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ENERGY SECTOR INQUIRY - ISSUES PAPER

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For reasons of confidentiality, company names have been excluded and figures in brackets indicate a range

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Executive Summary

The initial findings of the Commission's inquiry presented in this Issues Paper have confirmed many of the criticisms made about EU gas and electricity markets. The findings will be reported more in detail in the preliminary report at the beginning of 2006.

The initial findings also confirm the analysis put forward in the Commission's Report on Progress in Creating the Internal Gas and Electricity Market and emphasise the requirements for action. After a wide public consultation on the preliminary findings, scheduled for February and March of 2006, the Commission will discuss and propose necessary structural, regulatory and competition law-based remedies. These should address the barriers currently impeding the development of a fully functioning open and competitive EU wide energy market as a basis for fairer prices, more efficient allocation of resources and supply, more openness for renewable energies and an economically sustainable basis for security of supply. The final report of the sector inquiry will be published at the end of 2006.

The impediments to competition on EU energy markets can be categorized under five main headings: (1) Market concentration; (2) Vertical foreclosure; (3) Lack of market integration; (4) Lack of transparency; and (5) Price issues.

Gas sector:

Market Concentration: Gas incumbents remain dominant in their national markets and largely control gas imports and/or gas production. Control of imported gas is mainly exercised through long term gas purchase contracts with upstream producers and long term capacity reservations on "import" pipelines. Some specific features of the import contracts contribute to the low liquidity in wholesale gas markets.

Vertical Foreclosure: Limited liquidity, because of long-term vertical contracts, denies new operators the reliable long-term and short-term sources of gas necessary to enter supply markets. New entrants also allege insufficient unbundling of TSOs and DSOs from suppliers. Lack of access to storage capacity is also a barrier to new entry, although storage is crucial for suppliers to get flexibility.

Insufficient Market Integration: Cross-border sales are limited by incumbents' hesitance to enter other national markets, as well as by lack of available capacity on import pipelines and crucial entry points to national gas systems. The overall picture confirms that most capacity in transit pipes is controlled by incumbents on the basis of legacy contracts, for which a derogation from the third party access rules was provided in the 2003 gas directive. There is a risk that this situation might continue for more than a decade to come. A detailed study of two very important transit routes indicate some scope for optimising the use of existing capacities, although the impact of this extra available capacity would be relatively limited.

Transparency: Reliable information made available at the right frequency (notably on available transport capacity) is a key deficit of gas transport access. Network users point to lack of transparency and stress the need for consistent and continuous information.

Prices: The use of oil price indexes in import contracts has remained the rule. There are similarities in the indexes used with the result that prices in contracts between different producers and suppliers move in a similar way and do not react to the supply and demand of gas in EU markets. No clear trend towards more market-based pricing mechanisms can be observed at this stage.

Electricity sector:

Market concentration: In most Member States a high level of concentration persists in generation, which creates scope for market power for incumbent operators. The characteristics of the electricity market mean that generators are able to influence prices by the use of their generation capacity. Although concentration levels on wholesale traded markets are less striking, further analysis is needed to determine whether, as a result, competition is working satisfactorily.

Vertical Foreclosure: In many markets there is significant vertical integration between generation and retail. This tends to reduce liquidity of wholesale markets and increase price volatility as well as giving pernicious incentives for further vertical integration. Vertical foreclosure may also result from long-term power purchase agreements. Insufficient unbundling between supply and transport activities, despite the obligations existing in EU legislation, further strengthens the incumbents and makes market entry difficult.

Market integration: There is insufficient integration of EU electricity markets, because of inadequate interconnecting infrastructure and different market design between different transmission areas. Investment is insufficient to eliminate long-established bottlenecks resulting notably from long term capacity reservations that date from before liberalisation. Even existing capacity is not always used, mainly as a result of inadequate co-ordination between transmission companies and allocation rules. Such inefficiencies and cross-border barriers add to major entry barriers within national markets.

Transparency: There is a lack of transparency on wholesale markets which undermines confidence in trading. The lack of timely and accurate information on the availability of interconnectors; on available generation; of day-ahead and week-ahead aggregate forecasted and actual load; and on balancing and reserve power needs undermine the operators' confidence in most national markets. 83 per cent of suppliers believe useful, important or indispensable information is lacking.

Price issues: Large energy consumers doubt that prices on spot and forward wholesale markets result from fair competition. The EU emission trading system is increasingly affecting prices even in markets where carbon intensity is low. For several national markets, the continued co-existence of free and regulated supply markets threatens full market opening.

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1. INTRODUCTION

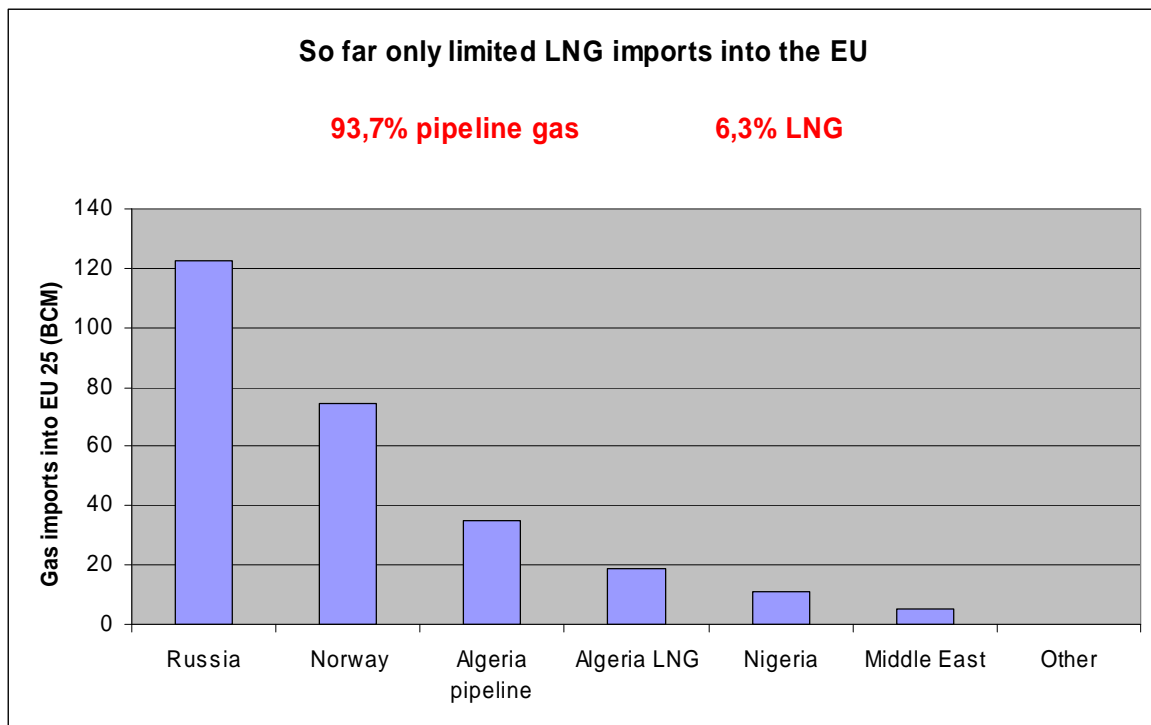
- (1) Recent dramatic rises in gas and electricity wholesale prices and persistent complaints about barriers to entry and limited consumer choice led the Commission to open an inquiry into the functioning of the European gas and electricity markets in June 2005. The inquiry, based on Art. 17 of Regulation 1/2003, aims at assessing the competition conditions and establishing whether current indications of market malfunctioning result from breaches of competition law.¹
- (2) Whilst there are significant similarities between the gas and electricity sectors – not least when it comes to the unsatisfactory state of the liberalisation process - there are also some important differences between them. Some of the main differences are: (a) electricity is not a natural resource whilst gas is (i.e. it can in principle be produced everywhere in the Community); (b) electricity cannot be stored whilst gas can; (c) generators have different generation portfolios (i.e. generators operate on different marginal costs e.g. for base load and peak load) whilst production of gas shows more similarities; (d) liberalisation in electricity started earlier than in gas. These and other differences have to be taken into account when describing the state of liberalisation of the gas and electricity markets.
- (3) Little reliable quantitative data is available on many aspects of electricity and (especially) gas markets. The Commission therefore sent out over 3000 questionnaires in order to establish the facts for a solid competition analyses. Market operators and national competition authorities were consulted with the European energy regulators significantly contributing from their expertise about energy markets.
- (4) The present Issues Paper presents the initial findings. Its primary focus is on problem identification, rather than proposing specific remedies. A presentation to national competition authorities and regulators has taken place on 15 November 2005, i.e. ahead of the 1 December Energy Council which will discuss the findings in its wider policy context.
- (5) The first phase of the inquiry has identified important impediments to competition in gas and electricity markets which can be grouped under five broad categories:
 - (1) Market concentration;
 - (2) Vertical foreclosure;
 - (3) Lack of market integration;

¹ A number of national competition authorities have undertaken inquiries into the functioning of national gas and electricity markets. The Commission's inquiry complements these investigations with a European perspective (e.g. the gas inquiry looks at issues raised in the UK gas probe about the functioning of Continental gas markets).

- (4) Lack of transparency; and
 - (5) The price formation mechanism.
- (6) The initial findings confirm the views expressed in the preparatory consultation phase on a number of points but there are many nuances. The overall picture emerging is one of significant differences between national markets with market concentration being a common problem throughout nearly all of the markets.

2. GAS MARKETS

- (7) Despite the fact that gas has been transiting across borders in Europe for many years the national gas markets have not integrated and remain at the most national in scope. The sector inquiry confirms that the highly concentrated market structure in most national or sub-national gas markets results from control of key inputs (gas, transit networks, storage) being highly concentrated. The strong vertical links between the operators active at the different levels of the gas supply chain point to a market structure that creates major barriers to new market entry. Lack of liquidity in the wholesale gas market is also confirmed.
- (8) Given this high market concentration in EU Member States a full assessment of the competitive conditions needs additionally to consider the very limited number of suppliers exporting gas to EU markets.



Source: BP Statistical Review 2005.

- (9) The chart shows the main external sources of gas for the EU. It illustrates that there is currently little gas imported by ship in Liquefied Natural Gas (LNG) form and that the vast majority of the EU's gas supply comes via pipeline from Russia and Norway.
- (10) However, the number of upstream producers supplying EU gas markets is gradually undergoing change as LNG supplies become more competitive. That diversification of upstream supply should enhance competition in EU gas markets. Competition in the EU will however increasingly be affected by the fact that the EU will compete with the US for LNG imports. As a consequence, US gas prices will increasingly impact on EU prices.

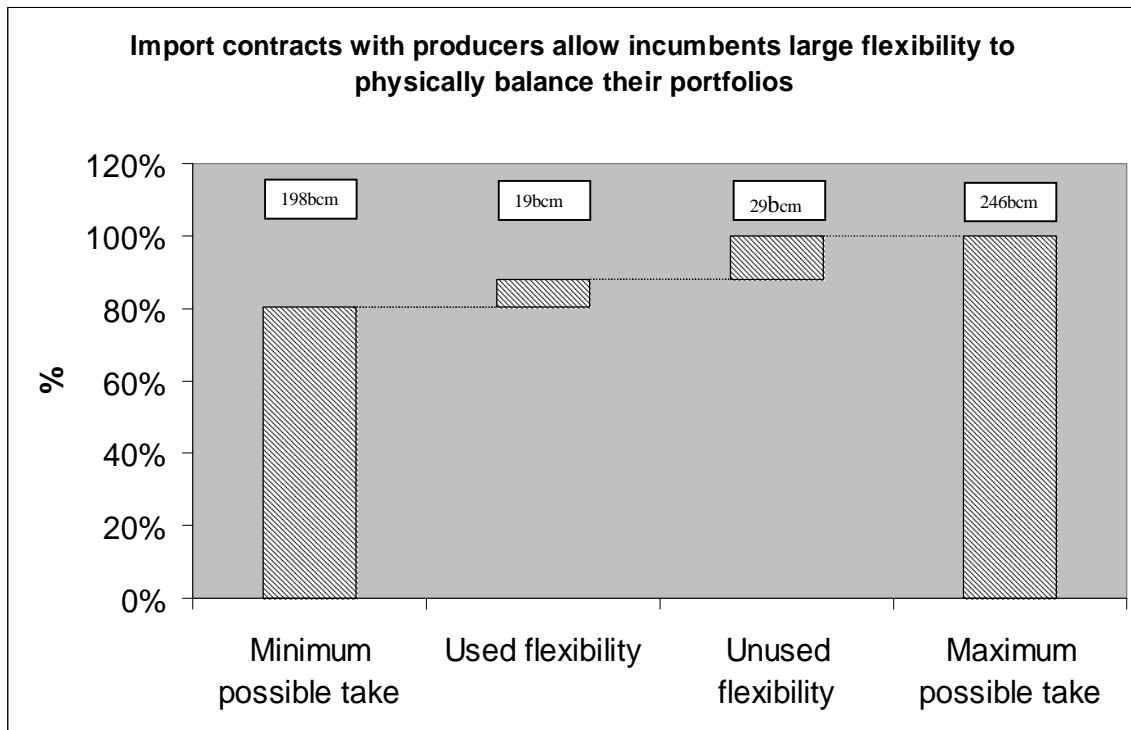
- (11) Finally, it is important to highlight that the functioning of gas markets and their outcome significantly affect electricity price levels, since in many Member States, gas fired electricity generation plants are responsible for setting the price level of electricity in particular during peak hours. In electricity markets, gas-fired generators need to rely on and have access to transparent and competitive gas (spot) markets that provide flexible gas for a competitive price. Ill-functioning gas markets with inefficient price outcomes will thus be reflected in electricity price levels.

2.1 Market concentration

- (12) Despite the Community's significant efforts to create a single market for gas, it is the Commission's experience from many recent merger cases that most gas markets are still national in scope. Whilst the situation differs significantly between Member States, in many national markets the high level of concentration which existed when the liberalisation process started is still a significant feature.
- (13) The market power of historical gas incumbents is to a large degree based on their control of local gas production and/or gas imports to their respective markets. In other words, they tend to be the principal buyers, sellers and transporters within each member state. The long term transport contracts mean that incumbents reserve most of the available pipeline capacity to transport imported gas to national markets. The long-term supply agreements between producers and importers also have features that contribute to the lack of liquidity of wholesale gas markets and inhibit the development of competition.

Gas import contracts

- (14) Most gas import contracts contain clauses requiring the importer to pay for a certain volume, even without taking delivery (so called "take or pay obligations"). However, they normally allow the buyer to vary the final volume of gas being delivered and include arrangements that for example allow the gas deliveries to be postponed to later years. This allows for smoothing of temporary variations in import needs. Our preliminary findings suggest that in recent years take or pay obligations have seldom had the effect that the importer had to pay for undelivered gas.
- (15) The graph below illustrates the amount of flexibility in a set of 242 incumbent take-or-pay contracts, under which 217 bcm were taken in 2004. These contracts typically offer an "annual contract quantity" (ACQ) but also include terms allowing the buyer to nominate more or less than ACQ (or sometimes both). The graph shows that the total maximum take in 2004 (246 bcm) was 18% higher than the minimum possible (198 bcm), and that out of this flexible volume, 39% (19bcm) was actually used and 61% (29bcm) was not used.
- (16) The degree of flexibility varies greatly between contracts, from zero up to 80% of maximum take being optional. The proportion of flexibility used is roughly similar for most contracts. However, the most flexible quarter of the sample (contracts with a degree of flexibility from 25% to 80%) saw much less of this flexibility being used in 2004, which was not a year that saw significant security of supply challenges.



Source: Sector inquiry. 2004 data on 242 incumbent take-or-pay contracts covering around 217 bcm actual take².

- (17) This contractual flexibility allows importers to respond to unusual events such as particularly cold weather or technical problems. However, it can also be used to match the deliveries of gas to normal demand fluctuations. These fluctuations might otherwise be met by importers trading, and therefore the flexibility of import contracts should be seen as a factor in the lack of hub liquidity.
- (18) Despite this flexibility, significant and more permanent changes of the importers' downstream market share in their traditional supply area could lead to companies falling below their minimum take obligations if they do not manage to sell sufficient volumes outside their traditional supply area. Contract volumes have, however, sometimes been renegotiated (contracts often include clauses that allow renegotiations to adapt to changing market conditions).
- (19) Most of the import contracts are of very long durations (our preliminary findings confirm that 15-20 years is typical), thereby "crowding out" access to such contracts for new entrants. Few new entrants have in any case the ability to enter into take or pay obligations of the magnitude and duration which have been normal until now.

² The analysis covers contracts from incumbents based in the following Members States: Belgium, Czech Republic, Germany, France, the UK, Hungary, Italy, the Netherlands, Austria and Slovakia. The data sample excludes a number of contracts where data submitted were incomplete or contain anomalies, particularly relating to Germany. One large contract has been excluded, as it saw a very large under-delivery during 2004 which distorted the overall results.

- (20) Certain contracts include terms that may impede competition. Historically the import contracts explicitly prohibited cross-border competition (territorial restriction clauses) or included “profit splitting clauses” with similar effect (mainly in LNG contracts). So called “reduction clauses”³ also reduce the economic incentives to sell to other traders in the market concerned.
- (21) Some incumbents draw advantages from controlling production within their national markets, which provides access to gas without the additional cost of transporting it from (often distant) locations. Such indigenous production can also provide flexibility if gas off-take can be varied.

