COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 15.11.2005
SEC(2005) 1448

COMMISSION STAFF WORKING DOCUMENT

Technical Annex to the

Report from the Commission to the Council and the European Parliament

on Progress in Creating the Internal Gas and Electricity Market

{COM(2005)568 final}

COMMISSION STAFF WORKINGPAPER

REPORT ON PROGRESS IN CREATING THE INTERNAL GAS AND ELECTRICITY MARKET: TECHNICAL ANNEX

BACKGROUND TO THIS REPORT

This summary technical report contains important background information on which the Commission has based its analysis in the main Communication on the implementation of the electricity and gas Directives[1]. The main Communication, combined with this report responds to the requirements of Article 28(1-3) of the Electricity Directive and Article 31(1-3) of the Gas Directive concerning reporting requirements during 2005.

The bulk of the information is based on the reports made by national regulators, which were submitted in the second half of 2005. These individual reports are being published concurrently with this document and can be found on the website of the European Regulators' Group for Electricity and Gas (www.ergeg.org). Those wishing to know the full details about progress in individual Member States regarding electricity and gas competition should consult these documents closely. Submissions from stakeholders have also been taken into account in this report which contains summaries of the main points raised. These submissions can be found on the website of the Commission.

http://europa.eu.int/comm/energy/electricity/report_2005/stakeholders.htm.

Some issues initially raised by this report will be covered in more detail by the sector inquiry on the electricity and gas markets undertaken by the Commission on the basis of it antitrust powers[2]. This work, however, is still ongoing and will be finalised in the course of 2006.

In addition, two studies by external consultants are being prepared. The first concerns the implementation by companies of the unbundling provisions of the Directives. The second study will assess the experiences of customers, especially large users, of the introduction of competition, in particular their behaviour as regards changing supplier or renegotiating contracts, and recent trends in electricity and gas prices. These reports will be published early in 2006.

Finally, the report refers to two other European Commission documents that will be published before the end of 2005. The first is a Communication of the Commission on the support of electricity from renewable energy sources which will be published as a requirement of Directive 2001/77 ("2005 renewables report"). The second report quoted is the 2005 horizontal evaluation of the performance of network industries providing services of general economic interest ("2005 SGEI report"). This refers to a study by Copenhagen Economics on the general economic effect of market opening across all network industry sectors. It also contains general customer satisfaction surveys that are reported in this document.

---

1 2003/54/EC and 2003/55/EC

2 reference to regulation 1/2003 and decision

As well as an executive summary which appears as the next section, the report is organised into the sections below which deal with each aspect of the functioning of the electricity and gas market under the headings contained in the relevant parts of the Directives.

- Section 1 Legal Implementation of the Directives
- Section 2 Issues related to service provided to customers
- Section 3 Extent of customer activity
- Section 4 Price developments and competition issues – electricity
- Section 5 Price developments and competition issues - gas
- Section 6 Existence of non-discriminatory network access
- Section 7 Experience with independent network operation
- Section 8 Effective Regulation
- Section 9 Development of Interconnection Infrastructure
- Section 10 Security of Supply
- Section 11 Environmental Issues
- Section 12 Employment and other Economic Issues

Each section is drafted as a stand-alone report on the subject in question summarising all the relevant information available. Most of the data used was submitted at the end of July 2005 and generally reflected the position at that date. However, some data items, referring to the information in a particular calendar year, will refer to the year 2004 as a whole. Where data is currently unavailable, this appears in tables as follows: "-".

EXECUTIVE SUMMARY

1 General Overview

It is now seven years since the first electricity Directive and over five years since the first gas Directive[3] came into force in which markets were partially opened to competition. The Commission has been monitoring these markets on an annual basis since the first "benchmarking" report in 2001. These reports, culminating in this document, as well as the submissions from regulators, demonstrate that, although some progress is being made in developing competition, and that some important benefits have been realised in terms of increased efficiency, the picture is extremely variable. In some cases developments are positive; in many others progress is slow, and in some instances there does not seem to have been any advance at all. In summary, the idea of a single market for electricity and gas is far from being realised. The Communication of the Commission associated with this document summarises progress as follows:

> The most important shortcoming on the internal electricity and gas market is the lack of integration of national markets. Key indicators in this respect are the absence of price convergence across the EU and the low level of cross-border trade. This is generally due to the existence of barriers to entry, inadequate use of existing infrastructure and - in the case of electricity - insufficient interconnection between Member States in many cases, leading to congestion. Moreover, many national markets display a high degree of concentration of the industry, impeding the development of real competition. The gas market continues to suffer from a lack of liquidity of both gas and transport capacity. In this context, the effects of long-term gas contracts will have to be taken into account. Another indicator of the lack of real competition is that switching by customers remains limited in most Member States and that choosing a new supplier from another Member State remains the exception.

The Commission has arrived at this assessment having considered a number of basic indicators notably;

i) the degree of price convergence,

ii) the extent of development of electricity and gas markets across borders,

iii) the extent of entry into national markets by foreign companies and/or other new entrants fully independent of network interests,

iv) the extent of customer activity,

v) the degree of concentration at both wholesale and retail level.

Although other indicators could be envisaged, and indeed many have been put forward by stakeholders in their responses, the Commission believes that the performance of electricity and gas markets measured against the above list will give a representative picture of the state of progress in introducing competition. Certainly, it is highly doubtful that competition can be described as functioning if performance against most of these indicators is limited. This is the case in too many instances at present. Conversely, there are few Member States which exhibit positive characteristics against all of these indicators for both electricity and gas.

---

[3] 96/92/EC and 98/30/EC

For electricity the main problems can mostly be traced to the failure to create an integrated market. This stems further from poor availability of cross border capacity and the need to use more effectively the capacity that does exist.[4] This is the single most important issue for the electricity market and if it could be resolved satisfactorily, the prospects for a fully functioning market would already be greatly improved.

For gas, competition is only really active in the North Sea region and to a lesser extent in Spain for instance. There are a number of obstacles in other regions. In particular, the necessary level of liquidity and transparency are lacking. Moreover, network access conditions do not appear to be sufficiently developed in order to allow for natural gas to be traded across Europe. Liquid trading hubs and hub-to-hub trading including cross border transactions, for example, do not exist and as a consequence, historical supply pattern are still very much prevailing. Long term reservations of important cross-border pipelines and operational barriers, such as non-harmonised balancing systems, also make it difficult for any company trying to enter new markets.

This document sets out the main obstacles to the internal market in more detail and, in particular the reasons why a real European market for gas and electricity is still rather far from being realised. In some cases, the problems relating to introducing relate to a failure to fully implement the Directives or are the result of late implementation. Other issues are likely to require further initiatives from, respectively, Member States, national regulators and the Commission. Many of these could and should be taken within the current legislative framework.

2 Background: Requirements for a functioning European market

The gas and electricity Directives were adopted by the European Parliament and by the Council in order to create competition. The key element is the introduction of non-discriminatory and transparent third party access to the networks with ex-ante supervision by regulators. As a result of regulated network tariffs and conditions, network users must be able to accurately anticipate the exact costs which will be incurred from using the system.

Without this, the initiative is likely to fail since networks are largely natural monopolies providing the basis and the fundament upon which competition among gas and electricity suppliers is to develop. This means that there is a non-competitive and a competitive part of the gas and electricity sectors. The former is made up of the necessary infrastructure and its operation, which should work to facilitate the market, while the latter is represented by suppliers and producers, often with traders and big customers contracting directly with the producers. These market participants should compete with each other for market shares in both the wholesale and retail market enjoying non-discriminatory use of the necessary infrastructure. Non-discriminatory access implies, for example, that neither size, the relationships between suppliers and network operators, nor portfolio considerations in the case of large system users must affect the tariffs and other conditions. This implies that tariff systems should not contain structural elements, such as distance related charges, which tend to discriminate, for example, against companies with a small portfolio.

It is considered that non-discriminatory and transparent network access requires **as a minimum** legal and functional unbundling of transmission and distribution system operators.

[4] Discussed further in section 9 (Interconnection Infrastructure)

The underlying objective of these provisions is to create a structure of interests of network operators which is geared towards the provision of a good transportation and/or distribution service no matter on whose behalf and no matter for which purpose. The main interest of the network operator would then be to offer transportation services ensuring efficient use of the network, which means to contract all the capacity available as much as possible on a firm basis and, once the firm capacity is sold out, to market unused capacity to the extent possible as the only means to maximise its revenues. In reality, legal and functional unbundling should, if properly implemented, result in an interest structure of the network operator that is very similar, if not identical to that of a network operator also separated from any supply interests by ownership, i.e. the network would not be owned anymore by any vertically integrated company with supply interests.

In such a system, operators of transmission and distribution grids would act as market facilitators allowing system users (suppliers, traders, large consumers etc) to exploit market opportunities to the extent possible. It would be characterised by

- the complete absence of operational barriers to enter and exit the system;
- a level of transparency which provides a level playing field for all system users;
- effective secondary capacity trading among system users with a view to optimising capacity and supply portfolios

Once network conditions are developed in such a way, liquid wholesale markets for electricity and gas would develop, almost by themselves, at both national level and subsequently at European level through hub-to-hub trading for gas increasingly decoupling its physical and contractual flow and integration of power exchanges for electricity. This integration would initially create regional markets and eventually go beyond this and integrate the whole European market. Inevitably this would mean an increased number of market players active at retail and wholesale levels.

The development of a framework for network access suitable for the development of a competitive European market for electricity and gas and its overall integration could be measured against these criteria. If the regulatory framework emerging from the current internal market Directives and associated Regulations[5] is properly implemented and applied in the sense described, market forces will make their way.

3 Views of Regulators

As well as their individual reports, regulators have, through ERGEG (European Regulators Group for Electricity and Gas)[6], provided an overall assessment of the outstanding issues in developing the gas and electricity markets. The CEER/ERGEG view concurs with that of the Commission in that they conclude that the state of a true European market for electricity and gas has been only slowly advanced. Indicative of this lack of progress is the large variation in prices between different wholesale markets.

A key problem highlighted by regulators is the need to ensure that all network customers are able to gain access on non-discriminatory terms; that network capacity is not hoarded (ie, that

---

5 Regulation 1228/03/EC and the forthcoming Regulation on Gas Transmission.

6 Established by Commission Decision 2003/796/EC

unused capacity is released for resale); that network availability is maximised (subject only to physical and security constraints); that physical congestion is managed in a non-discriminatory manner; and that new capacity is constructed and made available when there is a demand for it. Achieving this requires that transmission system operators (TSOs) act independently of any interest in the competitive parts of the market. Regulators therefore argue that ownership separation is a pre-requisite for effective competition and is therefore a key component of the liberalisation process. In the absence of ownership separation, it is, as a minimum, necessary to attempt to substitute the effects of ownership separation through monitoring and enforcing strict regulations on the conduct of a the legally separated TSO (i.e. strict ring fencing arrangements and the publication of information into the public domain). Regulators consider that, in particular, the unbundling requirements implemented by some Member States in national legislation needs to be reinforced by further measures relating, in particular, to the management of information held by TSOs (for putting it into the public domain where possible and strict ring fencing arrangements where publication is not possible or is only possible with some delay). Finally it is noted that whilst sufficient unbundling of TSOs in important for wholesale market development, efficient DSO (distribution system operator) unbundling is key for the necessary development of retail competition.

A second area of concern for regulators is their own powers. As well as the question of whether regulators have sufficient powers to fulfil the role of surveillance of the current unbundling requirements in the Directives, it is also argued that in order to carry out their functions effectively, that they must be equipped with the necessary tools. Regulators argue that they must, as a minimum, be able to:

- exercise appropriate regulatory oversight (and where appropriate control) over key market rules which may impact upon the operation of the market,
- monitor activity (for example through gathering information) within the market and detect non-compliance,
- impose sufficient sanctions on parties such as to be able to deter inappropriate behaviour,
- act as a catalyst for market reform, driving forward progress.

At present it is thought that the powers which are available to individual regulators are varied and in some instances regulators do not appear to have the necessary powers to monitor and enforce compliance with the legislative and regulatory framework. In particular, not all regulators operate at arms length from government. Some Ministries have reserved the right to make decisions in important areas with the risk that political influences may undermine economic principles and bring regulatory uncertainty to the market.

Finally, regulators underline their commitment to developing a functioning European market with, if necessary, regional steps as an interim phase. It is agreed that, often, the enlargement of the market may be the only realistic solution to issues of market dominance if structural measures on a national scale are considered unacceptable. Regulators acknowledge that measures have already been, or will shortly be, introduced at the European level, which are intended to further facilitate cross border trade. However, their view is that further steps are required: in particular;

- arrangements that enable and give incentives to TSOs to deliver cross border infrastructure and capacity, particularly for electricity;
- a strong regulatory framework for both electricity and gas to oversee cross border network access and trading arrangements.

Regulators consider that, at present, obligations placed upon TSOs invariably have a national focus relating to the operation and development of their respective networks. However, if regional (or European) markets are to be developed and operated efficiently and effectively, it will be necessary to consider to what extent the roles and responsibilities of TSOs may need to be adapted to this end.

Similarly, the arrangements for market participants to transport gas over long distances are thought to be unnecessarily complex. A consistent approach and framework for dealing with key market arrangements is needed, for example, to facilitate hub to hub trading in gas or the compatibility of wholesale market rules in gas. Regulators consider that the presence of appropriate network arrangements which will facilitate cross border trading would lead to the natural emergence of liquid trading markets at a regional or European level, and help overcome the issue that many markets in Europe are very much dependent on external suppliers. Gas release programmes may alleviate the situation as well as LNG (liquid natural gas) supplies, which may have the potential to render the European gas markets more liquid.

Such improvements to the functioning of the market on a regional or European basis will require national regulators, in certain circumstances, to work together in regulating regional activity if they are to fulfil their roles in a pan European market which, by definition, spans national jurisdictions. Co-operation between national regulators will need to occur under a clear framework operating across national boundaries and against a backdrop of strong independent and transparent regulation within all Member States.

3 Views of Stakeholders

As well as the opinions of the regulators, the European Commission has received over 40 submissions from associations and companies active in the electricity and gas markets, including producers, suppliers and end users. Of course, not all of these stakeholders share the same views. Despite this, some common themes have emerged from this initial consultation.

Electricity

Established electricity companies stress that the market is developing in a positive way with strong efficiency improvements and significant benefits to customers in the form of lower prices. They note that service standards remain at high levels with strong customer satisfaction. Many companies highlight the need to make wholesale markets more liquid through promoting cross border exchanges and that a higher degree of co-operation between system operators and regulators is needed to achieve this. Finally, the existence of a regulated price structure is seen as a large obstacle to effective competition, particularly where prices are not reflective of the full inclusive costs of providing the service.

Electricity network operators underline the need for full implementation of the existing Directives and the Regulation. In their view, the arrangements for cross border electricity exchanges are not yet satisfactory or compliant with the Regulation and this is damaging market liquidity. They also note the lack of scope, in the short term, for construction of new infrastructure favouring instead that more cross border capacity should be made available through greater and more pro-active co-operation between transmission system operators with appropriate regulatory incentives. Some transmission system operators suggest that increased use of counter-trading could be a way to do this if sufficient incentives existed. Network operators also stress the need for coherence between different energy policies noting, in particular that the uneven development of wind generation is, under current procedures,

reducing availability of cross border transmission capacity. Distribution companies also point to the need for regulated network tariffs to allow sufficient funds for maintaining the performance of the network over time.

Electricity traders highlight many of the same points relating to the lack of compliance with existing legislation, especially the unbundling provisions and the requirements for congestion management. Lack of market liquidity and a high level of concentration remain a problem in the absence of a real European market being developed. They argue that more cross border capacity should be made available, on a firm basis, via the use of counter-trading. Market operators and power exchanges also shared many of these views, also arguing that the role of market operators should be recognised in legislation and that similar requirements should be imposed in different jurisdictions, for example on transparency.

Large electricity users point to the significant impact of increases in wholesale electricity prices since 2002. These are having a disproportionate effect on the very largest users. They are critical of the trading arrangements that electricity companies have put in place, in particular the tendency for most electricity to be exchanged in bilateral arrangements between generators and suppliers – often between affiliate companies. In their view, this has served to constrain liquidity of markets for standardised contracts for which determine reference wholesale market prices which, it is argued, encourages tacit or explicit collusion. Excessive concentration in electricity markets is, in any case, a key concern for large users. They report that the range of offers being received by them is inadequate with all being based on the aforementioned, possibly manipulated, reference prices with little or no effort by companies to differentiate their service or contract structure. They also argue for a more comprehensive reporting and disclosure requirements on participants in electricity markets. They further point out that the emission trading scheme has exacerbated the trend in higher prices and that those companies that were allocated certificates in national allocation plans have received an unearned windfall profit.

Smaller electricity suppliers and new entrants, argue that the level of unbundling of transmission companies is not sufficient in some cases and that the Directives should be further developed in this respect. Some new entrants see network tariffs as too high and that separation at distribution level is not sufficient. They also argue that greater co-ordination of the transmission system at European level is necessary, working towards a framework for a single European transmission operator. They particularly highlight the large variations in balancing regimes, several of which they consider to be unfair. All these problems erode the margins of possible new suppliers and discourage entry. Meanwhile, the benefits to incumbents of generation plant whose costs are already amortised provide a distortion to the market that needs to be resolved, preferably through capacity release or divestment.

Gas

From the point of view of most stakeholders submitting their views to the Commission, the lack of liquidity in terms of both commodity and capacity represents the most serious obstacles to overcome in order to arrive at a competitive, well functioning market for gas. Long-term transportation and supply contracts, albeit not questioned in principle, are identified as one of the main reason for this observation. Furthermore, an apparent lack of transparency in the market, not only, but also with respect to available capacities for both pipelines and storage, is considered another significant shortcoming. Capacity allocation mechanisms, such as first-come-first-served are often perceived as discriminating against newcomers. Gas release programmes, effective use-it-or-lose-it principles, an increased level

of transparency providing a level playing field with incumbent companies and non-discriminatory and transparent capacity allocation mechanisms have been suggested to represent possible solutions to some of the problems identified.

Apart from these fundamental concerns, stakeholders pointed to a number of further deficits restricting the development of competition on the natural gas markets. Equity shareholdings along the gas chain often allow incumbent companies to exert their influence with a view to preventing new market entrants to gain market shares. Regulated retail prices, which apply to a large proportion of customers across the European Union, often seem more attractive to customers, since they might be more stable and do not as quickly adapt to market developments as free prices do. Regulated prices are seen as entailing cross subsidies, thereby distorting competition on the free market and reducing the potential for competition. In the view of many stakeholders, they should be phased out and replaced by genuine retail competition involving the household sector.

Network users generally do not consider unbundling to be as effective as it ought to be. In particular, its implementation in practice is thought not to ensure the necessary separation of system operators from the interest of the incumbent supply companies. Stakeholders call for introducing explicit obligations to ensure functional unbundling. In the event, that such obligations would not convincingly achieve equal treatment of all network users by system operators, they would advocate ownership unbundling, in order to free system operators from a persisting conflict of interest. Furthermore many stakeholders underline the fact that problems related to unbundling, confidentiality and equal treatment are more obvious at distribution rather than transmission level.

Access to storage is said to suffer in particular from a lack of transparency. Here again, it is generally more perceived to represent a problem at the level of distribution system rather than transmission system operators. It has been highlighted that access to storage should only be negotiated if there is effective competition between storage operators; otherwise regulated access would be more appropriate.

System operators in generally consider the provisions of the gas Directive sufficient, in order to achieve a well functioning internal market for gas, provided they are properly implemented and applied. They admit, however, that not all market rules are put in place and that the market is still developing.

Harmonised balancing systems with daily balancing periods would, in the view of many stakeholders, bring about significant improvements in cross-border trade.

Common Issues

Gas and electricity distribution companies point to the need for realistic levels of network tariffs which allow for long term investment in the network, particularly maintenance and renewal of assets. They also highlight their own key role in developing smooth procedures for changing supplier but also point to the costs of implementing this requirement, which should again be reflected in the tariff structures.

In relation to both electricity and gas, representatives of small commercial companies and households agree that no significant problems in terms of quality or continuity of supply have emerged. Small businesses consider that they have not yet felt the expected benefits of opening the market to non-households. Consumer groups suggest that switching supplier is

not always a simple procedure and in some cases the complications (e.g. possible mis-selling, complicated contract structures or unclear network access rules) means that households will be reluctant to use their new rights. Measures to protect customers should not be neglected in terms of disconnection, efficient billing practices and transparency of contracts.

Finally, public sector unions consider that market opening has not lived up to expectations and, at the same time had a negative impact on employment in the sector. They also criticize the fact that emission certificates have been allocated in such a way as to enhance the profits of the main companies. Their view is that vulnerable customers are unlikely to benefit from the ability to choose supplier and indeed that any benefits will be concentrated on wealthier households. Unions doubt that a functioning market is really possible at all in the electricity and gas sector in view of the many specific technical and political characteristics of the sector. They question whether the supposed benefits outweigh the transaction costs associated with introducing competition.

4 Commission Evaluation of Implementation of the Directives

4.1 Customer Service

The organisation of the electricity and gas sectors should have, as its first consideration the objective to improve the position of customers. The opening of the market to competition must not imply any deterioration in service standards. Indeed the combination of price and quality of service should improve as a result of competition.

There exist key requirements of the Directives in this respect relating to public service obligations and consumer protection objectives. These are contained in Article 3 and Annex A of both the gas and electricity Directives and relate to the question of the service standards received from suppliers; for example, billing and payments accuracy, complaints handling and transparency, including the requirement for labelling of primary energy sources used in supplying electricity. The treatment of vulnerable customers and those on low incomes also falls into this category. The Directives require that vulnerable customers should be protected from disconnection.

In general, regarding these questions of customer service, the initial analysis of the Commission is that these requirements are being met. Surveys of user/consumer perceptions have concluded that the level of satisfaction with the electricity and gas service providers is, in general, good, even if reasons for dissatisfaction exist[7]. Fears that the introduction of competition would lead to a decline in service standards have, by and large proved unfounded. However, Member States and regulators will need to continue to address these issues of relevance for consumers and users in particular; access to service, prices, quality of service, information provision, terms and conditions of contracts and complaint handling. The Commission also intends to investigate these issues further and a study is being conducted with a view to promoting a general policy on public service obligations and customer protection in the electricity and gas sector. The results will emerge during 2006.

On the specific question of labelling of energy sources used, a requirement set out in Article 3(6) of the electricity Directive, it would appear that this requirement of the Directive has not yet been fully implemented. Some Member States have already incorporated this requirement

[7] See section 2 below

into companies' supply licence conditions. Others are still developing an appropriate methodology and there are delays as a result.

Finally, regarding vulnerable customers, one indicator of progress is the affordability of electricity and gas to low income groups. This continues to improve as confirmed by analysis in the forthcoming 2005 SGEI Report.

4.2 Customer switching

The number of customers switching supplier is a natural indicator as to the effectiveness of competition. If hardly any customers are changing their supplier, especially business customers which have a strong incentive to save money, there is likely to be a problem in the functioning of the market. This does not mean to say that every customer has to switch every year. Similarly the benefits from the possibility to renegotiate with the historical supplier should not be underestimated. However taken together with other relevant indicators, a low level of switching may well be indicative of wider regulatory and competition problems.

For electricity, the degree of customer activity in the industrial and larger commercial user sector continues to develop in most Member States. It is clear that in the majority of Member States that market opening is at least partially effective and that, at least, the potential for changing supplier exists. This is noted in Table 1, where the most improved performance of Member States is highlighted.

Table 1 Classification of Member States by degree of switching: electricity[8]

Cumulative switching since market opening	Large Industrial Users	Medium industrial/commercial	Small commercial/household
>50%	DK, FI, **IE**, SE, UK, NO, **IT**	**BE**, FI, UK, NO	NO
20-50%	AT, FR, DE, BE, **LU**, **HU**	**AT**, **IT**, **HU**	FI, UK, SE,
5-20%	ES, LT, PL, PT, CZ, SI	IE, DK, DE, **PT**, **BE**	IE, **NL**, DE, DK, **BE**
<5%	GR, EE, LV, SK	all others	all others

Source: regulators' submissions

In many cases, the smaller non-households market has only recently been opened to competition, and the household market is not required to be opened at all. It is therefore necessary to take into account the starting position of Member States in evaluating these figures. It cannot, for example, be expected that Member States which have only recently opened the market to competition, or those which have not yet allowed households to become eligible customers to have high levels of switching in the third column.

[8] The estimates may, in some case, including switching between affiliates of the same Group of companies or simply imply a change from a standard regulated contract to an individually negotiated contract.

For large users, however, the results are disappointing in certain countries, especially some EU15 countries which have had six years of experience in market opening. Indeed these have already been overtaken by new Member States in terms of a development of a competitive electricity sector. For smaller consumers, it is rather too early to evaluate performance in most instances. However, as well as those which already have mature markets identified in previous reports, progress is also being made in the medium-sized commercial market in Member States such as Austria, Belgium and Italy.

The development of an active gas market remains rather slower. The most progress in the last two years shown in Table 2 below appears to have been made in Benelux region, Denmark, Spain and Italy. However, for many others, including almost all the new Member States, opening of the gas market to competition has had little or no impact on customer behaviour even at large user level. It is clear that in some cases this may be because there are transitional issues, or that energy users are happy with their existing suppliers. In some cases, such as many of the new Member States, SME and household gas prices are rather low and the incentive to switch is reduced as a result. However, some of the other Member States in question have among the highest gas prices in the European Union.

Table 2 Classification of Member States by degree of switching: gas[9]

Cumulative switching since market opening	Large Industrial users/ power plants	Medium industrial/commercial	Small commercial/household
>50%	IE, **ES**, UK	UK, **ES**	
20-50%	**DK**, **IT**, BE	**BE**, **IE**, **DK**	UK
5-20%	**AT**, FR, HU	**AT**, **BE,** FR, HU,	**BE, NL**,
<5%	all others	all others	all others

Source: Regulators' submissions

The reasons for this slow development of an active market for electricity and gas are complex. In many cases it may be a result of market structure or network access issues discussed below. However, one issue that is worthy of discussion in this section is the effect of end-user price controls in Member States whereby an obligation is imposed on one or more suppliers to maintain a standard specified tariff at a level set by the regulator or the government. Such controls on end-user prices usually relate only to small commercial customers and households but in some case all customers have the possibility to opt for a regulated tariff.

The existence of regulated end-user prices is clearly a key determinant of customer behaviour, especially where price controls are maintained at apparently unrealistically low levels. Although the retaining of controls may be justified in a period of transition, these will increasingly cause distortions as the need for investment approaches. It is debateable whether some of the price controls currently being imposed are consistent with Article 3 of the

[9] The estimates may, in some case, including switching between affiliates of the same Group of companies

Directives where the requirement for "equality of access for EU [electricity/gas] companies to national consumers". Member States and Regulators should examine this issue closely.

There may also be administrative barriers to switching. The Directives already set out clear requirements on Member States to ensure that customers are easily able to switch supplier. (Annex A). Distribution system operators play a crucial role in ensuring smooth procedures for switching supplier since they manage the switching process and handle metering data.

4.3 Price developments and competition

Price developments

In a competitive market it is expected that prices should, over the long term, reflect the efficiently incurred costs of supplying the product, including both fixed and variable costs, and the costs of complying with environmental regulation. In general the opening of the market should deliver greater efficiency and, over the long term, prices should be lower than they otherwise would be.

The information available to the Commission suggests that, despite the recent increases, average electricity prices for all consumer groups are a few percentage points lower in real terms than in 1997 despite the obvious changes in global economic conditions and the introduction of new regulatory measures. Gas prices meanwhile are visibly higher than 1997(see Tables 3 and 4 below). Econometric analysis in a study by Copenhagen Economics, prepared for the Commission, attached to the forthcoming 2005 SGEI report also note that a direct statistical link can be established between the degree of market opening and downward pressure on electricity and gas prices.

However, prices for electricity and gas will vary over time and there has been much discussion of increases in wholesale prices since 2002 for electricity. These have been rather severe in some cases, with significant increases in some markets for a standard annual base load contract.[10] For example the typical price for 2004 base load purchase in early 2003 was around €25/MWh. The forward price for 2006 base load is currently around €40-45/MWh. Many complex factors may be influencing prices in this direction including global developments in hydrocarbon prices and anticipated costs of new investments. Higher wholesale prices have initially had a large impact on the very largest users such as metal processing, chemicals and transport industries. They are also beginning to feed through to smaller companies and households.

Another factor which has also been identified as one of the drivers of the most recent increases is the EU Emission Trading Scheme, which started operating on 1 January 2005. This mechanism was established as a cost-effective market based scheme to meet the EU greenhouse gas emission reduction targets. Around 11,500 installations all over the EU, representing about half of CO2 emissions have received allowances according to national allocation plans. These installations are required to monitor and report emissions annually and to give up a corresponding quantity of allowances, or pay a charge. Allowances can be traded so as to provide some flexibility and ensure CO2 reductions are carried out at least cost. In the short time since the scheme was launched, allowance prices have been higher than expected by some market observers. This may reflect, among other things, higher demand than

[10] i.e. a fixed amount of supply during all 8760 hours of the calendar year

expected as a result of low rainfall and availability of hydro power, especially on the Iberian peninsular. It may also reflect the late operation of emission trading registries in some Member States. The market for allowances in general is still rather immature and it is generally too early to draw conclusions about its long term impact.

Table 3 Electricity Price Summary 1997-2005 [EU 15 only] [11]

1997 = 100, constant prices	July 1997	July 2000	July 2005
average (all consumers)	100	86	90
very large[12]	100	83	96
medium industrial)[13]	100	82	95
small commercial and household[14]	100	88	88

Source: Eurostat, DTI with DG TREN analysis

Table 3 shows that the degree of increase since 2000 has been rather more pronounced for larger customers. Small commercial and household customers have not seen the same increases. Many large users suggest further increases are likely in contracts for delivery during 2006 and future years.

Table 4 Gas Price Summary 1997-2005 [EU15 only] [15]

1997 = 100	July 1997	July 2000	July 2005
average all consumers)	100	92	122
Very large industrial users[16]	100	98	135
Large industrial users[17]	100	93	137
medium industrial)[18]	100	95	140
small commercial and household[19]	100	91	115

Source: Eurostat, DTI with DG TREN analysis

Table 4 shows that gas prices have clearly increased since 1997. Much of this increase is due to the fact that wholesale gas prices are often linked to oil prices. Although this mechanism

---

11 Prices without taxes

12 "Very large" implies consumption of up to 450GWh/year (maximum load 50MW). Only data for BE, DE, FR, GR, IT, NL, PT, ES, UK is included

13 Average of 24GWh/year and 2GWh/year consumer types

14 Average of 50MWh/year, 7.5MWh/year and 3.5MWh/year consumer types

15 Prices without taxes

16 Consumption of around 100mcm/year

17 Consumption around 10mcm/year

18 Consumption 1 mcm/year

19 Average of 10,000m^3, 2,000m^3 and 400m^3 consumer types

may not have any economic justification, it is worth mentioning that there is no legal or regulatory basis for the oil-gas price link, but that it has been introduced by both importers and exporters of gas as a risk sharing principle in the take-or-pay contracts[20] and when gas was relatively new on the market and just had to gain market shares, mainly from oil or other competing energy sources. In a competitive and fully liquid market, a partial decoupling of oil and gas prices could be expected, as has been the case in the UK until 2004.

However, these average figures also disguise more extreme developments in individual Member States.[21] For electricity, the price paid in the most expensive Member States is almost twice the level of the lowest price group. For gas, the differences are less pronounced but still evident. Analysis in the 2005 SGEI report suggests that the current level of convergence of prices is slow for both electricity and gas, much slower than the experience in telecommunications.

Developments in gas and electricity prices will always be called into question to the extent that markets are still characterised by a high level of concentration and a poor level of integration between Member States, or even between regions of individual Member States. This situation has not improved significantly over time and national markets remain highly concentrated as set out in Table 5 below. Concentration in upstream markets inevitably feed through into retail markets since, even if there are numerous suppliers, these will be reliant on the main upstream players. Further vertical integration risks leading to reductions in liquidity and reinforcing the risks of concentration. In many cases the incumbent companies are the only participants with sufficient access to advantageous sources of gas and electricity, transmission capacity and customers. The Commission has launched a sector inquiry pursuant to Article 17 of Regulation 1/2003 EC to examine among other the price formation process in electricity and gas markets and the effect of high levels of concentration on this process.[22]

Table 5 Degree of concentration

	Electricity (generation)	Gas (import and production)
Very highly concentrated [HHI above 5000]	BE, FR, GR, IE, PT, EE, LV, SK, SI	all others
Highly concentrated [HHI 1800-5000]	DE, IT, ES, LT, CZ,	AT, IE, IT, ES, NL
Moderately concentrated [HHI 750-1800]	AT, NORDIC, NL, UK, PL, HU	UK,

Source: regulators' submissions, DG TREN calculations

As well as concentration at national level, there have been a number of cross border acquisitions. In other cases mergers have taken place between incumbent gas and electricity companies which may reduce the scope for competition from new electricity producers building gas fired power plants. This has the effect of leading to a reduction in the potential number of competitors in both markets. It may make it more difficult for potential entrants in the electricity sector to get access to gas for supplying a power plant.

