliers must have access to entry capacity into the zone concerned through a transparent and reliable mechanism. We feel that any solution that consists in dividing France in 2 (e.g. creation of a Greater South zone) is not the best way of meeting the need.

We wanted to make a contribution to the quest for the best economic solution, which will result in a real opening up of the natural gas market throughout France and produce rapid results. We therefore got actively involved in the "Transmission Consultation" process and proposed possible solutions for a merger of GRTgaz's North and South zones, on the basis of regulatory and contractual mechanisms.

At this stage, we are convinced that a merger of GRTgaz's North and South zones, on the basis of the regulatory and contractual mechanisms envisaged, can be achieved. Indeed, each of these mechanisms has been implemented successfully on other transmission systems (notably in Germany for flow constraints, in France on the electricity grid for the adjustment mechanism, similar to the proposed geographical balancing mechanism). Of course, there are differences in the environments, but we think that the fundamentals are transposable to the gas transmission system in France, and that the large number of possible options for this transposition will make it possible to find an appropriate solution when the detailed studies are undertaken.

If it was decided not to merge the zones, the mechanisms for allocating capacity at the entry points into the South zone will need to be reviewed in depth.

5.6. Comments by GDF SUEZ

1) GDF SUEZ S.A is not in favour of the introduction of the proposed solution of a merger of the North and South zones without investment by means of “flow offset commitments at Fos and geographical balancing market based on storage facilities”. This solution faces significant problems of operational implementation and would also put GDF SUEZ S.A at a competitive disadvantage.

(i) The proposed geographical balancing market requires the use of the storage facilities which, under certain conditions, could prevent the suppliers concerned complying fully with their public service obligations, or even result in these obligations being transferred between suppliers. In addition, implementing such a solution would require a rewriting of the rules on the public service obligations, or a reshuffle of responsibilities between the different players in the gas chain, transferring some of the public service obligations and supply roles, and even last-resort functions, from the shippers to the system operator.

(ii) The maximisation of flows at the Fos terminals, a system that exists nowhere else in the world, would place heavy constraints on the shippers holding that capacity (loss of flexibility in scheduling tanker fleets, loss of financial opportunities arising from the impossibility of diverting ships to other markets) and would make this terminal less attractive. In addition, LNG producers are primarily looking for buyers that can value their production most effectively by sharing the sales proceeds and obtaining the widest possible access to the different international marketplaces. The suggested mechanism would be likely to threaten existing contractual relations with some of GDF SUEZ S.A.’s LNG suppliers and more generally could put at risk the relations with the countries/companies supplying LNG, which would be damaging not only to GDF SUEZ SA, but more broadly to France at a time when competition between countries/terminals in Europe is fierce. Any financial compensation that might be devised could only partially compensate for the damage suffered.

2) GDF SUEZ S.A is prepared to look further at the feasibility of a solution that would create conditional North-South capacity. However, GDF SUEZ S.A stresses that such a system would only be acceptable if it did not create additional uncertainty regarding the total level of capacity currently accessible to the GDF SUEZ S.A.

3) GDF SUEZ S.A is opposed to the introduction of a system of releasable capacity on the Fos Cavaou terminal. The UIOLI system in place in France’s LNG terminals already makes it possible to release unused capacity. Reassessing capacity that shippers have already subscribed would threaten their compliance with their public service obligations and would also constitute a negative signal for investors wishing to develop new access capacity to the French market.

4) GDF SUEZ S.A is in favour of an allocation system on the North-to-South link that would give priority access to companies with customers and storage facilities in the South zone, which would be likely to limit the problems of over-subscription currently experienced.

5.7. Comments by GRTgaz

5.7.1 "Merger" solution

On the purpose of the single zone

The approach of merging the GRTgaz North and GRTgaz South zones by establishing constraints on LNG unloading and on daily geographical balances is conceived as a temporary solution, in anticipation of the physical upgrades to the transmission system which will allow the large entry/exit zone created to operate smoothly and without constraints.

Though the idea of a single market zone covering the whole of France might seem at first sight both natural and attractive, the physical reality of gas flows makes it difficult to access and probably disadvantageous for a significant proportion of market players.

The contractual link between the North and South zones not only reflects the high degree of physical congestion on the transmission system, but also maintains a tariff structure that corresponds to the transmission service provided. Removing this contractual point and thereby merging the zones would have the effect of increasing the other transmission tariffs very significantly, especially as the transmission operator's costs would be substantially increased by the major investment programme required.

It should also be noted that the single-zone scenario would make any development of entry or exit capacity on this large zone even more costly for the whole community.

For this reason, GRTgaz is not convinced of the collective advantage of seeking a single zone. In principle, it considers that it would be more reasonable to consolidate the current system with two market zones and to enhance the fluidity of the link between those zones.

However, if a consensus in favour of a single zone should emerge, GRTgaz would be prepared to provide the matching investment, provided that the investment focus was on fluidity.

On the temporary mechanisms proposed

In the run-up to the completion of any investment relating to a single-zone scenario, the temporary approach as studied by the Working Group relies on two mechanisms:

- a commitment to unload minimum quantities of LNG in the Fos terminals, in monthly volumes,
- a geographical balancing market mechanism.