Conclusion – Market concentration

The level of concentration remains very high in most national gas markets.

Market entry at wholesale level is limited by the incumbents’ control of gas import contracts. Some incumbents also control indigenous gas production.

Import contracts are typically flexible as to volumes, reducing incumbents’ incentive to trade gas. Most contracts are of very long duration with 15-20 years being typical.

Control over the gas available within nearly all national markets is thus highly concentrated to the benefit of the historical incumbents.

2.2 Vertical foreclosure

Vertical foreclosure within the supply chain

- (22) The contracts between producers and importers/wholesalers have the effect that supply markets are significantly foreclosed vertically resulting in a lack of liquidity and lack of available gas at wholesale level. The preliminary findings confirm that liquidity on wholesale gas markets is low and that access to gas is a serious barrier to entry in the retail markets.
- (23) To undertake commitments to customers, new entrants need to be confident that future volumes of gas will be available on a stable basis. Gas hubs are potentially a vital source of gas for entrants: both to iron out short-term imbalances and to support long-term customer relationships. However, the inquiry confirms that the amount of gas available on most hubs is limited. Moreover, long term customer relations cannot be supported with spot market transactions alone; across European hubs, short term trading (within-day or day-ahead) is much the most common, particularly on hubs other than the NBP. On continental hubs activity is particularly low for medium-term

³ Such “reduction clauses” allow the importer to reduce its purchases below the take or pay minimum if the producer sells into the importer’s traditional market.

products (month-ahead to year-ahead), with a higher (but still not large) level of long-term trading (greater than 12 months)⁴.

- (24) One reason for lack of liquidity is the limited involvement in hub trading of the importer/wholesalers with access to volume gas through historic contracts (“incumbents”). For most incumbents the volumes traded on the virtual hub in the Netherlands, on the trading points in France and Italy, and at EuroHub and Baumgarten, were very low, even when these hubs were close to or within the operating region of the incumbent⁵.

Incumbents trading on gas hubs

Many incumbents did not trade in gas on hubs at all during 2003-2004 and even those having created a trading capability typically bought and sold very small volumes (below 2% of the company’s total supplied volume).

A small number of incumbents appear to have invested more heavily in developing a trading function with a turnover that is a significant proportion of their overall gas sales (over 20%). These traders operate predominantly on the UK National Balancing Point and at Zeebrugge.

- (25) Despite the small volumes traded by most incumbents relative to their overall sales, the information gathered in the inquiry shows that they are the most important providers of liquidity to hubs. Gas producers are the next most significant players and are potentially important contributors to hub liquidity. Pure traders are, in volume terms, of marginal importance on most continental hubs. Nevertheless, they may become increasingly important to keep the gas “churning” and maintain liquidity in the market.
- (26) The inquiry confirms that Continental hubs offered insufficient liquidity during 2003-2004 to provide the main source of gas for a new supply business. Despite the very small scale of most gas entrants, they would have encountered difficulties to source most of their gas from hubs except on the NBP/beach (UK) and (for some smaller entrants) at Zeebrugge. The actual proportion of total hub purchases varied greatly between new entrants, from very little up to one hundred percent. The exception is the Italian PSV, which is used by Italian entrant suppliers.

⁴ At its simplest, gas can be traded through negotiations for each deal – for instance, to settle credit issues, delivery points, timescales, volumes, quality, etc. However, it is in general more efficient for traders to use standard products. These will typically be for a set volume of gas, and traders wishing to trade larger volumes will buy or sell multiple contracts. However, the contracts will vary over other terms, notably delivery schedules. For instance, the UK NBP handles contracts for delivery before the end of the current day, next day, over the rest of the current week, over the coming Saturday and Sunday, over Monday-Friday the next week, over the rest of the current month, over the course of a specified month, over the course of a specified quarter, over a specified summer or winter (noting that the gas year begins in October), and over specified calendar years.

⁵ This analysis covers companies from Austria, Belgium, France, Germany, Italy, the Netherlands, Slovenia and the UK.

Volumes traded on continental hubs are, in general, not sufficient to be the main source of gas to build a supply business.

Hubs are rarely used by new entrants to source gas for their supply business.

- (27) The inquiry shows that entrants source their gas in a number of different ways. Bilateral agreements (with incumbents, with other entrants or occasionally with gas producers) are complemented by temporary purchases (for example from gas release programmes). However, in responses a number of critical comments are made on gas release programmes. They are considered sporadic in nature and sub-optimally coordinated with release of network capacity. To become a more reliable basis for sourcing a portfolio of customers, their design should be clearly improved.

Vertical integration of supply and infrastructure companies (TSO; DSO; transit)

Networks

- (28) Most Member States have implemented the 2003 gas directive's requirements for unbundling of transmission and distribution pipelines (legal unbundling is the rule, although not compulsory for distribution companies before 2007). Some countries have gone further than the legal obligations (for example the Netherlands have recently implemented ownership unbundling of Gasunie). The UK market experience of full ownership unbundling suggests that it significantly changes the behaviour of the transport undertaking: a fully unbundled TSO will focus on optimising the use of its network.
- (29) The TSOs' replies reveal a number of areas where the implementation of the unbundling obligations is incomplete. This is due in some cases to the late transposition of the gas directive by the Member States. In other cases, despite the unbundling obligations being applicable, TSOs indicate that they have not implemented it entirely in practice. In a number of instances, the top management of the supply company has access to strategic business information of the transport company as a result of representation in the Supervisory or Administrative Board. In many undertakings, the logos, IT systems and premises are still shared between the transport and supply companies. In a few cases, the network company transports gas for an affiliated supplier without a proper transmission contract⁶.
- (30) Allegations have been made in the context of the inquiry that network operators offer preferential treatment to their supply companies and that this constitutes discrimination by TSOs. These allegations need further investigation.

⁶ See in this respect the segment called "without contract" in section 2.3 and more particularly with respect to the East-West transit axis.

Entrants allege that network operators offer preferential treatment to their supply companies with regard to:

1. nominations management
2. transparency
3. access to available firm capacities
4. terms and conditions of the balancing regimes

Storage and flexibility tools

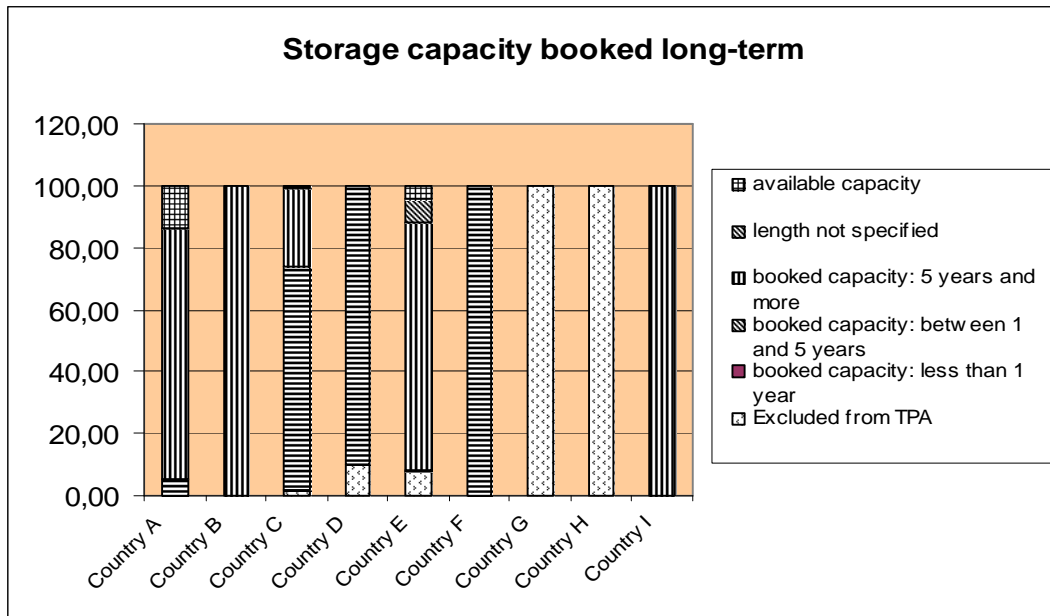
- (31) Gas suppliers need flexibility arrangements (notably storage) to allow them to supply gas to their customers whilst taking into account changes in demand caused for example by seasonal, daily and production cycle variations. Storage facilities are, however, largely controlled by the historical incumbents. Regulated access to storage facilities is only provided in Belgium, Italy and Spain. In the Czech Republic, United Kingdom, Hungary, Latvia and Poland, access is partially regulated. In Austria, Denmark, France, Germany and the Netherlands access is negotiated. Whilst regulated third party access to storage is of central importance, there is no legal obligation, under the current Gas Directive, to impose this type of access regime. Newcomers also complain about the lack of transparency on storage use, the inadequacy of storage services to their needs, the lack of secondary markets and high prices.
- (32) Non-binding guidelines on access to storage (guidelines on good storage practice) have been developed in close cooperation by the Commission and the energy regulators and accepted by the industry in the context of the Madrid gas forum⁷. Regulators have recently investigated compliance with these guidelines. Three main findings of this regulators' report can be underlined:
- i. On confidentiality requirements, the report states that it is important that effective market arrangements are put in place to ensure equal market conditions in particular where there is vertical integration. These are: separate databases for storage operations, implementation of a code of conduct/compliance program for staff working in the storage business, effective monitoring of firewalls between the storage operator and the supply branch of the company, cost effective solutions to ensure that the storage operator and the supply business are not located in the same place). However, in the majority of cases, these arrangements are not monitored at national level and for more than 60% of storage capacity under review, compliance with the GGSP guidelines is unclear;
 - ii. On transparency requirements, the report states that publication of relevant data is crucial to the efficient and transparent operation of the storage market.

⁷ See http://europa.eu.int/comm/energy/gas/madrid/index_en.htm.

However, there is very limited transparency on operational storage data in Europe, in particular on gas stock data;

- iii. The development of secondary markets of storage capacities is still limited and this further reduces the use of storage capacity.
- (33) It was decided, in the first phase of the gas sector inquiry to focus on issues in storage complementing the work realised by the European Regulators Group for Electricity and Gas (ERGEG), namely, assessing the length of storage capacity booking and the amount of available (not contracted) capacities for the countries under review: Austria, Belgium, the Czech Republic, Germany, France, Hungary, the Netherlands, Poland and Slovakia.
- (34) Information gathered indicates that, across the countries reviewed, available storage capacity is very scarce or non-existent. In the Netherlands and in Poland, capacity is allocated to production operations and so excluded from TPA. Long-term contracts prevail in four countries under review and will expire only very slowly. For instance, in Germany, capacity booked for more than 5 years (and in some cases for 15 years) represents around 80% of the technical capacity reviewed⁸. Moreover, apart from one exception, storage users were not offering capacity under contracts lasting less than one year.
- (35) When capacity is fully booked and in particular for the long term, it is important that appropriate congestion management procedures are put in place. For instance, in Belgium, the suppliers of non eligible customers or distribution companies have a priority right for the access to storage capacity; in France, the “storage capacity follows the customer”. Where these procedures exist, it remains to be assessed whether they are efficient, provide for non-discriminatory access to storage and meet users’ needs.

⁸ More than 80% of German storage capacity has been analysed to arrive at this figure.



(36) An issue related to flexibility and linked to storage is the balancing regimes. High penalties imposed on suppliers that fail to maintain balance and tight general balancing regimes are particularly burdensome for new entrants. Considering their more limited flexibility tools and smaller portfolios they run a greater risk of being out of balance (other factors can increase this risk including less secure transport and access to gas). New entrants complain notably about balancing regimes in the Netherlands, Belgium and Germany. The issue of balancing will receive more attention in the next steps of the inquiry.

Other barriers to entry

(37) In certain markets there are long term contractual relations between importers or wholesalers and large industrial clients or local retailers, which can have the effect of foreclosing access to customers⁹. In other markets, different types of entry barriers are equally hindering competition from new entrants. Respondents have identified allegedly abusive behaviour by incumbents that limit customer switching. These issues will be further investigated.

Conclusion - Vertical foreclosure

Vertical integration and limited sales by incumbents on gas hubs result in low liquidity on wholesale gas markets that hinder new entry.

⁹ Foreclosure in certain national markets is currently being investigated. The Bundeskartellamt is looking at contracts between the 15 largest gas suppliers on the one hand, and local distributors (Stadtwerke) on the other hand.

Despite the unbundling requirements of the EU gas directive, new entrants believe that network operators continue practices favouring the related supply company.

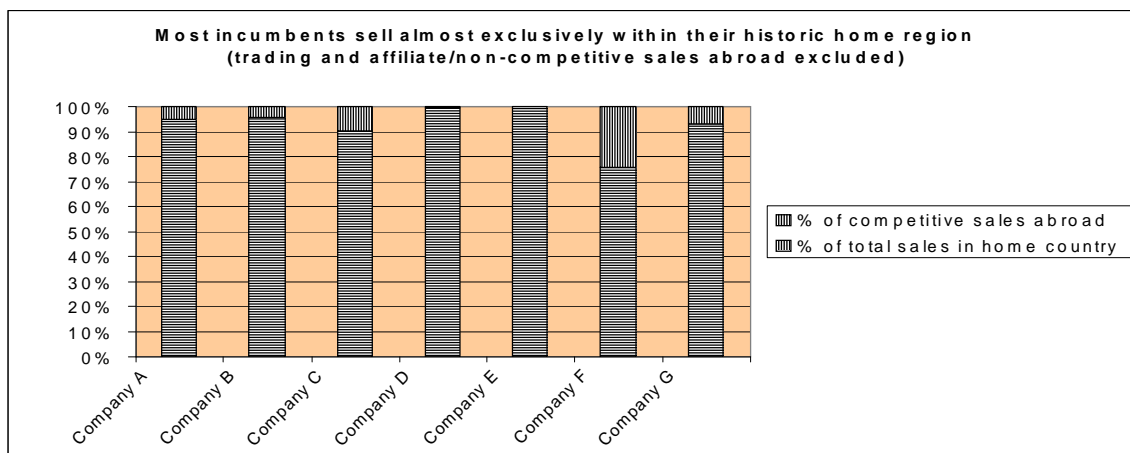
Long term contracts between importers and customers lead to foreclosure in certain geographic markets. Other barriers to entry dominate in other markets. There are persistent allegations of abusive behaviour that inhibits switching opportunities.

2.3 Insufficient market integration

- (38) Competitive pressure in national markets can come from cross-border supply to the extent cross-border infrastructure allows access to the market. Gas has been transported through Europe for many decades, much of it crossing borders. This “gas in transit” could exert pressure on prices in certain markets provided contractual, regulatory or other obstacles do not limit such possibilities. However, the inquiry has found a number of such obstacles.
- (39) As noted above, import contracts historically contained clauses explicitly prohibiting cross-border competition (territorial restriction clauses) between incumbents or included “profit splitting clauses” with similar effect (mainly in LNG-contracts).

Incumbent sales in other markets

- (40) The inquiry confirms that gas incumbents engage in little cross-border trade. Certain historic incumbents have significant sales outside their home market (up to 30%). However, their effect on retail competition in the destination market is limited, given that the sales are often through affiliates with historic monopolies, or to linked companies in which they have participations, or are short-term trading. Although incumbents in countries with more active competition at home have sought to be more active in entering other markets (Centrica, Eni), most incumbents are active in only one or two markets beyond their historic home market. The chart hereunder describes the amount of sales abroad realised by a number of incumbents in Europe.



- (41) In markets with a multi-tier structure, some former regional or local monopolists have tried to enter regions beyond their historic base. However, many local companies (e.g., German Stadtwerke) comment that they have declined to make offers to customers located away from their historic area or its immediate vicinity.

- Historic incumbents have contributed to competition beyond their home market through exports only to a limited extent (around 10% of their sales in most cases).
- Companies appear to work harder to enter new markets when they face more competition at home.