---

20 Take-or.-pay contracts entail risk sharing with the volume risk taken by the importer and the price risk taken by the exporter or producer of gas.

21 See Graphs 4.1 to 4.3 in Section 4 and 5.1 -5.3 in section 5.

22 Cases COMP/B-1/39.172 (electricity) and 39.173 (gas)

When assessing such mergers, the Commission and national authorities have to balance the beneficial effect of mergers in terms of synergies and economies of scale against the loss in competition which is likely to result from the merger Mergers significantly impeding effective competition are prohibited, unless appropriate remedies are offered[23]

4.4 Non discriminatory network access

As well as a suitable market structure, fair and non-discriminatory access to networks is indispensable to properly functioning competition. This comprises not only the level of charges for network access but also conditions relating to the flexibility for network users to change their contracts, the nomination procedures and the level of information provided to network users.

In the absence of complete unbundling in ownership terms, the necessity for firm regulation of all these conditions was unanimously agreed by Member States in the context of the Directives, the Regulation 1228/03 on Cross Border Electricity Exchanges, and the forthcoming Regulation on Access Conditions to the Gas Transmission Networks. Perceptions are important. Companies will not enter new markets unless all avenues for possible discrimination are closed off. The legislation already sets out clearly the role of regulators in this respect. It is expected that, as regulators become more effective in their dealings with network companies, that network tariffs will move in a convergent path in the different Member States. The exceptions will be where there are good reasons for difference to persist, such as operating environment, taxation differences or accounting treatment.

Network access tariffs and conditions are already converging for electricity and considerable effort has been undertaken to develop a coherent tarification system at European level. For the gas sector there has also been some convergence, with the majority of Member States now applying entry-exit-systems for tariffs and many also for capacity. However, in contrast to the improvements already introduced for electricity including the inter TSO compensation mechanism; these systems have not been made compatible across the European market. Furthermore where several balancing zones within one transmission system exist, elements discriminating against small network users or newcomers have been retained. [24]

Similarly in relation to ancillary services provided by TSOs, in particular the settlement of imbalances, the increased involvement of regulators under the requirements of the Directives, should lead to more satisfactory and compatible methodologies for determining the conditions for settling imbalances and for gas, access to storage networks. Currently these vary considerably by Member State leading to differences in the exposure of suppliers to imbalance penalties. Balancing arrangements, for both electricity and gas, do not always facilitate smooth trading, cross-border or inter-TSO transactions. For gas, market based balancing systems only exist in very few Member States and some, but not sufficient progress has been made with respect to access conditions to storage. Since April 2005, storage operators have started to implement the Guidelines for Good Practice for Storage Operators agreed in March 2005 on the basis of an ERGEG advice submitted to the Commission. In a

---

[23] e.g. Merger cases EDP/ENI/GDP, the Commission decision to prohibit this merger was confirmed by the CFI in case T-87/05 of 21 September 2005 – EDP .v. Commission

[24] A transmission system with several balancing or tariff zones necessarily introduces distance-related elements which may disadvantage small users not benefiting from a portfolio effect as the incumbent company is likely to do.

draft report benchmarking the achievements of storage operators, the main shortcomings identified concern transparency and secondary markets.

Finally, a key issue of importance is the necessity to encourage cross border and inter TSO flows of electricity and gas. As already noted, concentration is high on an individual Member State basis and, although some projects have recently been realised, there is still limited prospect for increasing physical cross border capacity. Furthermore, until recently, arrangements to allocate capacity were largely ad-hoc and discriminatory and old contracts have tended to block capacity. Regulations 1228/03 for electricity and the forthcoming gas regulation have been designed to improve this but these have not yet been fully applied in all cases and there are still many unsatisfactory arrangements for capacity allocation, which remain[25]. The situation is, however, expected to improve, especially for the electricity sector. New guidelines on congestion management will set out strict rules to be followed in designing market based arrangements and increase the degree of co-ordination including coupling of wholesale market. Meanwhile, the recent judgement of the European Court of Justice in Case C-17/03 is likely to lead to the removal of priority access for certain old contracts.

For gas, access to the network is aggravated or not possible due to capacity allocation mechanisms that may not comply with the principles of non-discrimination and transparency, and congestion, respectively a lack of capacity stemming from long-term contracts including transit contracts. These contracts may entail contractual, but also physical congestion in the network, and in addition, may restrict newcomers from access to customers. While effective use-it-or-lose-it rules as well as efficient secondary capacity trading in some Member States successfully address the problem of contractual congestion, it persists in most other Member States, in particular where large transit flows are operated. The gas Regulation will lead to more consistency between Member States in this respect.

4.5 Unbundling

In the Directive, the requirements are legal and functional unbundling for both transmission and distribution system operators. This is expected to lead to non-discriminatory network access with tariffs which broadly reflect costs. The Directive requires the Commission to examine both whether this requirement may go beyond what is necessary, but also whether further unbundling measures are needed.

Information collected from regulators and stakeholders show that the practical implementation of legal and above all functional unbundling, in a number of Member States is far from what is required by the Directives. Although the provisions of the Directive have usually been transposed into national laws, it is not clear that network companies have yet modified all aspects of their arrangements to comply with the new laws. The requirement to have legally unbundled and independently managed transmission system operators should have been implemented by 1 July 2004. More than a year later this requirement has been fully and unambiguously implemented in 16 Member States[26] for electricity transmission but only 9 Member States for gas[27]. Likewise, distribution companies should have already been independently managed sine July 2004. Performance here is even worse; only six Member States fully comply with this requirement for electricity and just four do for gas.

---

[25] As set out further below, first-come-first-served mechanisms, pro-rata arrangements would often represent appropriate examples in this respect.

[26] Out of 26. All Member States plus Norway

[27] Out of 20 Member States where the Directive applies in full.

This lack of separation is often clear in the apparent behaviour of some TSOs which, in several cases, remain close to their former supply and trading groups and do not take a proactive approach in order to ensure non-discriminatory and transparent access conditions. TSOs may also still depend on their parent companies or affiliates with respect to issues such as network development, especially where the transmission system operator does not have effective control of the assets in the event that they remain the property of the Group rather than the TSO. In some countries, there are suspicions that incumbent suppliers may still enjoy preferential treatment and confidentiality requirements are not always properly respected with affiliate suppliers having privileged access to information. Even more serious shortcomings have been reported regarding the insufficiency of current arrangements for distribution.

These issues have led some Member States, notably the Netherlands, to propose going further in their transposition by moving to full ownership unbundling for both transmission and distribution. The argument for this is that it solves all potential problems in one single stroke. Even in these circumstances however, due attention should be given to any long term capacity rights granted to the supply arm of the previously integrated company.

4.6 Effective Regulation

The duties of regulators are clearly set out in Directives. It is the obligation of Member States to guarantee an efficient surveillance of the gas and electricity markets by regulators, including access to all necessary information and means to enforce their competences. Compliance with this obligation is tends to be the exception rather than the rule. For some issues, regulators only have monitoring powers pursuant to Article 23(1) of the Electricity Directive and Article 25(1) of the Gas Directive and the national role of Ministries and Competition Authorities can confuse objectives. Some regulators lack resources and competences. They may be too reliant on companies for information and may not have appropriate access to both technical and financial information. Regulators may also need new powers in order to operate more effectively, for example a greater scope for surveillance of wholesale markets.

Consistency between regulators is of high importance in creating a real internal market. Incompatible regimes on, for example, balancing and capacity allocation, incentives to remove congestion, and on investment will clearly frustrate objectives of a coherent European market. Regulators have made this clearing their submission on “regional markets”. It is important therefore, for national regulators to collaborate closely with each other in order to ensure proper market compatibility. This is currently done through CEER and ERGEG and through the Regulations which provide for a degree of common action at European level.

However some arguments exist for making certain issues determined by a European Regulator, or alternatively to give regulators more general powers to regulate collectively, which currently they do not have. The remit of ERGEG provides one forum for such collaboration and could be expanded to work towards greater consistency of regulator decisions. This would contribute to the “better regulation” objective of the European Commission and regulators.

4.7 Development of interconnection infrastructure

The Directives do not themselves contain comprehensive measures relating to the development of interconnection infrastructure. The regulatory framework, for example, is left open for the Member States affected to determine. However at the time of the discussions

relating to the introduction of the internal market, it was agreed that a certain minimum level of interconnection for electricity was needed and Member States agreed to encourage new investment with this objective. There is therefore an expectation that a European market needs to involve some degree of co-ordination about the construction, development an operation of the network. Table 6 below shows that the level of cross border exchanges of electricity shows only a modest increase since market opening. Similarly the extent of hub-to-hub trading for gas is very poorly developed.

Table 6 Extent of cross border electricity flows - electricity

	cross border flows - actual as % of consumption
1995	7%
2000	8%
2005	10.7%

Source: UCTE

Some Member States have made this an important political objective in their efforts to create more integrated markets, often at regional or bilateral level. Examples include the Nordic countries, the Iberian market and the all-Ireland initiatives. Lately, investments aimed at improving electricity connections between Belgium, France and the Netherlands have been advanced. However a number of key projects have not been progressed very rapidly and for which little prospect of completion is expected in the near future. This has been highlighted in previous reports on infrastructure in 2001 and 2003[28].

As well as the physical investment itself, it is also true that a lack of co-ordinated network management tends to minimise the extent to which existing capacity can be used. For electricity cross border capacity is, too often, defined too narrowly. Greater co-ordination in making such calculations would significantly increase capacity while achieving the same level of network security. Similarly the use of counter-trading internally could also make a significant contribution if TSOs were given suitable incentives.

Current gas infrastructure reflects very much the historical supply patterns. Some Member States are still not connected to the European grid (Finland, the Baltic States, Greece), a matter, which on the one hand, remains an economic issue (size of the market, expected demand) and on the other may be alleviated by the upcoming Energy Market on the Balkans, where Greece forms an integral part.

In addition, a number of new supply projects are being constructed or planned, such as

- the Medgaz pipeline from Algeria to Spain;
- the Nabucco pipeline, ultimately linking Caspian and Iranian gas resources to the European market

[28] COM (2001) 775 and COM (2003) 743

- the Baltic Sea gas pipeline from Russia to Germany

- and a number of LNG projects in the UK, Spain, Italy and France.

Interconnection among Member States is being upgraded, where appropriate (e.g. UK-Belgium Interconnector) or constructed (BBL pipeline), however some physical bottlenecks remain for the time being or will be addressed in the years to come (French transmission system).

Others have looked to create a framework under which private investors are encouraged to come forward with new projects by allowing for exemptions from the normal third party access regimes. The connection between Finland-Estonia and the BBL gas pipeline between the UK and Netherlands are being constructed on this basis. However the granting of such exemptions needs to be carefully controlled.

4.8 Security of Supply

The Directives place considerable obligations on Member States to monitor security of supply developments and to provide a stable framework for investments in the network and in new capacity. These requirements have been strengthen by the Gas Security of Supply Directive[29] and the forthcoming Directive on Electricity Security of Supply and Infrastructure which will be adopted before the end of 2005. These strong measures are required since the introduction of competition means that the issue of balancing demand and supply will be determined by behaviour of producers and customers in the market. The role of governments and regulators should be to provide a stable framework and to closely monitor the outcome and convey these results to potential investors.

In practice such information is collected by transmission system operators and this has been helpfully consolidated at European level in reports provided by both the Union for the Co-ordination of the Transmission of Electricity (UCTE) and the group of European Transmission System Operators (ETSO). These indicate that, in general, sufficient reserve capacity is available in all Member States and regions of the European Union.

Concerns about a lack of investment in generation plant have proved to be exaggerated. As prices have increased an increasing amount of new projects have been announced, given authorisation and are proceeding to the construction phase. In this context it should be remembered that since the first Directive entered into force in 1998, **any company** has the right to proceed with an investment in generation capacity. In some areas, such as the UK and Ireland, Greece, and to an extent, the Nordic countries the balance is rather tight at present. However, this should create incentives to new investment, or for companies to return to service plant that has been taken out of service.

The second key aspect of security of supply for electricity is network operation rules, which have been demonstrated to be very important in the 2003 outages, as well as the overall performance of transmission and distribution networks. In this context the multi-lateral contract between UCTE Members on the Operational Handbook including enforcement procedures is a huge step forward. Phase 1 of this far reaching agreement is already in place and the remainder should be signed by the end of the year. Certain aspects of such agreements

[29] Directive 2004/67/EC

also need the oversight of regulators and their close involvement in this procedure is also to be welcomed.

In principle, the reliability performance of transmission and distribution networks in general should not be greatly affected by the introduction of competition. Although regulation of networks is a key part of the Directives, the process of deciding how much network operators can spend on, for example, maintenance, repair and renewal in order to minimise the chance of interruption of customers, has always been a decision that would involve some kind of regulatory process. However some gas and electricity network companies have argued that regulators have been too eager to impose tariff reductions, which has consequences for the degree of investment in the network. This is a possibility against which regulators need to be vigilant. Certainly, a situation where network operators are not provided with suitable incentives to maintain network performance and the standard of service must be avoided.

Many regulators have some form of incentive structure for network companies whereby they have to make payments to customers if poor service is provided. Alternatively additional revenue may be given to those companies which provide the best service. If anything, network performance has improved since market opening. For example, in Italy the average duration of interruptions per customer per year has fallen from over 3 hours in 2000 to around 1½ hours in 2004. The need for regulatory frameworks to ensure such a service level continues is underlined by the forthcoming Directive on Security of Supply and Infrastructure.

For gas, security of supply questions largely relate to the need for investments to bring gas from external sources to the European Union. Most Member States have sufficient capacity in this regard. The clear exceptions are those Member States where gas demand is growing rapidly such as Spain and Italy, and those where domestic production is in decline such as the UK. In these cases investors have come forward, on the basis of current price signals, with projects to enhance suppliers of gas. Both new pipeline projects and terminals for LNG imports have been progressed. The recent announcement of the gas pipeline from Russia to Germany is another project of this type. Where appropriate and necessary, these projects have received the support of regulators and ultimately the Commission in the form of exemption periods from the usual rules on third party access. In granting such exemptions, the impact of new infrastructure and new supply sources on the position of established players must be carefully assessed to avoid any reinforcement of existing dominant positions. The Commission is particularly supportive of projects bringing new companies into the gas market, for example where the rights to existing routes are largely reserved on a long term basis.

Investments in the internal gas network may also be necessary in order to accommodate additional flows within safety limits relating to pressure etc. These, however, may be realised under regulated third party access and a clear framework should be in place for deciding on such investments and ensuring that transmission companies have the funds available to undertake such projects in good time. Meanwhile operational security of supply, in particular for households, is addressed by Directive 2004/67/EC, which has to be transposed by Member States not later than May 2006.

4.9 Environmental Consequences

The opening of the electricity and gas market has been undertaken at a time when the European Union is seeking to substantially reduce carbon emissions and increase the share of renewable energy. These objectives are not inconsistent and many Member States have been

able to make significant progress in these areas in the context of a competitive market. Indeed, market opening can significantly benefit the take-up of renewables by encouraging suppliers to innovate, for example by offering a "green" option or by giving price reductions to consumers which are able to moderate their demand at peak periods. The majority of recently added generation during the 2000-05 period has been renewable capacity and combined heat and power generation (CHP). The introduction of emission trading should also give strong incentives for companies to invest in low carbon electricity generation and measures to save electricity.

Differences between national schemes to encourage renewables have in some cases led to imbalances in the location of, in particular wind energy, which has led to grid management difficulties. This remains a key challenge in the context of a European market since, in some cases; the availability of cross border capacity may be affected. Other means to deal with unpredictable flows should be encouraged. A more detailed and regular exchange of information between TSOs and the introduction of more intraday trading should assist in this area.

Fiscal incentives on customers to reduce consumption are also having an impact. Clearly, if Member States choose this route to encourage energy saving, it is far healthier in economic terms that price incentives are brought about through taxation measures rather than high prices being the result of a lack of competition.

4.10 Employment and other Economic Consequences

Regarding the question of employment, it is evident that the opening of the market has been accompanied by restructuring of energy companies. The level of employment in the industry has generally reduced. Although this goes hand in hand with increased productivity and wider benefits to the overall economy, these trends raise important questions regarding the mechanisms used by companies to restructure and any changes in the quality of employment that are ongoing as well as the adequacy of qualifications of employees. The Commission intends to update the study it carried out in 2000 to examine this question in more detail. The social dimension of the implementation of the gas and electricity internal market, including the effects on employment will be examined separately and more comprehensively as a consequence of this work, and discussed with social partners.

5 Conclusions and Next Steps

This summary document sets out the main detailed results experienced to date relating to electricity and gas competition, introduced as a consequence of the Directives. It therefore provides the background for the Communication of the European Commission alongside which it has been adopted. Some action has already been taken to address some of the shortcomings highlighted in this report. New guidelines being developed under the Electricity Regulation should further improve integration of national electricity markets and result in a higher degree of competition. Likewise the entry into force of the Gas Regulation should lead to significant improvements in access conditions for gas.

Several possible initiatives are identified in the main sections below to cover the subjects in question. The majority of these can be undertaken within the existing legislative framework, wither by Member States, or by Regulators. The following key areas are highlighted:

(a) **Member States** must ensure effective implementation of the new directives both in spirit and in practice – notably the unbundling provisions. The **Commission** will take action against Member States which fail in this respect.

(b) **Member States** should ensure that Regulators can take sensible decisions in a flexible way in order to enhance competition in the market independent of the interests of industry. Regulators should have the resources, the information and the enforcement powers to fulfil these tasks. If regulators are unduly constrained in their freedom to act, the **Commission** will examine the compatibility of these arrangements with the Directives.

(c) At the same time, **Regulators** must intensify their efforts in working together to solve the key issues in integrating markets, where they already have considerable powers to ensure fair and non-discriminatory network access and balancing rules. These rules should be made compatible, either via the work of ERGEG or formally by the Commission adopting a recommendation of ERGEG for inclusion in guidelines adopted under the Regulations.

(d) **Member States** are encouraged to take measures to stimulate competition in national markets through all possible measures – i.e. divestment, capacity release, transparency and disclosure requirements.

(e) **Member States** and **Regulators** should look to enhance the degree of available interconnection between Member States through either investment or other means. Regulators already have power over methods used to calculate cross border interconnection capacity and over general tariffs. They already have powers to give TSOs incentives in this respect.

(f) **Member States** and **Regulators** should seek to give adequate protection to consumers and stimulate consumer response – by giving the necessary structures and incentives for customers to seek to change their supplier. This should include a review of the appropriateness of price controls in the context of Article 3 of the Directives.

1. LEGAL IMPLEMENTATION OF DIRECTIVES

The legal deadline for the majority of the provisions in the Directives was 1 July 2004. The Regulation on Cross Border Electricity Exchanges also entered into force on this date. However, many Member States were late in implementing the Directives and the Commission was required to take action in order to ensure full transposition. In October 2004, letters of formal notice were sent to eighteen Member States which had not yet notified the Commission of the measures taken. By March 2005, this list was reduced to ten Member States, to which a reasoned opinion was sent. The Commission has now proceeded to the Court of Justice in the case of seven Member States as set out in the Table 1.1 overleaf which gives a summary of the current state of affairs.

The role of the Commission is to also ensure that the content of national laws comply with the provisions of the Directive and are complete. Infringement actions can be taken as a result of the Commission's own assessment, or in response to a complaint. To the extent that national laws are in place and are satisfactory, any complaint against the actions of a particular company will be dealt with in national legal procedures. The same applies to any breaches of the Regulation, which has direct effect.

Considering that for many Member States the laws have only recently been implemented, it may be too early at present to determine whether there are any difficulties emerging from the way in which Directives have been transposed. However this report clearly demonstrates that there are many respects in which the Directives have not been implemented in practice and that this may stem from shortcomings in the content of national laws transposing the Directives.

Table 1.1 Legal **Implementation of Directives**

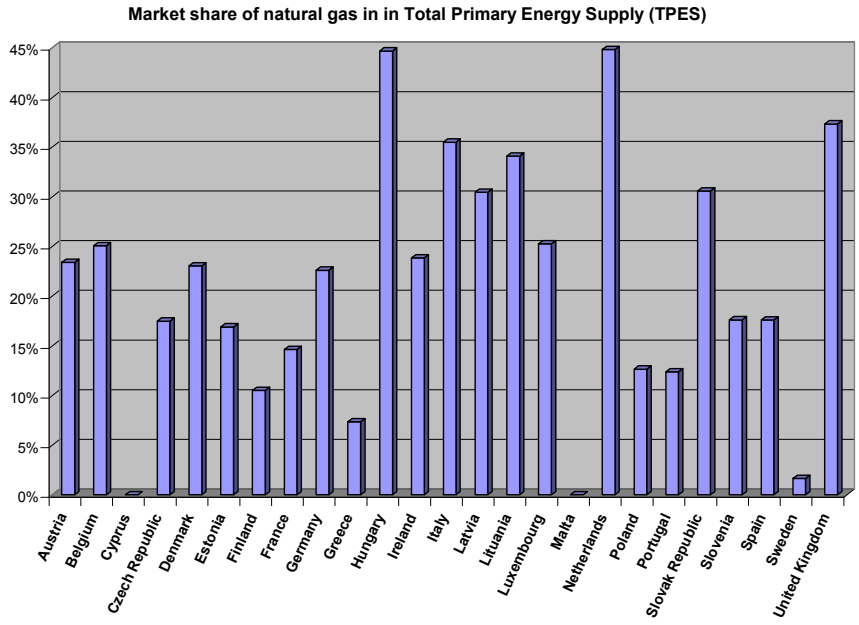
	Implementing Laws	
	Electricity	**Gas**
Austria	Elektrizitätswirtschafts und -organisationsgesetz (Electricity Law) and regional Electricity Laws („Länder"), Energie-Regulierungsbehördengesetz (Law on the energy regulator)	Gaswirtschaftsgesetz (Gas Law), Energie-Regulierungsbehördengesetz (Law on the energy regulator)
Belgium	Electricité : Loi du 29 avril 1999 relative à l'organisation du marché de l'électricité modifiée par la loi du 1 juin 2005	Gaz : loi du 12 avril 1969 relative au transport de produits gazeux et autres par canalisation modifiée par la loi du 1 juin 2005
Denmark	Elforsyningsloven	Naturgasforsyningsloven
Finland	Electricity Market Act (386/1995), Electricity Market Decree (518/1995)	Gas Market Act (508/2000), Gas Market Decree (622/2000)
France	Loi 2000-108 du 10/2/2000 (électricité), Loi 2003-8 du 3/1/2003 (gaz et électricité) Loi 2004-803 du 9/8/2004 (gaz et électricité), Loi 2005-781 du13/7/05 (Loi orientation énergie)	
Germany	Gesetz über die Energieversorgung ("Energiewirtschaftsgesetz – EnWG") - 7 July 2005	
Greece	**INFRINGEMENT**	**DEROGATION IN EFFECT**

	Implementing Laws	
	Electricity	**Gas**
Ireland	Electricity Regulation Act 1999, Statutory Instruments 511/2005, 287/ 2005, 60/2005, 632/2003, 328/2003 304/2003, 217/2002, 145/2002, 445/2000, 49/2000	**INFRINGEMENT**
Italy	DL 79/1999 is Legislative Decree n° 79 of 16 March 1999. Law 239/2004 is Law n° 239 of 23 August 2004.	DL 164/2000 is Legislative Decree n° 164 of 23 May 2000. Law 239/2004 is Law n° 239 of 23 August 2004.
Luxembourg	**INFRINGEMENT**	**INFRINGEMENT**
Netherlands	Elekticieitswet 1998 as amended	Gaswet 2001 as amended
Portugal	**INFRINGEMENT**	**DEROGATION IN EFFECT**
Spain	**INFRINGEMENT**	**INFRINGEMENT**
Sweden	Ellag (2005:404)	Naturgaslag (2004:403)
UK	Electricity Act 1989, Utilities Act 2000, Energy Act 2005, Electricity Order (NI) 1992 modified by Order 335/2005, Energy Order (NI) 2003	Gas Act 1986 (amended 1995), Petroleum Act 1998, Utilities Act 2000, Energy Act 2005, Gas Order (NI) 1996
Estonia	Elektrituruseadus	**INFRINGEMENT**
Latvia	Elektroenergijas tirgus likums	Energetikas likums
Lithuania	Electricity Law of 2002, amended in 2004	Gas law of 2001 currently being updated
Poland	Prawo energetyczne ("Energy Law") 10 April 1997, latest modification 2005 no. 62 item 552	Prawo energetyczne ("Energy Law") 10 April 1997, latest modification 2005 no. 62 item 552
Czech Rep.	Energy Act no. 458/2000, latest amendment 28 February 2005.	
Slovakia	Act 656/2004 on energy sector, Act 276/2001 on Regulation of Network Industries	
Hungary[30]	Electricity Act CX of 2001; Governmental Decrees 180/2002 (VIII.23.), 107/2004 (IV.27.);181/2002 (VIII. 23.); 183/2002 (VIII. 23.);. 56/2002 (XII. 29.); 182/2002. (VIII. 23.)	Gas – Act XLII of 2003 on natural gas supply; Government decrees 111/2003 (VII.29); 112/2003. (29.07.) 219/2003. (11.12.); 81/2003. (10. 12)
Slovenia	"Energy Act" as modified 23-4-2004	
Cyprus	Legal texts in place Law 122/03, and 2398/04	**DIRECTIVE NOT APPLICABLE**
Malta	Electricity - L.N. 164 of 2003; L.N. 511/2004	**DIRECTIVE NOT APPLICABLE**

Electricity has reached a market penetration of 100% in almost all Member States and represents a good that cannot be substituted. Contrary to that, natural gas is one of several primary energy sources with different market shares in Member States.

[30] The old Gas and Electricity Acts have been substantially modified by a law approved in July 2005 – The Government is preparing a Decree for its enforcement

Table 1.2 Market share of natural gas in total Primary Energy Supply of Member States



This fact is reflected in the Gas Directive by a number of derogations laid down in Article 28. These derogations are justified by certain specific features of natural gas markets, such as the need for large upfront investments, before natural gas can be supplied the first time ("emergent markets", Greece, Portugal) or because of a missing interconnection with another Member State ("isolated markets", Finland). In addition, two new Member States, Cyprus and Malta have not (yet) a natural gas market. For these reasons, the following tables on natural gas issues do not always list all Member States.

2. ISSUES RELATING TO SERVICE PROVIDED TO CUSTOMERS

2.1 Background

Directives 2003/55/EC and 2003/54/EC establish that by July 2004, at the latest, all non household gas and electricity customers be declared "eligible" and thus free to choose their supplier, and that, as of 1 July 2007, all customers must be in a condition to freely choose their supplier. The directives have assigned great importance to protecting consumers (in Art. 3 and Annex A). In particular, the Directives require that appropriate measures be introduced for the protection of vulnerable customers, including measures to avoid disconnections from electricity and gas supply and that, in this context, a supplier of last resort may be substituted.

Furthermore, the Directives state that the most important aspect of protecting customers is the transparency of general contract conditions, sufficient information to make it possible for consumers to understand and compare commercial offers, and the existence of mechanisms to resolve conflicts out of court. These measures are highly important, as they concern customer choice of suppliers, such as, for example, the small and average-sized businesses and end consumers as well as households in countries where the market is already open.

The Commission has, as part of the forthcoming 2005 SGEI report, carried out a number of investigations into the affordability of these services and surveys relating to customer satisfaction. Some of the results of the evaluation for the electricity and gas sectors are summarised in this section.

2.1 Current situation

2.1.1. Vulnerable Customers:

The problem of disconnecting electrical service can affect all electricity consumers. Specific legislation is very different from one Member Country to the next. The solutions introduced for avoiding disconnection from service are varied: a series of calls made to the customer; a time limit for paying bills; or a warning notice that service will be discontinued. It is necessary to emphasise the differences among customers who cannot pay, meaning between vulnerable customers who are not in a condition to pay and those who simply do not want to pay or who have forgotten to pay. It is true that as yet a definition of vulnerable clients has not been formulated in Europe. However, for example, in Holland and Belgium, legislation provides for this differentiation by offering greater protection to customers who are unable to pay by making it a condition that social services must be contacted before service is interrupted. Rights of vulnerable customers should not differ too much among Member States.

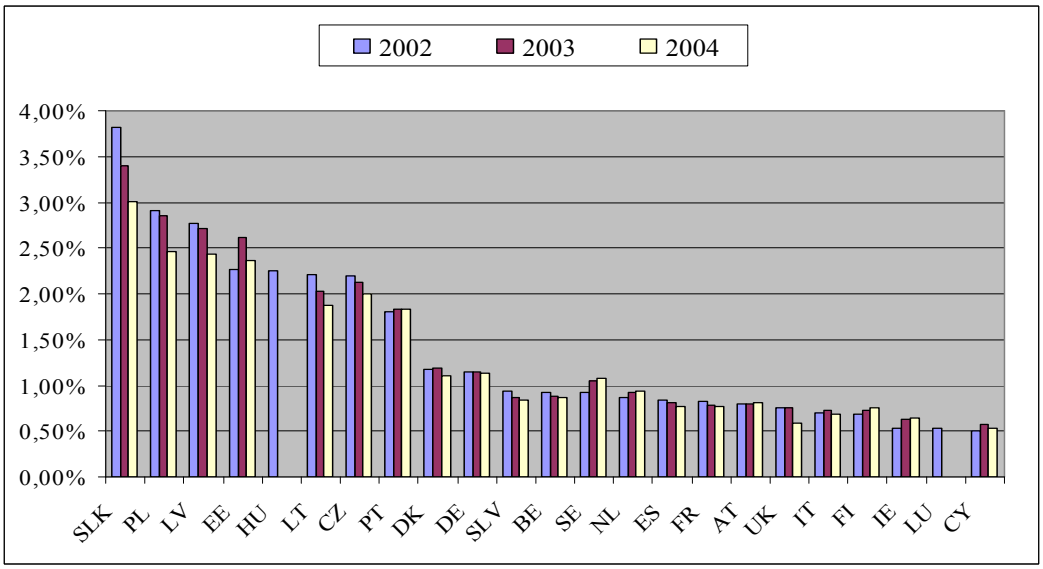
2.1.2. Social tariffs

As regards the existence of social tariffs for customers having difficulties to pay for electricity, there is no specific legislation in the UK, Germany or The Netherlands, while there is in countries such as Belgium, Spain, Italy and France. Finland has a last resort of economic assistance. Regarding payments methods accessible to vulnerable customers the pre-payment meters tend to be the most expensive ones.

Graph 2.1 clearly shows that electricity is generally less affordable in the new Member States. Seven of them are the EU countries where a higher share of household income is needed to

buy electricity with Slovakia (3.82%) at the top of that list. The exceptions are Slovenia - where electricity is relatively more affordable than in Portugal, Denmark and Germany- and Cyprus where citizens enjoy the most affordable electricity service among the EU25.

Graph 2.1 : Percentage of income spent on electricity by low income consumers



Source: European Commission with Eurostat data. No data available for Greece; for Hungary, Malta and Luxemburg income data is available only for 2002; incomplete data sets for electricity consumption for Latvia, Lithuania and Slovakia.

When analysing the 2002-2004 trend, it can be noticed that, on average, the indices for old Member States are changing very little (either upwards or downwards), while for the new Member States there is a clear trend for improving affordability (the affordability improved most dramatically in Slovakia – over 20%).

The analysis of affordability of gas services by Member States shows similar trends as in the case of electricity. The majority of new Member States have worse indices. Estonia has the worst affordability index for gas, followed closely by Lithuania and Slovakia. However for these three countries, we can observe a dramatic improvement in affordability over time– between 15% and 20% from 2002 to 2004.

2.1.3. Relations between customers and suppliers and dispute settlement

Directives 2003/55/EC and 2003/54/EC determine that a wide choice of payment methods should be offered to customers. Any difference in terms and conditions shall reflect the costs to the supplier of the different payment systems. However, some concerns may give rise to unfair costs to customers of different charges of different paying methods.

Billing seems to be a standard across Member States. Obstacles incur on estimate bills, timing and unsuccessful record for customer's read of their own meter. Consumers should receive clear, stated and comprehensible information on each element of their bill.