These two mechanisms are strictly necessary and indivisible. Indeed, the network design studies conducted by GRTgaz showed that merging the GRTgaz North and GRTgaz South zones required constraints on daily flows rather than on volumes, not only in the Fos terminals, but also at other points (in particular, the Salins storage facilities in the South zone). On its own, therefore, a commitment to unload minimum quantities of LNG in the Fos terminals, on a volume basis, would not be enough for a merger of the two zones.

However, at present the feasibility of neither one of these two mechanisms has been proven.

As regards the commitment to unload minimum quantities of LNG in the Fos terminals, it will require a profound modification of the legal framework under which France's gas market currently operates, firstly to extend GRTgaz's tasks well beyond its current role as a transmission operator, and secondly to require shippers to make such flow commitments. Such a profound modification does not fall within the remit of the Working Group participants. In addition, GRTgaz does not currently possess the resources needed to exercise these new roles.
As regards the geographical balancing market, here again a regulatory change would be required to make it compulsory for all shippers. Without this compulsory element, such a market would not be able to guarantee GRTgaz's ability, in all circumstances, to provide the flows of gas requested by shippers

within a single zone. However, such an obligation is firstly difficult to establish and secondly difficult to monitor:

- either a shipper's obligation to participate in the mechanism at a given point is based on the possession of residual capacity: in this case, it is relatively easy to monitor but very difficult for shippers to achieve, since the fact that a shipper holds capacity does not mean that it always possesses the gas to use it,
- or a shipper's obligation to participate in the mechanism at a given point is based on the possession of a volume of residual gas, in which case it would seem difficult to monitor.

Moreover, including the geographical balancing market into the day-to-day operation of transmission contracts, or even into each nomination cycle, would require a complete overhaul of GRTgaz's information system to make such an operation possible. Such an overhaul, which currently only exists in outline, is not a realistic prospect by April 1, 2011.

5.8. Comments by POWEO

With the opening up of the natural gas markets, POWEO moved into the business of supplying natural gas in France, with the goal of supplying customers throughout the country. After a few years in this market, POWEO has reached the conclusion that the market in the South of France is not really open, since alternative suppliers have real and serious difficulties in accessing this part of the country on competitive economic terms. These difficulties are of a physical nature (limited available capacity), but they are above all economic, since conditions of access are less competitive for alternative suppliers than for the historic operators. Indeed, the access that alternative suppliers have to GRTgaz's South zone is essentially indirect (access to the North zone then use of the congested North-to-South link).

The conditions that need to be met for the emergence of an efficient natural gas market in France, open to all suppliers, are notably as follows:

- to supply the end market, suppliers must have access to entry capacity into the zone concerned through a transparent and reliable mechanism. In particular, this means that if internal links are maintained within France, the allocation of entry capacity must match what suppliers need. In addition, the economic terms for this access must not discriminate between gaseous gas and LNG.

- it must be possible for the end market in natural gas to be coupled directly with the natural gas wholesale market, in particular so that suppliers can match their portfolio to their sales and so that a representative reference price is generated for all stakeholders (end users, traders, gas producers). This wholesale market must be national in scale. In addition, the possibility of convergence between the structures of the gas and electricity markets is also an important factor in encouraging the dynamic development of France's gas markets.

In this respect, we feel that any solution that consists in dividing France in 2 (e.g. creation of a Greater South zone) is not what is needed .

We wanted to make a contribution to the quest for the best economic solution, which will result in a real opening up of the natural gas market throughout France and produce rapid results. We therefore got actively involved in the "Transmission Consultation" process and proposed possible solutions for a merger of GRTgaz's North and South zones, on the basis of regulatory and contractual mechanisms. At this stage, we are convinced that this merger is achievable. Indeed, each of the mechanisms proposed has been implemented successfully on other transmission systems (in Germany for flow constraints, in France on the electricity grid for the adjustment mechanism, similar to the proposed geographical balancing mechanism). Of course, there are differences in the environments, but we think that the fundamentals are nevertheless fully transposable to the gas transmission system in France, and that the large number of possible options for this transposition will make it possible to find an appropriate solution when the detailed studies are undertaken.

If it was decided not to merge the zones, the mechanisms for allocating capacity at the entry points into the South zone would need to be reviewed in depth.

5.9. Comments by STORENGY

In respect of the solution proposing a “Merger of GRTgaz’s North and South zones”, Storengy expressed its reservations about the geographical balancing mechanism, given its possible impact on the role and operational performance of the storage facilities. Since the working group has not yet conducted an in-depth analysis of these impacts, it would seem essential to complete such an analysis before any decision to implement.

With respect to the solution proposing “Adjustments to the operations of the North-South zones”, Storengy stresses the need to take account of the requirements associated with the storage facilities in the South zone in setting the allocation rules for both North-to-South and South-to-North capacity.