Access to “transit pipelines”

- (42) Access to networks connecting national markets is a vital prerequisite for cross-border sales and imports of gas. Indeed, as no further major EU gas finds are expected, competition on national wholesale markets will originate mainly from imported gas. The significance of access to import pipelines is evidenced by the importance attached to this issue by traders, potential new entrants and large customers in their replies to the questionnaires. The inquiry therefore seeks to clarify the obstacles encountered by entrants trying to secure capacity on transit pipelines. Many new entrants and customers in their replies also criticise the lack of transparency regarding accessible capacity.
- (43) In the early 1990s, EU legislation was targeted at facilitating transit of gas without touching, however, the supply monopoly rights within Member States. With the adoption of Gas Directives 98/30/EC and 2003/55/EC, as well as the other implementing measures, it was expected that access conditions for national transport and transit would converge. In several countries (including Austria, Belgium, the Czech Republic, Germany, Slovakia) different conditions persist for gas transit through a country (without access to customers located within that country) and for gas transport within that country. The effect is that regulated third party access conditions as implemented by the regulators on the basis of the EU Directives do not apply (fully) to transit pipelines or transit contracts.
- (44) The fact that these crucial cross-border pipelines are, in practice, still largely governed by different access conditions than those generally applying to gas transport within Member States is confirmed by the fact that TSOs and large holders of capacity on transit pipelines¹⁰ in their responses claim either that the “use-it-or-lose-it” principle does not apply to transit pipelines at all, or at least that it cannot be applied effectively to transit. In their view transit contracts signed before 2004-2005

¹⁰ A tailor-made questionnaire was sent to these so-called “special capacity holders” in the context of the gas sector enquiry.

cannot be touched¹¹. They insist that the so-called “ship-or pay” transport contracts, traditionally used to transport the gas bought by wholesalers under “take-or-pay” supply contracts, allow the historic capacity holder to re-nominate typically until 2 hours before the effective gas flows. Thus capacity not used by such historic players is likely to be released on the secondary market on a very short term and interruptible basis only, giving potential users of the unused capacity little leeway to secure gas. Moreover, any request for secondary capacity has to be made not to an unbundled TSO, but to the primary capacity holder, which will tend to be an incumbent wholesale company, who will, in this manner, be informed about the likely gas transports of other competing wholesale companies.¹²

- (45) Under the 2003 gas directive, certain *pre-liberalisation transit contracts* were allowed to continue in force unaffected by liberalisation. The preliminary findings confirm that this treatment of pre-liberalisation contracts is a major obstacle for access to cross-border infrastructure. Pre-liberalisation contracts are the main reason why primary capacity is booked long-term by historical incumbents. The inquiry has shown that only in two Member States analysed primary capacity on important gas transit routes seems to become available in the coming years. In all other Member States, primary cross-border capacity is fully booked long term. It also appears that a significant number of the contracts include provisions that can create further impediments to market opening by giving current holders of capacity preferential rights for prolongation of the capacity reservations beyond the originally foreseen end date.
- (46) Information on capacity reservations and available secondary capacity¹³ relating to main transit routes in Europe has been compiled and analysed on two main axes of gas flows in continental Europe: a) the Benelux to Italy axis allowing for Norwegian, Dutch and UK gas to flow through France and Germany in the direction of Italy¹⁴ and b) the East to West axis allowing for imports of Russian gas into the EU¹⁵.

¹¹ This argumentation is largely based on article 32 of gas directive 2003/55/EC which provides for a (transitional) derogatory regime for pre-liberalisation transit contracts fulfilling minimal conditions.

¹² In most cases, the primary capacity holder is the TSO itself. Typically the TSO will sell this capacity on the ‘primary market’ to wholesale companies (i.e. shippers) who will subsequently make use of the capacity either by flowing gas or selling all or part of it to other shippers on the ‘secondary market’.

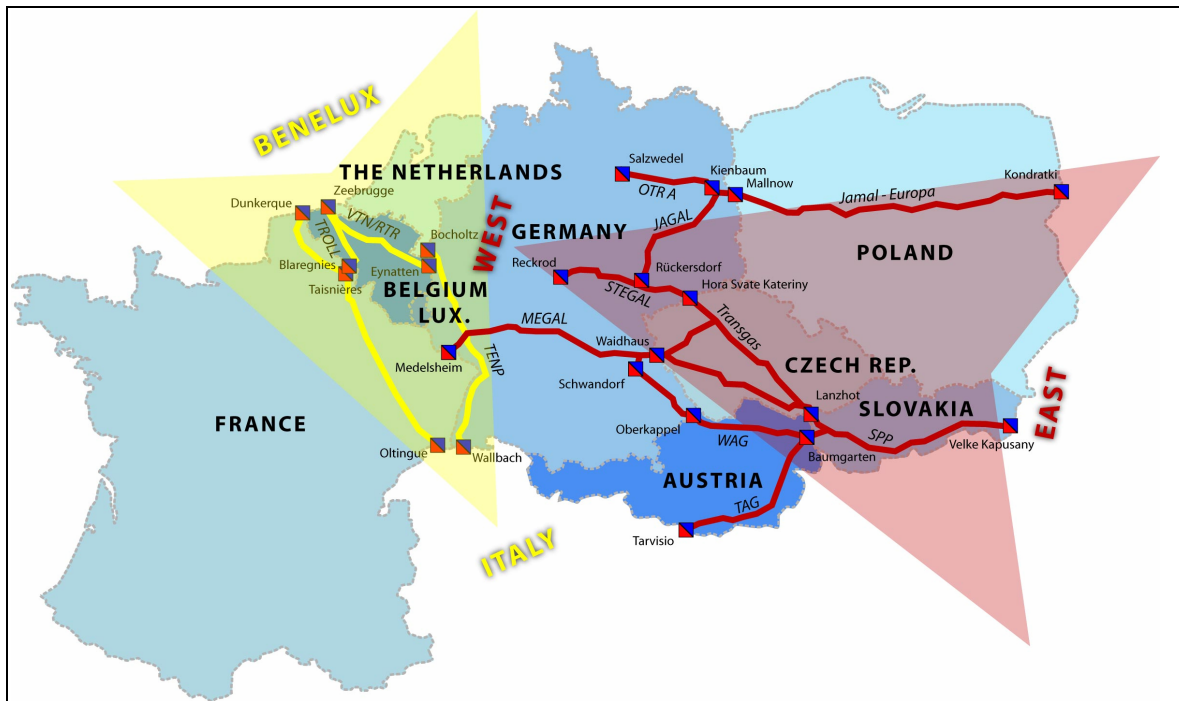
¹³ For the purpose of this analysis, only those secondary capacity trades made by parties having firm rights over a significant share of the total pipeline capacity have been considered. The amount of actual secondary capacity trading may therefore be greater than that presented in this analysis.

¹⁴ The sample includes data provided by TSO’s and primary capacity holders on the following pipelines or network points: Troll pipeline, VTN pipeline in forward flow on the Belgian network, exit point Oltingue on the French network, TENP pipeline in Germany, and exit point Bocholtz on the Dutch network. Data on network exit points have been used in case of Entry/Exit access regimes in the countries concerned.

¹⁵ The sample includes data provided by TSO’s and primary capacity holders on the following pipelines: JAMAL-Europa pipeline in Poland, SPP transit pipeline in Slovakia, Transgas transit pipeline in the Czech Republic, TAG pipeline, WAG pipeline in Austria, MEGAL pipeline, STEGAL pipeline, JAGAL pipeline and the pipeline linking up Poland with the NETRA pipeline (Kienbaum to Salzwedel) in Germany (labelled as ‘OTR A’ in the diagram below).

Information has also been gathered on other important transit routes, like, for instance, the import route of Norwegian gas starting from Northern Germany. This information will be compiled and analysed in a second stage of the enquiry. The number of different pipeline systems and the high number of operators controlling the capacity on these routes¹⁶ render the access conditions to these pipelines opaque, at least for those companies which have not historically flown gas through these different pipeline systems.

Main transit pipeline routes in Europe for Norwegian and Russian gas



(47) On the Benelux-Italy axis, the inquiry has found that, on average, primary capacity on these pipelines is booked until 2022¹⁷. It can be seen from the first chart¹⁸ below that

¹⁶ The capacity on many pipelines is often split through the so-called “pipe-in-pipe” concept, where different primary capacity owners of a single physical pipeline act, de facto, as separate TSO’s for the capacity they have acquired. This implies, in practice that no single TSO is in charge of allocating the entire available or unused capacity on those pipelines.

¹⁷ This analysis has been conducted by taking a volume weighted average duration of each contract for capacity individually. However, this is likely to understate the actual duration effect since, for some pipelines, a single party may strike a number of shorter duration contracts ‘back-to-back’, which can be considered to have the same effect as a single longer term contract (for instance, three five year contracts which cover the period 2005 to 2020 can be considered equivalent to a fifteen years contract).

¹⁸ Similar charts have been compiled for each individual pipelines, but cannot be disclosed for confidentiality reasons. The Benelux–Italy axis is composed of a volume weighted average of the allocations of each of these individual pipelines/network points. In the graph, the term “average maximum utilisation” was calculated by taking for each pipeline of the axis the (typically winter) month where any given pipe has been most used and taking an average over all the pipelines of that axis. “Average peak utilisation” uses the same methodology, but applied not merely on the month in

the relevant pipelines are fully booked for at least a period of 10 years starting from 1st of June 2005. In other words, *all* primary capacity on the pipelines of this axis has been attributed long term until 2015. In practical terms, this implies that any company wanting to flow gas on these pipelines will have to request capacity from the incumbent players for at least the next decade in order to obtain capacity on the secondary market. Only after 2015 will some of the primary capacity on certain pipelines become available.

- (48) Moreover, the vast majority of the primary capacity is typically held by only one or two historic players that are incumbents in their home markets.¹⁹ When capacity is allocated on the secondary market (see second chart below), roughly half of it is bought by affiliates of the primary capacity owners²⁰. An important part of the secondary allocation goes to other incumbents (typically an historic player from a neighbouring country) and to gas producers. Only approximately 5%²¹ of longer term capacity allocation goes to new entrants²².
- (49) In the period under investigation (2003-2005), even when taking as a benchmark the peak demand month in winter, there remains an average of around 10% unused capacity²³. The impression that there is indeed scope for maximising the usage of these pipelines would, however, need to be confirmed on the basis of further investigations concerning individual pipelines.

which each of the pipes was used most, but for all months where use of the pipeline was more than the annual average usage rate of the pipeline. Thus the first line provides an idea of capacity which could be made available long term (for a full year including winter), whereas the second gives a general impression of the average unused capacity.

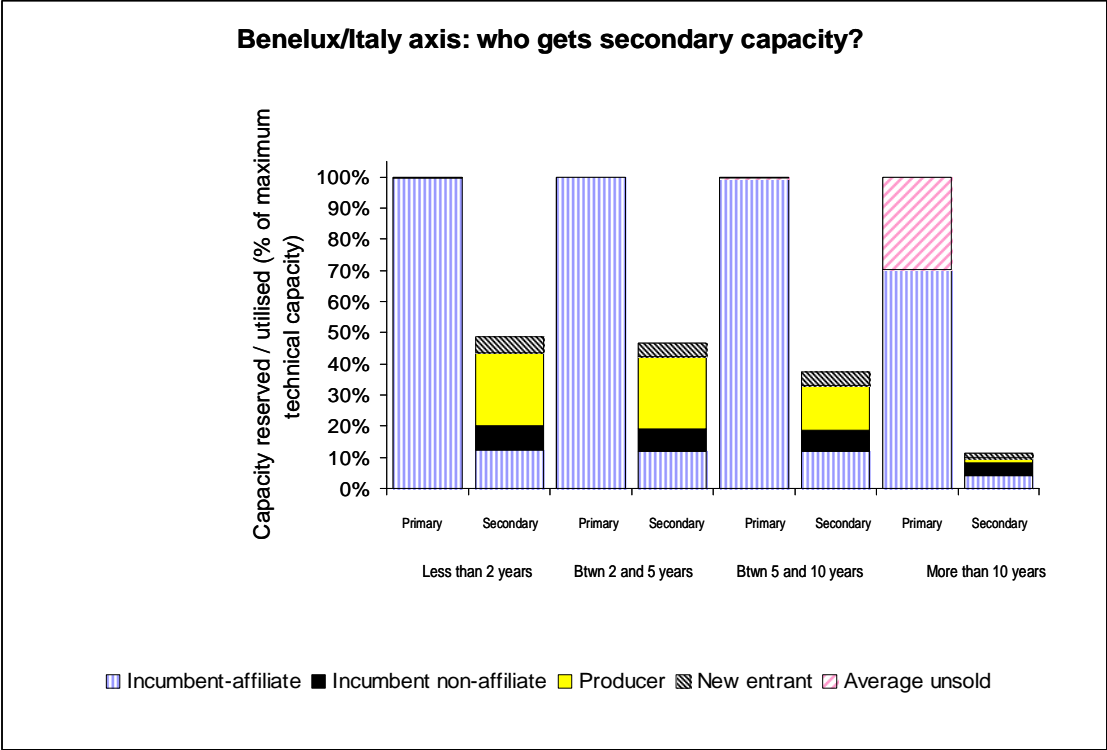
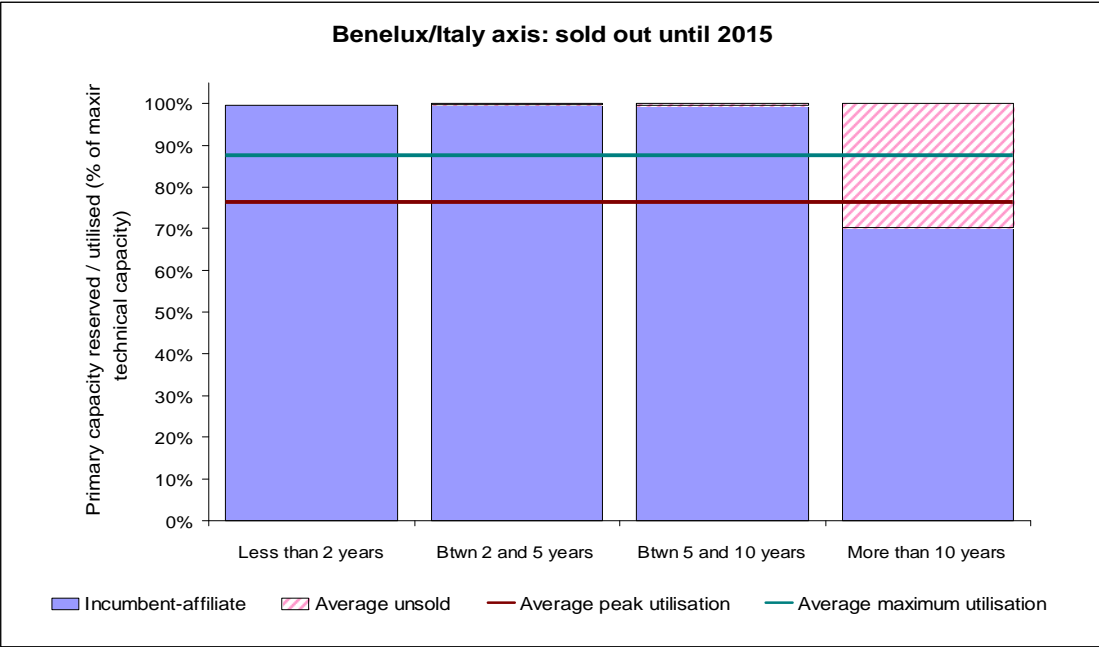
¹⁹ Very often, when more than one historic operator owns primary capacity on a transit route, each of these operators will subsequently market capacity of this pipeline on an individual basis as if there were two physically distinguished pipelines (the so-called “pipe-in-pipe” system referred to previously). This means in practice interested companies have to turn to at least two operators for requesting capacity.

²⁰ For the purpose of this analysis, an ‘affiliate’ company of a primary capacity holder is one which has a significant shareholding in the primary capacity holder, or is one in which the primary capacity holder has a significant shareholding, or is one in which a third party has a significant shareholding as well as having a significant shareholding in the primary capacity holder.

²¹ This figure is based on a volume weighted average figure for each of the five pipelines and therefore does not necessarily reveal that on three of these pipelines there were no sales to new entrants at all.

²² For the purpose of this analysis, it has been assumed that new entrants are companies that have never had a de facto or legal monopoly in any Member States before liberalisation.

²³ “Unused capacity” is capacity contractually booked but not used by the companies concerned. The figure of 10 % has been derived from data based on monthly average flows provided by the respondents to the questionnaires. This data do not take into account daily peaks in within monthly periods.