It is of fundamental importance that consumers have access to complaint processes that are simple and inexpensive. In many Member Countries, the regulator's role is a fundamental one, such as in Hungary and Italy, Ireland, Latvia, Greece (for electricity). In the UK,

suppliers are required to provide their customers with all the necessary information for making a claim.

2.1.4. Consumer satisfaction

Data on customer satisfaction is also included in the forthcoming 2005 SGEI report. European consumers overall find the quality of electrical service high, particularly in Belgium, Denmark, Spain and Greece. General satisfaction with electricity supply is around 74% while dissatisfaction is at 21%. However, there is a surprising difference between new Member States, (97%), and EU-15 where only 88% of consumers say they have an easy access to electricity. This figure even falls to 78% in Italy.[31]

Access to the electrical network is considered fine by most users. Most electricity consumers consider customer service from their present supplier to be good, particularly in Latvia, Cyprus and Lithuania. The countries with the highest percentage levels of dissatisfaction with the customer service are Sweden, The Netherlands, Greece and Malta.

Significant percentages of consumers are not satisfied with the value for money for electricity supply, 36% of EU-15 consumers are dissatisfied and 49% are dissatisfied in the new Member States. Figures for satisfaction are respectively of 59% and 44%.

The ways in which consumer complaints are handled is considered appropriate only by 57% of European consumers, 41% say that their complaint was handled badly. It must be noted, however, that a rather small percentage of electricity consumers file complaints, only 4% of electricity consumers have filed complaints between November 2003 and November 2004.

Most electricity consumers consider the information they receive from their supplier to be convenient, and only a small percentage considers it unsatisfactory. Information is considered insufficient (by a small percentage of consumers) in Greece and Sweden.

2.1.5. Labelling

Regarding the question of labelling, Table 2.1 below sets out the current status of implementation of Article 3(6) of the Directive. This shows that the requirement has, as yet only been partially transposed and is not operational in many Member States.

[31] Eurobarometer – Services of General Economic Interest in the EU 25 (fieldwork November 2004, DG Health and Consumer Protection)

Table 2.1 Status of implementation of the labelling provisions

	Summary of progress on labelling
Austria	Implemented in July 2002 Eco-electricity Act
Belgium	FL: Implemented in regional government decisions in March 2002, modified Sept 2003, January 2004 WA: Not yet implemented, BRU: Not yet implemented
Denmark	Implemented in Law 494, June 2004
Finland	Regulation entered into force 1 July 2005
France	Implemented by Ministerial decree, 30 April 2004
Germany	Labelling included in new energy law of July 2005
Greece	No information available
Ireland	Implemented by statutory instrument number, date.
Italy	Not yet implemented
Luxembourg	Not yet implemented
Netherlands	Article 95 of Dutch energy law, 20 July 2004
Portugal	Not yet implemented.
Spain	Not yet implemented.
Sweden	Ministerial Ordinance Sept 2005
UK	Implemented in Statutory Instrument no. 391 in force since 19 March 2005
Norway	no information
Estonia	Not yet implemented.
Latvia	Not yet implemented
Lithuania	Not yet implemented
Poland	Not yet implemented.
Czech R	Implemented in Energy Act, March 2005
Slovakia	Dealt with in main energy law.
Hungary	New legislation in preparation, not yet enforced.
Slovenia	Implemented in law of 11 April 2005
Cyprus	Not yet implemented
Malta	Dealt with in law no 511 of 2004

source: Draft study "A European Tracking System for Electricity (E-TRACK)" ECN Consulting

2.2. Views of stakeholders

Small and medium-sized businesses note that they are looking toward a liberalized market giving the opportunity to unite and buy bigger volumes of electrical energy, thus obtaining more advantageous tariffs (as promoted in Art. 3.3 of Directive 2003/54/EC). They expect that new commercial offers may be differentiated not only by the tariff applied but also by the transparency of possible tariff increases, by consumption standards and by the contract period. Consequently, proper and clear information provided to consumers who are already free to choose their supplier is needed to truly allow them to compare the various advantages and encourages them to switch suppliers. Household consumer groups echo the need for transparent contract structures. Meanwhile union groups question whether the benefits arising from competition exceed the costs of the systems required to enable switching to take place, above all for the household sector.

2.3. Assessment

Part of the success of opening the market depends on full application of consumer protection provisions established by Directives 2003/55/EC and 2003/54/EC and applied by Member States. Furthermore, the clarity, detail and facility of understanding suppliers' commercial offers should grow in a general climate of trust regarding legally acquired rights and encouraging them to switch suppliers.

The Commission intends to investigate all obligations on suppliers relating to public service and attain a complete overview, which will make it possible to understand the new rules (contractual, operational and commercial) that have already been established or are yet to be established by Member States. With this in mind, the Commission is conducting a study meant to create a general policy on public service obligations and consumer protection in the electricity and gas sector.

The conclusions of the study will be available in the first half of 2006. Subsequent policy formulation will have to address the possible support of public service obligations to strengthen a diversified electricity production at local or regional level, how to improve transparency in energy services and how to award energy service concessions in an efficient manner in the frame of unbundling. In general it needs to be assessed how to translate the freedom of choice of local and regional authorities in the provision of electricity and gas services.

3. EXTENT OF CUSTOMER ACTIVITY

3.1. Background

This section reports on the extent of customer activity in the electricity and gas markets. It draws on information submitted by regulators. The degree of customers switching is an important indicator of the development of energy markets. This does not mean to say that customers have to be switching supplier constantly. It is also the case that market opening has allowed for many customers to renegotiate tariffs with their original supplier and thereby benefit without necessarily switching supplier.

However, the market for large users has now been open for almost seven years for electricity and for five years for gas. Commercial customers might be expected to test the market on a regular basis. A low level of cumulative switching in that time, for example less than 50%, might be indicative of deeper problems in the functioning of the market, related for example, to network access conditions.

For smaller commercial customers and households, market opening is rather recent or even non-existent for household in some Member States since the deadline for full market opening is July 2007. In any case, these customers may be less inclined to change as regularly, particularly where electricity or gas is not a large part of annual expenditure. However a situation where zero or very few customers are changing supplier is likely to be indicative of the existence of obstacles to the competitive process.

The data provided by regulators gives a good picture of the degree of development in this area. However, in view of the importance of customer activity as an indicator, the Commission has engaged a consultant to investigate more deeply the behaviour of companies in this regard and confirm the results. This study will be available in early 2006 and allow for the information in this report to be confirmed and updated where necessary.

3.2. Current Situation: Electricity

To date, the key trends that can be perceived from the reports received by the Commission are as follows as indicated in the Table 3.1 below.

Table 3.1 show that, in many respects, the extent of customer activity for large electricity users is becoming rather mature in many Member States. This includes some of the new member States such as Hungary where progress appears to have been rather rapid in recent years.

Table 3.1 Volume of electricity consumption having switched by group – cumulative since market opening

	large and very large industrial	small-medium industrial and business	very small business and household
Austria	29%	29%	4%
Belgium	c. 20%	10%	
Denmark	>50%	c. 15%	
Finland	>50%	82%	30%
France	15%		0%
Germany	41%	7%	5%
Greece	2%	0%	0%
Ireland	56%	15%	9%
Italy	60%		-
Luxembourg	25%	3%	0%
Netherlands	-	-	11%
Portugal	16%		
Spain	25%	22%	19%
Sweden	>50%	-	29%
UK	>50%	>50%	48%
Norway	>50%	>50%	44%
Estonia	0%	0%	0%
Latvia	0%	0%	0%
Lithuania	15%	0%	0%
Poland	19%	0%	0%
Czech Rep.	5%	1%	0%
Slovakia	-	0%	0%
Hungary	32%		0%
Slovenia	8%	2%	0%
Cyprus	0%	0%	0%
Malta	0%	0%	0%

source: Regulators data

Notes:

1. The data for Belgium refer to the Flemish region only (customers leaving regulated tariff: 40% industrial, 53% small commerical/household)
2. Ireland, includes switching to ESB (Independent)
3. Italy, Spain includes all customers having left regulated tariffs (i.e. incl. renegotiation)

A number of the Member States where customer switching levels have been very low have failed to implement the Directive such as Greece. Performance is also somewhat disappointing in many others with problems related to network access or a concentrated market structure the most likely cause. In general, experience shows that a high level of customer activity is encouraged where non discriminatory network access is assured and there are enough independent competitors in the market to give a degree of real choice.

3.3. Current Situation: Gas

To date, the key trends that can be perceived from the reports received by the Commission are as follows as indicated in the Table 3.2 below.

Table 3.2 Summary of customer switching: volume of gas consumption having switched by group – cumulative since market opening

	power plants	large and very large industrial	small-medium industrial and busines	very small business and household
Austria	6%			4%
Belgium	25%		9%	
Denmark	30%			<2%
France	14%			0%
Germany	-	-	-	-
Ireland	100%		49%	0%
Italy	23%		3%	1%
Luxembourg	-	2%	0%	0%
Netherlands	-	-	-	5%
Spain	60%			2%
Sweden	-	-	-	-
UK	>90%	>85%	>75%	47%
Estonia	0%	0%	0%	0%
Latvia	0%	0%	0%	0%
Lithuania	0%	0%	0%	0%
Poland	0%	0%	0%	0%
Czech Rep.	0%	0%	0%	0%
Slovakia	0%	0%	0%	0%
Hungary	6%			
Slovenia	0%	0%	0%	0%

source: Regulators data

Notes:

1. The data for Belgium refer to the Flemish region only (customers leaving regulated tariff: 90%, industrial, 40% small commerical/household)
2. Spain, all customers having left regulated tariffs (i.e. incl. renegotiation)

The data collected again shows a mixed picture. For some Member States, the extent of customer activity is becoming relatively mature, especially those where there are a number of competitors with access to gas in that particular region. Other Member States' markets have not developed, particularly in the new Member States. There are diverse reasons for this lack of progress. However, unfair network access arrangements, the lack of opportunities available for real competition and the maintenance of price controls all play their part, as for electricity.

For smaller customers, there appears to be a reluctance to switch supplier in some cases, although this may develop further as the market matures. As discussed, the existence of unrealistic controls on end user prices may be a constraint on competition for this group of customers. This is set out in Table 3.3 below.

Table 3.3 Existence of price controls

	ELECTRICITY			GAS		
	Regulated tariffs - industrial users	Regulated tariffs - small commercial users	Regulated tariffs - households	Regulated tariffs - industrial users	Regulated tariffs - small commercial users	Regulated tariffs - households
Austria	N	N	N	N	N	N
Belgium	N	N	Y	N	N	Y
Denmark	Y	Y	Y	Y	Y	Y
Finland	N	N	Y *			
France	N*	Y	Y	N	Y	Y
Germany	N	Y	Y	N	N	N
Greece	Y	Y	Y			
Ireland	Y	Y	Y	Y	Y	Y
Italy	Y	Y	Y	N	N	Y
Luxembourg	N	N	Y	N	N	N
Netherlands	N	N	N	N	N	N
Portugal	Y	Y	Y			
Spain	Y	Y	Y	Y	Y	Y
Sweden	N	N	N	N	N	N
UK	N	N	N	N	N	N
Norway	N	N	N			
Estonia	Y	Y	Y	N	N	Y
Latvia	Y	Y	Y	Y	Y	Y
Lithuania	Y	Y	Y	N	Y	Y
Poland	Y	Y	Y	Y	Y	Y
Czech Rep.	N	N	Y	N	Y	Y
Slovakia	N	N	Y	N	N	Y
Hungary	Y	Y	Y	Y	Y	Y
Slovenia	N	N	Y	N	Y	Y
Cyprus	Y	Y	Y			
Malta	Y	Y	Y			

source: Regulators data
Notes:
1. Finland: Y* mean ex-post controls exist
2. Germany: ex-ante approval of dmoesic and SME end-user tariffs by the Lander will remain in force until 1 July 2007.

source: Regulators' submissions

This table shows that many Member States persist in maintaining the co-existence of a regulated end user price for electricity and gas, even for large industrial users.

3.4. Views of Regulators

Regulators noted that although switching rates seem broadly encouraging (30-50% in volume terms for several countries), an in-depth analysis indicates that there is a significant difference between large and small customer markets with small business customers and households rather reluctant to use their eligibility. This appears to be true, even in those Member States with relatively easy switching procedures. It appears that a long period of experience with market opening is necessary for an active market in, for example, households, to develop.

Regulators consider that some elements of suppliers' behaviour (*inter alia* multi-utility rebates, fidelity rebates, information policy,…) was found to be also contributing to entry barriers, cementing the dominant market power of incumbents in many retail markets. In addition they felt that insufficient unbundling at the distribution level with the possibility of cross subsidies between the network tariffs and retail electricity prices create additional entry barriers for new entrants.

Regulators also draw attention to the fact that many countries plan to continue with regulated electricity tariffs in a transition phase and even as a long term hybrid model. It is thought that these are likely to impede development of retail competition further since in many cases these tariffs undercut realistically priced retailers, thereby strangling retail competition. Regulators

are of the view that this would not lead to strengthening of consumer confidence as it clearly might lead to the misleading conclusion that consumers are better off in a regulated non-market system. Such controls might also generate security of supply problems.

3.5. Views of Stakeholders

The views expressed by stakeholders on the subject of switching covered a variety of topics. The established energy companies emphasised their efforts to date to ensure a smooth switching procedure although they also noted the costs of implementing the necessary systems. At the same time many suggested that customers had achieved benefits even without switching since their prices had been reduced through the threat of competition. They also argued that many customers had been able to negotiate a better deal without needing to switch. Several companies highlighted the negative effect of end-user controls on an active consumer market and argued that these should be progressively removed, or at least modified to more realistic levels.

However smaller suppliers and new entrants are of the view that a low level of switching is symptomatic of the wider problems in electricity and gas markets. They suggest that real competition is, in fact being constrained by a range of obstacles meaning that established companies are in a strongly advantageous position in their particular region which, in fact, makes it impossible for either new entrants or even incumbents from other areas or Member States from successfully competing. The balancing arrangements, in particular, are cited by some suppliers as a key obstacle in this regard. Some companies also argue that possibility to negotiate charges actually allows incumbents to segment the market between active and passive customers. The lack of unbundling between distribution and supply companies is also highlighted as a problem. Finally, the large differences between the performance of the gas sector compared to electricity in some Member States is thought to reflect the fundamental network access problems and the lack of possibilities to move gas flexibly around the European networks.

Some argue that the potential for competition is also restricted by the de minimis rule of 100,000 customers for legal and functional unbundling. They would consider a threshold of 20,000 customers would promote more competition, while others advocate maintaining the current de minimis rule on the grounds of the specific character of distribution.

Consumer groups, especially those of large users, go further. They note that that even where switching opportunities are available the savings are limited since the offers made by different competing companies are negligible. This, it is argued, is a result of the concentrated market structure in which only a limited amount of companies are competing.

3.6. Assessment

In the view of the Commission, a low level of customer switching in combination with a concentrated market structure is usually indicative of a poorly functioning market. It is generally easy to predict that those Member States which have failed to implement the Directive, or which have long standing obstacles to competition such as insufficient network access or a poor market structure, will generally perform poorly regarding this indicator.

The existence of regulated end-user prices is clearly a key determinant of customer behaviour, especially where price controls are maintained at apparently unrealistically low levels. Although the retaining of controls may be justified in a period of transition, these will

increasingly cause distortions as the need for investment approaches. It is debateable whether some of the price controls currently being imposed are consistent with Article 3(2) of the Directives where the requirement for "equality of access for EU [electricity/gas] companies to national consumers. Member States and Regulators should examine this issue closely.

Regarding the process of customer switching, it is clear that adequate unbundling of distribution system operators is required to ensure a smooth procedure. Unless distributors are effectively separated from any supply operations there is a risk that privileged information could be passed to the affiliated supply company. This is discussed in more detail in the unbundling section below. It is usually apparent that the best performing Member States regarding customer switching have already implemented the requirement for legal unbundling.

4. PRICE DEVELOPMENTS AND COMPETITION ISSUES - ELECTRICITY

4.1. Background

In a competitive market it is expected that prices will, over the long term, reflect the efficiently incurred costs of supplying the product, including both fixed and variable costs. In general the opening of the market should deliver greater efficiency and, over the long term, prices should be lower than they otherwise would be. However the current organisation of the electricity and gas sector may mean that this objective is not delivered in practice. The energy sector, in particular, is capital intensive and has a rather high level of concentration. It shares some characteristics with other sectors where an active competition policy has been needed in the past; for example chemicals or cement.

Added to this, the nature of the electricity market, with inelastic demand and supply and large variations on demand on an hour by hour basis, mean that the market is particularly prone to possible manipulation. For example, at certain times of day, it is often the case that the behaviour of a single plant may determine the wholesale price or balancing price. Without proper market surveillance the incumbent companies in concentrated markets may not be subject to the competitive discipline that would normally be expected and the incentives to more efficient operation will be curtailed.

There is also a dynamic aspect to competition. In this context it needs to be remembered that previous Directives have already significantly improved the contestability of the market, by ensuring that new generation investments can be realised by any company wishing to enter the market. Therefore, even where competitive pressures might appear to be constrained in the short term, it is expected that if prices are maintained above the cost of efficient operation for a long period this will bring new investors into the market.

4.2. Current Situation

4.2.1. Market structure: Production of electricity

As noted in previous benchmarking reports, the electricity generation sector is characterised by a high level of concentration. This is summarised in Table 4.1 below which sets out the degree of concentration estimated for electricity generation markets at national, regional and European level.

It must be underlined that the **national** market remains the most relevant for considering the degree of concentration. This is because only limited efforts have been made to integrate national markets by, for example, making more interconnection capacity available between Member States. Greater integration could be achieved in some regions as, indeed, is already the case in the Nordic countries. This serves to significantly reduce problems associated with concentration. Market integration would not necessarily imply investment in new infrastructure. The application of new methods of calculating available transport capacity, for example, has a great deal of potential provided that transmission system operators have the correct incentive structure for this.

There have been only limited changes in market structure in generation in the last five years. The Member State making the most progress in this regard is Italy which has followed a

deliberate active policy in this respect. In this case the share of Enel, the largest producer and former incumbent, has been reduced from over 50% to 39% of installed capacity.

Neither have there been many new entrants to the electricity market. In most cases competition has come from the existing national companies gradually entering other Member States through large acquisitions. Although this is often a helpful development, it should also be possible for companies to grow organically through direct investment in new plant and in signing up customers directly.

Table 4.1 Wholesale Market Position – end 2004

	Number of companies with 5% share of production capacity	Share of largest 3 producers	Liquidity multiple spot trading/ total consumption	Liquidity mulitple term trading/ total consumption
Austria	5	54%	3%	-
Belgium	2	95%	-	-
Denmark	10	40%	42%	450%
Finland	10	40%	42%	450%
France	1	96%	3%	-
Germany	5	72%	11%	64%
Greece	1	97%	-	-
Ireland	2	93%	-	-
Italy	5	65%	21%	-
Luxembourg	1	88%	4%	43%
Netherlands	4	69%	12%	37%
Portugal	3	76%	-	16%
Spain	3	69%	92%	-
Sweden	10	40%	42%	450%
UK	8	39%	6%	210%
Norway	10	40%	42%	450%
Estonia	1	95%	-	-
Latvia	1	95%	-	-
Lithuania	3	92%	-	-
Poland	7	45%	1%	44%
Czech Rep.	1	76%	1%	206%
Slovakia	1	86%	-	-
Hungary	7	66%	-	-
Slovenia	3	87%	2%	-

source: Regulators data
Notes:
1. Data for Sweden, Norway, Denmark, Finland relate to entire Nordic market

Such a process is made easier if there exists a liquid wholesale market for electricity since a new supplier will inevitably have to source part of its needs from other producers for a period. Likewise a new generation investment will not always have an exact match with its customers and may need to sell part of its production on the open market.

Since market opening, wholesale commodity-type markets for electricity have been developing, either spontaneously, or sponsored in some form in the regulatory framework. Electricity can be bought and sold in such markets by the main generators, suppliers and large

consumers. However, liquidity is often low and this can put smaller companies at a significant disadvantage since prices may be volatile. The information in Table 4.1 suggests only the UK and the Nordic market has a sufficient degree of liquidity in this respect. However, in the UK, the multiple term liquidity has recently been declining.

4.2.2. Market structure: retail supply

Previous reports have also noted the feed through between conditions in the electricity generation market, and that for the supply of electricity to final customers. Although some Member States are characterised by a very large number of supply companies, often affiliated to with existing distribution companies, it is often the case that these suppliers in turn have a close relationship with particular generation companies. Generally speaking, the conditions on the wholesale market are usually more indicative of the real degree of competition.

Table 4.2 shows, in fact that in terms of market share, and the number of major players, there is a close correspondence between the generation and the retail market. The data also shows that there are, however, new independent entrants which are active in almost all Member States which is relatively encouraging.

Table 4.2 Retail Market position – end 2004

	Companies with market share over 5%	Number of fully indepdent suppliers (no network affiliates)	Market share of largest 3 companies large industrial users	Market share of largest 3 companies small/medium businesses	Market share of largest 3 companies very small commercial/household
Austria	5	4	60%		
Belgium	3 / 2	14 / 6	100% / 92%	100% / 99%	94% / 100%
Denmark	-	3	-	-	-
Finland	5	< 5	-	35-40 %	
France	1	5	91%	97%	96%
Germany	4	13	-	-	-
Greece	1	10	97%	97%	100%
Ireland	3	7	99%	99%	99%
Italy	6	119	33%	12%	93%
Luxembourg	4	4	94%		95%
Netherlands	3	18	-	-	83%
Portugal	2	4	98%		
Spain	5	11	82%	86%	85%
Sweden	3	-	50%		
UK	6	3	65%	66%	59%
Norway	4	5	95%	33%	31%
Estonia	1	0	95%	95%	95%
Latvia	1	0			
Lithuania	3	5	100%	100%	100%
Poland	6	20	50%	48%	47%
Czech Rep.	3	0	95%		
Slovakia	1	1	86%	100%	100%
Hungary	7	0	7%	43%	51%
Slovenia	6	6	67%	75%	77%
Cyprus	1	0	100%	100%	100%
Malta	1	0	100%	100%	100%

source: Regulators data
Notes:
1. Belgium data Flanders\Wallonia. No data for Brussels region
2. Norway data from 2003
3. Germany: source for "fully indepdendent suppliers" from the new entrant goup "BNE".

In theory there should be room for companies to participate in the market as pure suppliers, simply purchasing from wholesale markets and selling the product to customers. In practice,

however, a supplier with little or no generation plant of its own is a price taker in the wholesale market and may find it difficult to maintain an independent pricing policy for final customers since it is reliant on the price it can negotiate with the main producers for part, or all of the electricity supplied.

In practice there are a range of different experiences in Member States in this respect. For example, in more mature electricity markets such as the United Kingdom, where most restrictions on the wholesale market have been lifted, the supply market has consolidated to closely match the structure of the generation market. The degree of competition is seen as acceptable even though the existence of fully independent suppliers has become limited to six main companies.

Similarly in Member States with a large number of municipal suppliers, such as Germany or Spain, many of these are linked through ownership or contractual arrangements with one of the largest producers in the market. There are, however, efforts from some municipal suppliers to increase their degree of independence by consolidation and through investment in their own power generation capabilities. New Member States such as the Czech Republic and Slovenia also have a system where the main suppliers are rather dependent on a single producer. Whereas in Poland and Hungary, the existence of long term power purchase agreements between generators and a single power procurement business tends towards a similar result.

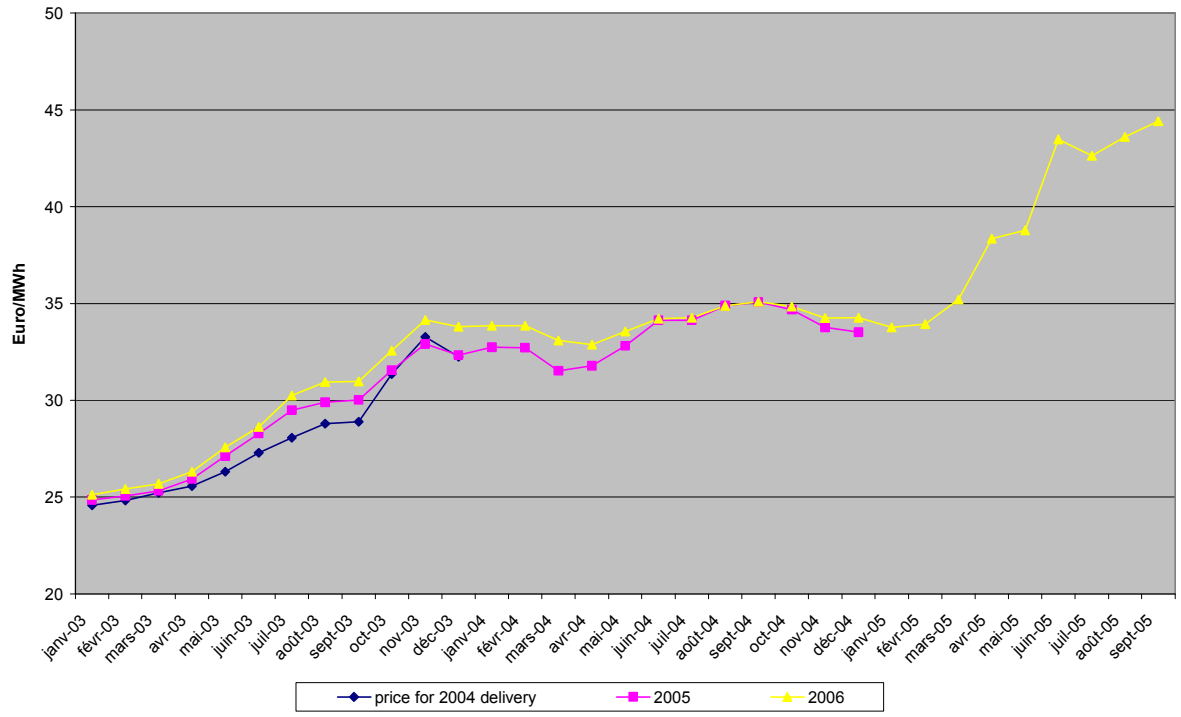
A third group of markets remain very concentrated at both generation and supply level as a result of the historical development of the electricity sector such as France, Ireland, Greece and Portugal. This also applies to the Baltic countries and Slovakia.

4.2.3. Wholesale Electricity Prices

Recent increases in wholesale prices have been rather severe, with a rise of 50-75% in some markets for a standard annual base load contract. Chart 4.1 shows the development of forward electricity prices in the important EEX market[32]. Similarly developments have been seen in other continental electricity wholesale markets. The reasons are complex. Underlying factors such as primary energy prices and the expected supply demand position are clearly important in some cases.

[32] European Electricity Exchange located in Leipzig, Germany

Chart 4.1 Prices for calendar year base-load contracts 2004-2006 (EEX Leipzig)

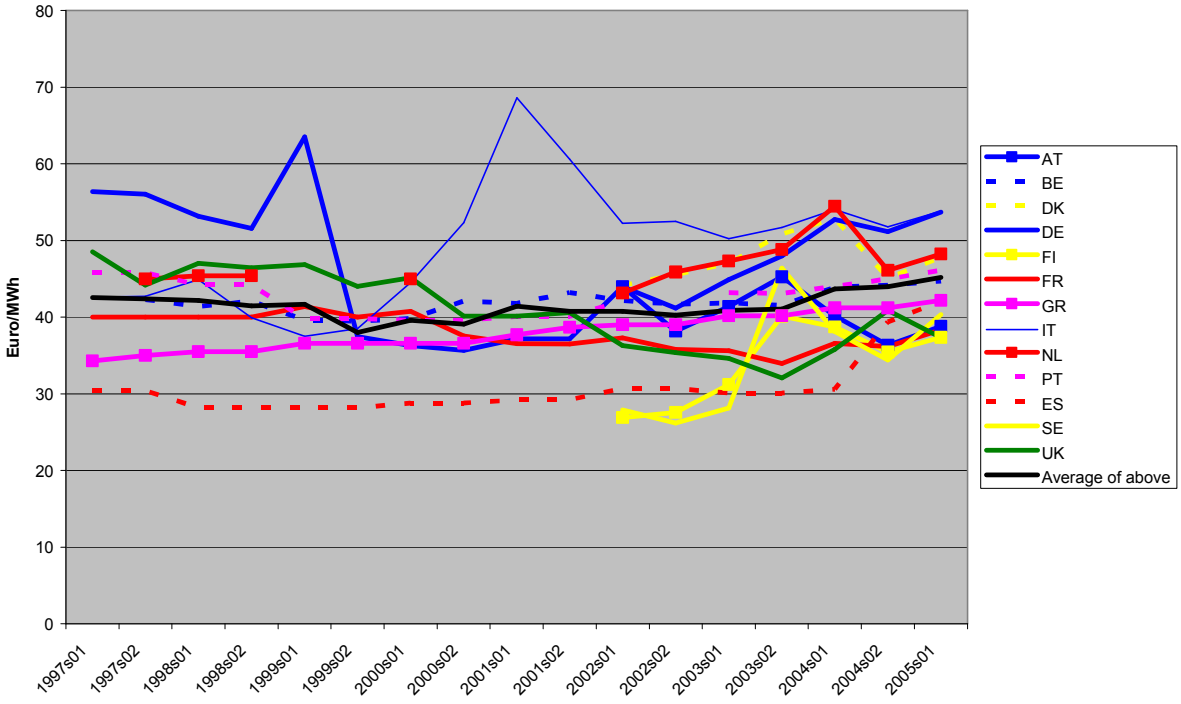


Although wholesale prices are increasing, it is important to remember that, as discussed above in Table 4.1, only a small part of electricity is actually traded in organised wholesale markets. Most electricity at wholesale level is still bought and sold in longer term fixed price contracts between generators and suppliers – often within the same group. Wholesale market price variations may, therefore, not be reflected in prices to final users since this will depend on the overall strategy of the company concerned. There may also be different contract structures prevailing whereby consumers can protect themselves against volatile prices. Finally, some very large consumers of electricity may have their own production facilities.