Indeed, not only are these storage facility an important factor in security of supply to the South zone (and more broadly to all French consumers), but they also contribute to the development of the market in the South of France. As regards security of supply, in addition to the need for North-to-South injection capacity, it should also be noted that the contribution of the South zone storage facilities to maintaining peak balance in the North zone also generates the need for South-to-North capacity. Moreover, these needs become greater in the event of the failure of a supply source in the North zone.

It is therefore important that the rules for allocating North/South capacity should facilitate transmission to and from the storage facilities in the South zone and should take advantage of all the flexibility of those facilities. For indicative purposes, there have been initial discussions in the working group of examples of allocation rules that largely incorporate these aspects, but these were unfortunately not included in the final version of the present report.

5.10. Comments by STMFC

5.10.1 Comments on the solution "Merger of GRTgaz's North and South zones"

For all the reasons given below, STMFC is opposed to the implementation, in the proposed solution, of the aspects relating to the LNG terminals.

STMFC points out that the imposition of further constraints on the use of the Fos and Montoir terminals would make these less attractive: potential customers would tend to choose terminals where the access conditions were not likely to be altered. As a result, these constraints could act as a brake on investment on the terminals in question, which could run counter to the objectives of the working group, by inhibiting the development of entry capacity into the South zone.

STMFC notes that the feasibility of the proposed solutions for the LNG terminals has never been discussed with the LNG terminal operators, and observes that the proposed mechanisms are impracticable for the following reasons:

- the proposed solutions entail the operator of Fos Cavaou requiring some of its customers to use the terminal installations to maintain a minimum load level set by the transmission operator.
  - the principles studied in this report seem to be largely based on solutions adopted by the electricity grid, although there are fundamental differences between the systems, in particular the fact that the electricity system can have autonomous production units within France, whereas the gas system depends on production sites a very long way away.
  - STMFC points out that it is not the responsibility of a terminal operator to force customers to use the facilities that it makes available to them.
  - customers have the choice, within the limits of their capacity, to unload and discharge quantities of gas on the basis of constraints upstream and downstream of the terminal that only they are in a position to manage.
  - there is nothing in the current contract that allows the terminal operator to play a coercive role, and STMFC thinks that it is impossible that there could be, since:
    - STMFC cannot physically force a ship to arrive;
    - any penalty for failure to unload under the proposed mechanism to maintain the overall balance of the transmission system, in so far as such a failure would cause no damage to the terminal operator nor to other terminal users, would be inapplicable on the grounds of its disproportionate nature;
    - the Russian crisis of 2009 shows that the best efforts of shippers are not enough to guarantee the arrival of gas.
  - in addition, the fact that these mechanisms would affect only one category of customer makes them discriminatory. STMFC would not be able to apply such rules in that they would run counter to the principles established by European legislation.
  - finally, STMFC points out that the responsibilities of the different players require clarification: to resolve a problem regarding the general balance of the transmission system, it is appropriate to involve the parties mostly concerned, i.e. the transmission system operator, which knows what it needs, and the shippers, which are the only ones that can manage the flows of gas, both upstream and downstream of the entry points into the system. STMFC notes that no solution for direct contracts between these two parties is considered in this report, which significantly weakens its scope.
  - STMFC is entirely opposed to giving the Fos terminal responsibility in the resolution of a problem that is completely outside its control, and disputes the merits of the changes to the contractual chain described in paragraph 4.1.2.5 .

- in certain scenarios for the use of the transmission system, the solution entails the requirement to unload quantities of gas during summer that are close to the technical maximum allowed by transmission. STMFC points out that the feasibility of this arrangement is far from proven:
  - these requirements, as well as the technical maximum permitted by transmission, will depend on climate conditions and decisions by shippers on the use of the transmission system (in particular: use of the interconnection point between the GRTgaz South and TIGF zones), and maintenance-related contingencies.
  - shippers will therefore be required to schedule ships several weeks in advance, and therefore to make undertakings to producers on at least the same timescale, in order to comply with maximum and minimum limits that will usually be contradicted by the real conditions – whether relating to temperature or the use of the transmission system – which will be known at the earliest the day before. By forcing shippers to unload ships, the party doing the forcing will have replaced the shipper in managing the risks associated with all the contingencies mentioned above and could lead the whole system into operational and contractual dead ends (LNG tankers forced to wait, breakdown in the regularity of turnaround between loading and unloading ports, triggering of take-or-pay clauses).
  - the proposed solution suggests that the aim should be to bring in as many ships as possible in summer; however, STMFC points out that transmission capacity is markedly less available in summer than in winter; as a prudent and reasonable operator, STMFC feels the need to point out that the risk of incompatibility between the requirement proposed by this report and the physical condition of the transmission system is a major operational difficulty.
- the proposed timeframes (application for 6 rolling years from 2011) entail periods a long time in the future, whereas there are very significant uncertainties about levels of infrastructure use: projects that could relieve the system by bringing quantities into the South, and infrastructures that could exacerbate the situation, such as the building of gas import facilities in the north of France, which could be completed before 2017. Mechanisms that might be introduced in radically different circumstances would create unacceptable competitive distortions between projects and existing facilities. For example, in the case of two fairly close infrastructures that reciprocally influence each other, STMFC wonders about the feasibility of making firm exit capacity to Spain available at the same time as imposing minimum flows at Fos.
- there is a proposal to introduce a mechanism to divert ships between Montoir and Cavaou for shippers who are signed up for the continuous service and hold capacity on both terminals.
  - STMFC points out the discriminatory nature of this arrangement, which would prevent the terminal operators applying it for the reasons already stated above.
  - STMFC points out certain contradictions in the description of this mechanism:
    - it is presented as an option, but seems to be the essence of the proposal put forward by the author of the report who, when the consequences of the shippers' commitments are analysed, visibly chooses combined scheduling at Fos and Montoir as the base scenario.
    - this mechanism is presented as a way of minimising the level of commitment at Fos, but here again, STMFC notes the discriminatory nature of the arrangement; STMFC sees it primarily as a compulsory service provided to other users by certain shippers that meet the criteria described above, without any suggestion of compensation whether financial or in kind. The only compensation mentioned is the reduced cost of transmission for most LNG sources, which is not proven, in particular for gas coming from West Africa, the Americas and Northern Europe.
  - STMFC considers that it is is not practicable to divert ships:
    - the same problems of division of responsibility presented in point 1 are further exacerbated by the involvement of two different terminal operators.
    - many cargoes are covered by ex-ship contracts, which means that the shipper has no control over shipping routes, let alone hoping that the terminal or transmission system operators might have any such control.
  - STMFC considers that the UIOLI mechanisms jointly envisaged by the operators and by CRE, by allowing maximum use of existing capacity on the terminals, will give shippers active on the LNG market the necessary resources to optimise operational management of the different gas infrastructures.