Source: Sector Inquiry

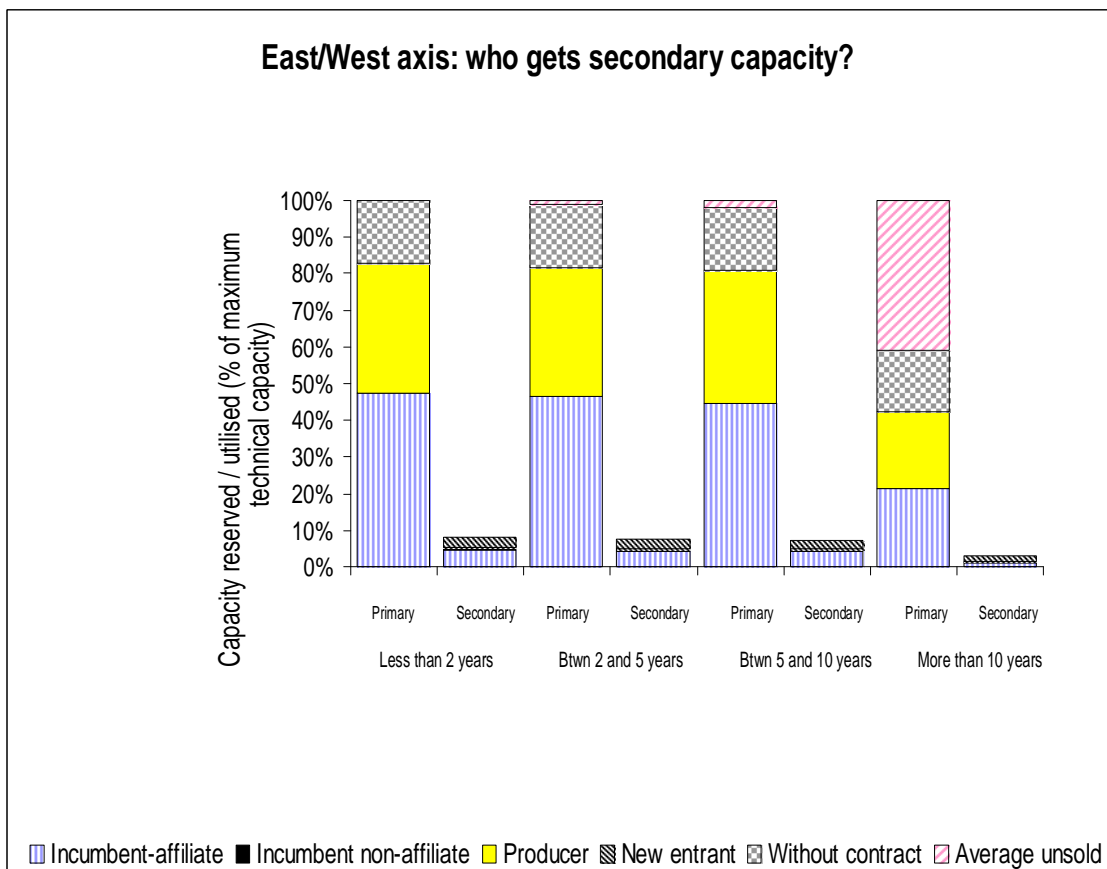
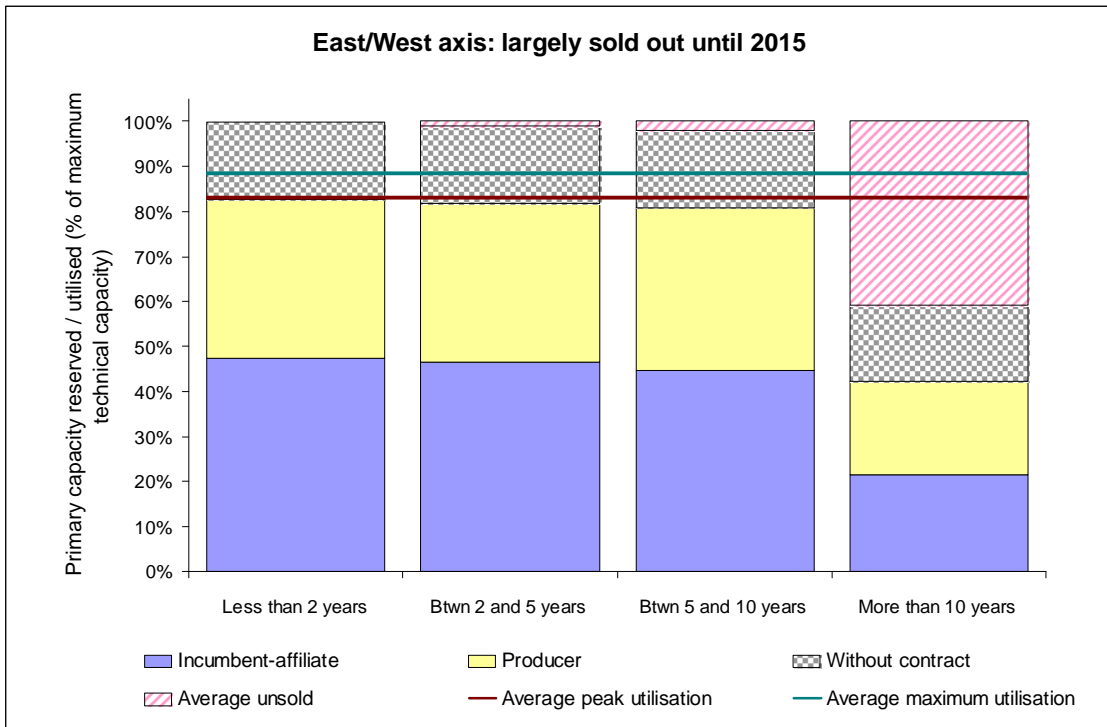
(50) The inquiry has found that on the East-West axis, a similar situation exists to that on the Benelux-Italy axis, with primary capacity booked on average until 2017. It can be

seen from the first chart below that the relevant pipelines²⁴ are almost fully booked²⁵ for at least a period of 10 years starting from 1st of June 2005.

- (51) Furthermore, very little primary capacity is subsequently made available on the secondary market, with only around 3% of longer term capacity in the hands of new entrants. It can be noted that, certainly as compared to the Italy-Benelux axis, a significant part of the primary capacity is held within integrated companies without any formal transport contract having been signed between a supply and transport branch within the company. Moreover, a comparison between the graphs of the two axes shows that on the Benelux-Italy axis, incumbent wholesalers control almost exclusively all primary capacity rights, whereas on the East-west axis the control of primary capacity is shared between incumbent wholesalers and gas producers. The effects for new entrants remain the same.
- (52) In relation to physical congestion, the East-West axis again shows similarities to the Benelux-Italy axis, with around 10% unused capacity when considering the peak monthly utilisation. Again, the scope for optimising the use of these pipelines will require further investigation.

²⁴ For the purpose of this analysis, the SPP transit pipeline system (Slovakia) and the Transgas pipeline system (Czech Republic) have been excluded. As described previously, the Commission has conducted its analysis on a pipeline by pipeline basis but, due to confidentiality concerns, the results presented in this section have been derived by taking an average of the results for each pipeline. Since the average employed is a volume weighted average based on the technical capacity of the individual pipelines, the results of the analysis for the SPP and Transgas transit pipelines tends to dominate the overall picture for the East-West axis, obscuring important trends in the information for other pipelines in the East-West axis, particularly those further to the West. Indeed, the SPP and Transgas transit pipelines appear, on average, to be less congested, both contractually and physically, than the other pipelines included in the East-West axis.

²⁵ For the purpose of this analysis, the Commission has explicitly identified transit capacity that has not been sold anyhow to third parties but has historically been reserved internally by the transit pipeline owner/operator for its own use without a formal transport contract having been signed between a transport and a supply branch within the same group. This category is identified in the legend as “without contract”.



Source: Sector Inquiry

The enquiry largely confirms that most capacity on crucial transit lines – which are vital for market integration - is in the hands of historic players. The transit contracts signed by these historic players before liberalisation will not expire, on average, before 2022. As a consequence, new entrants have little access to most of the transit pipelines, which in practice means that shipping gas over distances covering several pipelines is hardly possible. When access can be obtained, new entrants often have no other choice than to reserve capacity with competing suppliers. They cannot obtain such capacity from unbundled TSO's.

Although the largest part of the existing transit capacities is currently being used, monthly usage data suggest that an average of approximately 10 % of the pipelines on the East-West axis and on the Benelux-Italy axis is not used.

Gas swaps

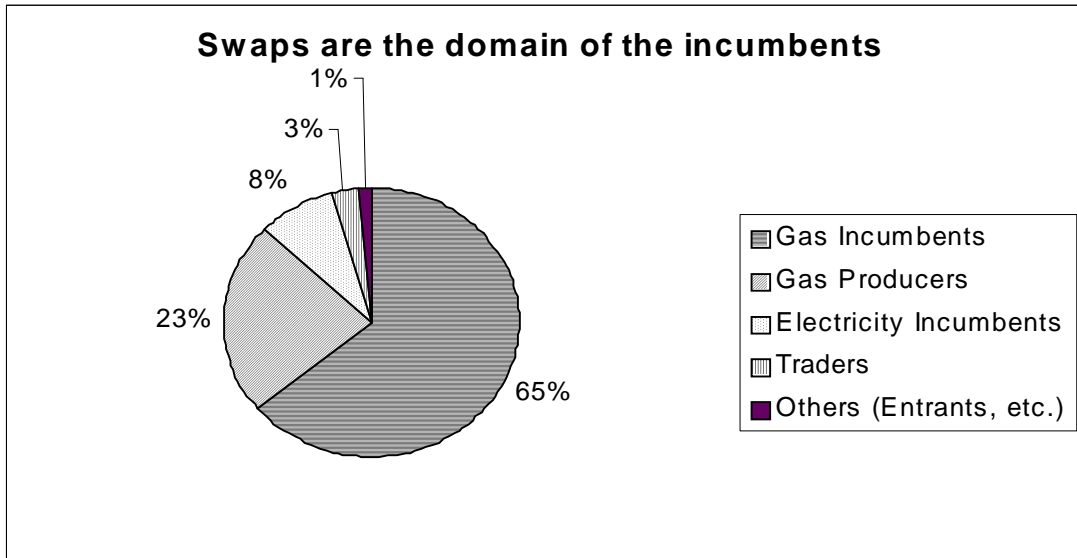
- (53) Gas swaps offer an alternative to physical transport of gas. They may take place for a variety of reasons including the avoidance of transit charges, a means to overcome network congestion or to avoid the physical constraints of the gas network (for example a pipe only flowing in one direction)²⁶.
- (54) Analysis of the extent and nature of gas swaps offers useful insights into the functioning of the European gas market. The scope for swaps indicates a potential means by which networks could be used more efficiently. Our preliminary findings suggest that gas swaps (in which two parties agree to exchange gas at one location for gas at another location) are not a marginal phenomenon²⁷. The respondents to the questionnaire swapped at least 27 bcm in 2004 (total gas consumption in the EU in 2004 was 447 bcm²⁸).
- (55) Swaps are diverse as regards their location, motivation and the length of contract. The largest categories involve swaps over network points in Germany; LNG swaps; intra-hub swaps; swaps from upstream points into hubs; and cross border swaps from network points to hub. Hub-to-hub swapping is quite minor in volume. Germany is the only country where there is a significant volume of gas being swapped between network points within the country.
- (56) The chart below shows that the great majority of swaps tend to be between large incumbent gas companies. There are also a significant number of gas producers and electricity incumbents engaging in gas swaps. Traders and market entrants only have a minor share of the volumes of the deals executed. Given the coincidence of circumstances necessary for swaps to take place, and that large gas incumbents have

²⁶ Swaps might also be used to deal with gas quality problems. This aspect has not yet been analysed.

²⁷ The swaps analysis covers undertakings from member states including Austria, Belgium, Czech Republic, France, Germany, Hungary, Italy, Slovenia, the UK and Norway. Undertakings may swap gas with undertakings from outside the EU and where these have been reported they are included in the analysis.

²⁸ BP statistical review 2005.

most of the gas, it is unsurprising that swaps tend to be the domain of the incumbents²⁹.



Source: Sector Inquiry

- (57) The link between swaps and congested network points will be further explored in the next stage of the inquiry. Further investigation will also look at the role of swaps in hub trading and to what extent new entrants have access to swaps compared to incumbent companies.

Conclusion – Market integration

Clauses in import contracts dating from pre-liberalisation times have contributed to market segmentation.

Access to cross-border pipelines and entry points to national gas systems are key factors for market integration. The main reason that access to import pipes is limited is the preferential treatment of pre-liberalisation contracts. Within the current framework of these contracts there seems to be scope for optimisation of the use of the pipelines.

Swaps can substitute physical transport of gas and can offer some solutions to congestion problems. However, they will generally tend to favour the incumbents.

2.4 Lack of transparency

- (58) Incumbents are generally satisfied with access to information regarding network capacity. In sharp contrast, most new entrants – start-up companies as well as

²⁹ A swap will occur if party A has gas in location 1 that party B wants AND party B has gas in location 2 that party A wants.

significant energy consumers - are critical about transparency on networks. Large industrial customers also complained about lack of transparency of tariffs.

“We have no information about long term available capacity, something we would need before deciding to buy gas elsewhere. To find your way in the tariff jungle is a real nightmare.” [Quote from a customer]

- (59) Potential users of important cross-border pipelines stress that information about transport capacity is not always publicly available, and is often incomplete and sporadic. Moreover, information on contracted but unused capacity does not appear to be available. Specifically, respondents stressed lack of transparency regarding transport capacity in Germany and in Belgium, and lack of transparency regarding congested border points.
- (60) Network users suggest that precise and certified information should be available regarding for example the following:
1. technical capacity of the pipelines;
 2. congestion levels;
 3. technical possibilities to raise the pressure in the pipe;
 4. expansion possibilities in case of request by new entrants; and
 5. identification of capacity holders on entry points to facilitate secondary trading.

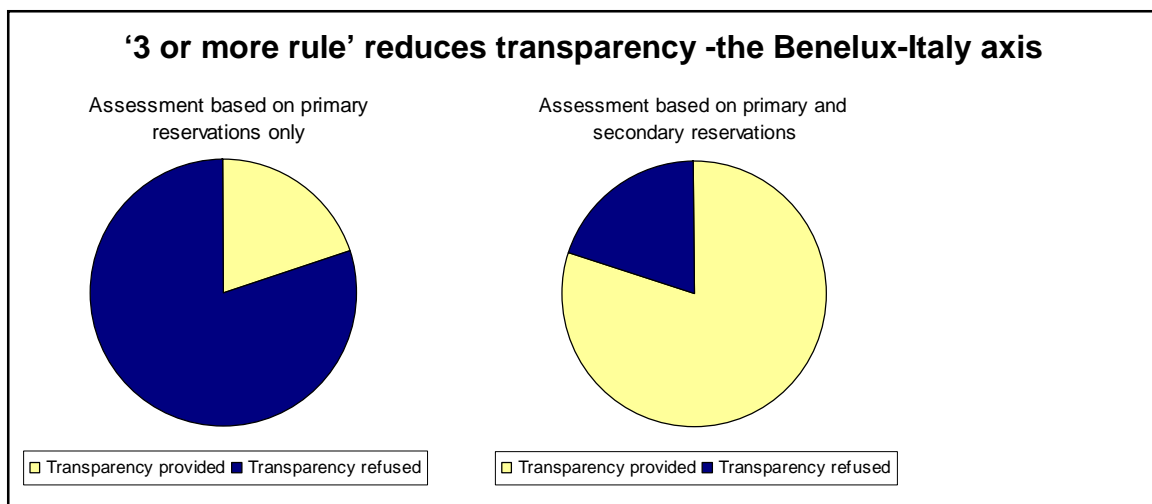
A number of new entrants would welcome the creation of a single transparent and integrated web platform providing information on available capacity for all transit pipelines. As transit pipelines are indeed raising crucial transparency issues, the Commission has, in this preliminary stage, analysed a number of key issues relating to these pipelines.

- (61) The issue of transparency on key gas pipelines is addressed in the Regulation on conditions for access to natural gas transmission networks, adopted in September 2005³⁰. Article 6 of this Regulation provides a number of transparency requirements applying to gas transmission networks, including those lines which are generally considered as “transit lines”. Article 6.3 of the Regulation obliges these TSO’s to make available to the public information at least on technical, contracted and available capacities.
- (62) The amount of information made public can be limited in the case where making this information public would risk harming legitimate commercial interests of supply companies shipping gas on the lines concerned. However, this situation is only likely to arise where, for a particular network point, there are a small number of network users with contracted capacity at that point and where the TSO is publishing information on unused capacity. However, the Regulation explicitly provides that

³⁰ Please note that this has not as yet been published in the Official Journal. See website DG TREN: www.europa.eu.int/comm/energy/gas/legislation/doc/gas_regulation/cp_en.pdf

regulators shall not grant an authorisation to limit the amount of information made available by the TSO “where three or more network users have contracted capacity at the same point”. This rule is dubbed hereafter the “three or more rule”.

- (63) On the basis of the information provided by the TSO’s and the companies controlling considerable amounts of primary capacity on transit lines (the so-called “special capacity holders”), the Commission has endeavoured to establish to what extent these companies could try to claim that confidentiality issues would limit them in making available to the market full information about technical capacity, contracted capacity, available capacity and used/unused capacity on transit lines.
- (64) Therefore, for each of the two main transit axes covered by the present stage of the inquiry, we investigated, firstly, if for each of the pipelines³¹ included in the axis, there were three or more *primary* capacity holders and, secondly if for each of these pipelines, there were three or more *primary and secondary* capacity holders.
- (65) The results of this strand of analysis are represented below. With respect to the *Benelux-Italy axis*, the graph demonstrates that on an average of 80 %³² of the pipelines on this axis only one or two *primary* capacity holders control the entire capacity. If the Regulation is read to apply only to primary capacity reservations, this might imply that on the vast majority of the pipelines of this axis only limited transparency risks being provided on the capacities of the pipelines. If one were to consider that *both primary and secondary* capacity reservations on the Benelux-Italy axis have to be taken into account - an interpretation which the Commission defends - the picture looks less bleak. However, even in such a scenario, on approximate 20 % of transit lines the main companies concerned could still try to justify that transparency is not required, given that no secondary capacity whatsoever has been granted on these pipelines by the primary capacity owner(s).