4.2.4. Retail Prices

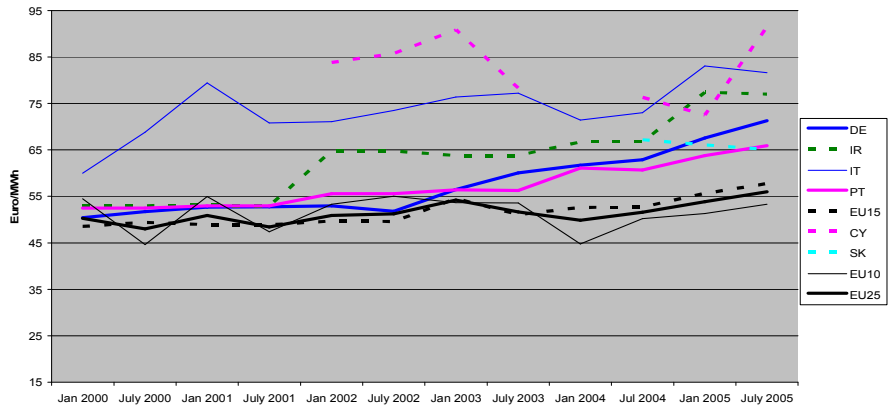
However, at least part of the recent increases has fed through into retail prices, which are clearly higher than in 2001. Experience varies by Member State. The graphs set out below show price developments in individual Member States for, firstly, very large users, and then two categories of other non-household users are shown. Member States have been split into "high", "medium and "low" price groupings. Other than the first graph, the source of all the other data is Eurostat. All prices shown are without tax

Graph 4.2 Electricity prices for very large industrial users [up to 50MW maximum demand]

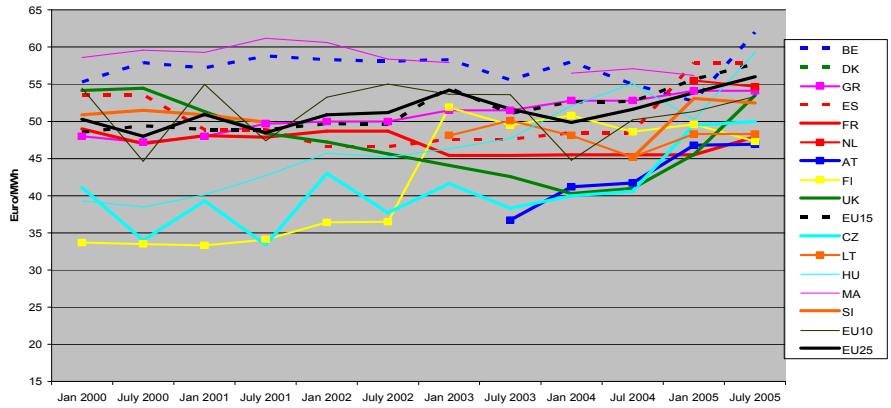


source: Eurostat Marker Prices, DTI Quarterly Energy Prices

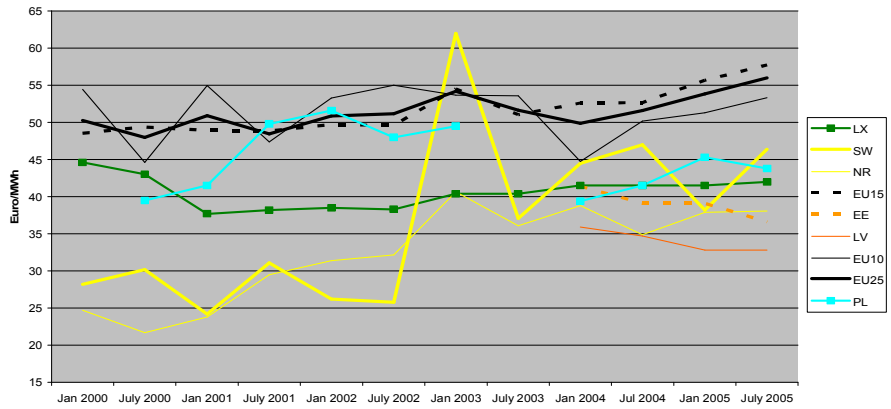
Graph 4.3a Electricity prices for moderate industrial users [24GWh/year] "high"



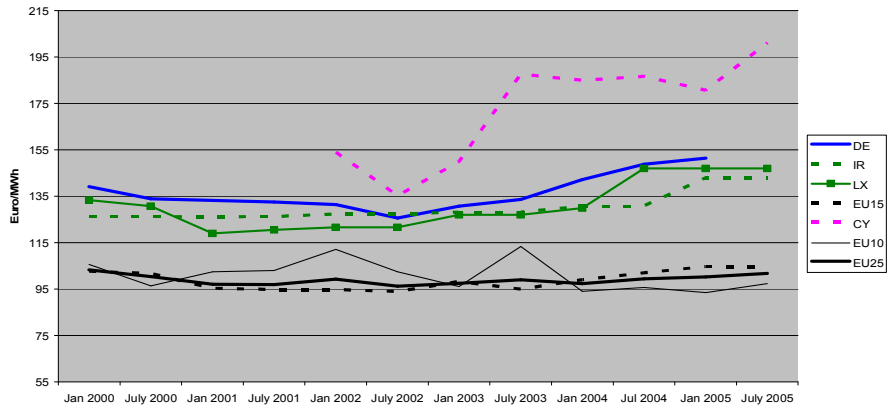
Graph 4.3b Electricity prices for moderate industrial users [24GWh/year] "medium"



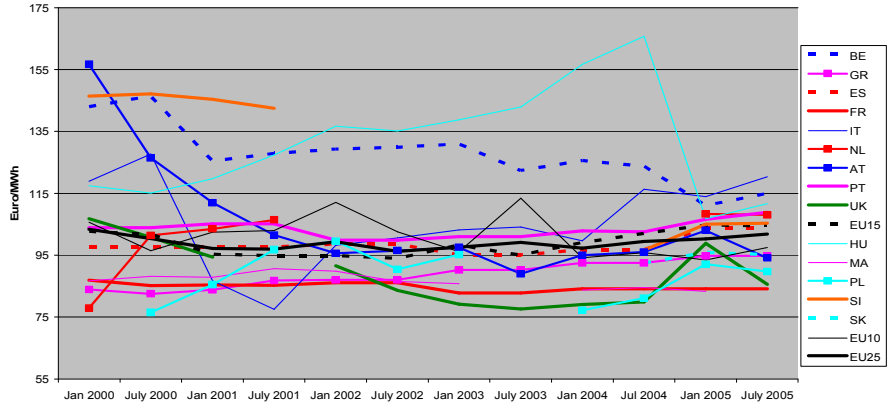
Graph 4.3c Electricity prices for moderate industrial users [24GWh/year] "low"



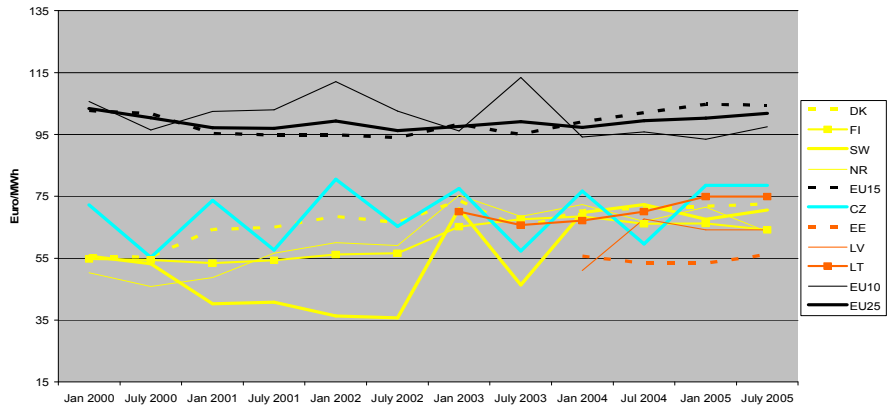
Graph 4.4a Electricity prices for small commercial users [50MWh/year] "high"



Graph 4.4a Electricity prices for small commercial users [50MWh/year] "medium"



Graph 4.4a Electricity prices for small commercial users [50MWh/year] "low"



The charts above clearly indicate that most Member States have experienced increases in prices for large users in recent years, in particular Germany, Ireland and Italy. Meanwhile, movements in prices for smaller commercial customers have been constrained despite the increased wholesale price. Some Member States have recorded significant price reductions for this group in recent years, in particular Austria and Belgium. The resulting differences in price levels between Member States are revealing. For the very large users, the price range is now relatively narrow, between €40 - €53/MWh. Whereas the range for the moderate group is €40-80MWh and for the small commercial group the range is €70 – 150/MWh[33].

4.3. Comments of Regulators

In the view of regulators, the development of competitive electricity markets have been hampered by unwillingness to consider structural measures such as divestiture in order to tackle initially monopolistic or oligopolistic conditions. Indeed they find that some mergers and acquisitions have been permitted by national and EU competition authorities, further increasing market concentration in several countries. Regulators note that wholesale market prices have increased sharply and that unexpectedly high prices for CO2 emissions certificates have been quickly built into forward prices.

Other area of concern to regulators is the fact that only a very small share of new generation projects (with the exception of subsidized renewable generation) were commissioned by independent, non incumbent generators, thus further strengthening the market power of incumbent generators. This may be indicative of difficulties in getting fair access to networks and reasonable conditions for ancillary services such as balancing. Regulators argue that ineffective wholesale markets limit retail competition. Most Member States currently exhibit very high concentration ratios (CR3) of more than 50% in the supply market and very few really independent suppliers have successfully entered the market.

Regulators emphasise the need for regional integration of wholesale markets of neighbouring countries (France-Benelux, Scandinavia, Germany-Austria, etc.) in order to improve market structure. In this context it is noted that, while progress has been made in allocating scarce cross border capacity the total amount, commercially and technically available, has actually been decreasing in relation to peak load due to changing generation patterns, increasing peak load and a big increase of difficult to predict wind dispatch.

Regulators also highlight the need for improved monitoring and surveillance of the relevant markets in the future as they move from national to regional, noting that special oversight provisions for the quite complex electricity markets, which pose a high risk of manipulation due to market concentration, are in most cases lacking. For example, when a major generation plant is not operating for whatever reason, this may have a large impact on the price in either wholesale or balancing markets. Unless such information is released at the same time to all participants, it may be that the owner of that plant will have a temporary advantage. If such events happen frequently, there may be a systematic advantage to those suppliers which have privileged access to such information. Regulators' experience shows that it is not certain that ex post control of abusive behaviour will be sufficient to guarantee an adequate level of information in the market. Therefore they argue that there is a need for equal access by all market participants to all relevant information from generators and/or TSOs as a prerequisite for a high level of confidence in the market. Regulators note that while information access for

[33] excluding Cyprus

TSO information has improved, progress for generator information is still insufficient in many markets (one major exception being Nordpool).

Regulators also consider that effective markets, close to real time, potentially increase efficiency. Although some countries, as their markets develop, have already introduced intra-day markets (Spain, France, UK, Scandinavia), these markets are often regionally restricted. Further integration of these markets is thought necessary.

4.4. Comments of Stakeholders

Consumer groups are particularly critical of the degree of market concentration for both electricity and gas at national level. This, in their view, is making a viable level of competition impossible meaning that the promised benefits of competition to consumers are not materialising. Large users are critical of the trading arrangements that have been established in many Member States, which they argue encourage collusion – especially in the light of a high level of integration between producers and retail supply companies. They cite the significant increase in wholesale prices since 2002, which have been compounded by the introduction of emissions certificates, the price for which has been passed directly into the wholesale price. Large users are also critical, for example, of measures to allocate capacity by auction based methodologies and consider that more effort should be made to reduce price differentials between Member States through other means. Public sector unions suggest that in the light of these issues, that tight controls should remain on end user prices, especially for household users – or even that market opening should be postponed.

Insufficient transparency and disclosure by dominant market players is a problem cited by both consumers and many other respondents including energy traders, smaller suppliers and market operators / power exchanges. It is argued that rules similar to those prevailing on other financial markets need to be considered.

The established electricity companies argue that the degree of concentration is reducing in some Member States and dominant incumbents are being challenged. They maintain that market opening has delivered significant price reductions, although these have often been concentrated on small and medium sized businesses which tended to have rather higher prices under the previous regulated regime. They see the solution to outstanding issues through the development of liquid wholesale markets at regional level, with a high degree of harmonisation between the regulatory frameworks across Member States. Some energy companies suggest that the required level of harmonisation can only be achieved through strong measures at European level on the subject of market design, nomination timetables and system operation, and that the current rate of development is not adequate.

Market operators and exchanges highlight the need for a more active demand side in price formation from all users implying more “time of day” charging and sophisticated metering arrangements. This would allow consumers to respond more effectively to changes in price levels and dilute the potential effect of distortions. They argued for a legal recognition of market operators with minimum transparency requirements. Several individually established electricity companies also supported stricter transparency measures.

As already noted, the dominance of established companies in wholesale and balancing markets is seen as a significant barrier by smaller companies, traders and new entrants. For both electricity and gas, the chance of being exposed to high imbalance charges is seen as a clear risk to enter markets and a major obstacle. Smaller suppliers consider that capacity

release through virtual power plant arrangements, or structural measures such as divestment as necessary to ensure real competition. The introduction of emission trading is also seen by new entrants as having a negative impact on competition. The fact that established energy companies were allocated a large quantity of certificates free of charge represents for many a large transfer of wealth from the energy using industries to the existing energy producers. Others consider that this constitutes a state aid.

4.5. Assessment

It is rather difficult to make a general assessment of performance in creating a "complete and fully operational internal market" in the manner required by the Directive. It can be stated that some competition exists and that customers have seen some benefits as a result. At the same time, it would be over optimistic to describe the current situation as "fully operational".

In general, it does appear that competition has yielded significant benefits to the EU economy in the form of a more efficient electricity sector and somewhat lower price. The study by Copenhagen Economics discussed in the forthcoming 2005 SGEI report, reveals that progress in market opening is a statistically and economically significant determinant of price reductions. In electricity, prices are estimated to be 10-20% lower than they would have been without liberalisation. The degree of unbundling of the transmission system operator would appear to be one of the most significant statistical determinants of this result.

However, concerns relating to market dominance have clearly not been resolved and the current developments in price levels have led to the behaviour of the main producers and suppliers being questioned, particularly by large customers. The suggestion that large users are being driven, against their wishes, toward shorter term contracts based on volatile wholesale prices, is clearly of concern since it is indicative of a market that does not fulfil the basic requirement of responding to customers' needs.

In order that consumers have confidence in the market opening process, there must be an assurance that prices are being determined through a competitive process without any perceived abuses of dominant position or suspicion of any form of collusion between producers or between suppliers. This requirement is not being met at present since the way that wholesale prices are determined is usually insufficiently transparent.

As well as the structural measures such as divestment, or capacity release which Member States should be encouraged to continue, another key issue is the question of clear rules on the adequacy of information that the generator, market operator or TSO should be required to be released, on an equal basis to all participants. In wholesale markets which, as already demonstrated, are highly concentrated, and which have special features such as the need to be consistently in balance, there is a case for arguing that the information provided by market participants should be far more detailed for electricity generation companies than other markets in order that any suspicion of manipulation of the market can be ruled out. One model that could be applied in this context is the system imposed by Nordpool as market operator in the electricity sector in Denmark, Norway, Sweden and Finland. The sectoral inquiry has been set up by the Commission to examine these issues in detail. The results of this work will form a key part of future developments of the functioning of electricity markets.

5. PRICE DEVELOPMENTS AND COMPETITION ISSUES - GAS

5.1. Background

The natural gas market at the European level is characterised on the one hand by a considerably growing demand and on the other by declining indigenous production entailing rising import requirements. Currently, 45% of European gas consumption is domestically produced, while the balance has to be imported from external sources.

Indispensable prerequisites for a competitive European natural gas market are sufficient availability of volumes of gas, as well as non-discriminatory and transparent access conditions to the network or, in other words, the complete absence of operational barriers. Liquid hubs and inter-regional hub-to-hub trading as well as more and more increasing decoupling of physical from contractual flows of gas would also represent constitutional elements of such a picture.

Against this background, the opening up of the European gas market to competition has not brought about genuine changes of historical supply patterns or a considerable move towards more competition and hub trading allowing free multi-lateral trade of commodity and capacity in the market. Hub-to-hub trading for the optimisation of supply and customer portfolios across borders as well as effective exploitation of market opportunities does not exist at all. With the exception of very few hubs in the North-West of Europe, liquidity at hubs remains very limited. Those Member States with a high share of domestic production in overall national consumption or alternatively with a high share of LNG imports may benefit from more competitive markets provided these features are underpinned by a conducive regulatory framework. The growing role of LNG for the European gas supply in the future might gradually contribute to further improvements in this respect.

As for most other Member States, the level of liquidity in terms of commodity remains basically unchanged and progress towards competition is moving very slowly, if at all. While in most of the new Member States, almost exclusively supplied by only one external supplier, the prospects for enhancing liquidity of gas and thus competition may remain slim for the time being, the potential for competition on the mature markets of the old Member States does not yet seem to be exploited. Full and consequent implementation of the Gas Directive as well as complementary legislation, such as the new Regulation on access conditions to the gas transmission network finally adopted by the Council on 12 July 2005 might bring about improvements in this respect.

5.2. Current Situation

5.2.1. Market structure: production/import of gas

As demonstrated by Table 5.1, the structure of the wholesale market still reveals a high level of concentration. In a few Member States, such as Belgium, Italy and France for example, the high level of concentration concerns the whole gas supply chain[34]. An exception to this rule might be Spain, where the incumbent still holds 43% of the free market, while competing suppliers with 17% and 9% (the latter being a foreign company) present a relatively

[34] The figure in the table for Italy is to some extent misleading, as it does not reveal the fact that the market shares lost by the incumbent have been gained by companies which bought their gas outside Italy from the incumbent.

balanced market structure, if compared to markets in most of the other Member States. In Germany and Austria, the historical supply areas have been broadly maintained putting aside the entrance of one small newcomer on the German market at the beginning of the 1990s.

An additional consolidating effect playing in favour of incumbent companies wishing to hold their market shares without competing effectively may be seen in the acquisition of equity cross holdings. In some Member States, such as Germany and Austria incumbent supply companies have acquired stakes in distribution companies thereby securing these companies as customers on the wholesale market often through appropriate representation in the board of the acquired company. Due to the structure of the national gas markets, such a strategy might not be necessary in other Member States, where only one, usually state-owned company, held the majority of assets along the whole gas chain, as for example in France.

Table 5.1 Market Structure in Import and Production of Gas – Position end 2004

	Total consumption (bcm/year)	Number of companies with 5% share of production\import capacity	Number of companies with 5% share of available gas	Share of 3 largest gas shippers in wholesale market	Liquidity multiple spot trading/ total consumption	Liquidity mulitple term trading/ total consumption
Austria	9	2	4	80%	3%	-
Belgium	17	2	2	-	229%	-
Denmark	4	2	2	97%	-	-
France	61	2	2	98%	-	-
Germany	102	5	10	ca. 80%	-	-
Ireland	4	5	5	84%	-	-
Italy	80	3	3	62%	-	7%
Luxembourg	1	1	-	-	-	-
Netherlands	48	1	1	85%	5%	175%
Spain	27	4	4	73%	-	-
Sweden	1	1	5	78%	-	-
UK	105	7	7	36%	10%	540%
Estonia	1	1	-	100%	-	-
Latvia	2	1	1	100%	-	-
Lithuania	3	4	-	92%	-	-
Poland	8	1	1	100%	-	
Czech Rep.	10	-	-	-	-	-
Slovakia	6,5	1	1	-	-	-
Hungary	14	2	1	100%	-	-
Slovenia	1	1	1	100%	-	-

source: Regulators data

In many EU Member States, new licenses or respective authorisation for the supply of gas have been issued to new suppliers. In some Member States, there are companies from other EU or non-EU Member States active on the market. However, with one exception in Germany and Spain respectively, their market share remains modest.

In order to stimulate competition and enhance the liquidity on the market, a number of gas release programmes has been carried out in different Member States in recent years. They often followed merger decisions or as a consequence of decisions from relevant national antitrust or regulatory authorities. The most prominent examples in this respect are gas release programmes following the Eon/Ruhrgas merger in Germany, the Econgas merger in Austria, the Marathon case dealt with by the Commission in cooperation with the French regulator CRE and the Blugas antitrust case dealt with by the Italian competition authority. Another gas release programme may be carried out in 2006 in Belgium. In general, however, the overall effect of the gas release programmes has been limited for different reasons: sometimes they suffer from insufficient access conditions to the network or a lack of capacity to transport the gas. In other cases, higher price levels in adjacent markets may have restricted the desired effect for the domestic market. However, a rather positive example for gas release programmes can be seen in Spain, where suppliers with a market share of more than 50%

have been excluded from the bidding procedure. Six companies have been awarded the gas released and subsequently stimulated competition on the Spanish market.

Once liquidity has been improved, trading hubs can play an important role in promoting gas trade and competition on the gas market. Apart from the wholesale market in the UK, which is based on bilateral trading at the NBP ("national balancing point"), markets on the Continent are mainly based on long-term contracts. However, over recent years, some new hubs, such as the Zeebrugge hub, and also the TTF in the Netherlands are gradually developing. Other hubs, such as the Eurohub, the Baumgarten hub, the PEG in France or the Virtual Trading Point (VTP) in Italy seem still to suffer from a lack of liquidity of either capacity or commodity and are not yet sufficiently transparent, in order to create a competitive impact to the markets concerned. In some cases, where hub-to-hub trading could develop, specific problems may prevent it. An example for this would be the vTn line in Belgium, where gas quality specifications do not allow carrying out trading between the adjacent hubs.

Lack of capacity is likely to constitute an entry barrier to newcomers and thus significantly restrict liquidity and the potential for competition on the European natural gas market. Very often, long-term supply contracts underpinned by long-term capacity bookings prevent newcomers to book the capacity they need in order to successfully enter the market. While there might not be a short-term remedy in the case of physical congestion of the capacity concerned, contractual congestion seems to exist at many cross-border points and within Member States. Ensuring the efficient use of this capacity by applying effective use-it-or-lose-it rules represents a solution in this respect.

Against this background and with a view to providing clarification, it is important to note that due to the new regime established by the gas Directive a distinction must be made among the following types of long-term contracts:

– long-term supply contracts concluded between a producer/exporter of natural gas on the one hand and an importer/wholesaler of natural gas on the other; such a contract might be considered an upstream (supply) contract; it does not involve a system operator;

– long-term supply contracts concluded between an importer/wholesaler of natural gas on the one hand and a retailer/final consumer of natural gas on the other hand; such a contract might be considered a downstream (supply) contract; it does not involve a system operator;

– long-term transportation contracts concluded between network users and system operators underpinning both upstream supply contracts and downstream supply contracts. Transportation contracts always involve system operators on the one hand, while it might be subject to the contractual arrangements laid down in the supply contracts, which party of the supply contract in question has to contract the respective transportation capacity.

In addition, the gas Directive establishes the right for a (large) final customer to contract his gas directly with the producer/exporter, also on a long-term basis. This possibility should also not be neglected when talking about "long-term contracts". Such a commercial arrangement would entail at least one supply and one transportation contract.

The Commission is currently examining the impact and consequences emerging from these different types of long-term contracts on the well functioning of the internal market for gas.

There is currently evidence that some long-term downstream contracts contain explicit contractual arrangements hindering competition. For example, they often contain clauses binding the customer to one supplier. Competition authorities, such as the Bundeskartellamt in Germany, are currently investigating the foreclosing effect of such contracts. Another case is currently pending with the Commission.

5.2.2. Market structure: retail supply

The retail market is to a considerable extent characterised by regulated prices. For the small commercial and household sector, they exist in 13 Member States, while some Member States (Finland, Hungary, Latvia, Poland, Spain, France) apply them across the whole retail market, i.e. in all customer segments. While in Hungary, Latvia and Poland all customers pay the regulated price, only a small minority of industrial users and power plants in Spain did not turn yet to the free market (3.4% of power plants and 2% of the large industrial user segment). In France, however, only 1% of the eligible customers representing 27% of eligible gas consumption have used their right to change supplier. Only five Member States (Austria, Germany, Denmark, Netherlands, Sweden, UK) do not regulate at all end-user prices.

As a consequence, competition for households based on gas prices could only take place in these Member States. However, as for Austria and Germany, albeit 100% open by law, it is safe to say that traditional suppliers have almost fully maintained their respective supply area and market share or in other words, competition for households does not exist. Competition for households does so far only exist in the UK and to a lesser extent in Denmark, the Netherlands, Italy and Spain, where the number of small customers turning to the free market recently has increased.

Across the European gas market, the level of competition for retail customers is generally modest, if measured against the market share of non-incumbent suppliers or newcomers. Table 5.2 below shows that despite a number of newcomers on the various national markets, the market share of the three largest companies – in most cases incumbent companies – is often above 90% or corresponds broadly to the market share pre-liberalisation. Even in the UK with the most competitive retail market, the three largest suppliers account for 77% of the entire retail market. Corresponding figures in Belgium, Denmark, France, Italy, Netherlands and Spain would be in the same order. A remarkable difference, however, can be identified on the Spanish market, where 24 suppliers are not only registered, but have acquired a countable market share in the free market. As for Germany, the extent of retail competition is not entirely clear. According to information submitted to the Commission, there are nine independent suppliers active on the market, of which one takes the view to have acquired nearly 50% of all customers switching gas suppliers. If this is true, retail competition in Germany remains tiny bearing in mind the annual turnover of this company.

Table 5.2 Structure of Gas supply market – position end 2004

	Companies with market share over 5%	Number of fully indepdent suppliers (no network affiliates)	Market share of largest 3 companies power plants	Market share of largest 3 companies large industrial users	Market share of largest 3 companies small/medium businesses	Market share of largest 3 companies very small commercial/household
Austria	4	6	-	-	-	-
Belgium	3/5	12 / 8	-	100% / 90%	100% / 99%	99% / 100%
Denmark	3	2	100%	92%	100%	100%
France	2	8	-	-	-	-
Germany	1	9	-	-	-	-
Ireland	3	8	91%	100%	100%	100%
Italy	5	110	80%	54%	-	33%
Luxembourg	4	1	99%	95%	93%	93%
Netherlands	3	5	-	-	-	83%
Spain	5	4	-	72%	77%	90%
Sweden	-	-	-	-	-	-
UK	6	8	56%	53%	61%	77%
Estonia	1	1	85%	100%	100%	100%
Latvia	1	0	-	100%	100%	100%
Lithuania	2	0	-	100%	100%	100%
Poland	7	0	100%	-	-	-
Czech Rep.	7	0	-	54%	51%	57%
Slovakia	1	0	100%	100%	100%	100%
Hungary	7	0	95%	77%	76%	79%
Slovenia	6	0	-	-	-	-

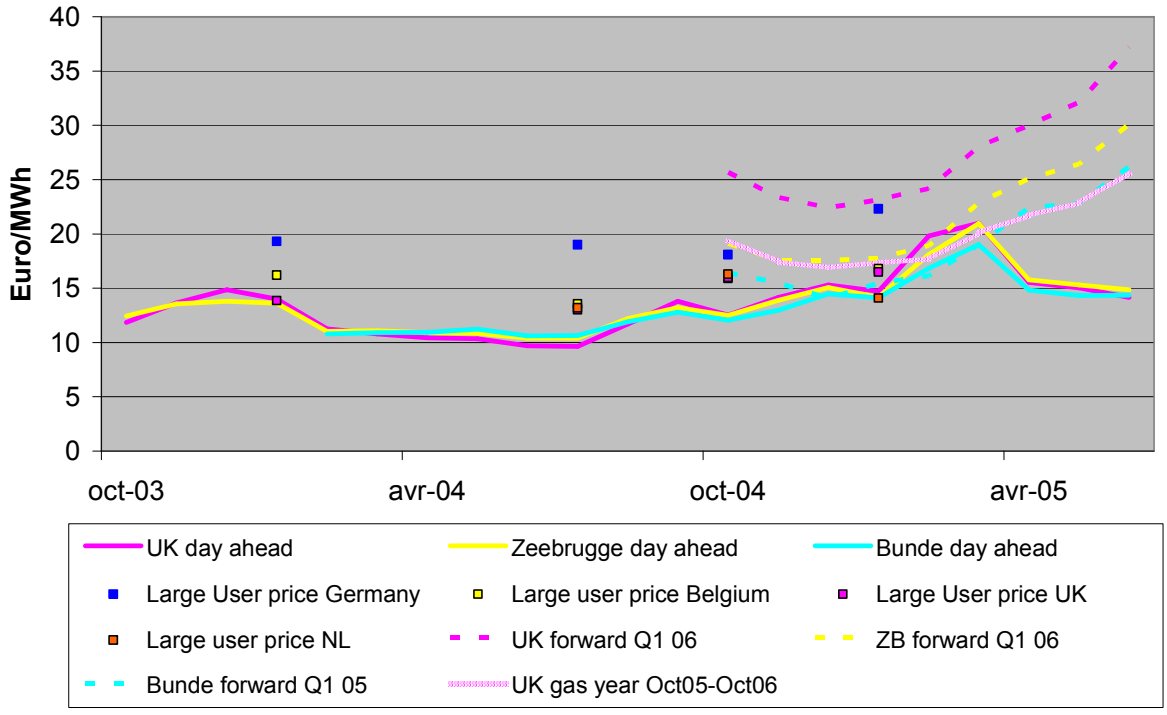
source: Regulators data
Notes:
1. Belgium data Flanders\Wallonia. No data for Brussels region

5.3. Prices

5.3.1. Wholesale Gas prices

Gas prices for both the wholesale market have increased significantly since 2004, as shown in graph 5.1.

Graph 5.1 Development of Wholesale Gas Prices



source: Argus Gas Connections

Subject to further investigations, gas price rises on the Continent might be due to the link between oil prices and gas import prices. At the wholesale or import level, usually, the price of gas is determined by a price formula embedded in the gas import contracts, in order to reflect the competitive situation of gas vis-à-vis other fuels likely to compete with gas. This approach is deemed to be a remnant of the time, when gas was introduced to the market and had to gain market shares from fuel oil or coal. Today, with a market share for gas amounting to approximately 24% of the European primary energy market, the justification of the oil-gas-price link is less obvious. In view of the physical link between the Continent and the UK (UK-Continent Interconnector), continental gas price developments may have influenced the gas prices in the UK usually established by the National Balancing Point.

In the absence of a liquid gas market, characterised by liquid trading hubs, a link between the gas price and a potentially competing fuel might always appear at the wholesale market. Recent developments, however, have shown that gas suppliers serving end users tend rather to reflect rising oil prices, but are more reluctant to pass on decreasing trends in their retail contracts with end users. This could possibly also be seen as a proof for a rather monopolistic supply structure in the retail market. The extent of these developments, however, may be more pronounced in countries with more imports than in countries with more domestic production.

In some Member States, where end user prices are not regulated but fully mirrored the sharp rise of oil prices, competition authorities are investigating whether the recent price increases for gas would be justified or would represent the abuse of a dominant position. However, it is important to note that such investigations would not concern the justification of the link between oil and gas prices, but try to figure out whether the price increases to households would exceed the corresponding oil price rises or not. Contrary to supply contracts with large consumers, the prices of which also reflect prices of competing energy sources, the retailers do usually not apply a sliding price formula agreed by both sides, in order to determine the price of the gas, but set the price unilaterally in line with what the retailer considers justified. In Germany, the cartel offices at federal and regional level are or have been investigating more than 110 cases with different outcomes.

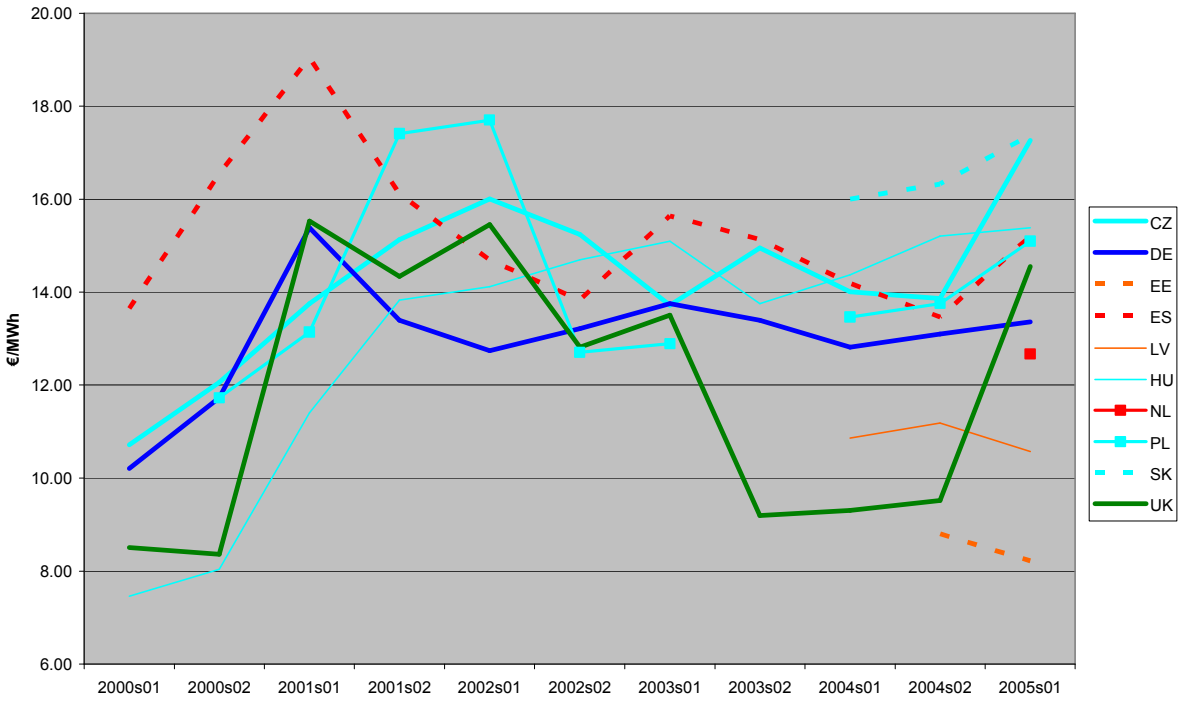
As the example of the UK market has shown, a liquid market may have the potential to dissolve the link between oil and gas prices by offering a reference to a competitive gas price, as it has been the case in the UK even after the setting up of the physical link to the Continent. This presupposes, however, a market that can be characterised as a buyer's market rather than a seller's market.

European gas prices may only be de-coupled from oil price developments, once the European gas market is liquid enough to provide the necessary incentives to suppliers to sell gas below a price determined by or linked to oil. High oil prices would encourage such a move, provided the gas can be procured and the necessary regulatory framework allows entering the market efficiently.