- for all these reasons, the STMFC is not in favour of the introduction of an offset mechanism as described in this report.

- it is proposed that a mechanism should be introduced for the preferential allocation of short-term capacity at Cavaou.
  - STMFC points out that it proposed an allocation mechanism for short-term capacity which opened up access to the Fos Cavaou terminal to new entrants into the French market: EDF, ENI, ESSENT TRADING INTERNATIONAL and DISTRIGAZ, and therefore gave these shippers access to an entry point into GRTgaz's South zone.
  - there was extensive consultation with the market players and CRE on the criteria for allocating capacity.
  - during this consultation, it became clear that imposing allocation criteria such as shippers' portfolios upstream or downstream of the terminal, would constitute barriers for new entrants. Such criteria were therefore not chosen and there is nothing in the present report that shows that conditions have changed radically since June 2007.
  - STMFC also points out that allocation criteria based on a commitment by shippers to maintain a certain load rate are unenforceable.
    - if they are simply commitments, shippers will usually be able to justify non-compliance on the grounds of circumstances
    - if penalties are introduced, STMFC believes that they could not reasonably be justified.
  - finally, STMFC observes that this mechanism is not necessary to the objectives pursued by the working group participants.
  - for all these reasons, STMFC disputes the relevance of the short-term capacity allocation mechanism in contributing to a merger of GRTgaz's North and South zones.

5.10.2 Comments on the solution "Adjustments to the North-South zoning system"

For all the reasons given below, STMFC is opposed to the implementation, in the proposed solution, of the aspects relating to LNG terminals.

STMFC points out that the imposition of further constraints on the use of the Fos terminal would make it less attractive: potential customers would tend to use terminals where the access conditions were not likely to be modified to meet the needs of other infrastructure operators, or the needs of other system users. As a result, these constraints could act as a brake on investment on the Fos Cavaou terminal, which could run counter to the objectives of the working group, by inhibiting the development of entry capacity into the South zone.

Within the context of this solution, STMFC considers that the introduction of a short-term capacity allocation principle at the Fos Cavaou terminal is not justified and refers to point 5 of STMFC's comments in paragraph 5.10.1 for specific details.

As regards releasable capacity,

- STMFC is not in favour of the introduction of such a measure for the reasons specified in the first paragraph of this section. STMFC believes that if such a measure were to be introduced, it should be applied to the planned terminals in France, which would otherwise create serious competitive distortions in relation to existing terminals.
- finally, STMFC points out that the scale of the Fos Cavaou terminal is not sufficient to show a congestion there is still capacity on the Fos Tonkin terminal, which needs to be included.

5.11. Comments by TGPL

As indicated in the preliminary remarks, Total Gas & Power Limited (TGPL), which was an active participant in this working group, reiterates that it is in disagreement with the initial assessment of the nature and causes of the situation in the South zone, and with the solutions described in this report, which did not attract a consensus.

The proposed solution for a North-South merger based on flow constraints would have the effect of damaging services to customers and primarily serves the special interests of a limited group of shippers. TGPL regrets the scale of the resources mobilised to study a project that it considers unviable. TGPL agrees that access to the South zone needs to be improved, but that short-term improvement should primarily be achieved by adjustments that will provide incentives for better use of existing capacity.

5.11.1 Comments on the description of the problem

5.11.1.1 General comments

To meet the demand of a few suppliers, the working group held 14 meetings, 9 of them plenary. TGPL considers that the time spent on this subject prevented the community of shippers as well as the system operators and CRE from working on quick solutions that would lead to better use of the North-to-South link as early as summer 2009, and all this for unjustified and abusive reasons.