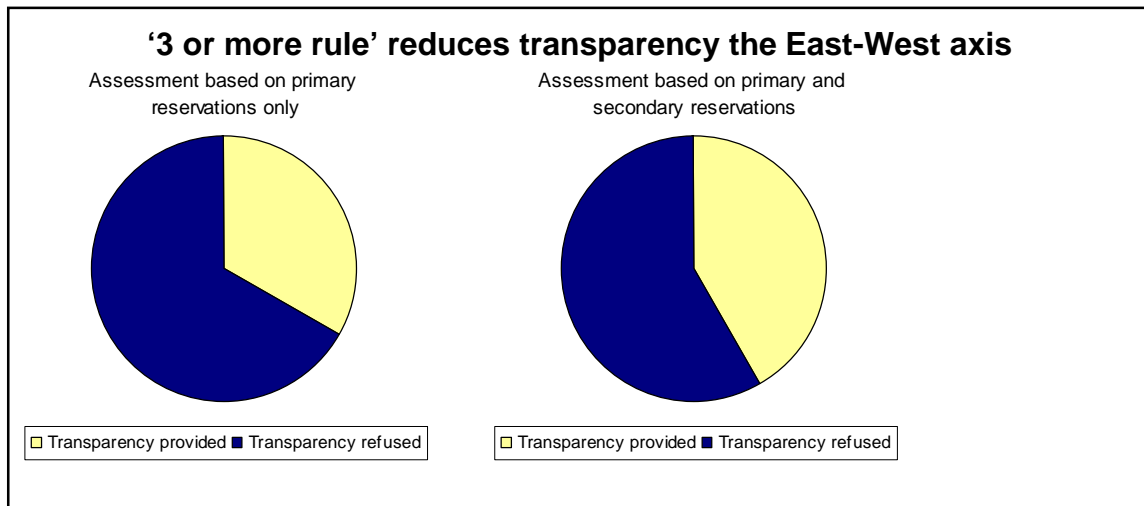


Source: Sector Inquiry

³¹ It must be highlighted that the confidentiality requirements –as they are laid down in the gas Regulation– refer to transparency with respect to network *points*, whereas the information gathered in the context of the present inquiry concerns *entire pipelines*.

³² For this exercise, identical weight has been granted to all pipelines within the axis.

(66) With respect to the *East-West axis*, the graphs hereunder demonstrate that on an average of 65 % of the pipelines on this axis, only one or two primary capacity holders control the entire capacity. This risks, as for the Benelux-Italy axis, to limit the amount of transparency which might be provided with respect to the pipelines concerned. If one takes into account both *primary and secondary* capacity reservations, the picture does not change fundamentally. This can be explained by the fact that, as compared to the Benelux-Italy axis, the amount of secondary capacity allocations is quite limited³³.



Source: Sector Inquiry

(67) On the vast majority of transit lines only one or two companies own primary capacity rights. These companies could try to make use of these rights – which they have often obtained under pre-liberalisation monopoly conditions – to argue that full application of transparency requirements would damage their commercial wholesale interests. Such approach could, de facto, lead to a high number of gas highways, which are crucial to develop competition and market integration in Europe, not providing the transparency required.

³³ See above section 2.3. It should be highlighted that the analysis set out above has been realised without cross-checking the extent to which the TSO's and/or primary capacity holders of the pipelines included in the axes have already, on a voluntary basis, provided transparency with respect to the different types of capacities which are of interest to third parties.

Conclusion – Lack of transparency

Increased transparency about access to networks is vital. Information is notably lacking for cross-border pipelines and entry points into national markets.

2.5 Price issues

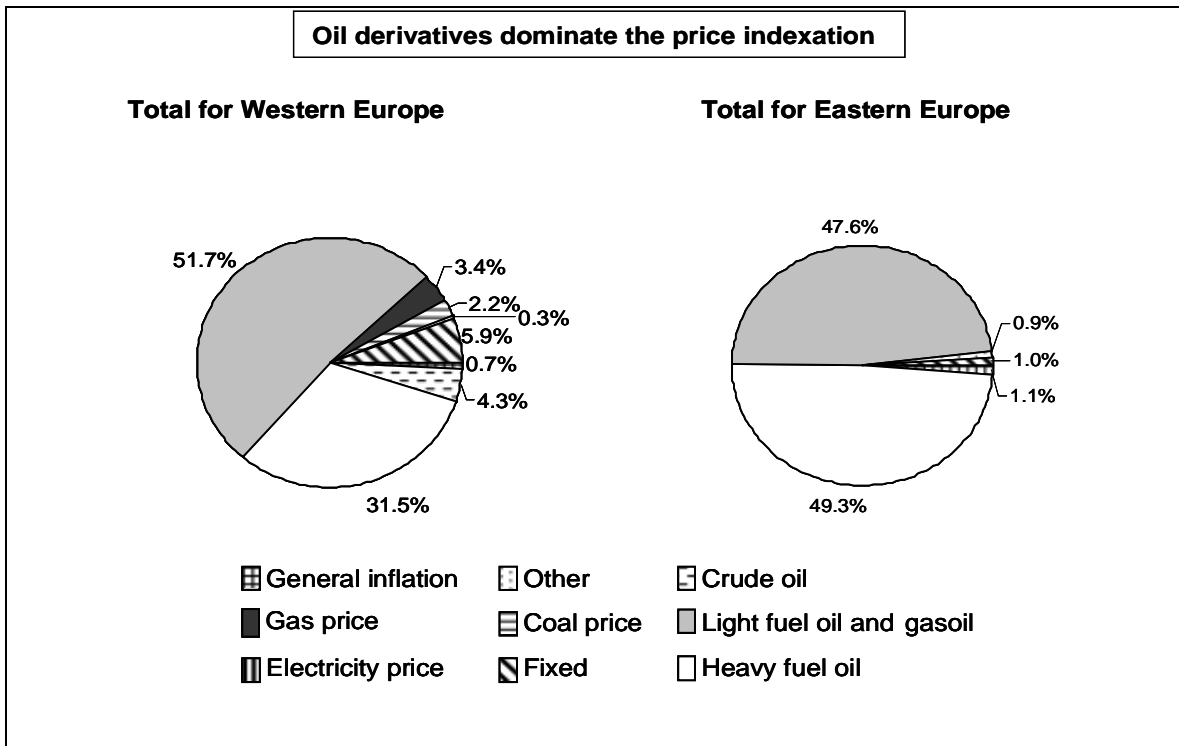
Oil-price link

- (68) The inquiry confirms that prices in long-term gas contracts are generally linked to oil and oil derivatives. The continuing practice of linking gas to oil-derivative prices has the result that prices in contracts between different producers and suppliers move in a similar way and do not react to the supply and demand of gas in EU markets. No trend towards less distortive, more market based pricing mechanisms can be observed at this stage.
- (69) In this first phase of the inquiry we have analysed oil price indexation in long term purchase agreements of major producers and wholesalers of gas. The inquiry has clarified the indexation systems actually used in the upstream contracts, notably the proportions of gas prices indexed to inflation, crude oil, heavy fuel oil, light fuel oil, coal, electricity, spot gas or any other variable.³⁴
- (70) The preliminary findings indicate that there are only a limited number of long term contracts which have a fixed price arrangement or are linked to indexes other than oil. Within the nearly 400 contracts analysed, representing around 300 billion cubic metres of contracted gas, only 5.3 % of the volume had fixed price and only 8.3 % of contracted volumes were linked to a gas index.
- (71) Although there appear to be some slight differences in the type of oil indexation used by different producers the results are quite similar across most European countries and, for the majority of incumbents, at least three quarters of their gas purchase price volatility is determined by changes in the prices of oil products. The following graphs show our preliminary findings in two different aspects of long-term contracts for Western Europe³⁵ and Eastern Europe³⁶. The analysis, which is based on data for calendar year 2004, looks at the average indexation present in long term gas purchase contracts (volume weighted average of contracts).

³⁴ It should also be noted that a wider range of pricing arrangements are often included in the contracts, such as options to reduce off-take, summer discounts, seasonal prices and options to take a proportion of gas at a spot or fixed price.

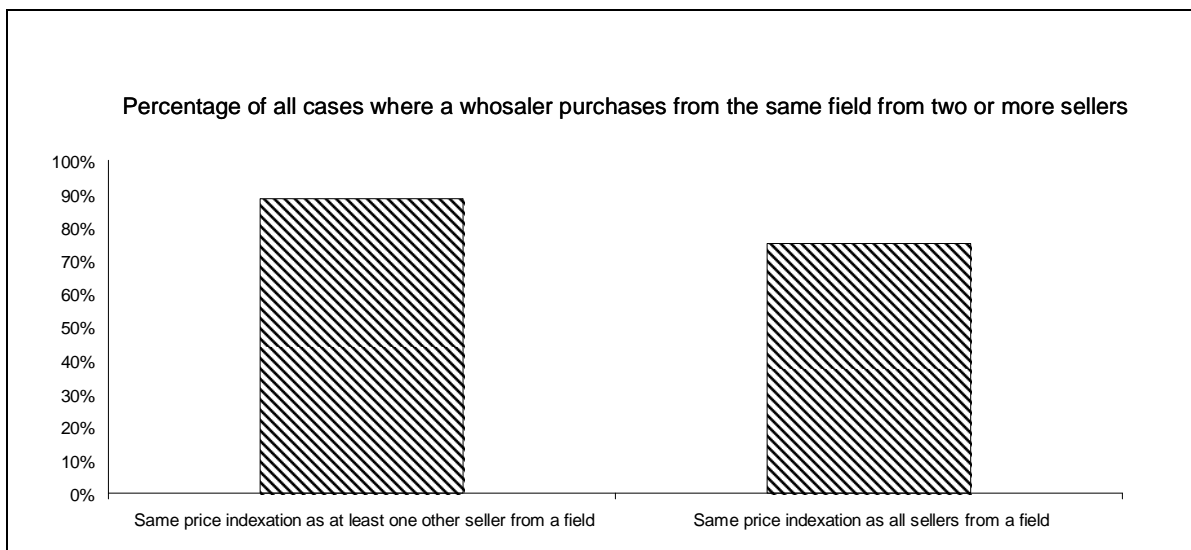
³⁵ Western Europe sample consists of long-term contracts supply contracts to Austria, Belgium, Denmark, France, Germany, Italy and the Netherlands.

³⁶ Eastern Europe sample consists of long-term contracts supply contracts of Hungary, Poland, Slovakia and Slovenia.



Source: Sector Inquiry

(72) There appears to be a very strong similarity between the indexation present in long term supply contracts of different producers selling from the same field. Most likely as a consequence of this, there is also a strong similarity between the actual prices paid by a wholesaler to several gas producers selling from the same field. It was found that in almost three quarters of cases, all producers in a field were selling to a wholesaler with exactly the same indexation formula and that in almost half of all cases they were being paid exactly the same amount by the wholesaler (the difference is due to a base price disparity, discounts and other pricing arrangements). The graph below provides further details about this issue. This preliminary finding merits further investigation.



Source: Sector Inquiry

- (73) The index clauses result in wholesale prices for gas that reflect the developments of the oil market.³⁷ Given the similarity of indexes, the difference between the actual prices paid by different purchasers of gas under long term gas contracts will primarily reflect the difference in the underlying base prices (i.e., the original contract price).
- (74) The price indexation clauses in the contracts between gas producers and wholesalers are reflected in downstream contractual arrangements between wholesalers and distributors/customers. This link will be considered in greater detail in the next phase of the inquiry.

Interplay between a regulated and a “free market” price

- (75) In a number of Member States, regulated retail prices co-exist with free market prices for some or all customers. A majority of Member States regulate prices to households and small businesses, while six set a regulated price that is available to all customers. However, the proportion of end-users that have stayed with the regulated tariff varies between countries.
- (76) Regulated tariffs may have a negative effect on competition, particularly if they are set too low so as to make cost-based competitive prices unattractive. The anti-competitive effect may however be greatly strengthened if incumbent suppliers are permitted to adjust the terms of a "tariff" service to suit a particular customer, as has been alleged by some respondents from France. A customer has also complained that competing suppliers in Spain are prevented by law from offering interruptible services and so cannot compete fully with the tariff, which includes an interruptible option.

Conclusion

Prices in most long term supply contracts are currently linked to oil or oil derivatives. No trend towards more market based pricing is observable. The price indexes in long term contracts between gas producers and importers are similar across Europe.

³⁷ There are often ceiling clauses on crude oil, light fuel oil and heavy fuel oil prices within gas contracts. In the contracts analysed in the inquiry, however, these do not apply to the full amount indexed within the contract but only to a specific part; for instance, if the contract includes 50% indexing to light fuel oil, the ceiling might only apply to 20% of the total light fuel oil element.

3. ELECTRICITY MARKETS

- (77) Whilst the electricity markets underwent significant changes over the last years (e.g. creation of power exchanges or pools in many Member States), it is the overall perception of many market participants that significant efforts are still needed to create a competitive common market for electricity.

3.1 Market concentration

- (78) Despite the Community's significant efforts to create a single market for electricity, it is the Commission's experience from many recent merger cases that most electricity markets are still national in scope.

Generation

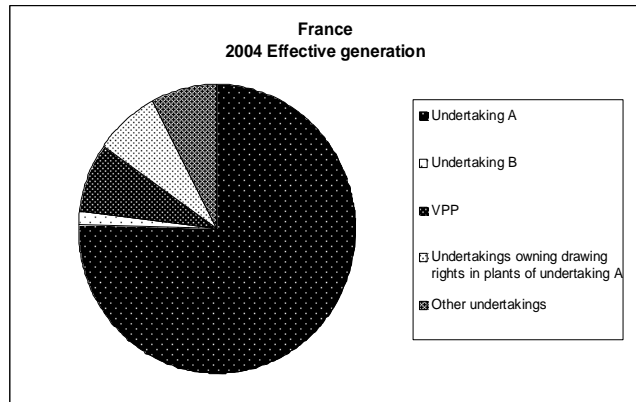
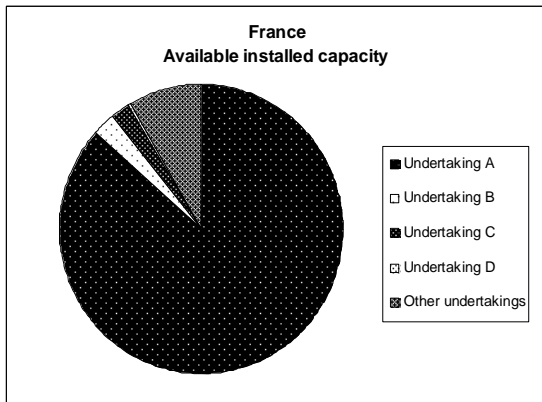
- (79) The sector inquiry confirms that the levels of concentration in generation are high in most Member States creating the scope for market power and the ability to influence prices. The strong position of incumbent operators has not been eroded in a significant way by investments in generation by new entrants³⁸. New generation assets normally entail significant investment costs which are seen as a major barrier to entry. Complex planning procedures and the scarcity of suitable sites have also been named as reasons why the building of new power plants does not take place. Uncertainties associated with the supply markets have also been mentioned as entry barriers.
- (80) Generation is a key issue for competition in the European electricity markets. The generators, due to the characteristics of the electricity market (the non-storability of electricity, the high inelasticity of demand, a very wide spectrum of costs of production and a price equal to the highest offer made in power exchanges), are able to influence prices through the use of generation capacity available to them, in particular by either withdrawing capacity (which may force recourse to more expensive sources of supply) or by imposing prices when they are indispensable to meet demand. In the first case, the withdrawal of capacity is profitable if the cost of not producing is made up by the increase in prices: large capacity portfolios (in particular large cheap capacity portfolios) facilitate this. In the second case, it is possible to raise prices even with a relatively small portfolio depending on other offer constraints. The behaviour of generators thus can impact significantly on the level of prices, already at a lower level of concentration than in other sectors. Lack of competition between generators also means that competition at the subsequent level of trade is limited to the supply margin. In this respect it is important to underline that many market participants complain about price distortions linked to the degree of concentration in generation.
- (81) The following graphs provide an overview of concentration in generation in some key markets. They show installed capacity as well as effective generation (information established/confirmed in the inquiry). In some countries there are significant differences between the shares in installed capacity and effective generation. This can

³⁸ In order to address this issue some Member States have opted for divestiture or capacity release programmes.

be explained by factors such as different types of generation assets (base load v. peak supply plants), the energy efficiency of certain plants (old plants v. new plants) or different commercial strategies (e.g. decision not to use certain generation assets to achieve higher prices for the remaining electricity produced). In order to assess which company can exercise market power, it is necessary to consider the shares of installed capacity and effective use as well as other indicators specific to electricity markets.