5.3.2. Retail prices

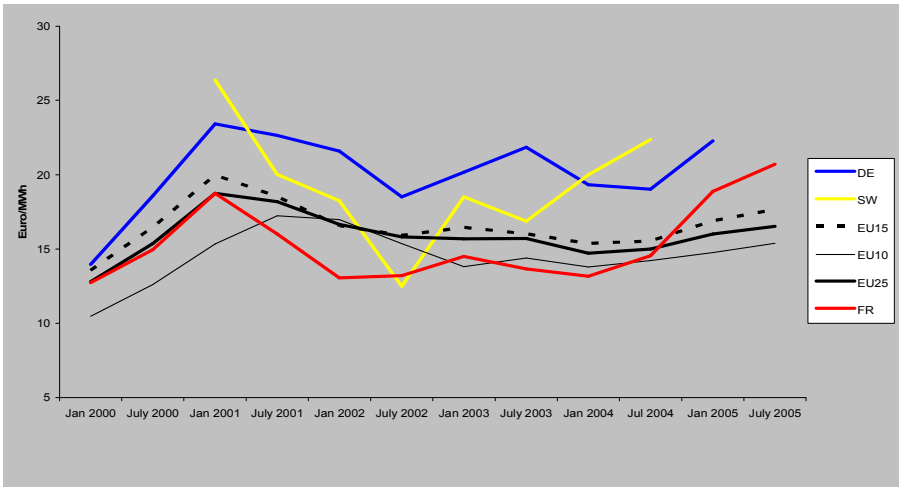
Since increasing during the year 2000, gas prices to end users have followed a relatively stable path over the last five years with a further increase in the last year. The graphs below set out the main developments by Member State for different consumer groups.

Graph 5.2 Gas prices for very large users (selected countries)

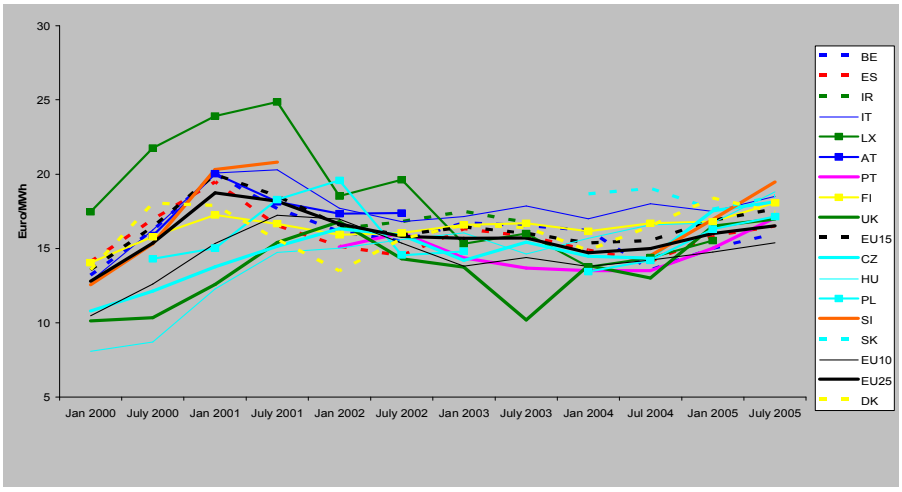


source; Eurostat data for I5 consumption group - approx 100 million cubic metres (mcm)/year

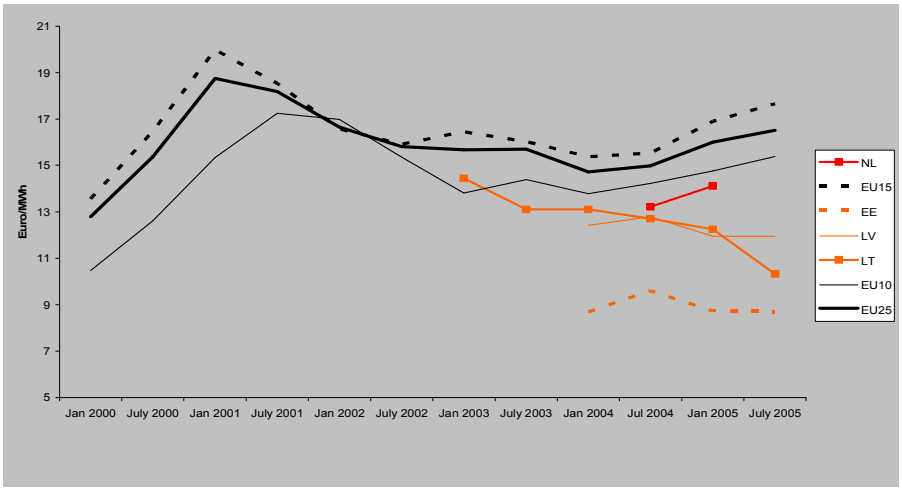
Graph 5.3a Gas prices for large gas users (10mcm/year) "high"



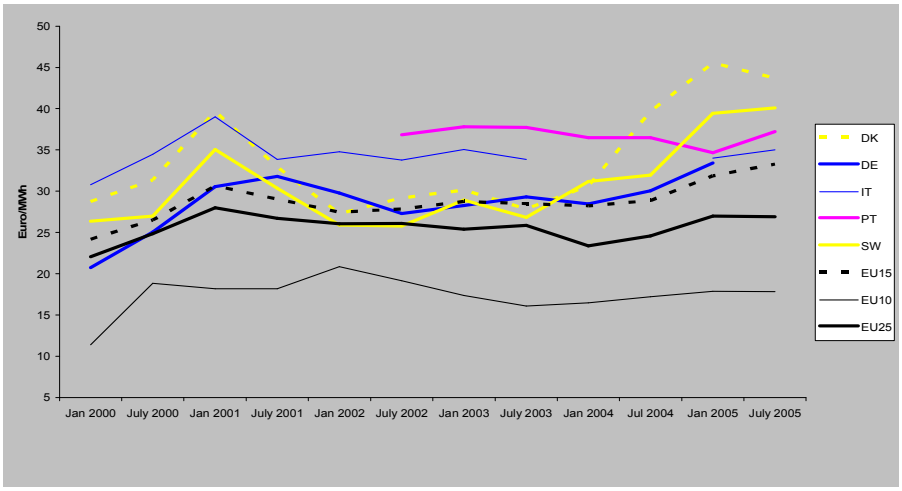
Graph 5.3b Gas prices for large gas users (10mcm/year) "medium"



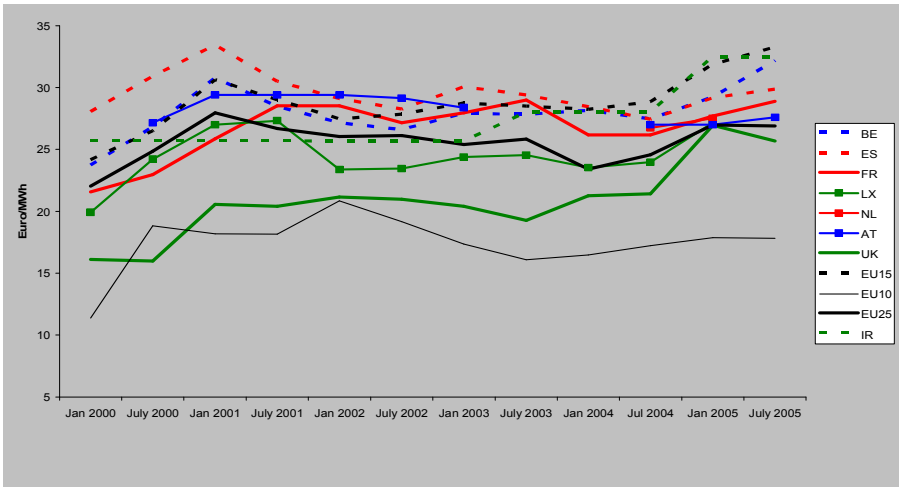
Graph 5.3c Gas prices for large gas users (10mcm/year) "low"



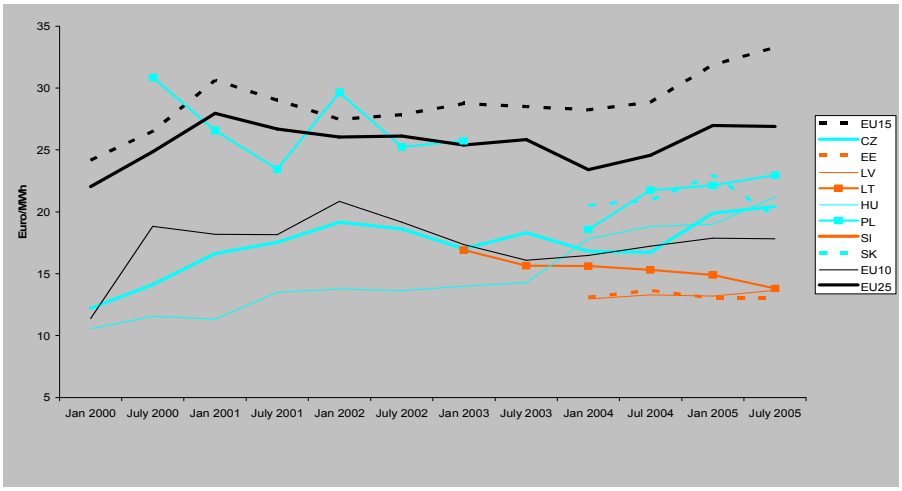
Graph 5.4a Gas Prices for small commercial gas users (10,000m3/year) "high"



Graph 5.4b Gas Prices for small commercial gas users (10,000m3/year) "medium"



Graph 5.4c Gas Prices for small commercial gas users (10,000m3/year) "low"



One interesting feature is the degree of convergence that now exists for the "very large" and "large" user group in almost all Member States. With some exceptions, prices are within a relatively narrow range around €13-20/MWh. Larger differences arise for smaller commercial users, where the range is €25-40/MWh.

5.4. Comments of Regulators

Regulators note that development of the gas market is at a very early stage in most countries and that most markets are characterized by a lack of gas supplies for alternative retailers. Measures such as developing new sources of gas and initiating gas release programs are considered a pre-requisite to effective competition. This is expected to allow for a greater range of market participants and the spread of gas trading. Regulators argue that this is beginning to be effective in those countries with a significant internal gas supply or with a high percentage of LNG with its greater diversity of suppliers; such as the UK, Belgium and Spain. However, European markets are still far away from a situation where, for example, independent traders or large gas customers could take advantage of these opportunities to deal directly with external gas suppliers.

5.5. Comments of Stakeholders

Stakeholders in general do not see any material progress towards the emergence of liquid markets. There is a widespread perception that the market in general suffers from a lack of liquidity in terms of both commodity and capacity. This is partly attributed to the predominance of long-standing contract arrangements favouring the incumbent companies as well as consolidation efforts undertaken by incumbent companies acquiring equities of customers in order to protect market shares.

As one of the consequences, newcomers have to buy their gas often at spot markets, which according to one company, provide good speculation opportunities for incumbent companies, but entails high risks for newcomers. Nevertheless, the spot market often seems to represent the only real gas source for newcomers.

As a possible remedy to the lack of liquidity, many market participants and new entrants strongly suggested gas release programmes, as in their view these would contribute to the establishment of a liquid wholesale market. Other views call for the establishment of regional gas exchanges and restricting the market share of the dominant supplier.

Beside the lack of access to gas, a number of problems relating to concentration and anti-competitive behaviour of incumbent companies have been reported and identified as genuine obstacles to enter the market. According to some market participants, incumbents would sell gas below cost price as a defence measure with a view to keeping competitors out, an approach that entails cross-subsidies. If no firm capacity is available, unused capacity is offered on an interruptible basis, however, with a prevailing right for the incumbent to use his capacity by within-day nominations, attributing an even higher risk to interruptible contracts. In single cases, system operators are said to ask for astronomically high penalties if the balance is not kept (one example is described in more details below).

5.6. Assessment

Those Member States which have been bold in adopting competition have generally seen the best results. This is confirmed by the results of the Copenhagen Economics study which

suggests that the effect of market opening on prices is highly significant and large for gas. The study estimates that prices are 35% lower than they would be in the absence of liberalisation for Member States which are well advanced.

For others, measured against the need of a competitive market to benefit from liquid trading hubs including hub-to-hub trading and to see an increasing number of market actors on the supply side, a competitive European market is still not in sight. This may be attributed to the overall lack of liquidity in terms of gas, but also for transmission capacity. However, as the examples of some Member States show a regulatory framework conducive to competition could considerably improve the situation,

As for the European dimension, it is safe to say that historical supply patterns are still very much prevalent in most Member States. This goes in particular for those Member States with relatively few supply sources, but would also apply to some with a well diversified supply portfolio. A development to a more integrated and competitive European market is still far from being achieved notwithstanding progress in some Member States. Despite the fact that more than 60% of gas in Europe crosses at least one border due to the fact that gas has to be transported from the wellhead to the market (transit), cross border trade in the sense of a functioning competitive market exploiting opportunities irrespective of national borders has not yet become apparent. Remedies might be seen in gas release programmes, provided they are properly designed, implemented and underpinned by non-discriminatory and transparent network access conditions. They may help to promote liquidity on the wholesale market.

Similarly, problems with network access and long term transmission contracts should be resolved. Member States should impose capacity release or increase the transparency of contracts in order to facilitate new entrants. The Gas Regulation will improve conditions in this respect by introducing an obligatory set of minimum requirements in this regard.

Better access and trading conditions to the trading hubs and spot markets would certainly encourage direct participation of producers and large consumers and thus enhance liquidity and functioning of these hubs. In this respect, the intention of ERGEG emphasising the development of hub trading including hub-to-hub trading in the framework of its roadmap towards a single competitive European gas market should be welcomed. In this context, the sector inquiry launched by the Commission in June 2005 is currently looking into a number of key features of the energy price formation. Preliminary findings of this enquiry will be published in the first months of 2006.

6. EXISTENCE OF NON-DISCRIMINATORY NETWORK ACCESS

6.1. Background

Fair and non-discriminatory access to networks is indispensable to a properly functioning market. This comprises not only the level of charges for network access but also conditions relating to the flexibility for network users to change their contracts, the nomination procedures and the level of information provided to network users. In the absence of complete unbundling in ownership terms, the necessity for firm regulation of all these conditions has been unanimously agreed. Perceptions are important. Companies will not enter new markets unless all avenues for possible discrimination are closed off. The Directives already set out clearly the role of regulators in this respect.

Until recently, Germany was the only country where access to the grid was not yet granted on the basis of ex-ante regulated tariffs or tariff methodologies. However this will soon change. According to the new energy law, which entered into force in July 2005, all network tariff fees, including those currently being applied by network operators, require approval by the German regulatory authority (Bundesnetzagentur). Network operators must submit an application for network tariff approval for the first time within 3 months (electricity) or six months (gas) after entry into force of the Network Tariff Ordinances, which specify the methodology to be applied.

Overall, since the technology used for networks is very similar across Member States, it is expected that differences, in for example, network tariffs could be clearly explained by obvious differences in operating conditions, or by fiscal or accounting technicalities. Similarly it is expected that there would not be significant differences in the terms for provision of ancillary services, particularly the imbalance prices used by transmission system operators.

Regarding cross border transactions, Regulation 1228/03 also sets out compulsory rules to be followed by transmission system operators for electricity in setting charges for flows across borders. Non compliance with these rules can be challenged by network users in the form of direct legal action. Unless congestion exists, it should be as easy to transport electricity between Member States as it is within a Member State. Even with the existence of congestion, it should be possible for network users to expect capacity allocation to be carried out in a fair and predictable way which allows for them to manage the risks associate with cross border trade effectively. Similar rules for gas will be embodied in the Gas Regulation which enters into force next year.

6.2. Current Situation: Electricity

6.2.1. Use of network charges

Ongoing examination of national network charges since market opening suggests that network tariffs are on a reasonably convergent path in the different Member States and that regulators, in general, have sufficient powers over this item. Table 6.1 below shows that some Member States still appear to be outside the normal levels and this needs to be examined closely by regulators.

The isolation of network charges from other vertically integrated business in order to remove cross subsidies remains a key focus of the work of regulators in this respect. The degree of

separation of costs in order to avoid cross subsidies should improve further now that national regulators have taken up their duties in all Member States.

Table 6.1 Network Access: Electricity[35]

	Number of regulated transmission companies	Number of regualted distribution companies	Approx network tariff large users	Approx network tariff low voltage commercial	Approx network tariff low voltage household
Austria	3	133	10	51	53
Belgium	1	26	11	-	51
Denmark	10	120	19	25	48
Finland	1	91	10	26	37
France	1	161	12	40	48
Germany	4	950	9	53	62
Greece	1	1	8	-	-
Ireland	1	1	-	48	50
Italy	1	173	9	41	67
Luxembourg	2	10	7	62	72
Netherlands	1	12	-	-	40
Portugal	3	13	4	39	37
Spain	1	308	69	34	33
Sweden	1	184	10	17	40
UK	3	17	5-12	11-23	17-34
Norway	1	170	11	25	-
Estonia	1	42	11	31	40
Latvia	1	8	-	-	-
Lithuania	1	2	6	23	42
Poland	1	14	13-26	48-88	37-50
Czech Rep.	1	327	3	-	36
Slovakia	1	3	6	17	37
Hungary	1	6	2	48	30
Slovenia	1	5	8	38	31
Cyprus	0	1	-	-	-
Malta	0	1	-	-	-

source: Regulators data
1. General: data excludes levies related to, for example PSOs and renewables or CHP promotion.
2. Germany: the category Ib is not typical of commerical customers of this size (annual load 1000 hours)
3. In Italy there are 10 companies owning a share of the national transmission network.

6.2.2. Cross border and inter-TSO arrangements

A key issue of importance is the necessity to encourage cross border flows of electricity. As already noted, concentration is high on an individual Member State basis and, although some projects have recently been realised, there is still limited prospect for increasing physical cross border capacity. Until recently, arrangements were largely ad-hoc and discriminatory. The regulation was supposed to change this and market based mechanisms were to apply from 1 July 2004. This has not happened in all cases.

In particular during 2005 it was expected that all congested interconnectors would have introduced non-discriminatory market based mechanisms for the allocation of capacity. Many delays have been recorded and not all Member States complied with this deadline. However significant improvement is expected for 2006 and all EU interconnectors are expected to have compliant mechanisms by this date.

[35] Charges are estimated excluding all taxes and levies. Both transmission and distribution charges are included

This does not mean that the congestion management will be optimal and much will still need to be done to increase efficiency, especially greater co-ordination of capacity calculations and allocation, as well as the introduction of better methods to allocate capacity close to real time such as implicit auctions. The forthcoming revision of the congestion management guidelines will allow further progress in these areas. Finally, the recent judgement of the European Court of Justice suggests that the reservation of capacity, with a priority right, relating to some existing supply contracts is not compliant with the rules of the Directives or the Regulation. This may allow for additional cross border capacity to be made available to other users.

6.2.3. Balancing

Previous reports have examined the extent to which network users have fair access to balancing energy. Imbalance pricing is partly a network issue but also a competition issue since indirectly, the electricity concerned is being purchased from other generators. Furthermore, any excessive balancing charges may affect adversely the development of the market. The Directive recognises the need for ex-ante regulation of this issue and requires national regulatory authorities to approve the methodology used by transmission system operators to determine imbalance charges. Any market participant who cannot easily match its generation portfolio to the characteristics of its customers may find itself exposed to the difference between the price at which the TSO will sell imbalance energy, and the price at which it will buy back excess production. These prices may either be directly imposed by the regulator on the TSO; or alternatively a market based mechanism will be used in which the price is determined by bids from other producers to regulate their production upwards or downwards. A summary of current practice is set out in Table 6.2. below.

Table 6.2 Electricity Balancing

	Market or fixed prices	Gate closure	Average TSO sell price	Average TSO buy price	Spread
Austria	market	day ahead	51	24	27
Belgium	hybrid	"ex-post"	56	12	44
Denmark	market	½ hour	36	27	9
Finland	market	½ hour	32	27	5
France	market	6 during day	50	45	5
Germany	market	3 during day	70	2	68
Greece	fixed	day ahead	44	44	0
Ireland	hybrid	day ahead	69	60	9
Italy	market	day ahead	102	23	79
Luxembourg	fixed		-	-	-
Netherlands	market	1 hour	69	28	41
Portugal	fixed	2 during day	58	23	35
Spain	market	2¼-3¼ hrs	-	-	0
Sweden	market	1 hour	32	28	4
UK	market	½ hour	55	39	16
Norway	market	1 hour	29	29	0
Estonia	n.k.	day ahead	-	-	-
Latvia	n.k.	2 hours	-	-	-
Lithuania	n.k.	2 hours	-	-	-
Poland	market	day ahead	37	24	13
Czech R	market	1½ hours	51	0	51
Slovakia	n.k.	day ahead	-	-	-
Hungary	market	day ahead	40	0	40
Slovenia	market	day ahead	-	-	-

Source: Regulators' data, DG TREN analysis of TSO websites

As noted in previous reports, a key difficulty for small market participants arises where there is the risk of a large spread between the buying price from the TSO and the selling price. This occurs in a number of Member States and is likely to be detrimental to the development of competition. A high spread may be indicative of an insufficient level of competition in the balancing market which may be dominated by only one or two main generators. Such difficulties are made worse where network users are unable to adjust their positions close to real time. Greater integration of both intraday and balancing markets would significantly improve this situation.

6.3. Current Situation: Gas

6.3.1. Use of network

As shown in Table 6.3, in many Member States, access to the network is based on regulated entry-exit tariffs, even if in some Member States the necessary legislation has just recently entered into force.

Table 6.3. Access Conditions to Gas Transmission networks

	Transmission			
	Tariff regime	Capacity regime	Capacity allocation	Anti-hoarding
Austria	entry-exit	entry-exit	fcfs, cgwc	UIOLI
Belgium	entry-exit	entry-exit/ptp	fcfs	UIOLI
Czech Republic	postage	ptp	fcfs	pro rata
Denmark	entry-exit	entry-exit	fcfs	na
Estonia	na	na	fcfs	na
France	entry-exit	entry-exit	fcfs, Cgwc	UIOLI
Germany	entry-exit	entry-exit	fcfs, Cgwc	UIOLI, auction
Hungary	entry-exit		auction	na
Ireland	entry-exit	ptp	fcfs	na
Italy	entry-exit	entry-exit		pro rata
Latvia	na	na	na	na
Lituania	postage	na	na	na
Luxembourg	na	na	na	na
Netherlands	entry-exit	entry-exit	open season	UIOLI
Poland	na	na	fcfs	na
Slovak Republic	entry-exit	na	fcfs	na
Slovenia	na	na	na	na
Spain	postage		fcfs	UIOLI
Sweden	na	na	fcfs	na
United Kingdom	entry-exit	entry-exit	auction	na

na	**not availlable/not applicable**
fcfs	**first come, first served**
cgwc	**capacity goes with customer**
UIOLI	**use-it-or-lose-it**
ptp	**point to point**

source: Regulators' submissions

The overall situation has not very much changed compared to the CEER monitoring report published in July 2004 at the Madrid Forum. In many Member States, existing entry-exit systems have been further developed and adapted to the needs of the market. For example, the exit zones in France have been reduced by one, a further reduction by eliminating the physical bottlenecks is expected. Belgium has introduced the legislative framework for genuine entry-

exit tariffs meaning that the various entry and exit points entail different tariffs reflecting as close as possible the underlying costs of the physical flows involved at the respective points[36].

It is important to note that entry-exit systems have to be consistent, in order to really guarantee non-discriminatory access to the systems. This means that not only entry-exit tariffs, but also entry-exit capacity systems have to be set up[37], although it may require some time to overcome physical obstacles contained in the various systems as a result of the historical development of the systems. It would also mean that the split up of a TSO system into several entry-exit zones has to be avoided to the extent possible, as otherwise it cannot be excluded that discriminatory elements are introduced through the backdoor. Capacity allocation mechanisms are often based on the first-come-first-served principle (FCFS). Only TSOs in the UK and Hungary apply an auction mechanism. Although authorities are getting increasingly involved in capacity allocation with a view to ensuring non-discriminatory and transparent capacity allocation rules, this might not yet be achieved across the whole market and is sometimes considered in- transparent and possibly discriminating. A similar observation applies with respect to transparency on available capacities. The application of the new Regulation on access conditions to the gas transmission network and its practical implementation may help to bring about further improvements in these areas by creating a consistent European framework in this respect.

A clear problem with respect to access to the system is contractual congestion[38]. It exists in a number of Member States, in particular with well-developed gas markets. While in some of them, such as Spain and the UK, effective secondary trading and anti-hoarding mechanisms successfully tackle these problems, the necessary mechanisms are not (yet) fully effective or prove to be less efficient in other Member States. Secondary capacity markets could also help to eliminate or at least alleviate the problem of contractual congestion. So far, however, with the exception of the UK and the Netherlands, secondary capacity trading is not transparent and only little utilised. Where it is generally possible, for example at the Title Transfer Facility, a virtual trading hub in the Netherlands, the procedural requirements for capacity trading seem to be quite burdensome. In some Member States, secondary capacity markets are not yet permitted by law, but this is said to improve in 2006.

6.3.2. Transit

Unlike the 1st Internal Gas Market Directive, Directive 98/30/EC, the 2nd Directive does not acknowledge a regime different from transport on the basis of regulated and ex-ante approved tariffs. However, pursuant to Article 32(1) of the 2nd Directive,

> *...contracts concluded pursuant to Article 3(1) of Directive 91/296/EEC...shall continue to be valid and to be implemented under the terms of the said Directive.*

As a consequence, contracts falling under Article 3(1) of Directive 91/296/EEC and which had been concluded before the entry into force of Directive 2003/55/EC will continue to be

---

36 So far, Belgium applies the same tariffs for all entry and exit points (postage stamp system)

37 In a point-to-point capacity system allowing no changes of the exit points, a small shipper faces some disadvantages vis-à-vis the incumbent company. He may find it difficult to resell eventually unused capacity, since it is bound to certain entry and exit points, while the incumbent company could perform internal swaps and enjoys, due to its large customer base, a considerably higher degree of flexibility, which would also allow exploiting market opportunities at short notice.

38 Contractual congestion implies that not all capacity contracted or reserved is actually used. Albeit not necessarily, it might be an indication for capacity hoarding.

valid and implemented under the terms applied at the time of their conclusion. Against this background, it becomes obvious that for a certain transition period, namely until the expiry of these contracts, gas transportation under any of the contracts covered by Article 32(1) of Directive 2003/55/EC continues to be executed under negotiated, rather than regulated terms. As for all other contracts, it does not matter, whether they concern transportation to domestic customer or transportation to non-domestic customers, i.e. transit, they would all fall under the new access regime based on ex-ante approved tariffs.

Member States with transportation flows across the country for non-domestic consumption ("transit") are likely to be Austria, Belgium, the Czech Republic, Denmark, Germany, France, Italy, Netherlands, Poland and the Slovak Republic. This list however might not be exhaustive. Current practice in most of these countries shows that this kind of transportation continues as business as usual, i.e. under negotiated terms, the only exemption to the rule being Poland, where transit tariffs are approved by the regulatory authority. This might be due to the fact that there have not been any new contracts concluded since the entry into force of the Directive (or at least the Commission is not aware of them) or, due to some specific arrangements actually circumventing regulated tariffs[39], the contracts are considered to be legally compatible with the new regime.

In several Member States, there may be a gap in the legal provisions implementing the Directive, since often regulatory authorities setting up tariffs for domestic transportation do not have the competence for tariffs concerning gas transportation for non-domestic use or transit. Obviously, there are cases where this has led to problems with respect to access to the "transit" pipelines, since often incumbent companies control transit pipelines upstream their domestic markets, which means that they also control access to the domestic market. Due to the currently prevailing regulatory uncertainty with respect to transit matters, they may succeed in preventing new entrants from entering their markets, although access to pipelines principally is regulated.

At the last meeting of the EU Gas Regulatory Forum in Madrid on 15-16 September 2005, Member States, regulators, TSOs and network users acknowledged the importance of this problem and agreed to conduct an in-depth discussion in the next meeting of the Madrid Forum. Against this background, the Commission also pointed out that relevant provisions of the recently adopted Regulation on conditions for access to the gas transmission network and the 2nd Internal Gas Market Directive also apply to existing contracts (including transit contracts).

In Austria, a considerable number of the requirements identified in the Guidelines for Good TPA Practice for Transmission System Operators of September 2003, are implemented for most of the Austrian transit pipelines, despite the fact that these pipelines are not subject to regulation.

6.3.3. Use of network charges

The level of tariff regulation is quite good: almost all Member States have set up access on the basis of ex-ante determined regulated tariffs, which have taken effect in all, but one. The role and involvement of regulatory authorities, however, is quite different and ranges from setting

---

[39] In Belgium, all transit contracts are operated and marketed by Distrigaz, which is not the TSO, but has contracted all transit capacity on the primary market from the TSO. Consequently, Distrigaz sells the capacity on the secondary market, actually under negotiated terms.

the tariffs to proposing them. In the latter case, it is usually the respective Ministry, which has to approve tariffs or methodologies respectively. Network tariff levels for national network uses are reported in Table 6.4 below. These show some rather wide variations which regulators will need to monitor.

Table 6.4 Regulated companies and access charges

	Number of regulated transmission companies	Number of regulated distribution companies	Approx network tariff large users	Approx network tariff medium commercial	Approx network tariff small commercial/ household
Austria	5	19	n.a.	8	12
Belgium	1	19	2	6	12
Denmark	1	4	4	13	13
France	2	22	5	9	14
Germany	23	686	-	-	-
Ireland	1	1	-	19	20
Italy	2	480	2	9	12
Luxembourg	1	4	1	6	7
Netherlands	1	12	-	-	5
Spain	9	25	3	12	23
Sweden	2	7	-	-	-
UK	1	8	2	5	6
Estonia	1	20	1	5	5
Latvia	1	1	-	-	-
Lithuania	1	6	4	6	6
Poland	2	62	5	11	11
Czech Rep.	1	134	-	-	-
Slovakia	1	1	-	-	-
Hungary	1	11	3	4	7
Slovenia	1	17	2	-	-

source: Regulators data

Another important factor in the creation of a European market is the need for tariff regimes in adjacent Member States to facilitate cross-border trade and for this reason, to show a certain degree of consistency.

The structure of charges for gas and the flexibility on which terms are offered are also important factors affecting network users. This issue has been covered in previous reports in the context of the Guidelines for Good practice (GGP) for transmission system operators. The forthcoming Regulation will make many of the requirements in the GGP compulsory for network operators. The evaluation of compliance will be updated at this point.

6.3.4. Balancing

Pursuant to Article 25(2)b of Directive 2003/55/EC, regulatory authorities shall be responsible for fixing or approving prior to their entry into force, at least the methodologies used to calculate or establish the terms and conditions for the provision of balancing services. This provision takes fully into account the importance and role of balancing for non-discriminatory access. It is for this reason that balancing is laid down in the Directive as a regulated business, in the same manner and to the same extent as tariff setting.

The terms and conditions of balancing regimes could have an immediate impact on the capability of a network user to carry out his business successfully or to fail. In some cases it is considered that TSO rules still include considerable scope for discrimination, for instance by applying strict balancing rules to some but not all network users. Network users subject to these balancing rules would be seriously compromised in their competitiveness in comparison

to those that do not fall under these balancing rules. Non discrimination is a requirement of the Directive and its full application with respect to balancing is therefore indispensable.

In acknowledging the importance of unbundling rules, the European Regulators Group for Electricity and Gas recently drew up an ERGEG discussion paper for public consultation on "Gas Balancing" with a view to developing more detailed guidelines for good practice for gas balancing. Table 6.5 is taken from this paper.

It shows the existing differences of balancing regimes in Member States. These differences may to some extent reflect the underlying physical and technical features and conditions of the systems concerned. They also point to possible inconsistencies and incompatibilities if it comes to cross-border trade. For example, in the event that a supplier from the Czech Republic with a daily balancing period intends to serve a customer in Germany where an hourly balancing period prevails, additional measures rendering the deal more complicated must be taken by the parties concerned, in order to allow the supply to happen. A 20% tolerance band in France cannot be fully enjoyed, if the upstream side in Belgium only allows 10%.

While the decision on the most appropriate balancing system might be a trade-off between costs and benefits due to the inherent differences and needs of the systems concerned, compatibility of adjacent balancing systems should be aimed at to the extent possible, to facilitate the free flow of gas including possible hub-to-hub trading. The consideration of the relevant national regulatory authorities and active cross-border cooperation between the TSOs concerned would have an important role to play in this respect and could be an area for further voluntary agreements or guidelines to be adopted under the forthcoming gas Regulation.

In several Member States, for example in Belgium, France, Germany, there are multiple balancing zones, sometimes within the system of one TSO. Whilst it should not be excluded that the underlying reasons are well justified, TSOs and regulatory authorities should strive to overcome them and aim at reducing balancing zones appropriately.

Market based balancing systems, as already in place in some Member States, appear to avoid excessive balancing charges sometimes imposed upon system users in non-market based systems. In that respect, but also with respect to transparency requirements, market based balancing systems are generally deemed to entail less problems and therefore seem to be preferred by system users.