In addition, TGPL agrees neither with the initial diagnosis nor with the way the problem was described.

The suppliers who signed the initial “position paper” constantly claimed a competitive handicap and their need for **unlimited access** to the South zone for **major needs** of portfolio development, but such unlimited access **is not realistic** in the light of the physical situation of the zone, a problem experienced by **all** shippers.

The working group could have concentrated on proposals that would enhance the development of the gas market in the South zone rather than the introduction of constraints on the use of access capacity to the South zone. The “market” solution was deliberately ignored during this process. Yet there is already a market in the South zone, a market that has many active players. We will consider these points in great detail in the third part of our comments.

The priority of all involved should be to guarantee effective use of existing North-South capacity. Constraining flows to artificially remove the North-to-South link, in order to meet the highly “ambitious” development assumptions of certain suppliers, would be beneficial neither for the development of the market nor for end customers.

We would now like to look in greater detail at certain claims in the report.

5.11.1.2 Total, investor in Fos Cavaou

As regards access capacity to be South zone, TGPL, which contracts capacity at Fos Cavaou, where Total is a private investor, points out that the commissioning of the Fos Cavaou terminal will increase entry capacity into the South zone by 70%, an increase that would be even greater without the constraint on the transmission system. This increase will relieve demand on the North-to-South link, which will benefit all shippers.

Moreover, the possession of capacity in the Fos Cavaou terminal, as described in paragraph 2.2.4, arises from voluntary investment in the terminal, made at a time when the opening up of the French gas market was already well advanced, and has nothing to do with long-standing customer portfolios.

5.11.1.3 North-South capacity

TGPL disputes the requirements for access capacity into the South zone as presented in the report: there is no competitive disadvantage for alternative suppliers on account of access to North-South capacity. The reservation rules are transparent and non-discriminatory and the OSPs conducted in 2008 led to extensive redistribution of this capacity to alternative suppliers. The problems associated with physical bottlenecks and the uncertainty about the proportional principle applied to reservations, affect all shippers.

Here is our detailed analysis of the problem of access to the South zone:

- Overestimation of needs by alternative suppliers

  The summary presented in the report (paragraph 2.2.4) refers to limits to the North-South capacity currently available, which purportedly primarily affects alternative suppliers.

  However, an analysis presented as part of the group's work shows that with "ambitious but realistic" development assumptions for the new entrants, the capacity required on the North-to-South link would be 104 GWh by 2011. It was specified at the meeting of March 27, 2009 (cf. Minutes) that the new suppliers have currently reserved 150 GWh at that point through OSPs that took place in spring 2008.

  As a result, some alternative suppliers have recently been able to sell this North-South capacity on the secondary market or via North-South swaps at prices equivalent to 3 times the tariff: the competitive advantage therefore clearly benefits the alternative suppliers selling on the secondary market.

  Finally, during the 2008 OSPs relating to be North-to-South link, certain companies benefited from advantageous rules (e.g. linked companies).

  In these OSPs, all suppliers, whether or not they had customer portfolios in the "Greater South" zone, accepted the rules and the risks associated with those rules.

- Need for comprehensive and neutral feedback

  The conclusions put forward by the alternative suppliers in this report take no account of the current use of North-South capacity.

  We think that feedback is needed on the current use of this capacity by each supplier. This would be useful in deciding any changes to the operational and contractual procedures for the operation of this link.

  In addition, gas trading activity on the South PEG also needs to be studied, to see how the market behaves in this zone.

- Improvements to the existing conditions of use

  There is extensive physical and contractual congestion on the North-to-South link.

  The operational procedures governing the performance of the North-to-South link (nomination, availability of interruptible capacity, definition of interruption rules, etc.) need to be overhauled and optimised in order to improve the use of this capacity.

  We will develop some of these solutions in the third part of our comments on the solution "Adjustments to the North-South learning system".

A comprehensive, accurate and neutral analysis of the situation in the South zone is needed in order to identify appropriate and effective improvements. This would prevent measures being introduced that would make the system more rigid and inhibit the market.

5.11.2 Comments on the solution for a merger of the zones

Quite apart from its disagreement on the analysis of the problem, TGPL is currently opposed to a merger of the North and South zones. We think that the transmission system is not ready to support such a merger now or in the near future. The two-zone system reflects constraints that are present on the system.

The solutions proposed to bring about such a merger would damage the French gas market (economically, operationally and functionally).

5.11.2.1 Flow obligation in the LNG terminals, notably Fos Cavaou

TGPL is against this solution, which it considers legally indefensible, unachievable and ultimately negative in its impact (increase in prices and a brake on investments).