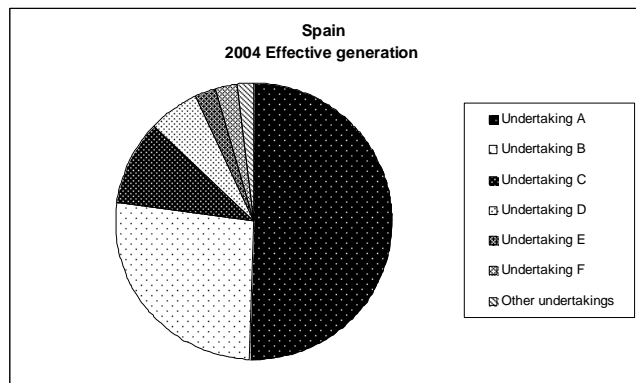
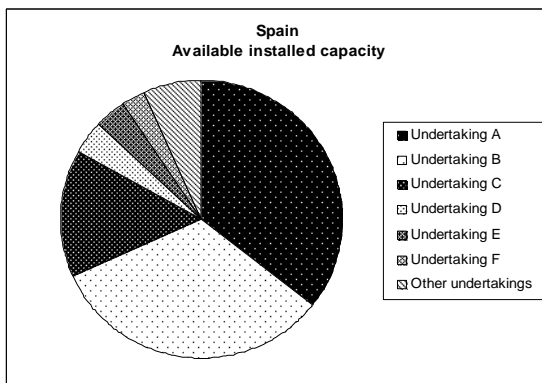
Effective generation differs significantly from installed capacity

a) France

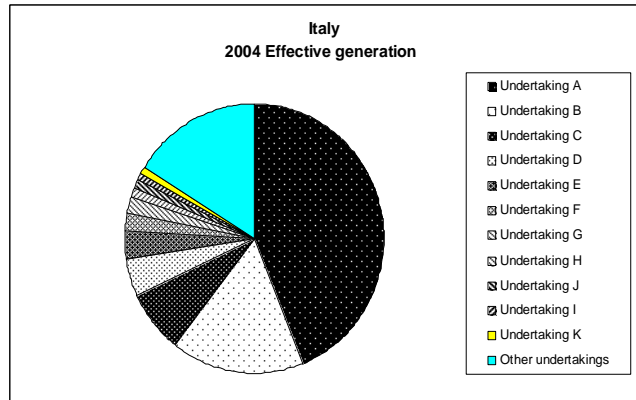
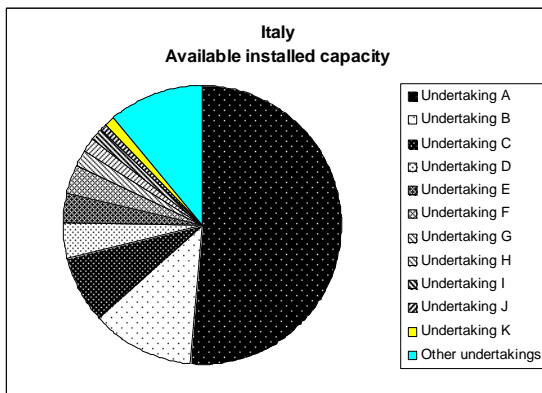


VPP volumes are generated by EdF upon request of capacity holders (cf. remedies in the context of the merger case M.1853 EdF/EnBW)

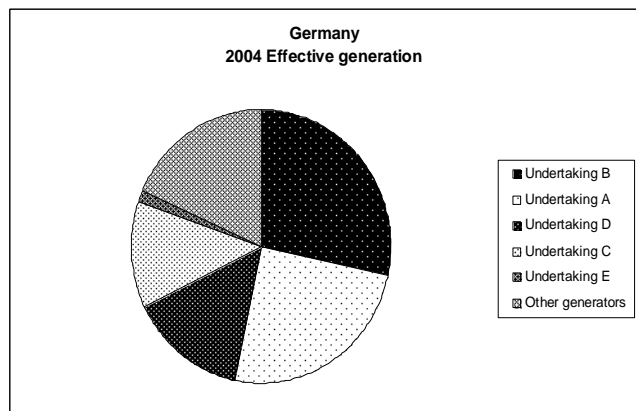
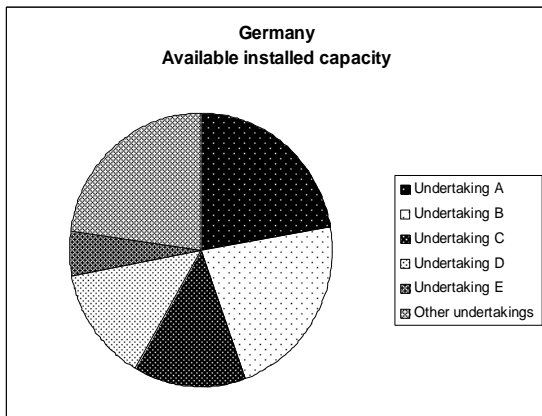
b) Spain



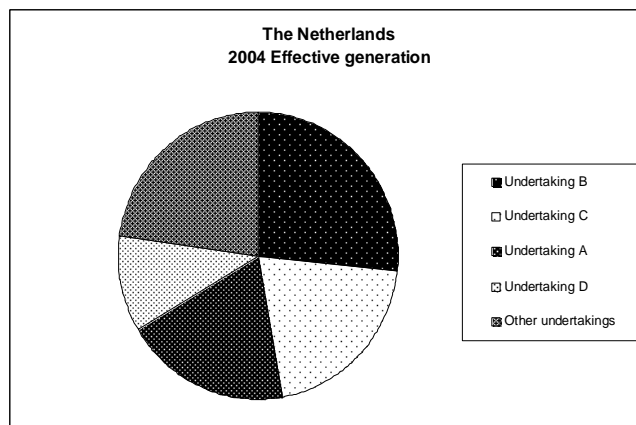
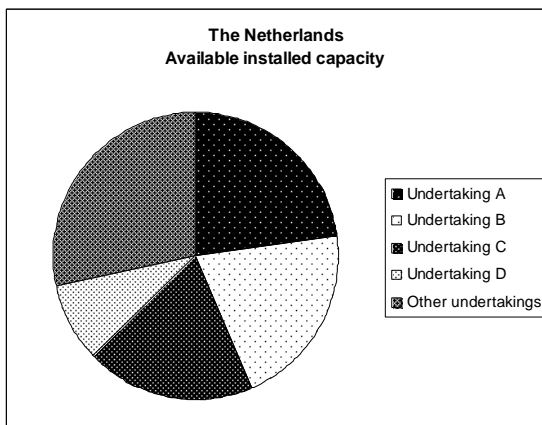
c) *Italy*



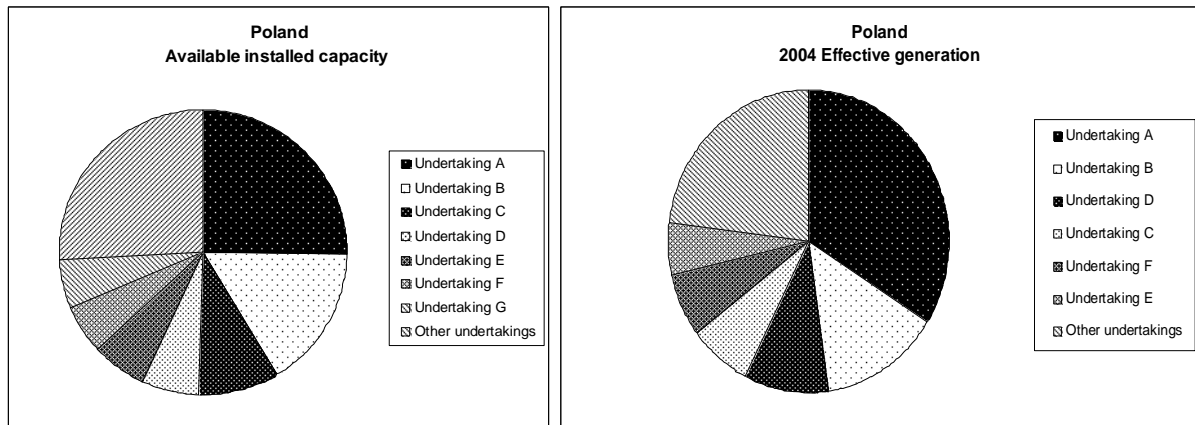
d) *Germany*



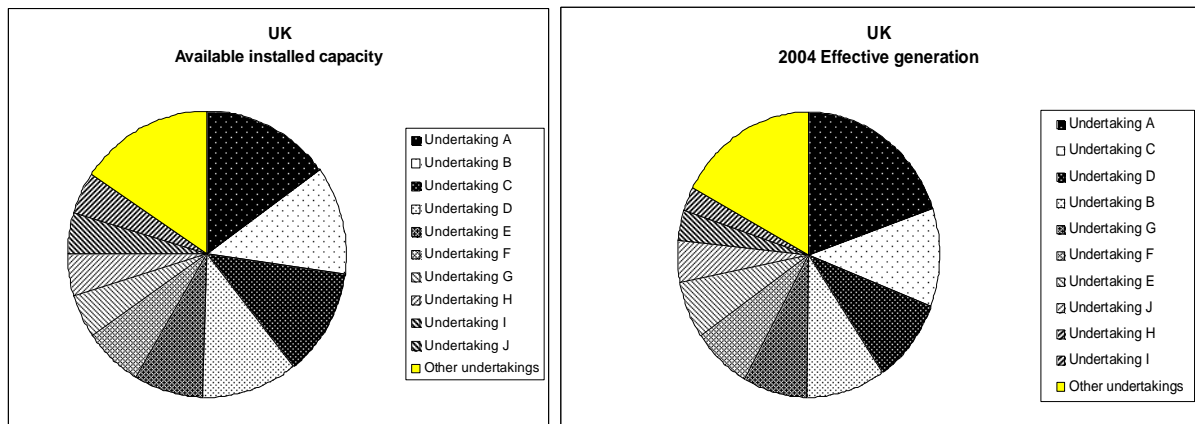
e) *Netherlands*



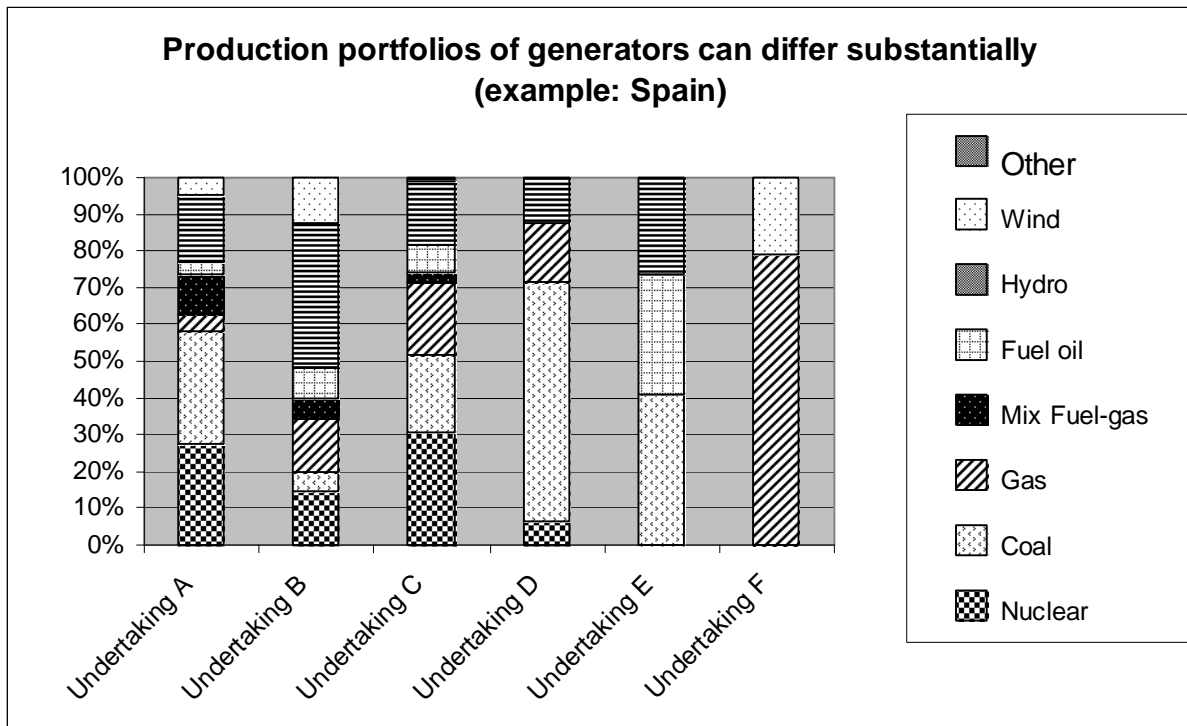
f) Poland



g) UK



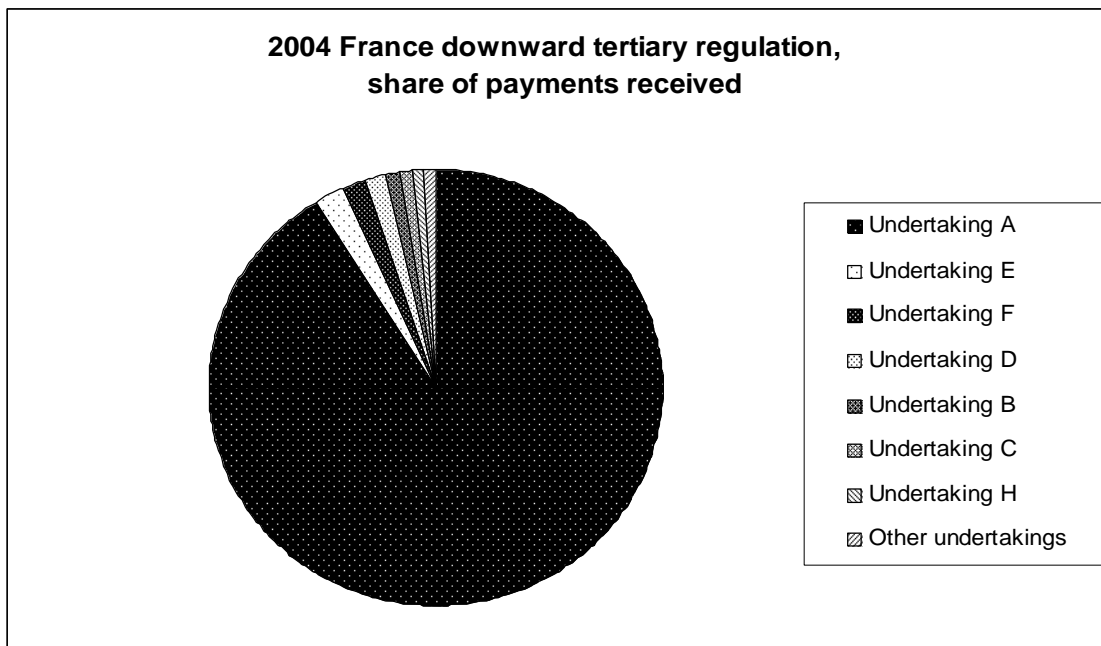
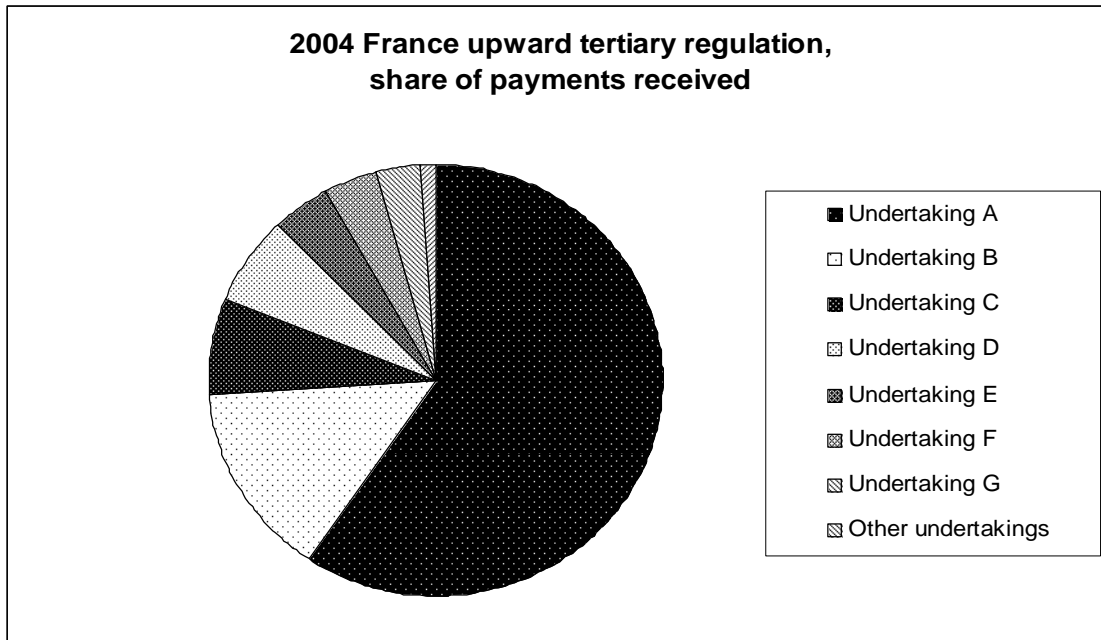
(82) As explained above the deviation between installed capacity and effectively used capacity can have a number of reasons – amongst them the different generation portfolios of electricity producers in the country concerned. The sector inquiry confirmed for example for the Spanish market that certain companies essentially operate base load plants, whilst others are more active in peak load technology. It therefore needs to be assessed in more detail, which company can be considered to have market power by setting the prices at different levels of demand. In this respect it would seem likely that different production portfolios lead to different degrees of market power.



(83) The overall importance of generation is also evidenced when assessing the balancing markets. The sector inquiry confirmed that mainly the generators are present on this market due to technical constraints. The first statistical data gathered on some of these markets confirm the clear indispensability of some players which may give them the opportunity to set prices (see the following graphs concerning the French market).

Balancing revenues go to generators

The following graphs show the share of payments that operators received from the TSO for balancing services in France. Upward tertiary regulation corresponds to orders to increase production with a view to ensuring a balance between demand and supply. Downward tertiary regulation corresponds to orders to decrease production with a view to ensuring a balance between demand and supply. All the main actors either directly own production capacity or drawing rights in plants of another undertaking).



Wholesale markets

(84) Electricity wholesale trade takes place in a variety of ways: on power exchanges, traded OTC-markets (often brokered markets that are regularly assessed by price reporters) and through non-standardised bilateral contracts. The inquiry indicates that concentration on the power exchanges and trading platforms, on both spot and forward markets, is less striking on average than concentration in generation. This does however not allow the conclusion – at this stage of the inquiry - that competition is functioning in a satisfactory manner on all wholesale markets – taking into account the market power in generation.