Table 6.5 Gas Network Access Conditions: Balancing Arrangements

	Balancing period	Conditions set by:	Tolerance bands	pooling/trading allowed
Austria	Hourly	market	no	ex-post
Belgium	Daily	regulator\TSO	10%	ex-ante only
Denmark	Daily	regulator\TSO	15%/5% of daily quantity	ex-ante only
France	Daily	Regulator	20%	ex-ante only
Germany	Hourly	TSO	various	various
Ireland	Daily	regulator\TSO	3%	ex-post
Italy	Daily	Regulator	8%	ex-post
Luxembourg	Daily	regulator\TSO	5%/3%	ex-ante only
Netherlands	hourly/daily	Regulator	13% hourly/ 2% daily	ex-post with penalty
Spain	Daily	Ministry\TSO	no	ex-ante only
Sweden	Daily	regulator\TSO	no	ex-post
UK	Daily	market	no	ex-post
Estonia	Daily	TSO	yes	none
Latvia	Hourly	TSO	10%	none
Lithuania	Daily	TSO	yes	none
Poland	Daily	TSO	no	ex-post
Czech R	Daily	TSO	yes	none
Slovakia	Daily	TSO	5%	yes
Hungary	Daily	regulator\TSO	2-8%	none
Slovenia	Daily	regulator\TSO	yes	ex-ante only

Source: CEER document submitted to 10th Madrid Forum

6.3.5. Storage

In March 2005, in the framework of the Madrid process, ERGEG submitted an advice to the Commission on Guidelines for Good TPA Practice for storage operators. These voluntary guidelines have been accepted by storage operators, which agreed to implement them from 1 April 2005. The Commission has asked ERGEG to monitor the implementation of the Guidelines and report back to the next Madrid Forum. ERGEG submitted a preliminary report which gives a quite complete picture on the state of play with respect to access to storage, as required by Directive.

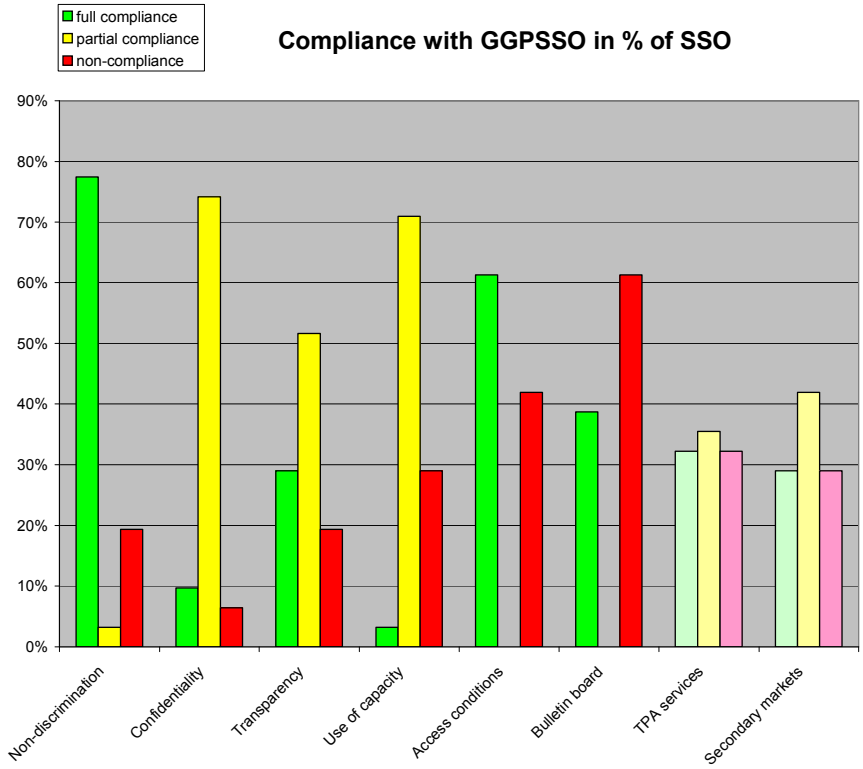
Pursuant to Article 19 of Directive 2003/55/EC, access to storage facilities may be regulated or negotiated. As a consequence, access regimes in Member States vary widely, as shown by table 6.6.

Table 6.6 Access regimes to storage facilities in Member States

Regulated access conditions	Partly regulated access conditions	Negotiated access conditions
BE, IT, SP	CZ, UK, HU, LV, PL	AU, DK, FR, GE, NL

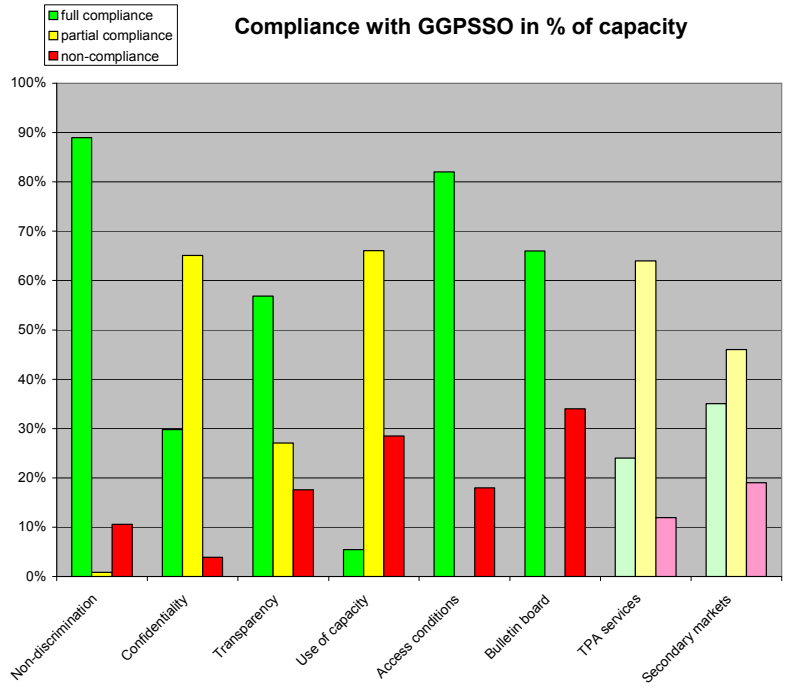
The tables on compliance with the GGPSSO represent only a small part of the overall picture, but deliver a snapshot of the current state of play.

Graph 6.7 Compliance with GGPSSO in % of SSO



It can be seen that the overall level of compliance is not really disappointing bearing in mind the brief time since start of implementation and start of the monitoring exercise. However, it has to be noted that in particular with regard to some aspects on transparency, such as the use of capacity, but also secondary markets, improvements are required.

Graph 6.8 Compliance with GGPSSO in % of capacity



In general, the rate of compliance seems to be higher in countries where access to storage is regulated (for example Italy, Spain, Belgium) compared to a negotiated regime as applied in most of the other countries.

6.4. Comments of Regulators

Regarding electricity, regulators have few major comments. They consider that the implementation of new guidelines on congestion management will considerable improve the framework for cross border transactions. For gas, regulators report that non discriminatory access to physical transport infrastructure is regularly mentioned as a major problem. Those companies which have inherited long term transport capacity, pre-dating market opening, appear to be at an unfair advantage. Their view is that restrictions should apply to the use of long-term transmission contracts with strict use it or lose it rules. These measures would help bring about a liquid secondary trading market and preventing hoarding of unused capacity. A higher degree of transparency, as set out in the recently adopted Regulation on conditions for access to the gas transmission networks is expected to yield improvements in this area.

Regulators view gas storage as an important component of a competitive market. Fair and non-discriminatory access to storage is crucial if the EU gas market is to function efficiently. They consider it questionable that the market for storage and flexibility is competitive and in many countries there are not significant alternatives to storage as a tool for flexibility.

6.5. Comments of Stakeholders

Electricity transmission system operators consider that, in general, network access conditions are fair; although they suggest the cross border arrangements could certainly be improved. Some, however, suggest that more consistent rules for balancing mechanisms and associated charges are needed.

Established companies also underline the need for further harmonisation of rules, especially for cross border exchanges in electricity. This includes the development of a common structure for the intra-day market and compatible balancing arrangements to facilitate trade. In their view, this should take place at national, regional and European level according to an agreed road-map implemented through the Florence Forum process and with modifications to the guidelines as and when necessary.

Companies trading electricity note the incomplete application of the existing Regulation, especially the congestion management guidelines. They underline their support for revision of these guidelines to encompass a high degree of consistency and greater flexibility including the incorporation of intraday trading. They underline the need for both explicit auctions of longer term capacity rights alongside implicit auctions at the day-ahead stage.

Smaller suppliers and consumer groups agree with the need for greater consistency of network access arrangements across Member States. Some suggest this could be better dealt with through the establishment of a single European system operator setting tariffs and access conditions and managing capacity allocation. Some individual companies, including large European market participants suggest that a single TSO with a single regulatory framework is needed as that a common market design should be imposed. Some energy traders agreed with this assessment.

On the gas market, stakeholders' main concerns with regard to effective TPA to the network relate to the lack of transparency and capacity. Very often, it is unclear to network users when at least interruptible capacity or short-term firm capacity would be available. While long-term capacity contracts are usually not questioned in principle, it has been stressed that they must not constitute any kind of discrimination in terms of getting access, as they tend to favour the incumbent companies anyway. There is a clear role for regulators to ensure non-discrimination and transparency in this respect. The operators admit that many challenges with respect to non-discriminatory, transparent and fair access to the grid remain, since the rules in many Member States are still under development. Access to conversion capacity and relevant information also has to be improved.

Many stakeholders underline that effective third party access is key for a competitive market to develop. They identified a number of indispensable requirements, such as effective regulators, a sufficient level of transparency, effective UIOLI rules in order to avoid capacity hoarding and practical, less burdensome capacity booking regimes.

Generally, secondary capacity markets are not yet well developed or facilitated by TSOs; in one case, for instance, registration of secondary market trade can take up 10 days; it has been said that this also goes for lending, i.e. use of unused capacity.

Capacity allocation systems qualifying as first-come-first-served or similar are said to be discriminating. With respect to auctions, it has been highlighted that they entail a number of incalculable commercial risks, in particular in markets with lack of liquid capacity markets, since often the contract with the customer is concluded before the necessary transport agreements are signed. For this reasons, smaller companies entering the market would be clearly disadvantaged.

It is also argued that tarification systems have to be adequate and bring about adequate financial compensation for both TSOs and DSOs. Cost reductions emerging from utilisation of infrastructure must be balanced with maintaining service quality and reliability as well as network integrity.

There are many complaints about inconsistency of entry-exit systems in some Member States, as these systems would be more in line with point-to-point rather than entry-exit systems[40]. Principally, tariffs should be based on costs and not entail any cross subsidies, as this is usually the case with large postage stamp systems including transmission. In some Member States, the postage stamp tariff applied by DSOs is considered excessively expensive, in one Member State occasionally amounting to 70% of overall transportation costs, while a reasonable figure was said to be 40-50%. In the same Member State, published DSO tariffs are said to remain unchanged since 5 years and to exceed distribution tariffs in other Member States by 500%.

Many stakeholders take the view that hourly balancing is deterring new entrants and complicates cross-border trade with daily balancing on the other side of the border. They advocate moving towards harmonised balancing regimes including daily balancing periods, improved information to shippers on their balancing positions and transparent imbalance charges reflective of efficiently incurred costs. Market based balancing should be an objective and the incumbents should act as market makers.

---

[40] See point 6.3.1.

Some single cases of excessive balancing charges have been reported to the Commission, one of them resulting in penalties amounting to € 20,000/hour and € 90,000/per month for a transportation contract worth € 3,200/month.

In general, there are widespread complaints about lack of transparency and effective TPA to storage as well as the unbundling rules applying to storage operators. In addition, it is stressed that in some cases, flexibility is only available to incumbents, which refuse to sell it on a stand-alone basis and thus create major obstacles for newcomers to enter the market. Also long-term storage arrangements set up by the incumbent are a matter of concern. Access to storage also often creates a problem at the level of DSOs, where also the pricing is considered inadequate. Storage users highlight the need for fair access to flexibility also for new entrants, as otherwise the incumbent would enjoy a dominant position in the provision of flexibility, which cannot be offset by newcomers. Negotiated TPA to storage should only be allowed in case of effective competition; otherwise regulated access should be set up. The Guidelines for Good Practice for Storage Operators (GGPSSO) should be turned into legally binding rules.

6.6. Assessment

Network access conditions are still not demonstrably fair and non-discriminatory across all Member States. Indeed in almost all Member States there is at least one aspect of network access which is unacceptable for either gas or electricity. These shortcomings, which sometimes may appear minor, are nevertheless important since each one creates a perception among potential market entrants that they will not be fairly treated in certain circumstances. This becomes a severe disincentive to new entrants over time and will be damaging to competition.

Cross border and inter TSO arrangements are still deficient in a number of cases. For electricity some arrangements currently breach of European law and companies are acting illegally in persisting with systems which do not comply with the Regulation. The same goes for regulators which endorse such practices in their decisions.

The complete absence of operational barriers to enter and exit gas systems including cross border is not yet in place. Sometimes, leftovers of the pre-liberalisation period are still hindering progress and have to be addressed rapidly and efficiently. While arrangements for gas are still being developed, it is clear that, at present, gas cannot easily be moved around the European network in a flexible manner. A fundamental requirement of the Directive, namely non-discriminatory and transparent access to the network is therefore still missing in many Member States. This needs to improve rapidly. Furthermore, the new Gas Regulation brings in additional requirements from July 2006 and will need to be applied quickly.

The two Directives and two Regulations give significant powers to Regulators on all the issues discussed in this section; network tariffs, balancing mechanisms, congestion management and capacity allocation. This suggests that all the outstanding issues should be resolved through the actions of regulators themselves. This may either be done through the procedures defined in the Regulation for the adoption of legally binding guidelines. Alternatively regulators may enhance the degree of co-operation between themselves and each adopts compatible approaches which will maximise the degree of competition.

7. EXPERIENCE WITH INDEPENDENCE OF SYSTEM OPERATORS

7.1. Background

In the Directive, the requirements are legal and functional unbundling for both transmission and distribution system operators. Unbundling is considered necessary for a variety of different reasons. As well as the need for fair network tariffs, which do not lead to cross subsidies, network operators also play a very important facilitating role in the development of the market.

Transmission system operators have a market operator role in that they provide a default market place for electricity to be traded. This is either a formal arrangement whereby the TSO itself operates a day ahead power exchange, or through its balancing responsibilities. As already demonstrated, the way that wholesale markets are structured has a large impact on the success or otherwise of competition. Secondly, TSOs also have control over a great deal of market sensitive information. Without strict unbundling in functional terms there is the possibility that such information may be distributed unfairly among market participants. Finally TSOs also are responsible for safe operation of the system which involves questions such as allocation of capacity and determination of the quantity of interconnection available for example. These decisions are also likely to affect the development of the market.

Distribution system operators likewise have an important role closer to consumers. The collection of metering data, and the managing of exchange of information in order to enable customers to switch supplier, is their responsibility. As for TSOs, the possibility that market sensitive information is supplied to affiliate companies needs to be avoided and the switching process must be managed in a cost effective and user-friendly manner if competition is to succeed.

The Directive requires TSOs to be set up as separate legal entities and fully independent in operational and functional terms. The overall objective of these provisions is to create the necessary pre-conditions for non-discriminatory treatment of any party requesting access to the network. It is obvious that only a company operating independently of any supply or trading interests can be considered to be in the position to guarantee the necessary non-discrimination, i.e. equal treatment of all network users, including the incumbent, which – in the absence of ownership unbundling – often remains linked to the network operator via a holding company or a similar construction.

As for DSO serving more than 100,000 customers, the unbundling requirements of the Directive are slightly different. Pursuant to Article 33(2) of the Gas Directive and Article 30(2) of the Electricity Directive, Member States can postpone the implementation of the legal unbundling requirements laid down in Article 13(1) of the Gas Directive and in Article 15(1) of the Electricity Directive until 1 July 2007. This notwithstanding, functional unbundling has to be carried out by these DSOs in the same manner and to the same extent as for TSO: i.e. by July 2004. DSOs with less than 100,000 customers, however, can be fully exempted from the application of legal and functional unbundling requirements. This decision is left to Member States.

There are a number of features which could reasonably be expected to apply once a network operator is unbundled in legal and functional terms complying with the requirements of the Directive in particular:

- a separate headquarters for the system operator, or at least a restricted area of the building,

- a separate corporate presentation including a separate website, distinctive company name implying a network business,

- separate accounts compiled according to the requirements of the regulatory authority responsible for network access and the removal of cross subsidies which are separately audited with these objectives in mind,

- a separate board of Directors, the members of which have has no involvement with other parts of the vertically integrated business,

- removal of situations whereby network companies have an shareholding in supply trading, generation or gas production or wholesale businesses.

The European Commission has asked a consultant to examine a sample of both transmission and distribution companies across Member States in order, in particular to ascertain the effectiveness of functional unbundling. This study is ongoing and will be completed early in 2006. In the meantime data has been provided by regulators on a variety of aspects of unbundling which are summarised in the Tables below.

7.2. Current Situation: Electricity

Table 7.1 Unbundling of Network Operators: Electricity Transmission

	Legal unbundling implemented?	Separate Headquarters (Y/N)	Separate corporate presentation (Y/N)	Unbundled regulatory accounts with guidelines (Y/N)	Audit of unbundled accounts (Y/N)	Publication of unbundled accounts (Y/N)	Separate board of Directors without Directors from other group companies? (Y/N)	Total rating out of 6
Austria	yes	partly	Y	N	Y	Y	Y	5
Belgium	yes	Y	Y	Y	Y	Y	N	5
Denmark	yes and ownership	Y	Y	Y	Y	Y	Y	6
Finland	yes: state overlap	Y	Y	Y	Y	Y	Y	6
France	yes: state overlap	Y	Y	Y	Y	Y	Y	6
Germany	yes	N	N	Y	Y	N	Y	3
Greece	yes: state overlap	Y	Y	N	Y	N	N	3
Ireland	yes: state overlap	Y	Y	Y	Y	Y	Y	6
Italy	yes and ownership	Y	Y	Y	Y	Y	Y	6
Luxembourg	yes	N	partly	N	Y	Y	N	3
Netherlands	yes and ownership	Y	Y	Y	Y	Y	Y	6
Portugal	yes	Y	Y	Y	Y	Y	Y	6
Spain	yes and ownership	N	Y	Y	Y	N	N	3
Sweden	yes: state overlap	Y	Y	Y	Y	Y	Y	6
UK	yes and ownership	Y	Y	Y	Y	Y	Y	6
Norway	yes: state overlap	Y	Y	Y	Y	Y	Y	6
Estonia	yes	Y	Y	Y	Y	Y	Y	6
Latvia	yes	Y	Y	Y	Y	Y	N	5
Lithuania	yes: state overlap	Y	Y	Y	Y	Y	Y	6
Poland	yes: state overlap	Y	Y	N	Y	Y	Y	5
Czech Rep.	yes: state overlap	N	N	Y	N	N	N	1
Slovakia	yes: state overlap	Y	Y	N	N	N	N	2
Hungary	yes: state overlap	N	N	N	Y	Y	N	2
Slovenia	yes: state overlap	Y	Y	Y	Y	Y	Y	6
Cyprus	no	Y	N	Y	N	N	N	2
Malta	-	-	-	-	-	-	-	-
Total Compliance / 26	24	20	21	19	22	19	16	

source: Regulators data
Notes:
1. Greece: Accounts for the TSO in are available for 2002 and 2003
2. UK: Network ownership in Scotland remains integrated with Scottish Power and SSE
3. Spain: the TSO is partly involved in the cross border sale of electricity
4. "State overlap" where the state owns the TSO and also has a shareholding in one or more suppliers

Table 7.1 shows relatively good compliance with the legal and functional unbundling requirements. Indeed many Member States have moved to ownership unbundling, although in some of these cases it is the state which is both a major shareholder of both the TSO and some production and supply companies. Other Member States, for example Ireland and Hungary have a system where the system operator is a separate company but where the assets are owned by a vertically integrated incumbent. This system requires close supervision of the

development of the network. Similarly, some unbundled TSOs still do not have an independent management board which is a requirement of functional unbundling.

Table 7.2 Unbundling of Network Operators: Electricity Distribution

	Legal unbundling implemented?	Separate Headquarters (Y/N)	Separate corporate presentation (Y/N)	Unbundled regulatory accounts with guidelines (Y/N)	Audit of unbundled accounts (Y/N)	Publication of unbundled accounts (Y/N)	Separate board of Directors without Directors from other group companies? (Y/N)	Total rating out of 6
Austria	no	N	partly	N	Y	Y	partly	3
Belgium	yes	Y	Y	Y	Y	Y	N	5
Denmark	yes	partly	partly	Y	Y	Y	partly	4
Finland	yes	N	N	Y	Y	Y	N	3
France	no	N	N	N	N	N	N	0
Germany	no	N	N	Y	Y	N	Y	3
Greece	no	N	N	N	Y	N	N	1
Ireland	no	N	Y	Y	Y	Y	N	4
Italy	see note	N	N	Y	Y	N	N	2
Luxembourg	no	N	N	N	partly	partly	N	1
Netherlands	yes	N	Y	Y	Y	Y	N	4
Portugal	see note	Y	N	Y	Y	Y	N	3
Spain	see note	N	Y	N	N	N	N	1
Sweden	yes	N	N	Y	Y	Y	N	3
UK	yes	partly	partly	Y	Y	Y	partly	5
Norway	yes	N	partly	Y	Y	Y	N	4
Estonia	yes	Y	Y	Y	Y	Y	Y	6
Latvia	no	N	N	Y	Y	N	N	2
Lithuania	yes	Y	Y	Y	Y	Y	Y	6
Poland	no	N	N	N	N	N	N	0
Czech Rep.	no	N	N	Y	N	N	N	1
Slovakia	no	Y	Y	N	N	N	N	2
Hungary	see note	N	N	N	Y	Y	N	2
Slovenia	no	N	N	Y	Y	Y	N	3
Cyprus	no	N	N	Y	N	N	N	1
Malta	no	N	N	in progress	N	N	N	1
Total Compliance	9	7	11	17	19	15	6	

source: Regulators data
Notes:
1. In Spain, Italy, Portugal and Hungary, the distribution company is also the default supplier. However suppliers to non-regulated customers must be legally unbundled

Table 7.2 shows a rather less encouraging situation for distribution. Although legal unbundling is not required until 2007, it would appear that less than half many Member States have failed to implement the basic requirements of management and account unbundling that are already required.

7.3. Current Situation: Gas

On the basis of the information provided to the Commission by August 2005, legal unbundling requirements of TSOs are laid down in the respective transposition laws in 12 Member States (Austria, Denmark, Germany, France, Hungary, Italy, Netherlands, Poland, Portugal, Spain, Slovenia, UK). Some of them have already anticipated legal unbundling in the preceding years (Austria, Italy, Spain), while in others, the corresponding laws have entered into force not before summer 2005 (France on 1/7/05, Germany 13/7/05).

In Belgium, the transposition law requiring legal unbundling of system operators will enter into force in 2006. However, since functional unbundling has already been embedded in the existing law, companies already anticipated legal unbundling on a voluntary basis.

In seven Member States (Czech Republic, Estonia, Ireland, Latvia, Lithuania, Slovak Republic, Sweden), legal and functional unbundling has not yet been established by law, while another five Member States enjoy derogations or are not yet supplied by natural gas (Cyprus, Malta, Luxembourg, Finland, Greece).

In some Member States, governments are considering going a step further and implement ownership unbundling (Italy) or apply already certain provisions that restrict the ownership of network operators (Belgium, Spain) by companies active in the competitive part of the natural gas market. Three Member States have already implemented full ownership unbundling of network companies (UK, Denmark, Netherlands).

Table 7.3 Unbundling of gas transmission system operators

	Legal unbundling implemented?	Separate Headquarters (Y/N)	Separate corporate presentation (Y/N)	Unbundled regulatory accounts with guidelines (Y/N)	Audit of unbundled accounts (Y/N)	Publication of unbundled accounts (Y/N)	Separate board of Directors without Directors from other group companies? (Y/N)	Total rating out of 6
Austria	yes	Y	Y	N	N	N	Y	3
Belgium	yes	Y	Y	Y	Y	Y	N	5
Denmark	yes and ownership	Y	Y	Y	Y	Y	Y	6
France	yes: state overlap	N	N	Y	Y	N	N	2
Germany	partly	N	N	Y	Y	N	Y	3
Ireland	no	N	N	N	N	Y	N	1
Italy	yes and ownership	Y	Y	Y	Y	N	Y	5
Luxembourg	no	N	N	Y	Y	N	N	2
Netherlands	yes and ownership	Y	Y	Y	Y	Y	Y	6
Spain	yes	N	Y	N	Y	Y	N	3
Sweden	yes and ownership	Y	Y	Y	Y	Y	Y	6
UK	yes and ownership	Y	Y	Y	Y	Y	Y	6
Estonia	no	N	N	Y	N	N	N	1
Latvia	no	N	N	N	Y	N	N	1
Lithuania	no	N	N	Y	Y	N	N	2
Poland	yes	Y	Y	N	Y	Y	N	4
Czech Rep.	no	N	N	Y	N	N	N	1
Slovakia	no	N	Y	N	N	N	N	1
Hungary	yes	Y	partly	N	Y	Y	Y	5
Slovenia	no	N	Y	Y	Y	Y	Y	5
Total Compliance / 20	12	9	12	13	15	10	9	

source: Regulators data
Notes:
1. Germany: not all TSOs are yet legally unbundled, although the largest 5 are

As Table 7.3 shows, the basic unbundling requirements, legal and functional unbundling stipulated by the law, are in place in 9 Member States accounting for a large proportion of total EU gas consumption. The gas consumption of those Member States without the necessary rules in place would only amount to less than 8.5% while the remaining Member States would not have a gas market or enjoy derogation under Article 28 of the Directive. On paper and bearing in mind the core markets of the EU, such as Austria, Belgium, Germany, Denmark, Spain, France, Italy, Netherlands and the UK, the picture would look promising with respect to a successful implementation of a fundamental requirement of the Directive.

However, going more into details, as demonstrated by the remaining columns of table 7.3., the picture appears less bright. A majority of TSOs do not seem to run headquarters separate from the remaining branch. Only very few TSOs are managed without involvement of Directors from other group companies. This raises concerns on whether non-discrimination, equal treatment of third parties and confidentiality requirements can be considered guaranteed.

This impression has been confirmed by the contributions the Commission received from stakeholders during the preparation of this report. In some important gas countries, such as Germany and the Netherlands, some incumbent suppliers seem still to enjoy preferential treatment, for example detailed information, compared to third parties, i.e. other network users implying that confidentiality requirements of TSOs are not always met.

Another example, possibly constituting considerable discrimination of third parties are nomination procedures. While third parties have to nominate on the basis of the contracted capacity the gas they inject and take off the system on behalf of their customers, this is not always the case for the incumbent suppliers. As a consequence, third party shippers may be subject to more burdensome procedures implying more costs than their incumbent competitors. They may also run into imbalances (input unequal off-take), which in the day-to-day gas business can never be avoided, resulting in balancing charges which in a similar situation the incumbent company would never incur due to the fact that the TSO automatically balances the input and off-take of the incumbent.

While it is difficult to say from the Commission's point of view, whether such behaviour would represent the exception to the rule, it is likely to infringe the requirements of non-

discriminatory access to the network and confidentiality of the TSO, as laid down in the Directive.

Table 7.4 Unbundling of gas distribution system operators

	Legal unbundling implemented?	Separate Headquarters (Y/N)	Separate corporate presentation (Y/N)	Unbundled regulatory accounts with guidelines (Y/N)	Audit of unbundled accounts (Y/N)	Publication of unbundled accounts (Y/N)	Separate board of Directors without Directors from other group companies? (Y/N)	Total rating out of 6
Austria	yes	partly	partly	N	no audit by	N	partly	2
Belgium	yes	Y	Y	Y	Y	Y	N	5
Denmark	yes	N	partly	Y	Y	Y	Y	5
France	no	N	N	N	Y	N	N	1
Germany	no	N	N	Y	Y	N	Y	3
Ireland	no	N	N	N	N	Y	N	1
Italy	yes	N	N	Y	Y	N	N	2
Luxembourg	no	N	N	N	partly	N	N	1
Netherlands	yes	N	Y	N	N	Y	N	2
Spain	see note	N	Y	N	N	N	N	1
Sweden	no	N	N	Y	Y	Y	N	3
UK	yes and ownership	Y	Y	Y	Y	Y	Y	6
Estonia	no	N	N	Y	N	N	N	1
Latvia	no	N	N	N	Y	N	N	1
Lithuania	no	N	N	Y	Y	N	N	2
Poland	no	N	N	N	N	N	N	0
Czech Rep.	no	N	N	Y	N	N	N	1
Slovakia	no	N	Y	N	N	N	N	1
Hungary	no	N	N	N	Y	Y	N	2
Slovenia	no	N	N	N	N	N	N	0
Total Complaince	6	3	7	9	11	7	4	

1. In Spain, the distribution company is also the default supplier. However suppliers to non-regulated customers must be legally unbundled

It becomes obvious from table 7.4 that unbundling of DSOs is generally lagging significantly behind of what has been achieved by TSOs. The reason for that may be found in the Directive allowing postponement or exemptions, as explained above.

Several Member States (Czech Republic, France) intend to implement legal unbundling of DSOs not before July 2007, while many Member States fully apply the de-minimis rule .

It is also doubtful whether the de-minimis rule with a threshold of 100000 customers has to be considered appropriate, as a large part of eligible customers are not likely to enjoy the benefits of proper unbundled networks providing fair, non-discriminatory and transparent access conditions. Few Member States, such as Austria, have lowered the exemption threshold from 100,000 to a smaller figure, e.g. 50,000.

As already mentioned, in some Member States (e.g. Austria, Germany), incumbent companies hold large, sometimes only minority shares in many of the DSOs. It cannot be excluded that influence is exerted by the incumbent on the distribution companies with a view to maintaining market shares for the incumbent.

7.4. Comments of Regulators

In the view of regulators, effective unbundling is certainly necessary at both the level of TSOs for a dynamic wholesale market, and at DSOs level for enabling an undisturbed retail competition. Regulators considered that DSOs, which play an essential role concerning information exchange and access to the retail market, are still too closely linked to incumbents´ supply business in many countries. It is also thought that “soft factors” might at least be as important as the traditional formal unbundling issues such as possible confusion of small consumers regarding logos, abbreviations etc.

Many regulators explicitly found insufficient unbundling as a main impediment to dynamic competition and that it contributed significantly to the disappointing results in the small

customer retail markets. In short, regulators find that in many cases the goal of independent and non discriminatory operation of the grid has not been reached yet.

7.5. Comments of Stakeholders

Transmission system operators for the electricity sector maintain that, in general, unbundling of transmission is compatible with the Directive. However it is acknowledged that Article 10 of the Directive has been interpreted differently by Member State. They argue that greater consistency would improve competitive conditions. Several vertically integrated companies argue that the current Directives, if properly and fully implemented, are sufficient. However, Nordic TSOs suggest that ownership unbundling has a number of advantages.

However some network users, especially independent companies and smaller suppliers suggest that this assessment is too optimistic, especially for TSOs. In their view, many network operators do not comply with the Directive's requirements. They argue for a strict enforcement of the Directives in this regard. Insufficient unbundling of distribution companies was seen as problematic and the 100,000 limit was questioned by some companies, particularly energy traders.

Many participants in the gas market have highlighted the importance of effective functional and legal unbundling. It would lead to a structure of interests of the TSO geared towards offering transport capacities in a non-discriminatory manner, in order to maximise its revenues. Against this background, one would assume that a TSO fully unbundled in functional and legal terms, would take a proactive approach when it comes to making capacity available to shippers. Many shippers, however, take the view that this is very often not the case. They advocate explicit obligations on the implementation of legal and functional separation involving separate sites and systems for transporters as well as a clear code of conduct.

Some have taken the view that ownership unbundling has to be considered, if inherent conflict of interests continues. They argue that ownership unbundling would be best to ensure effectively regulated TPA and avoids conflict of interest of the TSO. Without ownership unbundling, effective compliance and Chinese wall separation were essential, however such measures imposed costs, which would disappear in the case of ownership unbundling and would then be more efficient for the TSO.

Operators underline the need for a clear definition of roles and responsibilities under the new market environment. From their point of view, the provisions of the Gas Directive and other requirements, such as the voluntary Guidelines on Good Practice for Transmission System Operators are adequate to ensure effective independence, while authorities need to take a pragmatic view to ensure that cost/reward balance is correctly struck.