5.11.2.1.1 No legal basis for imposing flow obligations on the Fos terminals:

As discussed and agreed in meetings, **the proposal to oblige terminal users to guarantee a level of use (paragraph 4.1.2) is legally unenforceable.**

5.11.2.1.2 Impossible operational implementation

As pointed out during the meetings, LNG supply contracts and terminal access contracts cannot be used to achieve the constraints described. It is simplistic and inaccurate to suggest that LNG supply contracts could easily be amended to allow buyers to choose the terminal where the cargo will be unloaded. We are speaking on our own behalf, but we think that the problem would be the same for any supplier which, like Total, relies on LNG supplies as they are traded in the open, competitive, free-market world of recent years, since no supplier (producing country) is in a position to recognise France as an “landlocked” market that depends on a constant flow of LNG whilst enjoying a purchase price lower than landlockedmarkets.

For their part, the terminal operators have formally rejected the feasibility of coordinated scheduling between all the LNG terminals, a position fully backed by TGPL.

5.11.2.1.3 A potential obstacle to future investors

Total invested voluntarily in the Fos Cavaou terminal in a regulated environment that had been negotiated and agreed with CRE, in particular with regard to third-party access to 10% of the terminal’s capacity. The introduction of new regulatory constraints would inevitably lead the companies concerned to reassess or even modify their investment plans. Moreover, it would indicate that the legal framework applicable to any investment might change radically and unpredictably.

5.11.2.1.4 A direct impact on South zone customers: the wrong price signal

Imposing minimum flow obligations on the Fos terminals would have the direct effect of promoting flows to Spain and generating flexibility in LNG supply for the Spanish market, without French consumers receiving any advantage, in fact quite the opposite.

Forcing LNG into the South zone would therefore have the direct effect of increasing the price in the zone to the detriment of end users.

Generally speaking, LNG is more expensive than pipeline gas. A massive influx of LNG to Fos would therefore help to increase the average price of gas in the South zone.

On the other hand, this average price of gas in the South zone will be structurally lower than the average price of gas in Spain, which is largely supplied by LNG. Very logically, the Spanish operators

will therefore import gas from France to Spain. This will become even easier as the interconnections develop.

It is, in fact, easy to demonstrate that the Spanish operators will try to divert LNG cargoes initially intended for Spain to other more valuable international markets, replacing them with gas that was thought to be necessary to the South of France.

In addition, it will be noted that in the past, despite the existence of transmission capacity from South to North and the possibility of reducing existing historic flows, it was very difficult to set up flows or counter-flows from Spain to France, even when the market conditions were theoretically favourable (flow interruption on the Spanish side, royal decree prohibiting gas exports in winter, absence of a real spot market, Centro de Gravidad not representative of a real balancing zone).

Finally, as regards the possibility of compensation for these LNG flow commitments or constraints at Fos, TGPL believes that the only acceptable compensation would be payment at the marginal LNG price, although it is very clear that resolving the constraint using the possibilities of the different markets and transmission systems will provide solutions at a much more economic price.

In summary, TGPL reiterates its rejection of minimum flow commitments on the LNG terminals, whether or not any compensation is provided. It considers that the direct consequence would be to increase prices in France to the detriment of end users.

5.11.2.2 Geographical balancing market mechanism

The principles of this mechanism were discussed at length and it was not shown that such a mechanism was technically viable. The daily volumes involved are much too great for one to be sure of its feasibility from the perspective of the "storage" shippers.

In addition, since this mechanism would make GRTgaz a captive operator, its economic viability also seems highly compromised.

Finally, the application of such a mechanism to the storage facilities would encourage operators to replenish their storage facilities partly in response to GRTgaz's actions, to the detriment of their Public Service Obligations and prudent and reasonable management practices.

TGPL considers that the proposed mechanisms to merge the North and South zones without investment would result in a deterioration in economic conditions for end customers, would introduce a rigidity that runs counter to an open market and would inhibit future investment. These mechanisms are neither technically nor economically viable and will damage the French gas market.

5.11.3 Comments on the solution "Adjustments to the North-South zoning system"

5.11.3.1 Adjustment of North-South capacity allocation rules:

An analysis put forward within the group shows that with "ambitious but realistic" assumptions of evolution of the number of new market players, the capacity needed on the North-to-South link would be 104 GWh. However, (see Minutes of the meeting of March 27, 2009), the new suppliers have currently reserved 150 GWh through the most recent OSPs.

It was repeated several times at plenary meetings that the suppliers wanted to be treated "on an equal footing with regard to access to the transmission system in terms of both capacity and price". TGPL considers that in order to meet such a requirement, the best way of selling capacity remains OSPs such as those held last year. The rules had been slightly modified following the OSP (linked companies, unbundling of firm and interruptible capacity) and we feel that these rules are now entirely appropriate. Let us remember that through this process, capacity was widely redistributed in favour of the new entrants.

Moreover, it is possible to trade this capacity on the secondary market.

Any solution likely to complicate the selling process will have the effect of putting off new shippers.

An administrated capacity system runs counter to market liberalisation. Once again, the tendency of the proposed solution is to make the system more rigid and to inhibit the opening up of the markets.

5.11.3.2 Releasable capacity at the Fos Cavaou terminal

TGPL notes that the subject has already been covered on multiple occasions, notably in the Lewiner working group on "The regulation of LNG terminals in France" and as part of the "Public consultations on the rules for regulating LNG terminals" in 2007 and 2008.