- (85) Indeed, as regards spot markets, there are several ways to exercise market power without representing a very large part of the sales on an exchange: a generator may actually have withdrawn some generation to force recourse to expensive alternative supplies so as to raise prices of the exchange (and any other sales, including that generator's sales outside of the exchange, whose price is indexed or correlated to the price of the exchange). A generator may also be able to raise the price of the exchange because the other generators that could serve an extra load have substantially higher prices (and that may be all the easier when there are few generators in the exchange at a given level of total offer on the exchange). The functioning of power exchanges and the links between different forms of trading need to be assessed thoroughly in that respect.
- (86) As regards forward markets, it is important to assess on the supply side the relative importance of generators compared to other players without generation and the behaviour of the different participants on both the supply and purchase sides.
- (87) Another aspect requiring further analysis is the liquidity of the wholesale markets. In this respect the sector inquiry established that the volumes traded day ahead on certain power exchanges still represent a relatively small proportion of the total consumption in a number of Member States (see box).

Relationship in % between volumes traded day-ahead on certain power exchanges and total consumption (period January-June 2005)

- Germany: 14.1%
- Netherlands: 12.9%
- France: 3.9%
- Austria: 3.1%

- (88) There may be various reasons for the differences between Member States: the rules of the power exchanges, the availability of the other channels of trade, the strategies of the generators.

Conclusion – Market concentration

The level of concentration in generation – whilst varying from Member State to Member State - is high in most countries creating scope for market power for incumbent operators. The generators, due to the characteristics of the electricity markets, are able to influence prices by the use of generation capacity available to them. Whilst the level of concentration on observable wholesale markets (power exchanges and trading platforms) is less striking, no conclusion can at this stage be drawn about the satisfactory functioning of these markets.

3.2 Vertical foreclosure

- (89) The sector inquiry confirms that in many markets there is a significant degree of vertical foreclosure. Vertical foreclosure can take different forms, namely vertical

integration between generation and retail and vertical integration of network and supply. With respect to vertical integration of generation and retail, the sector inquiry confirms the existence of “structural integration” combining generation and retail activities within one undertaking and “contractual integration” through long term contracts (so called Power Purchase Agreements or PPAs). Both types have adverse effects for the liquidity of the wholesale markets. Also the inadequate unbundling of network and supply is seen as an important entry barrier.

Generation and retail

- (90) Vertical integration of generation and retail within the same group reduces the necessity to trade on wholesale markets which in turn can lead to a reduction of liquidity of wholesale markets. Indeed, there are indications that in markets with high degrees of vertical integration there is little liquidity. The French market is a good example. There is very low degree of liquidity on the French wholesale market and the existing liquidity mainly seems to stem from the Virtual Power Plants “VPP” (i.e. the electricity release programme that EdF committed to introduce as a remedy in the merger case M. 1853 EdF/EnBW). Another example referred to in a number of replies is the UK market which is characterised by an increasing trend of vertical integration.

Thus an important trader stated that “vertical integration often accompanies illiquidity since vertically integrated entities have less need for the service of a wholesale market. This is very true of the UK where re-integration has been accompanied by a substantial drop in liquidity which has been well documented in the trade press”.
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- (91) Lack of liquidity can have many negative effects, such as:
- High volatility of prices, which increases costs for hedging (this can be an important barrier to entry);
 - Lack of trust that the exchange price reflects the overall supply and demand balance in the wholesale market (reduces the reliability of the price signal); and
 - Initiation of a vicious circle creating further incentives to vertical integration because operators do not want to rely on the wholesale market electricity supply.
- (92) Cross-border entry in electricity markets is facilitated to a very important degree if entrants do not have to enter as vertically-integrated companies acquiring simultaneously generation capacity and a customer port-folio, but can choose to enter as a supply company or at the generation level. This reduces risk and costs of entry. However, this is only possible if a liquid wholesale market exists. Liquid wholesale markets are therefore key for the erosion of incumbent’s market shares.

Power Purchase Agreements

- (93) Vertical foreclosure may also result from long term power purchase agreements (PPAs) which constitute in certain countries one of the main causes for the illiquidity of the wholesale markets. Such foreclosure is currently found notably in certain new Member States.

- (94) The fact that power is sold on a long term basis to the incumbent downstream operators means that new entrants cannot buy electricity from these generators or can do so only to a smaller extent. The PPAs thus are an entry barrier (particularly if combined with state aids) foreclosing the independent power producers from selling to new entrants.

PPAs in Hungary and Poland in 2004

Hungarian PPAs accounted for approx. 76% of generation and 67% of net consumption. Many of those long-term contracts are foreseen to run until 2015-2022.

According to the data provided by the main Polish generators as well as the regional distributors, the PPAs accounted for some 50% of the regulated market, which translates into approx. 45% of the total energy sold in Poland. The last PPAs were foreseen to expire by the end of 2017.

PPAs in the Czech Republic and Slovakia in 2004

Despite the fact that Czech and Slovak PPAs accounted for a small share of the national markets, the position of the incumbent operators, each of which holds the vast majority of generation assets in its own country, was further strengthened by long-term PPAs, which allowed the incumbents to additionally control some 20-30% of the remaining independent generation capacity.

Supply and network (TSO and DSO)

- (95) Vertical foreclosure can also stem from the fact that network and supply activities are insufficiently unbundled. The Electricity Directive³⁹ contains unbundling rules for transmission and distribution networks. The transmission system operator must be independent at least in terms of its legal form, organisation, and decision making from other activities not relating to transmission. For distribution system operators the rules are similar. However, Member States are not obliged to implement the unbundling rules before July 2007. They can also decide not to impose unbundling on distribution companies, which have less than 100.000 customers.
- (96) Most Member States by now have implemented the Electricity Directive's requirements for unbundling. Approximately half of them have gone further than the legal obligations (Source: Communication from the Commission to the Council and the European Parliament: 2005 Report on the Implementation of the Gas and Electricity Internal Market). The experiences of full ownership unbundling suggest that it significantly changes the behaviour of the network undertaking: fully unbundled Transmission System Operators (TSOs) and Distribution System Operators (DSOs) will focus on optimising the use of the networks and the capacities of the networks.

³⁹ Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC, OJ L 176, 15.7.2003, p.37

- (97) Vertical integration of supply and transmission activities within one company risk creating incentives within the group to favour/protect the supply business. This can happen in many ways such as: raising rivals' cost, withholding essential information, and by providing the information only to affiliated companies. All of these practices harm the level playing field (examples of this brought to the attention of the Commission in the context of the sector inquiry can also be found in the chapters on market integration and transparency).
- (98) Similar problems are found at the distribution level. In a number of countries, substantial problems have been reported with respect to the exchange of customer data needed for switching: information needed for connection and billing purposes was not provided, not provided within the statutory deadlines, or simply wrong in a significant number of cases. Even if this may be expected to occur to a certain extent during the transition to liberalised markets, these problems appear to remain unresolved in particular in Belgium and Germany. German respondents also report administrative procedures, information exchange protocols and payment conditions so onerous that they appear to be designed specifically to increase switching costs. Even if no discriminatory conduct is present, vertically integrated DSOs lack incentives to address switching problems efficiently as it raises costs and risks only for those trying to acquire new customers.
- (99) In addition, significant concerns have been expressed in the sector inquiry about discriminatory conduct in switching procedures. Notably in Belgium and Germany, but also Finland and Austria there are allegations about preferential information for affiliated supply companies. Repeatedly, respondents complain that affiliated supply companies approach customers with improved offers only when the intention to switch is reported to the network branch. German, Polish and Czech respondents also report cases where network related charges were increased when a customer switched. German respondents mention practises rendering it difficult if not impossible for customers that are new to the network to be supplied by parties other than the affiliated supply company.
- (100) Inadequate unbundling also maintains the incentives for vertically integrated companies to raise costs for competitors. Respondents have provided detailed information on a very substantial number of German distribution network companies that are said to cross-subsidise supply activities with revenues from (monopoly) network charges. Late or even no announcements of changes on network charges to third parties also unduly increases administrative costs and commercial risks for competitors.
- (101) To illustrate the damaging impact of these kinds of practises, one market participant stated that of the approximately 150 supply companies that entered the German market when customers became eligible in 1999, only a handful have survived until today.

Conclusion - Vertical foreclosure

A high degree of vertical integration between generation and retail leads to illiquid wholesale markets. Long term power purchase agreements between independent power producers and incumbent operators have similar adverse effects. Illiquid wholesale markets are a significant obstacle for new entrants. Inadequate unbundling between network (transmission and distribution) and supply activities equally undermines entry.

3.3 Insufficient market integration

(102) Limited integration of national markets means that imports cannot play their role to counter market concentration in national markets and exert competitive pressure on dominant players. The sector inquiry confirms that inadequate integration of electricity markets mainly results from:

- insufficient interconnecting infrastructure between national electricity systems, and/or
- inefficient allocation management methods of existing capacities, and/or
- incompatible market design (e.g. differences between balancing regimes, nomination procedures, differences in opening hours of power exchanges) due to a lack of coordination between TSOs and/or spot market operators.

(103) The main bottlenecks on electricity inter-connectors are generally known. Many borders are at least occasionally (but many chronically) congested such as the Dutch/German border, Danish/German border, Czech/Austrian border, French/Spanish border and the Northern borders of Italy. Moreover the number of congested borders is steadily increasing (e.g. German/French). The quantitative goal for interconnectors established at the Barcelona Council in 2002 has not been achieved by many Member States.

(104) Building or expanding new inter-connectors can take significant time. TSOs stress that the major obstacles to the construction of new interconnectors are complex multi-level political decision making processes and lengthy administrative procedures.

(105) Electricity customers in their replies stress the lack of incentives (occasionally even the reversing of incentives) that TSOs have to invest in inter-connectors because of their high revenues from auctioning of scarce capacity. Information was gathered in the inquiry about the use of the income TSOs receive from inter-connectors. The inquiry confirms that such revenue can be substantial. It is also confirmed that some TSOs do not dedicate the congestion revenues to inter-connector expansion investments (it cannot be excluded that there are administrative or other obstacles to such investment⁴⁰).

⁴⁰ Moreover, TSOs may use congestion revenues to lower transportation tariffs in their control area, which is currently one of the alternative uses of congestion revenue according to Article 6(6) of

Congestion revenues of German TSOs in 2001 to 2005 and use of the revenues

In the period 2001 to 2005 three German TSOs managing interconnectors generated congestion revenues of [400-500] million Euros. Of these revenues only [20-30] million Euros were used to reinforce/build new interconnectors (one TSO said that it does not know how much of the investments into the net had the effect of reinforcing interconnectors). All TSOs maintained that the remaining revenues were used to reduce the transmission tariffs. One TSO declared that the extension of a 380 KV line with a length of 50 km and a capacity of 1400 MVA costs [1-10] million Euros. The building of new lines or subsea cables is significantly more expensive.

- (106) A number of consumers take the view in their replies that current allocation rules have the purpose of protecting the incumbents.⁴¹ Clearly, incumbents have benefited from long term capacity reservations on electricity inter-connectors, using their grandfathering rights. The “pre-liberalisation” capacity reservations have taken up a significant proportion of some of the most congested interconnectors. From a legal point of view the existing grandfather rights are problematic. Thus the ECJ stated in a recent case (C-17/03, Vereniging voor Energie, Milieu en Water, judgment of 7 June 2005) that a preferential treatment for pre-liberalisation capacity reservations is incompatible with the Electricity Directive 96/92/EC⁴² if the Member State concerned failed to request an exemption pursuant to Article 24 of that Directive. Pre-liberalisation contracts also have to be assessed on the basis of Articles 81 and 82 EC and recently the Commission received first requests for guidance on this important issue.

Regulation 1228/2003 on condition for access to the network for cross border exchanges in electricity, OJ L176, 15.07.2003, p.1.

⁴¹ Responses from some large energy consumers indicate that they would be interested to book themselves capacity on interconnectors. However, the majority considers that transaction costs are too high for them to become directly involved in cross-border trade.

⁴² OJ L27, 30.01.1997, p.20.

Long term capacity reservations in selected interconnectors

Border	FR-ES (4)	ES-FR (4)	FR- I	CZ-AT	P (2)	AT- I	FR-D
Current NTC value (1)	[1-1000]	[1 – 700]	[1-2300]	[1-600]		[1-190]	[1 – 2200]
Long term reservations as a proportion of NTC value (3)	[60-70]%	[70-80]%	[60-70]%	[60-70]%	[40-50]%	[50-60]%	[40-50]%

Source: Sector Inquiry

Notes: (1) NTC values from responses to questionnaires vary for certain borders from hour to hour, therefore there can be a range or an approximate value. (2) Data for Poland is not available per interconnector, only aggregated over all interconnectors, including P-CZ, P-D and P-SK. The interconnector to SE is excluded. (3) It is possible that in certain interconnectors uncommitted capacity is available despite long term capacity reservations.

(107) The mechanism to allocate interconnector capacity plays an important role in market integration. For many congested interconnectors TSOs make use of explicit auctions for day-ahead allocations (examples of interconnectors that are explicitly auctioned are: NL – DE; NL – BE; FR – UK; DE- CZ; CZ – PL). This mechanism - whilst being explicitly recognised in Regulation 1228/2003 and the envisaged Congestion Management Guidelines - is perceived as not satisfactory by a number of respondents in the sector inquiry because it suffers from the time lag between capacity allocation and wholesale market clearance. It also imposes uncertainty on the network users, another aspect highlighted in a number of replies. The consequence is that – according to these submissions - explicit auctions do not lead to an optimal price arbitrage between national markets and an optimal use of scarce interconnector capacity.⁴³ However, explicit auctioning is preferred by a number of replies compared to other mechanism that are insufficiently based on economic principles such as ‘first come, first served or “pro rata”, which are anyway incompatible with Regulation 1228/2003, but still seem to be practised for certain interconnectors.

(108) Differences in national market designs can also make it more difficult for operators to trade across borders (e.g. differences between balancing regimes and nomination procedures, differences in opening hours of power exchanges) particularly when TSOs do not cooperate closely to limit risk exposure, a claim repeatedly made by

⁴³ The new Congestion Management Guidelines under Regulation 1228/2003 planned for adoption in 2005 aim at improving efficient use of inter-connectors. These guidelines allow both so called “implicit” (the transmission capacity is managed implicitly by the spot markets; this means that network users submit purchase or sale bids for energy in the geographical zone where they wish to generate or consume, and the market clearing procedure determines the most efficient amount and direction of physical power exchange between the market zones) and “explicit” auctions (each market participant offers a price for use of the interconnector capacity that is available to the market (the so-called NTC - Net Transport Capacity); the bids of the participants are stacked, highest bids first, until NTC is completely used).

respondents in the sector inquiry. Lack of co-operation between TSOs can also have the effect that existing interconnector capacity is not fully used.

Conclusion – Market integration

Interconnectors are key for market integration. Long term capacity reservations (grand fathering) and inadequate capacity allocation rules are barriers to efficient market integration. Incentives to increase capacity and reduction of administrative burdens to build new interconnectors are important. Unless more efficient use of revenues is available, congestion fees should be ringfenced with a view to using the revenues for reinforcing the existing interconnectors.

3.4. Lack of transparency

- (109) The sector inquiry confirms that there is a lack of transparency on wholesale markets. There is a general perception that in particular generation data by incumbents is being shared first with affiliates, which undermines confidence in wholesale trading. The inquiry has revealed examples of operators that seem to have used information regarding generation outages of affiliates to trade on the electricity market.
- (110) The publication of more information on the functioning of the electricity system and network would allow all players to take informed action on the spot and forward wholesale markets. If information is not made publicly available, there is a risk that only the incumbent market participants have access to the information, which creates barriers for new entrants and undermines the level playing field. One trader, which is very active in a number of markets, estimated in its response to the sector inquiry that “the cost to EU energy consumers of poor information transparency alone is therefore likely to run into tens of billions of Euro”.
- (111) Information was gathered from national energy regulators about transparency in each market. The inquiry identified 49 precise issues on which information was of potential importance to allow competitive trading on wholesale markets. The responses from national regulators demonstrated that the level of transparency on electricity wholesale markets varied significantly across the EU. In one Member State no information was published on any of the 49 issues identified, whereas in another Member State information was published on 38 of these issues. In general, markets where information was published on many issues appear to function better than those where little information is published.

Overview of transparency in the EU

- Member States in which information on 0-9 issues is published: 14%
- Member States in which information on 10-19 issues is published: 33%
- Member States in which information on 20-29 issues is published: 33%
- Member States in which information on 30-39 issues is published: 19%

(112) National energy regulators recognise in their replies that there is a lack of transparency in most Member States in the following areas⁴⁴: availability of the TSO network and interconnectors (e.g. location, frequency and causes of congestion, net and available transfer capacity of interconnectors, prices and physical flows), generation (available generation capacity, dispatch schedules/forecasts and capacity outages (anonymous figures grouped under base and peak load, nuclear, fossil, renewable, hydro), and generation production), load (e.g. day-ahead and week-ahead aggregated load forecast, and actual load), and balancing and reserve power (e.g. demand for balancing power, system balancing status (long or short), and actual use of reserve power).