In general, however, there seem to be more problems with DSOs. Albeit required to unbundle in operational and functional terms, some network users seem to consider them a further serious hurdle for a competitive natural gas market. In general, unbundling requirements between DSOs and their supply arms are thought to be insufficient. Network users often complained about the difficulties to overcome the last kilometre to the customers: excessively high balancing charges, obvious cross subsidisation paid by household customers, network subsidies going to the sales department do not support the view that non-discriminatory TPA to distribution systems is working properly in all Member States.

As for both DSO and TSO, there is a general complaint that compliance reports, as required by the Directive are not drawn up and published. As a consequence, network users may show a lack of confidence about the level of compliance by DSO and TSO in implementing separation and other anti-discriminatory measures.

Since DSOs very often operate the last kilometre to the eligible customer, the fact that many of them are completely exempted from legal and functional unbundling requirements is likely to compromise the potential benefits for eligible customers.

In view of the fact that a considerable proportion of households would not be able to fully benefit from a free natural gas market, because many DSOs with less than 100,000 customers would not need to be unbundled and would thus be able to prevent competitors from successfully entering their market, some market participants consider the threshold of 100,000 customers for DSOs too high, while DSOs underline its importance, as otherwise costs would be un-proportionately high. They estimate the costs of unbundling at €3-10 million one-off for undertakings with more than 100,000 customers and in addition, increased operational expenditures by 10-15%.

7.6. Assessment

The tables above, as well as the comments of regulators and stakeholders suggest that unbundling is currently not being implemented in a sufficiently robust manner across all Member States. In many Member States, it seems as if network operators are still closely working with and for the incumbents. A necessary precondition of a competitive market to develop and a fundamental requirement of the Directives, namely system operators with a structure of interests geared towards offering transportation services is thus still missing in a number of Member States. It is doubtful whether these Member States comply with the Directives in this respect, even for transmission where the deadline for legal and functional unbundling was July 2004. This contrasts with the attitude of many others that have clearly decided that they need to go further than the Directive towards ownership unbundling, or at least, as a hybrid solution, to have a fully independent system operator with decision making powers over investments, even if the ownership of the network remains in a vertically integrated group.

The implementation of functional unbundling for distribution companies, also required by July 2004, remains highly deficient in practice. Very few Member States have established management unbundling as required by Article 15(2) of the electricity Directive and Article 13(2) of the Gas Directive. Again, these shortcomings in some Member States contrasts with those taking bold measures to ensure competition, notably the Netherlands, which favour full ownership unbundling for both transmission and distribution. Arguably this solves a number of issues discussed above in one single stroke. Unless Member States take stronger measures in this regard, so that the requirements that they chose to put on vertically integrated companies are fulfilled, the Commission will be obliged itself to take action.

8. EFFECTIVE REGULATION

8.1. Background

The existing electricity and gas Directives are the first to introduce a compulsory element of ex-ante regulation of networks via the establishment of a sector specific regulator. All Member States have now established such an authority. The minimum roles and responsibilities of the regulatory authority are clearly set out in the Directives.

However the current Directives allow for a wide degree of interpretation. More than one regulatory agency is permitted, for example. It is also possible for the Ministry to take over most or all the regulatory functions and for the nominated regulatory agency to play only a minor advisory role. However, at the same time, Article 3(1) of the Directives require that Member States to ensure "on the basis of their institutional organisation… that electricity [gas] companies are operated with a view to achieving a competitive….market in electricity [gas]."

A final set of issues relates to access to information. Regulators may find themselves over reliant on the companies that they regulate for information. It is not always clear that they have appropriate access to both technical and financial information.

8.2. Current Situation

As a result of this flexibility, a high degree of variability exists in the extent to which regulators can exercise their functions. From the submissions of regulators and examination of current practice it is possible to identify a list of possible shortcomings in the arrangements from the point of view of effective regulation of the electricity and gas sectors. The following circumstances are seen as potentially problematic in this regard:

(a) regulators do not directly set tariffs or tariff methodologies and instead only have an advisory role to the Ministry,

(b) regulators are not responsible for setting tariff methodologies for distribution companies below a certain threshold with this being done by local government,

(c) regulators do not directly set balancing methodologies and instead only have an advisory role to the Ministry,

(d) regulators are not responsible for control of access to gas storage,

(e) regulators do not have the competence for upstream gas production and pipelines in terms of surveillance and setting rules on transparency and disclosure,

(f) regulators do not have responsibilities for the surveillance of wholesale electricity markets in terms of transparency and disclosure for producers and transmission system operators and/or market operators/power exchanges,

(g) regulators are not responsible for setting end-user regulated tariffs resulting in unrealistic levels,

(h) regulators are not entitled to ask for basic information on the functioning of the market in order to fulfil their reporting duties under the Directive,

(i) regulators are not entitled to specify clear rules for cost allocation in the preparation of unbundled accounts,

(j) regulators may be unable to allow for incentives to TSOs to make available more cross border connection capacity, either through investment or operational techniques such as counter trading

(k) regulators have no input into conditions applied to companies seeking to merge – for example the imposition of capacity release for gas or electricity,

(l) regulators may have limited input into decisions to authorise new generation plant or gas infrastructure and on the terms and connections for connection to the network,

(m) regulators may have no say on public service obligations imposed on companies especially those that give a selective obligation on an individual company that also requires compensation payments or levies,

(n) regulators may have insufficient ability to enforce their decisions through sanctions.

All these issues create the potential for dilution of a functioning electricity and gas market to the extent that decisions taken by authorities other than the nominated regulatory body are not fully in line with this objective. Taken individually, these issues may not necessarily imply and infringement of the Directive or lead to particular problems. However if several of these apply and the consistency of overall regulation of the electricity and gas sector is damaged, the requirements of Article 3(1) of the Directives may not be met. The possibility of inconsistent regulation between Member States is also an obvious potential obstacle to the objective of a single European market. The more government agencies that are involved in such decisions, the more likely it is that such inconsistencies are likely to arise and to persist.

8.3. Comments of Regulators

Regulators themselves stress the fact that their own independence might be compromised by the fact that many energy companies are also owned by public authorities. The fact that regulatory decisions have an impact on another branch of government activity often compromises their effectiveness in fostering competition. They note the possibility that decisions taken by regulators could be overruled by public administrations. In addition some of the competences required by regulators in the Directives are in fact taken by another public authority, i.e. the government (federal ministry, provincial or local authority) itself. Furthermore many regulators' budgets are part of the state budget and have to be negotiated with the relevant ministries. This might imply a regular dependence of regulators on ministries' good will and therefore undermine independence.

Regulators consider that there are several countries where either independence or competences of regulators is/are still insufficient, especially in the area of effectively enforcing compliance (i.e. penalties, enforcement). Many regulators say they either do not

have the rights to provide sanctions, or that penalties are so low that a cost-benefit analysis for companies normally would indicate that non-compliance is very profitable.

In many countries (exceptions are The Netherlands, Spain, UK) regulators note that market surveillance is somewhat blurred by the fact that two authorities (general competition authority and sector regulator) are monitoring and controlling parts of the market. There is no guarantee that the whole market is covered in that system and regulatory gaps might exist. Better formal co-operation on competition issues (clearly set up in national laws) seems necessary to use the most efficient instruments to foster competition. Finally it is thought that regulatory gaps emerge when dealing with cross border problems. As regional integration makes progress, co-ordinated surveillance across the border and also the necessary legal basis to close gaps are essential.

8.4. Comments of Stakeholders

Transmission system operators in the Nordic region argue that with sufficient unbundling, the TSOs themselves can fulfil an important role in proactively encouraging competition and monitoring the market. This can allow for a lighter handed regulation.

Consumer groups in some Member States argue that the powers of regulators are insufficient. They suggest that stronger incentive based regulation needs to be introduced so that network companies reduce their costs.

8.5. Assessment

Most, although not all of the issues identified above are not fully addressed by the Directives specifically, although Member State the requirements in Article 3(1) imply the need for a certain minimum standard of regulatory independence. As a minimum, regulators should have clear powers of the issues covered by the Directives, and with independence from industry and government, especially where the state retains a large shareholding in energy businesses. Arrangements which fall short in terms of regulatory independence may be inconsistent with the Directive. Regulators may also need new powers in order to operate more effectively, for example a greater scope for surveillance of wholesale markets.

Consistency between regulators is of high importance in creating a real internal market. Incompatible regimes on, for example, balancing and storage, incentives to remove congestion, and on investment will clearly frustrate objectives of a coherent European market. Regulators have made this clearing their submission on “regional markets”. Regulators should already posses most of the powers that they need to make these objectives a reality. They should under the legislation be in a position to deal with, directly or indirectly, network access arrangements, balancing, capacity allocation and congestion management. Regulators should make maximum use of the powers that they do have in this respect.

9. INTERCONNECTION AND OTHER INFRASTRUCTURE

9.1. Background

Development of a European single market for electricity and gas requires there to be an energy network that can easily allow for exchanges between Member States. However electricity, and to a lesser extent, gas networks have usually been developed only with national requirements in mind. Furthermore, capacities in those interconnections that do exist are often the subject of contractual arrangements which predate the introduction of competition. This has led to a situation whereby the electricity sector is the only one where transport of the product is a serious barrier to the development of a real internal market.

Furthermore, the construction of new infrastructure is often a very time-consuming process. As well as the financial and regulatory issues, there would appear to be more opposition for aesthetic and environmental reasons to the construction of new electricity lines and LNG terminals than for other large infrastructure projects. It would be over-optimistic to expect this situation to be changed quickly. It is therefore of crucial importance to make the maximum possible use of the interconnection and infrastructure that does exist through better management of operations, greater co-ordination and through strict use-it-or-lose-it procedures and other anti-hoarding measures.

9.2. Current Situation: Electricity

Currently the availability of electricity network capacity for cross border transactions is not satisfactory either in terms of new investment or in the way existing capacity is allocated. Lack of co-ordinated network management is damaging the integrity of the internal market and this is clearly limiting the scope for competition and in particular the liquidity of wholesale markets as discussed in previous sections. In particular, at present, the network is not being planned or operated on a European basis or even regional basis in most cases. This often reflects a regulatory gap in that no requirement is placed on authorities to encourage a more integrated approach. Certain regions such as the Baltic countries, the Iberian peninsular, Great Britain and Ireland all remain rather isolated from their neighbours in terms of interconnection. Although some new interconnection projects have been realised over the past five years, many of the so-called “key” projects supported by the Commission as highlighted in previous reports on infrastructure [2001 and 2003], not all have been realised as set out in Table 9.1 below.

Table 9.1 Member States with low levels of interconnection

	Installed generation capacity (GW)[41]	Import capacity NTC[42] (GW)	Import capacity as % of installed capacity	Projects to improve interconnection	Current Status
Italy	80	6.0	8%	San Fierano- Robbia	complete
Portugal	12	0.8	8%	Balboa-Sines Duroro internacional Minho Algarve	complete in progress proposed proposed
Spain	56	2.2	4%	Balboa-Sines Baixas-Bescano	complete delayed
UK	80	2.3	3%	UK-NL DC link	proposed
Ireland	5	0.3	6%	second ROI-NI GB-ROI DC link	agreed proposed
Poland	34	3.4	10%	Poland - Lithuania	no progress
Baltic States (collectively)		0.0	0%	Estlink Poland - Lithuania	in progress no progress

Source: ETSO data on available interconnection capacity

A more general problem, applying to all Member States, is that existing capacity is not really used effectively. Many of the larger countries, in particular, do not have a sufficient amount of capacity made available for cross border transactions, especially those with a rather unfavourable national market structure. This situation is improving however, and the introduction of new congestion management guidelines, requiring a higher degree of co-ordination, should imply that more capacity will be made available. Transmission system operators are already working towards this objective, in particular by restating available capacities to take account of loop flows in the network. The recent judgement of the European Court of Justice may improve this situation by making available some capacity that was previously reserved to certain network users on the basis of agreements pre-dating market opening.

9.3. Current situation: Gas

Regarding the gas sector, the degree of interconnection between Member States is usually relatively high, but is depending on historical supply patterns. Some Member States, such as Spain are relatively badly connected to the European network due to the fact that most of its supplies are delivered from the Maghreb region both by pipeline and LNG. But also the Baltic States and Finland are not yet connected to the European grid, a fact that is likely to be improved, once economic conditions allow. As for Greece, another Member States without any gas pipeline connection to EU Member States, the situation may improve once the energy

41 UCTE July 2003 forecast, Nordel winter 2003-4 forecast, NGCand ESBNG 7 year statement.

42 Based on ETSO Winter 2004-05 NTC data, includes capacity from Switzerland and South East Europe, excludes Morocco Ukraine and Russia

market on the Balkans becomes a reality. Table 9.2 provides a more detailed overview of projects currently planned, envisaged or under construction.

Table 9.2 Key Gas Infrastructure Projects

Member State	Project Pipeline/LNG	Operator	new	expansion	bcm/yr capacity	by		comments
	Connection WAG							
	TAG	ENI		yes		6,5	2007	
AU	WAG					4,0	2011	planning
	Nabucco	OMV/MOL/Bulgargaz/Transgaz/Botas					2011	
	Storage Haidach	RAG				2,4	2007	
	new entry point at Zandvliet	Fluxys	yes		2 mcm			
BE	LNG terminal Zeebrugge	Fluxys		yes		4,5		
	Interconnector compressor station	IUK		yes		15,0	2006/2007	
DK	Baltic Gas Interconnector		yes		na			under approval
	NOGAT pipeline - Dutch system		yes			5,4	2004	commissioned in July 2004
	Compressor station Cuvilly	GdFT					2009	merger of balancing zones
	Euscadour: Interconnection Spain-France	TIGF				na		
FR	Fos Cavou LNG terminal	GdF/Total	yes			8,3	2007	
	Increased capacity at Obergailbach	GdFT		yes	na		2008	
	Interconnector Greece-Turkey		yes			6,0	2008	
HE	LNG terminal Rewythoussa			yes		2,4	2008	
IR	2nd Interconnector UK-Ireland						2006	
	TAG	ENI		yes		6,5	2007	
	TTGP (Tunesian stretch)	ENI		yes		7,0	2007	
	TAG	ENI		yes		6,5	2011	
	TTGP (Tunesian stretch)	ENI		yes		7,0	2012	
	Brindisi	BG Group	yes			8,0	2007-2008	authorised
	Rovigo	Edison-Exxon Mobil - Qatar Petroleum	yes			8,0		authorised
	Rosignano	Edison - BP - Solvay		yes		3,0		modification requested
IT	Toscana offshore	OLT LNG terminal	yes		3 - 4			at approval stage
	Trieste Zaule	Gas Natural	yes			8		procedure not yet started
	Trieste offshore	Endesa	yes		8 - 12			preliminary stage
	Gioia Tauro	Società Petrolifera Gioia Tauro		yes	4 - 8			modification requested
	San Fernandino	LNG Med gas Terminal		yes	6 - 12			modification requested
	Taranto	Gas Natural	yes			8		procedure not yet started
	Porto Empedocle	Nuovo Energie	yes			8,0		procedure not yet started
	Priolo - Augusta - Melilli	Erg Power&Gas - Shell Energy Europe	yes		8 - 12			procedure not yet started
	Dutch Interconnector	Gasunie/Eon/Fluxys	yes			15,0	2006/7	under construction
NL	Pipeline between Midwolda and Oude Statenzijl						2005	under construction
	Pipeline between Noordbroek and Tripcompagnons						2005	under construction
	Pipeline between Grijpskerk and Wieringermeer						2007	under construction
	Connection of the Polish and German transmission system							na
	Wlocwek - Gdynia pipelins							under construction
PO	Czeszów - Wroclaw pipeline							na
	Nowogard - Ploty - Karlino - Western Pomerania							na
	Lubliniec - Czestochowa pipeline							na
	Barcelona LNG terminal	Enagas		yes		5,2	2009	several project under construction
	Cartagena LNG terminal	Enagas		yes		2,6	2006	
	Huelva LNG terminal	Enagas		yes		3,9	2006	
	Mugardos LNG terminal	Reganosa	yes			7,0	2006	
ES	Sagunto LNG terminal	Sagunto Regasification plant	yes			6,6	2006	
	Gran Canaria regasification plant	Canarias gas transporter	yes			1,3	2009	
	Larrau connection	Enagas		yes			2008	
	France-Spain Interconnection	Sociedad de Gas de Euskai				0,5	2005	
	Medgaz pipeine					8,0	2008	
SW	Baltic Gas Interconnector	Sydkraft Gas et al	yes		na	na		authorised, but no decision taken yet
	extension of Swedish network	Sydkraft, Fortum	yes		na	na		planning stage
	IUK Zeebrugge - Bacton	IUK		yes	7 - 8	2005/6		under construction
	Langeled (Ormen Lange)	OL Partners	yes			25,0	2006/7	under construction
	FLAGS - Statfjord	Gassco		yes		4,0	2006/7	connection project to be completed
	Dutch Interconnector	Gasunie/Eon/Fluxys	yes			15,0	2006/7	under construction
UK	Isle of Grain LNG terminal	NGT		yes		4,4	2005	commissioning
	Isle of Grain LNG terminal	NGT		yes	10,5 - 14		2008	open season
	Milford Haven Dragon LNG	Petroplus/BG/Petronas	yes			6,0	2007/8	TPA exemption secured
	Milford Haven South Hook LNG	Qatar Petroleum/Exxon Mobil	yes			10,5	2007/8	TPA exemption secured
	Storage projects		yes			3,8	-2010	various

It is often said that over 60% of gas used in the European Union crosses at least one border. While this may be true, it gives, however, a very misleading impression of degree of integration of the European market since often the transport routes in question are reserved for only one or two network users. Network users have limited flexibility to change their traditional pattern of flows in the network and therefore limited opportunity for competition between the main companies. The same applies to the prospect for new entrants who find that there are only a few points in the network where capacity can be made available.

9.4. Comments of Regulators

Regulators argue that TSOs need to be incentivised to ensure that available cross border capacity is utilised, and expanded, where necessary. Gaps in the current arrangements will need to be addressed to ensure that required cross border investment takes place and that the costs of such investment is appropriately reflected onto those who will benefit from such investment. In addition, they note that closer TSO co-operation and co-ordination, for

example in areas such as system planning and emergency operation, will provide clear benefits but will need to take place under an appropriate regulatory framework. Regulators argue that changes to the current legislative framework may be required, for example, to permit compatible planning standards and shared funding arrangements for cross-border infrastructure investment.

9.5. Comments of Stakeholders

Transmission system operators noted the long timescale that is needed to carry out investment in overhead high voltage lines. Although they point to some progress in recent projects, they also stress the need to be realistic about how quickly such projects can be put into practice. They also note that price differentials that exist today are unlikely to be a permanent feature and that investment which might appear beneficial on the basis of current condition could end up being superfluous. A clear demonstration of cost effectiveness is needed in their view. TSOs also note that the internal market is bringing new challenges to network management and that there is often little incentive for TSOs to make available an increased amount of cross border capacity from existing infrastructure. Indeed, they argue that considerable additional risks are placed on TSOs under the current regulatory framework.

Nordic TSOs suggest that the potential for increasing cross border capacity through counter-trading is not fully exploited at present. Most companies trading electricity strongly agreed with this assessment. Many electricity companies also highlighted the need for co-ordinated network planning, at least at regional level.

Gas transmission companies note that large parts of the existing European network were constructed on the basis of long-term arrangements with huge upfront investments. They consider that these existing contracts must not be challenged and, moreover they consider that future projects should be undertaken on a similar basis through the use of exemptions from third party access.

Other stakeholders challenge these views in differing degrees. Many argue that the lack of incentives on TSOs to invest may come from an insufficient degree of unbundling from associated supply companies. They suggest, for example, it can hardly be expected that a TSOs would invest in a connection that would bring more competition to its affiliated company. Some stakeholders also criticise the idea of using exemptions, especially for gas infrastructure. They note that exemption that have been allowed for are damaging the liquidity of the gas market in particular and will discourage or block new entrants. The suggestion of many smaller companies and consumer groups for an independent European grid co-ordinator is also relevant in this context. The technical limits to the use of interconnection are not usually threatened and there is rarely a need to constrain the freedom of network users as regards their nominations to transport gas. Instead the difficulties in transporting gas more often arise from the failure to use capacity effectively.

9.6. Assessment

As discussed above, there remains something of a regulatory gap on issues relating to cross border investments. This has only been partially addressed by the Directive on Security of Electricity Supply and Infrastructure. It is clear that the degree of market integration could be improved significantly, even without any new investment taking place. This would require TSOs to be given suitable incentives to change their operating practices in order to make more cross border capacity available. It also requires tighter regulation of the treatment of existing

capacity reservation for both gas and electricity. The recent judgement of the Court of Justice may have implications in this respect. Meanwhile, the construction of new infrastructure is likely to continue to develop relatively slowly without a high degree of political commitment.

One area which could develop more quickly is the development of improved methodologies for calculating capacity available for electricity. Regulation 1228/03 gives the Regulators powers of approval for capacities and a coordinated approach to give incentives to TSOs to increase their level of co-operation and to make more capacity available could be implemented under current legislation. Regulators are encouraged to work towards this objective.

10. SECURITY OF SUPPLY SITUATION

10.1. Background

In a competitive market, generation capacity for electricity and production and import of gas will, normally, no longer be planned and implemented as a result of regulatory decisions. It is therefore necessary, instead, to monitor closely the trends in supply and demand for electricity and gas. This is a requirement of the Directive. Close monitoring is necessary since competitive markets inevitably have somewhat tighter margins. Indeed avoiding expensive over-investment is one of the benefits of introducing competition. Such a situation is not necessarily problematic provided that there is enough flexibility to respond to unexpected events.

As well as these issues, the question of operational network security is also a key feature of the new market arrangements. Transmission system operators are now required to interact more closely to ensure that network flows can be handled in a secure way as part of their regulated activities. Networks, both distribution and transmission, also need to be maintained and renewed in order to ensure an ongoing high level of customer service in this respect.

10.2. Current situation: Electricity

10.2.1. Supply Demand situation

The most recent data show that the supply demand balance position is, in fact, developing favourably in most Member States. It is not the case that companies are failing to invest in the competitive market and the situation in Member States such as Spain and Italy are much improved on two years ago. Table 10.1 overleaf summarises the information contained in the most recent ETSO and UCTE reports. The important indicator is the figure for "remaining capacity" which sets out the extent to which reliably available capacity exceeds a forecast for maximum load. The figure for "reliably available generation removes intermittent generation plus a proportion for outages, maintenance and system reserve.

Although some Member States show negative figures, such as Belgium, this situation is not of concern provided there are neighbouring Member States with sufficient spare capacity and sufficient transmission lines are available. There is no reason why individual Member States need to be 100% self-sufficient at all times although, as demonstrated in previous incidents, enough reserve capacity needs to be available to deal with some disruption of the network.

This table demonstrates improvements in the supply demand position which has taken place since 2003 during which a number of difficulties were recorded relating to supply-demand, particularly during the heatwave in central Europe that summer. Construction of new capacity in, for example, Italy means that the degree of reserve capacity is now substantially better. Some improvement is also expected in the Nordic region. Data for 2007 at regional level show that a reasonable margin is being maintained in most areas well in excess of the 5% figure recommended by UCTE for example. Meanwhile regions such as the UK and the Nordel system can either served by imports from outside the EU, or through the return of "mothballed" capacity.

Table 10.1 Electricity Security of Supply

MW	Peak demand recorded (date) A	winter/ summer peak b	Total generation capacity c	"Remaining capacity" UCTE definition 2006 forecast	"Remaining capacity" UCTE definition 2007 forecast
Austria[43]	8 962 (16/12/04)	W	18 300	55%	
Belgium	13 708 (20/12/04)	W	14 600	-5%	
Denmark	6 480(?)	W	12 710	-	
Finland	14 040 (02/01/03)	W	16 488	-	
France	86 000 (21/02/05)	W	112 900	13%	
Germany	77 200 (16/12/05)	W	114 800	10%	
Greece	9 510 (02/08/05)	S	11 000	-3%	
Ireland	4 528 (20/12/04)	W	6 400	-	3%
Italy	54 100 (28/06/05)	S	90 800	13%	6%
Luxembourg	994 (18/11/04)	W	1 700	75%	
Netherlands	15 601 (21/12/04)	W	21 100	5%	
Portugal	8 261 (09/12/05)	W	11 800	17%	
Spain	38 980 (21/07/05)	S	64 800	18%	
Sweden	27 000 (22/01/04)	W	33 551	-	
UK	54 100 (13/12/04)	W	75 700	-	3%
Norway	23 050 (05/02/01)	W	28 327	-	
Estonia	1 475 (?)	W	2 200		
Latvia	1 234 (?)	W	2 164		
Lithuania	2 000 (?)	W	5 000		
Poland	21 146 (23/12/04)	W	32400	30%	
Czech R	10 157 (16/12/04)	W	16 300	29%	
Slovakia	4 319 (16/12/04)	W	7 700	2%	
Hungary	6 012 (15/12/04)	W	7 800	6%	
Slovenia	2 006 (25/11/04)	W	2 900	6%	
Cyprus	-	S			
Malta	-	S			
NB:	**REGIONAL DATA**				
UCTE main					10%
Spain+Port					10%
Centrel					16%
Nordel					2%

Source: ETSO, UCTE and Nordel Power Balance forecasts

10.2.2. Network performance electricity

The performance of the network is a key factor affecting the quality of service as perceived by final customers and should, therefore, be a high priority. Since regulators set the framework for network tariffs, the monitoring of performance is a key part of their activities. The information provided in Table 10.2 below sets out the current level of performance reported by regulators in this regard.

Performance clearly varies quite significantly with the average duration of interruptions varying between half an hour per customer per year on average, to up to five hours in some cases. Of course the level of interruption that can be tolerated is very much the decision of

[43] High levels of reserve capacity reported result from inclusion of storage plant capacity of some 6,4 GW.

individual Member States. However it would seem to be important that the regulatory framework for network operators should not preside over any significant deterioration in this regard.

Table 10.2 Interruptions from the distribution network

	Average duration of interruption per customer per year (minutes)
Austria	30
Belgium	-
Denmark	30
Finland	103
France	
Germany	-
Greece	-
Ireland	162
Italy	180
Luxembourg	-
Netherlands	27
Portugal	300
Spain	-
Sweden	123
UK	68
Norway	-
Estonia	-
Latvia	-
Lithuania	190
Poland	300
Czech R	-
Slovakia	-
Hungary	-
Slovenia	138
Cyprus	
Malta	

Source: regulators' submissions

10.3. Current Situation: Gas

10.3.1. Supply Demand Issues

Table 10.3 below summarises similar information for gas that has been collected from national regulatory authorities and complemented by latest figures from the IEA. The table demonstrates that overall natural gas demand in the EU is steadily growing accompanied by declining domestic production. Most Member States are eager to diversify their supply portfolio, in order to enhance security of supply. LNG is likely to play an important role in this respect.

Table 10.3 Gas Security of Supply

	Total con-sumption in bcm in 2004	Dom. Production in bcm 2004	in % of total consumption	Imports from EU in 2004	in % of total consumption	Imports from Non-EU in 2004	in % of total consumption	Import capacity bcm/yr	LNG capacity bcm/yr
Austria	8,6	2,0	23%	0,0	0%	7,1	83%	38,7	
Belgium	18,1	0,0	0%	6,9	38%	10,0	55%	72,8	4,5
Czech Republic	9,0	0,2	2%	0,0	0%	8,7	97%	54	
Denmark	4,2	10,9	260%	0,3	8%	0,0	0%	11,2	
Estonia	0,8	0,0	0%	0,0	0%	0,8	95%	na	
Finland	4,6	0,0	0%	0,0	0%	4,9	107%	6,6	
France	45,6	1,4	3%	8,7	19%	34,9	77%	54	15,5
Germany	103,0	19,5	19%	19,4	19%	61,9	60%	192	
Greece	2,5	0,0	1%	0,0	0%	2,6	104%	3	1,4
Hungary	14,5	2,2	15%	1,1	8%	10,3	71%	18,7	
Ireland	4,3	0,9	20%	3,4	80%	0,0	0%	10,3	
Italy	80,2	13,0	16%	8,1	10%	59,4	74%	77,9	3,32
Latvia	1,6	0,0	0%	0,0	0%	1,6	100%	na	
Lituania	3,0	0,0	0%	0,0	0%	3,0	101%	na	
Luxembourg	1,4	0,0	0%	1,4	97%	0,0	0%	3,7	
Netherlands	47,2	74,7	158%	11,9	25%	0,0	0%	29,1	
Poland	15,7	4,5	29%	0,4	3%	9,5	61%	2,2	
Portugal	3,8	0,0	0%	0,0	0%	3,8	100%	2,9	5,5
Slovak Republic	6,7	0,2	2%	0,0	0%	6,9	103%	87,2	
Slovenia	0,8	0,0	0%	0,0	4%	0,8	94%	4,9	
Spain	27,4	0,6	2%	0,0	0%	27,0	99%	11,5	33,6
Sweden	1,1	0,0	0%	1,0	89%	0,0	0%	2,2	
United Kingdom	104,7	101,2	97%	3,4	3%	6,5	6%	57	4,4
European Union	**508,9**	**231,2**	**45%**	**66,1**	**13%**	**259,7**	**51%**	**739,9**	**68,22**

import capacity on basis of a load factor of 8300h/yr

Source: regulators' survey response, GIE website, IEA

Figures are only indicative and do not fully match due to inconsistent statistical approaches

Security of gas supply implies long and short term aspects. Long-term aspects of security of supply relate very much to the long-term character of the business. Large upfront investments are needed in order to explore, produce and eventually transport the gas to the market, a pattern which applies to both pipeline and LNG supply. The new regulatory framework emerging from Directive 2003/55/EC requires separation of the network operator from the rest, in particular the supply branch of the company. With respect to long-term security of supply and the necessary investments to be undertaken, new arrangements may need to be set up, in order to ensure the necessary infrastructure investments to be launched, even if the operator of the network cannot be the user anymore. The question arises how the network operator can make sure that the necessary capacities are available when needed and how can they be offered in a non-discriminatory and transparent manner to the market.

Regulators, system operators and network users would have a role to play in this respect. Their roles and responsibilities would need to be accurately defined and adopted to meet the relevant security of supply standards. Investment decisions should be determined through market signals or, where appropriate, through long-term planning processes. A predictable, stable and commensurate environment is also important in this context.

While the procedures to arrive at a certain investment decision might now be more formalised and might involve more parties not being part of the same undertaking than the network operator, they already proved their efficiency. Network operators would be required to organise open seasons or similar procedures in order to get the commitments of the future users of the infrastructure in question. On the basis of these commitments, which usually concern firm contracted capacity, the funds could be raised and the investment launched. This may be done under an exemption granted on the basis of Article 22 of Directive 2003/55/EC or not. Experience shows that Article 22 may facilitate the necessary investments and investment decisions, thereby contributing significantly to the long-term security of gas supply. However the strict criteria in the Directive must be fulfilled.

On the other hand, other examples show that Article 22 exemptions are not indispensable, when it comes to increasing existing or building new capacity. Table 9.2 above provides an overview of all projects currently planned, considered or under construction as reported by regulators. Although only a proportion of these projects may be realised as a function of demand and market developments, the projects listed seem to demonstrate that the scope of regulators may be sufficient to allow the investments happening. Most of the projects under construction or authorised cannot be exempted from TPA rules under Article 22 of Directive 2003/55/EC, but may enjoy higher rates of return granted by the relevant regulatory authority.

It is also worth mentioning that most Member States with domestic natural gas reserves strive to provide incentives to the industry to invest in exploration and production. These incentives may, among other things, include tax reductions and facilitating administrative procedures.

Short term security of supply refers to operational security of supply and means the ability of suppliers to ensure supply of their customers under any predefined circumstances. Because of the legal and functional separation of the network from the supply business under Directive 2003/55/EC, Member States are required to define roles and responsibilities for the different actors along the gas chain, in order to guarantee security of supply also under extreme circumstances, in particular to those customers who do not dispose of the necessary means to protect themselves (households, small commercial consumers etc). Directive 2004/67/EC set up the necessary framework, in order to ensure security of gas supply to small consumers in a liberalised and competitive environment. It has to be transposed into national laws until May 2006, from which onwards Member States will have reporting duties on security of supply in addition to those (and supplementing them) laid down in Article 5 of the 2003/55 gas Directive.