TGPL also notes that the Fos Cavaou access contract already includes provisions on UIOLI and therefore considers that the subject is no longer on the agenda.

5.11.3.3 Other short-term streamlining mechanisms

5.11.3.3.1 The "market" solution

In a report in favour of making the market more open in the South zone, it is surprising to see that the "market" solution is completely ignored.

Indeed, the report seems completely unaware of the current existence of a market in the South zone. The existence of the Gas eExchange operated by Powernext is vaguely referred to. We would like to note that there are also brokers through which extensive volumes are traded on "longer-term" maturities (quarters, seasons, years) on the South PEG. In addition, since the introduction of the new transmission system structure, activity on the South PEG has markedly increased in recent months, and there have been numerous swaps between the South and North zones.

In addition, TGPL notes that some of the "6 alternative suppliers" complaining of difficulties in accessing the South zone are currently not even registered on the Powernext Exchange and are completely inactive in the market on the South PEG.

TGPL considers that a "market" solution is still one of the best solutions to be considered.

5.11.3.3.2 Other streamlining mechanisms:

TGPL regrets that such a small role is allocated to the mechanisms for improving existing capacity, which we believe are currently the priorities to resolve.

We have studied a solution that would bring about rapid improvements in the use of North-South capacity.

- one possible solution – "emergency supply":

TGP considers that one of the current problems of the North-to-South link arises from a lack of physical fluidity within the new North zone. Although the old zones making up the new North zone have been merged, there remain internal East-West bottlenecks which prevent the conditions for the use of entry capacity (Taisnières, Dunkerque, Obergailbach, Montoir) being neutral in terms of the possibility of gas flowing down to the South. GRTgaz mentions bottlenecks in its long-term plan and and is planning minimum investment of €270 million to resolve them and and a maximum of €1,700 million for the implementation of the Taisnières OS (Opens Season) and an LNG terminal (Dunkerque type) in the North zone.

This situation, which is globally positive for the North zone, can conversely have a negative impact on the South zone by limiting the transit possibilities to the South which the diversity of the former access routes allowed.

This problem should be resolved, in the medium/long term, by the completion of a GRTgaz investment plan within the North zone which would turn currently interruptible North-South capacity into firm capacity.

In the meantime, from summer 2009, it is possible to introduce mechanisms that would mitigate this kind of problem in the next few years.

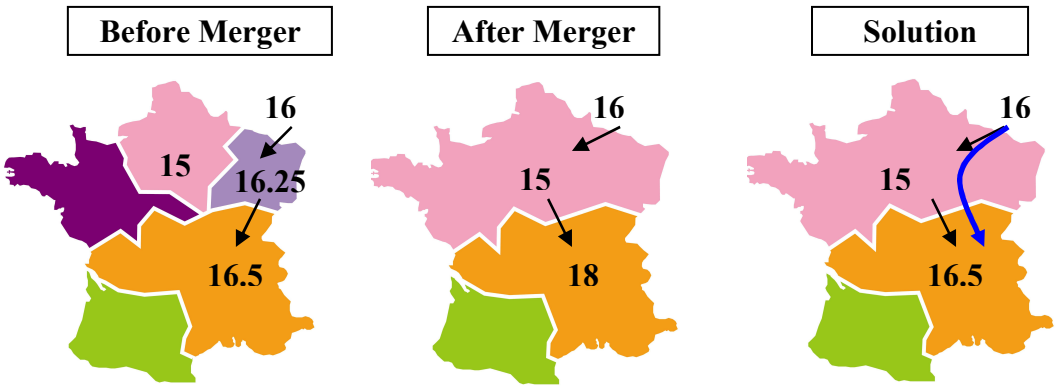
The particular case of flows at Obergailbach is a good illustration of this problem, which can also appear at other points. The usual direction of gas price differentials between Germany and France's South zone should naturally lead an operator to route gas from Germany to the South zone. However, if the German price is higher than the price in the North zone, the absence of firm North-South capacity and the interruption of interruptible capacity limit the possibility of transit to the South and prevents an operator implementing transmission that would be technically achievable. This situation contributes to the often deplored lack of gas in the South.

If we take a practical example where German Spot prices are higher than North zone prices (e.g. a Russia/Ukraine crisis or the more frequent likelihood of constraints at Emden):
Day Ahead North PEG: €15/MWh, Germany: €16/MWh.
Flows at Obergailbach therefore fall to the point of triggering an interruption in North → South capacity.
It then becomes necessary to withdraw excessively from storage facilities in the South. This reduces security of supply in the South zone, and increases prices in the South to the marginal withdrawal level, say for example €18/MWh.
At present, in these circumstances, there is no way for a shipper to bring gas from Germany to the South. (The situation would be the same from Montoir).

Before the North/East/West merger, the solution would have emerged through the market: demand would have arisen at the East PEG to attract gas, until the price at the East PEG rose above the German price, say to €16.25/MWh. The gas would therefore have been able to arrive in the South zone at a marginal cost, e.g. €16.50/MWh.

The current situation prevents proper supply to the South, but the cause is a problem internal to the North zone and not a lack of capacity in the South.