(113) Suppliers were also asked about their views on the availability of information to trade within acceptable risk levels on electricity wholesale markets. The table below summarises the responses of generators, traders and suppliers broken down by categories, which information is considered “indispensable”, “important”, “useful” and “not useful”.

	Indispensable	important	useful	not useful
TSO network	55.2%	12.1%	27.6%	5.2%
Interconnectors	56.9%	25.9%	12.1%	5.2%
Load	35.1%	31.6%	29.8%	3.5%
Balancing	37.5%	32.1%	21.4%	8.9%
Generation (production)	27.8%	37.0%	18.5%	16.7%
Generation (capacity)	40.0%	30.9%	27.3%	1.8%

Note: almost all suppliers who said that generation (production) information was “not useful” were local or regional incumbents, who might be able to profit in their own markets by not releasing this information.

(114) The same companies were also asked whether the current level of information was satisfactory. Of those that responded to this question 83% believed that useful, important or indispensable information was lacking.

Views of suppliers, traders and generators on information needed to trade within acceptable risk levels

- 43 % believe that “indispensable” information is not available
- 16 % believe that “important” information is not available
- 25 % believe that “useful” information is not available
- 17 % believe that all useful/important/indispensable information is available

⁴⁴ It should also be noted that at the Florence Forum in August 2005 ERGEG requested Eurelectric to prepare a list of information needed by network users, possibly in cooperation with traders and users associations. UCTE/ETSO were requested to prepare a list of information needed by TSOs.

Conclusion – Transparency

Lacking transparency on wholesale markets is a barrier for entry and does not provide for a level playing field for electricity trading.

83% of suppliers, traders and generators believe that useful, important or indispensable information is lacking.

3.5 Price issues

- (115) Perceived problems in wholesale price formation was one of the reasons prompting the inquiry. Specific price issues relate to the effects of the CO2 emission trading scheme (ETS) and the relationship between regulated prices and liberalised markets.

Price formation on the wholesale markets

- (116) In absence of generation capacity constraints economic theory would suggest that prices on spot markets generally reflect the marginal cost of the generation unit producing the last unit of electricity to meet demand (i.e. where supply and demand curve meet). In their replies to questionnaires, many respondents gave reasons why in their view the market is malfunctioning: a) the price is formed only on a small part of the generation, b) a substantial amount of generation is locked up in long-term bilateral contracts to be delivered on the day of operation irrespective of the price of the spot market, c) vertically integrated generators do not systematically arbitrage (“make-or-buy”) between their own portfolio and spot sourcing.
- (117) One of the main questions still to be assessed in the inquiry is how operators can affect pricing on the spot markets. In particular, the inquiry aims at establishing whether there is scope for using market power in generation to increase prices, e.g. through withdrawal of capacity.
- (118) At this stage the sector inquiry confirms that there is – at least in certain Member States – little trust in the existing spot price formation mechanisms.

Customers views on the functioning of spot markets

Almost 100% of industrial customers whose responses have been analysed claim that prices on spot markets (at least for some periods) did not represent competitive levels. Typical comments of industrial customers were (partly translated):

- “There is an oligopoly on the supply side (...) accounting for 80% of the generation output.”
- “Low traded volumes on the EEX in Germany.”
- “Lacking market transparency concerning [...] scheduled revisions and outages of generators”
- “French and Belgian markets are dominated by single players – thus distortions can easily occur there.”

- (119) Similar concerns are raised as regards the forward markets in a number of Member States. The functioning of forward markets is particularly significant as they play a key role in the price setting of supply contracts for final customers.

Customers views on the functioning of forward markets

- “Forward and futures prices at EEX do not react to supply and demand. A very dry summer such as 2003 drives up prices, the end of the dry period should thus result in a price decrease. However a downward trend after a price peak is not observable. Obviously the few suppliers at the power exchange are able to prevent price decreases by limiting the offer.”
- “Since only a few trades are required to set the OTC market price for forward products such as year ahead, we believe these can be easily influenced.”

- (120) Further, there are complaints about the cost of balancing: data provided in the inquiry indicates that participants in the different balancing regimes are exposed to different risks (for cost of balancing) for comparable deviations. The reasons given for such discrepancies relate to the rules of the balancing regimes (e.g. certain regimes penalise each party’s imbalances, whether or not they amplify or reduce the system imbalance as a whole). While penalisation of imbalances can be an acceptable incentive to have a smoother functioning of the system during the day of operation, it will be important to analyse the consequences of the different regimes. For instance, heavy penalisation of deviations may reduce liquidity since vertical integration is encouraged when high balancing costs can be avoided by vertically integrating load (consumption) and generation.

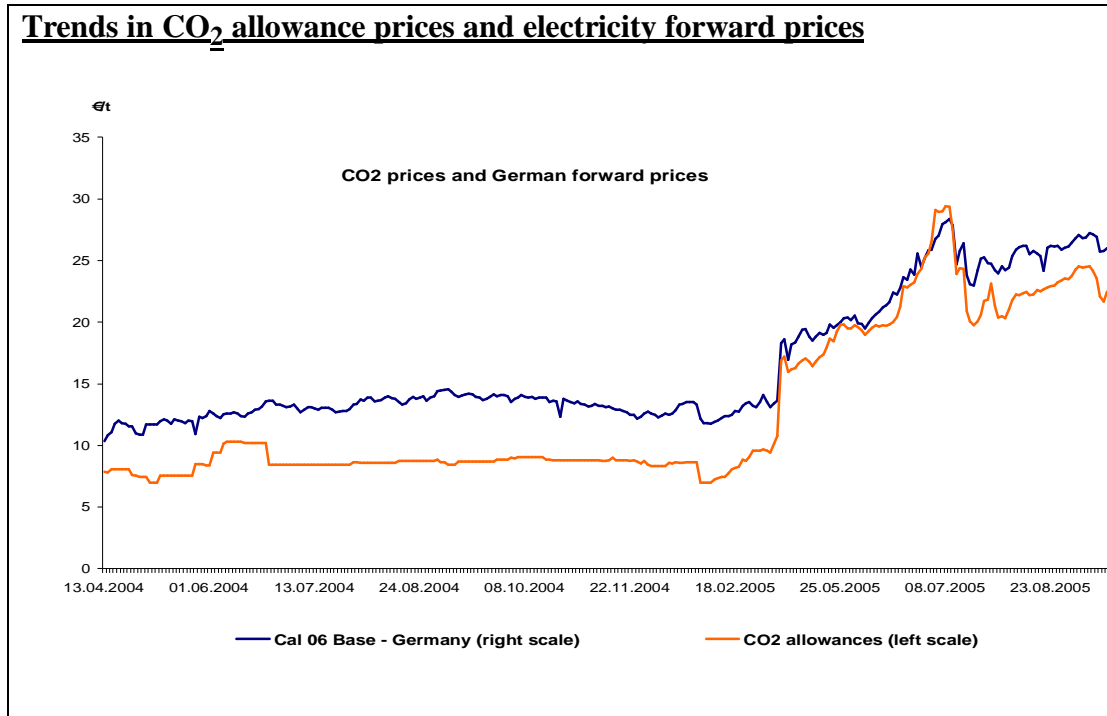
Pricing in retail – industrial consumers

- (121) The inquiry confirms that in a number of Member States suppliers traditionally base their offers to the subsequent level of trade (e.g. Germany, Austria, Netherlands, UK) on forward market prices established at observable markets (power exchanges, platforms). Customers’ historical consumption data are rolled out into the future with a derived hourly forward price curve that is based on relevant forward/futures price quotations prevailing at the time of the offer. The fix priced contracts normally have a duration of one to two years. This pricing practice applies irrespective of whether the customers’ needs will actually be supplied from the suppliers own generation portfolio or covered on the observable wholesale market (power exchanges, platforms) after entering into the supply contract.
- (122) Suppliers’ reports from the Nordic region suggest that a forward based fixed price contracting described above is less prevalent in the Nordic market where prices for a good part of supply contracts seem to be tied to spot prices on Nordpool. One possible explanation for this different pricing policy is that there is more trust in the spot price.

- (123) Other practices can be observed in countries (e.g. Italy) where no developed forward markets exist. Suppliers' price offers are either based on (officially published) indices composed of prices of fuels used in domestic power generation or simply given as a percentage reduction on regulated end consumer tariffs. This practice was also reported from Hungary where neither spot nor forward prices exist.

CO2 emission trading

- (124) Since the implementation of the EU emission trading system (ETS) at the beginning of 2005 the value of CO2 allowances is increasingly reflected in electricity prices. This has led to increased electricity wholesale prices even in countries which are characterised by very low carbon intensity, such as France (nuclear) and Sweden (hydro and nuclear). These price increases in turn gave rise to strong criticism from energy consumers.
- (125) The practice of including the value of CO2 emission permits in the cost calculations is seen - by certain industrial customers - as evidence of market power of the generators (predominantly in Germany) and non-functioning of markets. The critics underline that companies that are subject to global competition are not able to shift costs associated with CO2 emission permits to their customers (e.g. steel or aluminium producers, whilst electricity producers can do so). Critics also mention that the vast majority of the allowances were given for free to generators (generally between 95 and 100% of their demand). It is also claimed that the current allocation scheme favours incumbents over new entrants into generation. New entrants should in theory also get certificates for free, but there is uncertainty compared to the situation for incumbents.
- (126) It appears that lately CO2 prices have become one determinant of prices on wholesale electricity markets. Its impact on forward prices is more apparent than on spot prices for reasons unknown. Observation of the German power market suggests a simple correlation between wholesale power prices (0.6 €/MWh) and CO2 certificates prices (1 €/t). However, the markets for CO2 emissions trading in the EU and worldwide are at an infant state and the interactions of CO2 prices with other important price determinants are rather complex and not yet fully understood. In Germany court proceedings and competition cases were initiated as a reaction to these price increases.

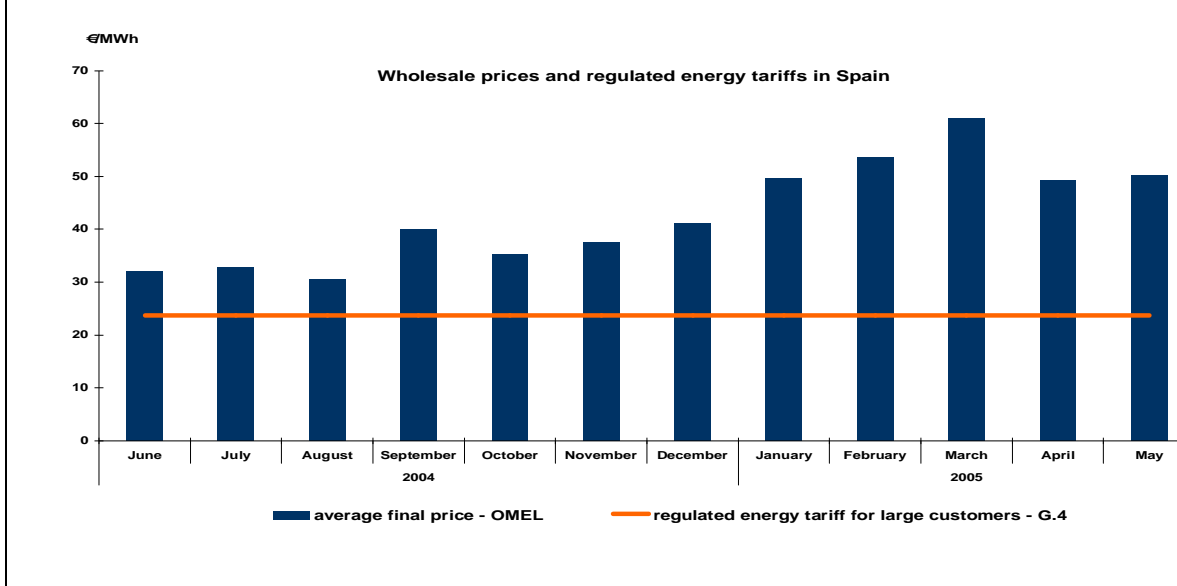


Source: EEX, brokers

Interplay between a regulated and a “free market” price

(127) Liberalised and regulated markets for final customers coexist in a number of European markets (e.g. Portugal, Italy, Spain, Hungary, Poland). This poses a threat to full market opening. Authorities in charge of setting final customer tariffs will – especially in periods of rising prices - be tempted to set those prices below the market based benchmark thus squeezing out or keeping away (new) market participants supplying final customers without local generation portfolio. Electricity suppliers, in particular one Spanish company, complained about the public tariffs.

Comparison of Spanish regulated electricity tariffs for certain large industrial customers with Spanish wholesale prices



Source: OMEL, CNE (Spanish Regulator)

Note: There is not a unique level of G4 tariffs. The tariff depends on a capacity and consumption element. The level in the chart has been calculated for given levels of capacity and consumption.

(128) Addressing this issue is a prerequisite for allowing new competitors to enter the supply market with long term benefits for consumers.

Conclusion – Price formation

Trust in functioning wholesale markets, which is crucial for the success of the liberalisation exercise, is currently lacking. Energy consumers do not believe that prices on wholesale markets are resulting from fair competition.

Co-existence of regulated and free market prices causes distortions.

4. CONCLUSIONS

(129) Recent dramatic rises in gas and electricity wholesale prices and persistent complaints about barriers to entry and limited consumer choice led the Commission to open an inquiry into the functioning of the European energy markets in June 2005. The energy sector inquiry is a competition investigation based on Art. 17 of Regulation 1/2003 which aims at assessing the competition conditions on European energy markets and establishing whether current indications of energy market malfunction result from breaches of competition law.

(130) In the first phase of the inquiry important competition distortions have been identified in gas and electricity markets. The key preliminary findings as regards these categories can be summarised as follows:

(131) Market concentration

- Gas: The level of concentration remains very high in most national gas markets. Market entry at wholesale level is limited by the incumbents' control of gas import contracts. Some incumbents also control indigenous gas production. Import contracts are typically flexible as to volumes, reducing incumbents' incentive to trade gas. Most contracts are of very long duration with 15-20 years being typical. Control over the gas available within nearly all national markets is thus highly concentrated to the benefit of the historical incumbents.
- Electricity: The level of concentration in generation – whilst varying from Member State to Member State- is high in most countries creating scope for market power for incumbent operators. The generators, due to the characteristics of the electricity markets, are able to influence prices by the use of generation capacity available to them. Whilst the level of concentration on observable wholesale markets (power exchanges and trading platforms) is less striking, no conclusion can at this stage be drawn about the satisfactory functioning of these markets.

(132) Vertical Foreclosure

- Gas: Vertical integration and limited sales by incumbents on gas hubs result in low liquidity on wholesale gas markets that hinder new entry. Despite the unbundling requirements of the EU gas directive, new entrants believe that network operators continue practices favouring the related supply company. Long term contracts between importers and customers lead to foreclosure in certain geographic markets. Other barriers to entry dominate in other markets. There are persistent allegations of abusive behaviour that inhibits switching opportunities.

- Electricity: A high degree of vertical integration between generation and retail leads to illiquid wholesale markets. Long term power purchase agreements between independent power producers and incumbent operators have similar adverse effects. Illiquid wholesale markets are a significant obstacle for new entrants. Inadequate unbundling between network (transmission and distribution) and supply activities equally undermines entry.

(133) Market Integration

- Gas: Clauses in import contracts dating from pre-liberalisation times have contributed to market segmentation. Access to cross-border pipelines and entry points to national gas systems are key factors for market integration. The main reason that access to import pipes is limited is the preferential treatment of pre-liberalisation contracts. Within the current framework of these contracts there seems to be scope for optimisation of the use of the pipelines. Swaps can substitute physical transport of gas and can offer some solutions to congestion problems. However, they will generally tend to favour the incumbents.
- Electricity: Interconnectors are key for market integration. Long term capacity reservations (grand fathering) and inadequate capacity allocation rules are barriers to efficient market integration. Incentives to increase capacity and reduction of administrative burdens to build new interconnectors are important. Unless more efficient use of revenues is available, congestion fees should be ringfenced with a view to using the revenues for reinforcing the existing interconnectors.

(134) Transparency

- Gas: Increased transparency about access to networks is vital. Information is notably lacking for cross-border pipelines and entry points into national markets.
- Electricity: Lacking transparency on wholesale markets is a barrier for entry and does not provide for a level playing field for electricity trading. 83% of suppliers, traders and generators believe that useful, important or indispensable information is lacking.

(135) Price Formation

- Gas: Prices in most long term supply contracts are currently linked to oil or oil derivatives. No trend towards more market based pricing is observable. The price indexes in long term contracts between gas producers and importers are similar across Europe.
- Electricity: Trust in functioning wholesale markets, which is crucial for the success of the liberalisation exercise, is currently lacking. Energy consumers do not believe that prices on wholesale markets are resulting from fair competition. Co-existence of regulated and free market prices causes distortions.

The initial findings also confirm the analysis put forward in the Commission's Report on Progress in Creating the Internal Gas and Electricity Market and emphasise the requirements for action. After a wide public consultation on the preliminary findings, scheduled for February and March of 2006, the Commission will discuss and propose necessary structural, regulatory and competition law-based remedies. These should address the barriers currently impeding the development of a fully functioning open and competitive EU wide energy market as a basis for fairer prices, more efficient allocation of resources and supply, more openness for renewable energies and an economically sustainable basis for security of supply. The final report of the sector inquiry will be published at the end of 2006.