From both an economic and a security of supply perspective, it is essential to find solutions which, in the event of North/South interruptions due to excessively low import flows at specific points (essentially Obergailbach and Montoir), enable shipper at these points to transport the additional gas directly to the South zone, since this is physically possible.



Remember that the markets which have succeeded in creating single zones are not restricted to investing in overcapacity to resolve every temporary and local problem that may arise. Mechanisms to

resolve them are necessary and exist. Let us take the English example, which works and which uses the market, by means of trading gas and/or capacity. This also entails a distribution of the resulting costs (*smearing charges*).

We understand that mechanisms that impose subjective choices on the transmission operator, which will influence the balancing prices and require those costs to be passed on to users, are not favoured by CRE or by GRTgaz. We therefore need to find cost-free priority allocation mechanisms.

A simple solution in the short and medium term, with no additional cost for GRTgaz, customers or shippers, would be to create a concept of “emergency supply” whereby, in the event of an interruption, GRTgaz can name the “guilty” point and allow shippers that increase their flows at this point to have the same volumes of their North-South flows turned into firm capacity.

In this way, on a short timeframe (Within day or Day Ahead), GRTgaz could identify the need for an additional flow at the “guilty” point and launch a tendering process. This tender could take place either in the morning or in the afternoon if more visibility is required (after the 2 p.m. nominations are sent).

Participants agreeing to route more gas via the “guilty” point would then have the option to have their interruptible North-South capacity converted into firm North-South capacity. This could be done on 100% of the additional flows or else on a lower percentage (e.g. for 1 GWh of additional flow at Obergailbach, the shipper might have 0.8 GWh of North-South capacity converted to firm capacity), at the discretion of GRTgaz on the basis of physical realities.

Under this “emergency supply” system, therefore, at GRTgaz’s request, each shipper could obtain a firm flow capacity between the “guilty” point and the South zone, up to the limit of the lower of the following values: its entry capacity at that point or its North-South transmission capacity.

Such a solution would generate no additional costs for GRTgaz and could be carried out quickly via e-mail.

There are other improvements that would lead to better use of North-South capacity and each of them could be studied as a matter of priority:

- better use of UIOLI
- more active revision of reduction ratios by GRTgaz

TGP is ready to help GRTgaz explore such a mechanism, so that it can be introduced as soon as possible. We think that any solution that will lead to better use of North-South capacity needs to be studied as a priority and introduced as soon as possible.

5.11.4 Conclusion:

TGPL disagrees with the initial diagnosis of the nature and causes of the situation in the South zone, and with the solutions described in this report, on which there is no consensus.

The effect of the proposed solutions would be to make the system more rigid and to provide customers with a worse service. We also consider that these solutions only serve the particular interests of a limited group of shippers.

TGPL regrets the scale of the resources mobilised to study a project that it considers unviable.
TGPL agrees that access to the South zone needs to be improved, but holds that short-term improvement should primarily be achieved by operational adjustments that will provide incentives for better use of existing capacity.

5.12. Comments by UNIDEN and RHODIA

5.12.1 SOLUTION 1. "Merger of the North and South zones":

The End Users Group supports the Alternative Suppliers' Position Paper of October 17, 2008 on the need for a rapid merger of the North and South zones and agrees with the positive outcomes expected.

The End Users Group considers that only the first solution, entailing a merger of the North and South zones, will result in the target of enhancing competition in the South zone being fully achieved.

This merger could be achieved by flow commitments on the part of parties operating on the Fos terminals, through a mechanism still to be decided.

These commitments would need to be reviewed regularly and not set once and for all, in order to reflect changes to the transmission system and the introduction of new entry points.

5.12.2 SOLUTION 2. "Adjustments to the the North and South zones"

If a merger of the North and South zones cannot be achieved quickly, the solution "Adjustments to the North and South zones" should only be a temporary measure kept in place until the zones can be merged.

UNIDEN-Rhodia on the adjustment of the North-South capacity allocation rules: the Industrial Consumers Group is in favour of an administered system for allocating North-South capacity on the basis of customer portfolio (as already exists for storage rights), but would like to add certain comments on how the system is implemented.

In conditions of acknowledged shortage, setting a "fair" aAllocation level is essential. It is important that this capacity should be granted primarily to meet the annual reference consumption (ARC) needs of each supplier's Greater South portfolio. If the allocation levels for North-to-South link capacity were set on the basis of maximum flow requirements or by reference to flows for the storage facilities, this would probably have the effect of shifting the allocation of North-to-South link capacity in favour of certain customer portfolios with very large modulation requirements (e.g. CCGTs) and depriving all the other shippers with more balanced industrial type portfolios. This scenario could have the opposite of the desired result, and even further deprive certain end customers of any competition. North-to-South link capacity cannot be considered as a modulation or Peak-demand tool.

Therefore, if Solution 2 were to be temporarily implemented, the mechanisms and the new allocation rules would need to be studied closely so as not to undermine offers to industrial customers.

The End Users Group is totally opposed to an auction-based allocation system which, under a constraint system of entry capacity to the South, necessarily drives prices upwards and would inevitably lead to higher costs for end customers.