In February and March 2005, some Member States experienced a sharp decline of temperatures and as a consequence, the need to maintain security of supply for certain consumer segments, such as households and small commercial consumers, required additional measures. Where appropriate, interruptible contracts were interrupted and where available, strategic gas reserves used for immediate consumption. Arbitrary supply interruption, however, could be avoided. In view of the increasingly tighter supply-demand situation in some Member States, arrangements have been introduced or are being introduced with a view to setting up a supplier of last resort and/or long-term planning. By these means, possible security of supply problems are anticipated and addressed.

As mentioned above, a number of projects are planned and ongoing, in order to make gas supply matching gas demand also in the future. Nevertheless, Europe is likely to face new challenges in terms of security of supply mainly attributed to the growing role of LNG for the European and global gas supply. While currently, LNG imports amount to approximately 45

bcm/yr, their share may go up to between 100 and 150 bcm in the years to come. However, in order to bring these volumes to the European market, Europe is likely to face competition from other gas consuming countries, such as the United States, which face a similar change to their supply portfolio, too.

As a consequence, since natural gas markets are gradually turning into wider than regional markets and ultimately may also be linked into a global market, investments decisions will be measured against each other on a global scale. This means that in the future investors may take their decision in the light of the expected rate of return compared to other markets. As a consequence, European security of gas supply may also depend on the ability of the European market to deliver competitive returns.

Keeping the European market attractive by enabling gas to flow freely and thus allowing investors, suppliers and producers to exploit the business opportunities of this market seems to be the most promising answer to this issue.

10.4. Comments of Stakeholders

Established energy companies are of the view that a stable framework is needed to ensure that investments are made. The allocation of roles and responsibilities is important in this regard. Transmission system operators agree with this statement and welcome, in particular the outcome of the Security of Supply Directives for Electricity and Gas. As for electricity, however some argue for a more harmonised approach and stress the need to encourage a demand side response. For many companies, the arrangements for security of supply should form part of a common market design at regional level.

TSOs consider that although the current supply-demand position is acceptable, significant new generation investment are very likely to be needed in the next 5-10 years in most parts of the European Union. Distribution companies point to the increased penetration of distributed generation and note that additional resources are needed to accommodate these investments.

Gas producers point out that the investments needed in order to bring the gas to the European market requires sophisticated funding from banks; therefore, regulatory and fiscal stability is indispensable. In their view, the application of regulation and their enforcement should be seen to strike the right balance between the objectives of securing future gas supplies, building new infrastructure and developing a competitive market.

Gas companies and transmission operators also underline the need for long term agreements along the supply chain to ensure the realisation of investment in infrastructure to import gas to the European Union, in particular in the light of growing dependence on imports from non-EU sources. They welcome the willingness of regulators and the Commission to allow for exemptions from third party access in this respect.

10.5. Assessment

The Commission has already produced a number of initiatives relating to the need to assure security of supply in the context of a competitive market. There are now two pieces of additional legislation to address this issue in the form of the gas security of supply Directive which will has to be implemented by May 2006 as well as the forthcoming Electricity Infrastructure and Security of Supply Directive. The latter has been agreed on the basis that market mechanisms will respond to price signals and new projects will come forward on that basis. However they also acknowledge the possible need for interventions in the market, for

example to avoid a possibly volatile cycle of prices and investments. Such interventions must, however be transparent, stable and predictable since uncertainty will clearly undermine investment.

Regarding the question of network management, there would not appear to be any evidence of a systematic decline in service standards in terms of continuity. For example, regarding transmission, most outages appear to have been the result of isolated one-off occurrences usually due to human error or unforeseeable combinations of events. Similarly the performance of the distribution network has generally improved in recent years as a result of regulatory initiatives.

The security of supply situation in gas is not problematic at present although clearly new investments are needed and prices are beginning to reflect the scarcity of gas (e.g. in UK markets). On the basis of the information available to the Commission and in the light of ongoing and planned investments, long-term security of supply seems to be ensured. Article 22 of Directive 2003/55/EC has proved its effectiveness, but is has also been demonstrated that it is not in all cases indispensable, provided competences of regulatory authorities allow to fully take into account the prevailing investment environment.

On the operational side, there may still be need to adapt the legislative and regulatory framework to the new requirements of the market. The legislative framework in this respect is defined by Directive 2004/67/EC, which Member States have to transpose into national law not later than May 2006. In the light of the implementation measures of Member States, a more in-depth analysis may be required.

11. ENVIRONMENTAL CONSEQUENCES

11.1. Background

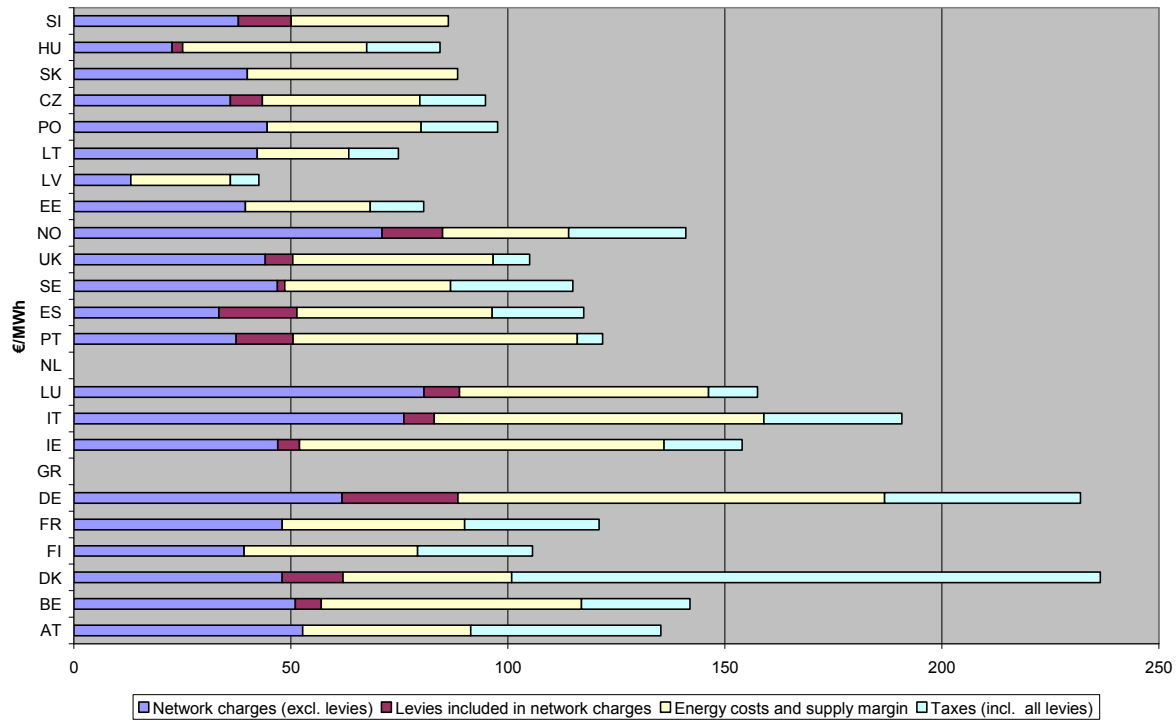
The opening of the electricity and gas markets to competition takes place in the context of clear commitments by the European Union to achieving reductions in carbon emissions. These include the promotion of renewables energy as well as measures to promote energy efficiency. The Commission's Green Paper on Energy Efficiency "Doing More With Less" examined the possibility of further improvements in these areas across a range of energy uses. Energy taxes clearly have an important influence on the use of energy and can provide incentives for customers to make savings as well as being an important source of government revenues.

11.2. Current Situation

11.2.1. Fiscal Policy

The fiscal framework for electricity consumption is reported in the graphs below, which concentrate on households. This shows that energy taxes can have a large impact on the final price being paid by consumers, e.g. Denmark, and this may help deliver an improved energy efficiency performance. Taxation may be differentiated, where appropriate, for instance to take account of the energy intensiveness of businesses.

Graph 11.1 Composition of final post tax electricity prices (household)



11.2.2. Electricity from Renewable Sources

As well as measures aimed at reducing the level of demand, a key objective of the Community is an increase in the proportion of electricity generated from renewable sources. Table 11.1 below gives an update of performance in this regard since the last report. As with previous years, these results are encouraging for the development of renewables and CHP plant since this again forms the majority of new net additions to generation capacity. A range of incentives are successfully being used to give a supportive framework for renewable energy, including fiscal measures.

Table 11.1 Environmental Policy Framework: Electricity generation

		Net addition to generation 2004 (MW)			
	main RES support mechanism	net new coal/oil	net new gas	net new RES/CHP	Other (e.g. nuclear)
Austria	feed in tariff (terminated)	0	+100	+500	0
Belgium	green certificates	-	-	-	-
Denmark	fixed premium	-300	0	+100	0
Finland	tax incentives	0	0	+190	0
France	feed in tariffs/tendering				
Germany	feed in tariff	+60	0	+2550	+530
Greece	feed in tariff/ investment incentives	-	-	-	-
Ireland	tendering	0	0	+200	0
Italy	green certificates				
Lux	feed in tariff	-	-	-	-
Netherlands	feed in tariff	0	0	+1000	0
Portugal	feed in tariff/ investment incentives	-50	+390	+650	0
Spain	feed in tariff	0	+4000	+2000	0
Sweden	green certificates	-	-	-	-
UK	green certificates	-	-	-	-
Norway	n.k.	0	0	+250	0
Estonia	feed in tariffs	-	-	-	-
Latvia	green certificates	0	0	+1000	0
Lithuania	feed in tariffs	0	0	0	-1300
Poland	green certificates	-65	+8	+145	0
Czech R	feed in tariffs	+50	+50	0	0
Slovakia	feed in tariff/ investment incentives	-	-	-	-
Hungary	feed in tariff/ other incentives	-60	+180	+5	0
Slovenia	feed in tariffs	-	-	-	-
Cyprus	investment incentives				
Malta	tax incentive				
Total (approx.)		**-350**	**+4700**	**+8500**	**-800**

source: Regulators' survey responses,
Commission 2005 Communication on Renewables (forthcoming)

11.3. Comments of Stakeholders

Renewable suppliers argue that significant subsidies have, in fact, also been provided to conventional sources. They consider it unlikely that the European Union will meet the targets set out in the Renewable Directive under current conditions.

A particular problem cited by producers and suppliers of wind power is that their access to the network was often constrained and that connection agreements had sometimes been unfair.

Many renewable producers argued that they, as small new entrants to the market, were facing the same obstacles relating to network access and that unfair conditions and an insufficient level of unbundling are damaging both competition and sustainability objectives. Renewable producers also emphasise the need for a stable framework of support for their investments in order to build credibility of Member States' commitment to renewables and encourage investment.

Small distributors/suppliers strongly criticised over centralised schemes to support renewable energy and argue that it would be more effective if green energy was sold directly to final customers.

Although recognising the significant progress in developing renewable generation in the European Union, many stakeholders, especially transmission system operators, expressed concerns about the compatibility of existing support mechanisms with a competitive market. The lack of harmonisation in this regard was seen as a distortion and the resulting uneven development, particular of wind energy, is thought to create severe network management problems. It is argued that this results in constraints on possible use of cross border connection capacity. Many network users including the main established electricity companies and traders argued for a European system of tradable certificates to promote renewable energy.

11.4. Assessment

There is no reason at all why the opening of the electricity market should have any negative environmental consequences provided that the framework for producers and consumers is set in an appropriate way. The Community is working hard to ensure that this is the case and a range of measures have been adopted and are being implemented with this in mind.

12. EMPLOYMENT AND OTHER ECONOMIC ISSUES

12.1. Background

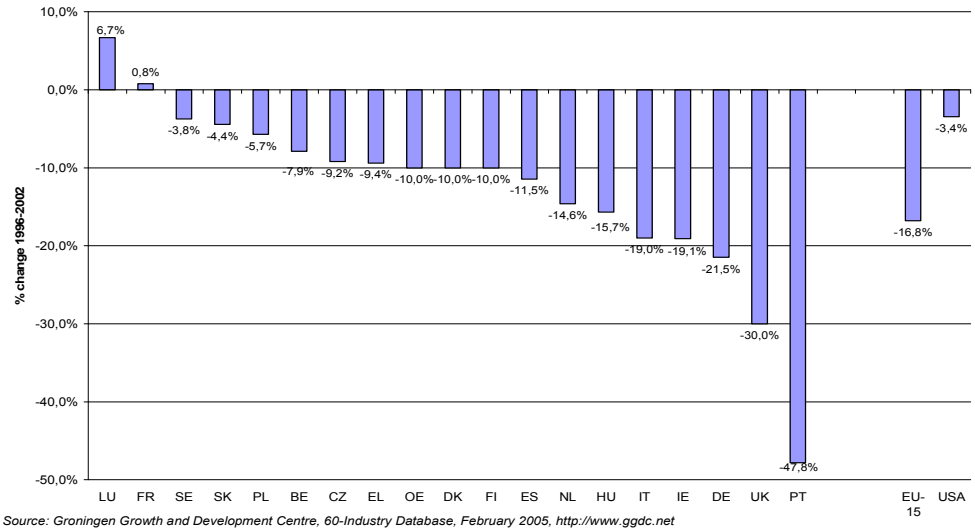
Market opening also takes place in the context of the social and employment objectives of the European Union. As well as the issues relating to vulnerable customers, the restructuring of the industry that may accompany market opening also leads to a need to consider the arrangements put in place to manage such changes smoothly.

The Commission has examined the more general economic and social effects of reforms in all network industries as part of the work evaluating the performance of network industries providing services of general economic interest. The forthcoming SGEI 2005 report contains a large range of analysis in this regard including a study by Copenhagen Economics on the general macro-economic impact of the introduction of competition in different sectors.

12.2. Current Situation

Clearly reforms of electricity and gas markets have coincided with restructuring of energy companies in many cases which has had an impact on employment in the sector. The graph below, taken from the horizontal evaluation referred to above, sets out estimates of changes in employment in the utilities sector as a whole.

Graph 12.1 Development of Employment in the Gas Electricity and Water Sector



Source: Groningen Growth and Development Centre, 60-Industry Database, February 2005, http://www.ggdc.net

Several reports have concluded that productivity per hour has increased in all network industries throughout the 1980s and 1990s and the average growth of productivity has outpaced the average performance of the economy as a whole. In addition, several sectors such as air transport, telecommunications and inland transport showed both increases in employment and in productivity, indicating that there is not necessarily a trade-off in the long-term.

12.3. Comments of Stakeholders

Employment issues are seen as particularly important by European Public Sector Unions. They argue that the reduction in employment in the sector has also been accompanied by deterioration in the quality of employment and the level of training. It is argued that this threatens security of supply.

12.4. Assessment

The employment trends in the energy industry merit wider attention in view of the high level of European legislation that now affects this sector. Although it is not the job of the Commission to decide what level and how many employees, the right incentives need to be in place for companies to maintain their assets and have a sufficient level of qualified employment.

In view of these questions, the Commission has decided to upgrade the study on employment in the energy sector which was first performed in 2001. The Commission has therefore asked consultants to assess the impact on employment in EU-25 of the opening of electricity and gas markets and of other key EU directives in the field of energy.

The study will examine the impact of liberalisation and also other EU legislation (cogeneration, renewable directives among others) on the number of jobs, including how different categories of workers are affected and on quality in work. Social partners will be represented in the steering committee for this work.

ANNEX

SUMMARY REPORTS ON INDIVIDUAL MEMBER STATES

COUNTRY SUMMARY: AUSTRIA

COMMON ISSUES

Main Legal Texts	Elektrizitätswirtschafts und -organisationsgesetz (Electricity Law) and regional Electricity Laws („Länder“) Gaswirtschaftsgesetz (Gas Law) Energie-Regulierungsbehördengesetz (Law on the energy regulator)
Unbundling	TSOs are unbundled in legal terms; the process of unbundling of DSOs is ongoing with regional governments being responsible for implementation.
Regulator	In Austria two regulatory authorities exist: Energie-Control GmbH and Energie-Control Kommission. Energie-Control Kommission among other approves general terms and conditions for grid access, determines use of system tariffs and other tariffs according to the Article 25 of the Electricity & Gas Laws, etc. Energie-Control GmbH duties include among others preparation of all necessary works for the decisions of the Energie-Control KOmmission, creation of framework conditions (market rules, codices, market design), monitoring, settlement of disputes, statistical works, etc.
Interconnection	The electricity interconnector capacity of Austria with neighbouring countries amounts to 14000MVA line rating. Apart from the connections with Germany and Switzerland, congestion occurs frequently. Austria is an important transit country for both electricity and gas. In gas, around 70% of the Austrian import capacity is used for transit purposes.
Security of Supply	The Austrian electricity system has approximately 18.700 MW installed capacity while peak consumption is around 9200 MW. Reliable reserve margins have been sufficient in recent years. New projects amounting to in total around 2000 MW are in the pipeline and supposed to be implemented by 2010. In aDcition, around 1300MW from renewable sources of energy will be is supposed to be aDced by 2010. In gas, 19% of internal consumption are covered by own production, the remainder is imported. A sharp raise in gas demand of around 10% in 2008 and 9% in 2009 is expected, as a result of new, gas-fired electricity plants.
Other Issues	

ELECTRICITY

General/ Customer Service	There are 5,12 million electricity customers in Austria. The electricity market was opened 100% in October 2001. General consumer protection legislation applies to electricity. In addition, specific consumer protection rules for electricity are under preparation. In Austria there is no regulation of end-consumer prices. There is no supplier of last resort.
Switching	Customers can change supplier without charge, on the basis of standard rules and the process of changing lasts without objection from involved parties 5 weeks and with objection up to maximum 8 weeks. Around 25% of large consumers, 7% of SMEs and around 3% of households have changed supplier since market opening.
Competition	The wholesale market is currently based on bilateral trading (largest part) and trading in the Austrian electricity exchange (EXAA) a bilateral trading market between generators and suppliers. Five companies have a share in overall production capacity of more than 5%, the largest three companies have a share of around 54% of total production capacity. In 2004, four newcomers to the market independent from network operators existed.
Prices	Electricity end-consumer prices in Austria are characterised by a relatively low component for energy and a relatively high component for network access charges. Euro/MWh Ig Ib Dc AT price 47 94 95 EU average 56 101 96
Network Access	Network charges are approved ex-ante by the regulator. They are relatively high compared to European average levels. On 1 January 2006 an incentive based system of network access regulation will be introduced. During the first 4-years period of incentive regulation, quality regulation will be prepared and introduced at latest in the second regulatory period.

GAS

General / Customer Service	In 2004 overall as consumption in Austria amounted to around 8,6 Billion m³. All customers have been eligible since 1. October 2003. General consumer protection legislation applies to electricity. In aDcition, specific consumer protection rules for electricity are under preparation. In Austria there is no regulation of end-consumer prices.
Switching	Customers can change supplier without charge, on the basis of standard rules and the process of changing can last maximum 8 weeks. Switching rate in 2004 amounted to 4,7%, expressed in proportion to overall consumption of gas. Switching differed significantly between regions and is much more developed for commercial customers than for households, where the rate was below 1%.
Competition	The main obstacle for new entrants to the Austrian gas market is insufficient available network capacity. Trades are for this reason often refused access to final customers. Management of capacity is currently not transparent. A gas release programme, operated by one Austrian gas supplier following a merger procedure, has had little impact on the liquidity of the Austrian market since more than 90% of the released gas has been bought for consumption in Italy. In 2004, one newcomer to the market independent from network operators existed.
Prices	Gas prices in Austria are slightly above the European average. Euro/MWh I4 I1 D2 AT price - 28 44 EU average 17 27 40
Network Access	Network access charges are approved by the Austrian regulator and are based on the “postage stamp” principle without any distance related component.

COUNTRY SUMMARY: BELGIUM

COMMON ISSUES

Main Legal Texts	Electricity : Loi du 29 avril 1999 modified by the loi du 1 juin 2005 (Moniteur belge du 14 juin 2005) Gaz : loi du 12 avril 1969 modified by la loi du 1 juin 2005 (Moniteur belge du 14 juin 2005).
Unbundling	Legal separation of both transmission and distribution system operators for electricity. For gas, the legal separation will be enforced in the law in 2006 but this has already been carried out on a voluntary basis by the company.
Regulator	CREG regulates network access tariffs for both transmission and distribution. Under the new law these tasks are shared by the regulator and the relevant Ministry. The CREG is made up of 6 Commission Members and is separate from the government. The new law has also transferred some regulatory competences regarding security of supply from the CREG to the federal government. There are 3 regional energy regulators, one for each region on Belgium.
Interconnection	New electricity interconnection projects have recently been completed between France and Belgium. Work is underway on a second line at 380 KV which will be completed during 2005.
Security of Supply	Total electricity consumption was 83.6 TWh during 2004 which peak load of 13.7GW. There is around 15.7GW of installed generation capacity in Belgium. Regarding gas, the transport network is used for both national consumption and transit. In 2004 43.2 bcm was transported on the Belgian network of which 17.6bcm was destined for consumption or storage nationally. The network is heavily loaded according to the regulator and could be overloaded in the event of a severe winter. The CREG has recommended additional investment in the gas transport network for this reason.
Other Issues	Additional investments in generation capacity of 532MW have taken place in the last year.

ELECTRICITY

General / Customer Service	In the Flemish region, 100 % of final customers are eligible to choose their supplier. In the other regions, non households are eligible in Bruxelles-Capitale since July 2004 while in Wallonia, clients connected to the distribution network can chose supplier on request of the distribution company. Customer protection measures have been implemented and a series of measures are included in the energy law to this effect, particularly to protect vulnerable customers.
Switching	According to CREG data, 53% of all electricity clients in the Flemish region have changed supplier with around 20% moving to a totally new company. Full data is not available in the other regions but the Walloon regulator (CWAPE) estimates that 270 clients have entered into a contract with a supplier other than the default company.
Competition	Only 2 producers Electrabel et SPE, have a market share above 5%. Electrabel itself owns over 70% of production capacity. The wholesale market is based on bilateral contracts between producers and supplier. There is currently no liquid trading. However the proposed Belpex power exchange will be created in 2006. Electrabel has been required to release some capacity - 1200 MW - in the form of VPP (virtual power plants auctions).
Prices	Electricity prices in Belgium are slightly above the European average at present, but have fallen since market opening, particularly for small companies. Euro/MWh Ig Ib Dc BE 62 115 110 EU average 56 101 96
Network Access	Network access charges for both transmission and distribution have been progressively lowered between 2003 et 2005, especially for industrial companies.

GAS

General / Customer Service	In the Flemish region, 100 % of final customers are eligible to choose their supplier. In the other regions, non households are eligible in Bruxelles-Capitale since July 2004 while in Wallonia, clients with a consumption level above 0.12GWh can choose supplier. Total market opening will be completed in 2007.
Switching	In the Flemish region, CRE report that 11% of large industrials changes supplier in 2004, bring the cumulative total to over 90% since market opening. For the smaller commercial companies and households, the switching level is estimated at 45%. No data is available from other regions.
Competition	In the Flemish region, 3 companies have a market share above 5% and they cover over 90% of customers. 12 companies are active in the Walloon market and 4 have a market share above 5%. The three largest have 63% of customers.
Prices	Gas prices in Belgium are below the EU15 average. Euro/MWh I4 I1 D2 BE 16 32 52 EU average 17 27 40 The CREG estimates that prices have fallen by around 5% for smaller commercial and resident customers in the last two year. Those for large companies have, however, increased by around the same amount.
Network Access	

COUNTRY SUMMARY: CYPRUS

COMMON ISSUES

LEGISLATION:	Electricity: Legal texts in place Law 122(I)/2003, and 239(I)/2004. The new electricity Directive is not transposed into national law. Cyprus qualifies as an "isolated" system and has requested derogation for market opening.
UNBUNDLING:	The TSO is unbundled in terms of management. The EAC accounts are not yet unbundled.
REGULATOR:	The Cyprus Regulatory Authority (CERA) was established in mid 2003. The Board consists of three Commissioners with a six years mandate. The Board is appointed by the Council of Ministers and reports to the President of the Republic. Overlapping jurisdictions have been identified between CERA and the Cyprus Competition Authority.
INTERCONNECTION:	No plans.
SECURITY OF SUPPLY:	Heavy Fuel and Diesel dominate the energy portfolio. Plans to diversify the fuel resources to include renewable and natural gas have started. The installed capacity is 988 MW with a recorded maximum demand of 854 MW (July 2005). The annual consumption in 2004 was 3.742 GWh. The average estimated demand growth up to 2008 is 5%. It is expected that a 130 MW power plant will be commissioned in November 2005. CERA has issued 12 licenses for existing and new power generation stations which amount to a total capacity of 1693,5 MW.
OTHER ISSUES:	

ELECTRICITY

GENERAL/CUSTOMER	The Electricity Market Law of 2003 covers adequately the provisions of Article 3 of the Directive 2003/55. The market is open by 35%. The consumption threshold is 350,000 KWh/year.			
COMPETITION:	Competition in the generation and supply side may arise in the island. However, there is no other supplier currently than the incumbent (EAC).			
SWITCHING:	None			
Prices:	EURO/MWh	Ig	Ib	Dc
	EU15 average	56	101	96
	CYP prices	92	98	201
Network access:	Proposals on use of system and connection charges are being considered. Trading and Balancing rules are in the process of adoption and allow a retail market to operate for participants that owe and operate enough generation capacity to cover their customers' needs. Market participants having capacity above of 50 MW can also provide ancillary services. The balancing interval is 60 min. Production must balance within 10% if customers demand. The difference between total supply and demand is settled through the balancing market. Settlement of imbalances will be arranged on a monthly basis.			

COUNTRY SUMMARY: CZECH REPUBLIC

COMMON ISSUES

Primary Legislation	Energy Act no. 458/2000, latest amendment 28 February 2005.
Unbundling	The transmission system operator has been established as a separate state owned company, independent of CEZ, the main producer. For gas the TSO is not yet separated from other businesses. Functional and legal separation of distribution companies will take place in 2006 for electricity and in 2007 for gas.
Regulator	The regulator, ERO, is independent and has various competences including the setting of network tariffs and conditions and also fixing end user price controls.
Interconnections	
Security of supply	Peak consumption of electricity is 10,2 GW compared to installed capacity of 17,4 GW.
Other questions	

ELECTRICITY

General/ Customer Service	The electricity market will be fully open to competition from 2006. A default supplier is appointed in each region via a tender process. This supplier is obliged to serve all households at regulated prices and any SMEs which request the regulated price.
Switching	2460 customers have changed supplier representing around x% of the market. These are mainly multi –site customers which have grouped their consumption to a single supplier.
Competition	CEZ is the main generator and has 73% of national production capacity. Other generators are all much smaller with none more than 3% of the total. Wholesale trading takes place in the OTE power exchange. VPP capacity auctions will take place for 400MW during 2006 and 2007. The main suppliers are now CEZ and EON which together serve 85% of the market.
Prices	Regulated tariffs will apply until the end of 2005. These are rather lower than the EU15 average. Euro/MWh Ig Ib Dc Czech Rep. 50 79 73 EU average 56 101 96
Network access	All Network tariffs are fixed by the ERO.

GAS

General/ Customer Service	The market will be totally open to competition in 2007. As for electricity, a default supplier will be appointed in each region via a tender process.
Switching	To date, no switching has taken place.
Competition	The transmission system is not yet unbundled and relevant information is not yet provided to potential market participants other than Transgas. Trasngas also controls storage. This makes any new entry very difficult. Furthermore all gas available in the Czech Republic is purchased by Transgas from Gazprom.
Prices	Euro/MWh I4 I1 D2 Czech Rep. 18 20 30 EU Average 17 27 40 Gas prices are currently below the EU15 average.
Network access	Network access conditions are fixed by the Regulator. However for storage, access is negotiated and the regulator does not have any competence in this respect.

COUNTRY SUMMARY: DENMARK

COMMON ISSUES

Main Legal Texts	Elforsyningsloven Naturgasforsyningsloven
Unbundling	A new electricity and gas transmission system operator Energienet.dk, owned by the Danish state, was established 1 July 2005. Distribution companies have been ownership unbundled already in the past, functional unbundling is required with the new law for companies with more than 100.000 customers. Legal and functional unbundling is required for all gas network companies.
Regulator	Energitilsynet is an independent authority under the Competition authority. Energitilsynet regulates network tariffs and has a number of other tasks related to energy markets.
Interconnection	Interconnection capacity of Denmark is about 5.200 MW with Norway, Sweden and Germany. A further increase of 600 – 800MW with Norway has been planned.
Security of Supply	The Danish system has about 10.300 MW installed capacity while the highest peak consumption in 2004 was about 6.200 MW. Reserve margin is high in Denmark, it contributes in an important way to the reserve capacity of the whole Nordic area.
Other Issues	

ELECTRICITY

General/ Customer Service	The electricity market was fully opened in 2003. The market is characterised by vertical integration of distribution and retail business. There are 120 distribution companies and 40 last resort suppliers. There are important public service obligations regarding the supply of wind and CHP electricity.
Switching	No reliable figures on switching exist yet. The household market has been open only since 2004. Household electricity prices in Denmark are high due to taxes and public service obligations, which reduces the scope for competition on prices.
Competition	The wholesale market is integrated to the Nordic power market. It consists of a bilateral trading market between generators on one hand and suppliers and industrial companies on the other hand, and of a voluntary Nordic power exchange Nordpool which has a spot market and a forward market. The market share of Nord Pool Spot AS in 2004 was 42 % of the physical delivery in the Nordic countries. The wholesale market in Denmark has been largely dominated by two producers, Elsam end Energi E2. The Competition authority is preparing two cases concerning Elsam's abuse of dominant position.
Prices	Electricity prices have been rising slightly as a result of increased fuel prices and emission trading costs. Euro/MWh[44] Ig Ib Dc DK price - 73 96 EU average 56 101 96
Network Access	Network tariff are regulated with a price-cap regulation. Network tariffs and the tariff methodology vary considerably depending on the company.

[44] Eurostat categories, without taxes

GAS

General / Customer Service	The Danish natural gas market is characterised by production in the North Sea, with long term take-or-pay contracts with DONG, the state owned gas company. There are four distribution companies and several supply companies.
Switching	No studies have been made on customer switching on the Danish gas market.
Competition	For household and smaller industrial customers there is competition on the Danish market. Big customers, especially power plants, are almost exclusively supplied by DONG. A reason for this could be that the storage capacity is owned and operated by DONG.
Prices	Gas prices have ??? Euro/MWh I4 I1 D2 DK price 17 44 44 EU average 17 27 40
Network Access	Distribution tariffs are approved ex-ante by Energitilsynet through a four year income-cap. For transmission the regulator is assessing whether the tariff is reasonable.

COUNTRY SUMMARY: ESTONIA

COMMON ISSUES

Main Legal Texts	Elektrituruseadus Maagaasiseadus
Unbundling	The electricity transmission system operator OÜ Põhivõrk is a company in a vertically integrated group of Eesti Energia. OÜ Jaotusvõrk also belonging to the same group is the largest distribution company with 90% market share. There are 42 distribution companies altogether. Unbundling is required for companies with more than 100.000 customers. In Gas market Eesti Gaas is the transmission company, importer and the major distribution and supply company. Additionally, there are 20 small distribution and supply companies in Estonia.
Regulator	Energiaturu Inspektsioon is an independent agency under the Ministry of Economy and Telecommunications. It regulates end-user prices and network tariffs and has a number of other tasks related to energy markets.
Interconnection	Interconnection capacity with Latvia is about 1000 MW. A connection with Finland through a 350 MW sea cable should be in operation in 2007.
Security of Supply	The Estonian system has 2.200 MW installed capacity while peak consumption is about 1.500 MW. Reserve margin is sufficient regarding Estonia. However, as all the Baltic states are connected to the Russian system, the region should be considered as a whole from the security of supply point of view. Closure of Ignalina power plants reduces capacity in the region.
Other Issues	

ELECTRICITY

General/ Customer Service	The electricity market is opened 15% in January 1997. Estonia has derogation until 2012 regarding opening of the market to household customers. Prices for non-eligible customers remain regulated. The electricity for the non-eligible customers must be produced in an Estonian oil-shale power plant bigger than 500MW, or be produced by small hydro or CHP plants.
Switching	There is one industrial customer who changed supplier before Estonia joined the EU.
Competition	There is in practice no competition on the Estonian market.
Prices	Electricity prices in Estonia are low, but they have been rising slightly in recent years. The prices are significantly below the EU average. Euro/MWh Ig Ib Dc EE price 37 56 60 EU15 average 56 101 96
Network Access	Energiaturu Inspektsioon approves the network tariffs as well as the end-user prices on a yearly basis based on RPI-X methodology.

GAS

General / Customer Service	The Estonia natural gas market is very small with a pipeline connection to Russia and Latvia. The Natural Gas Market Act amendment has not yet been approved by the Parliament.			
Switching	There is hardly any switching yet in Estonia.			
Competition	There is one dominant supplier Eesti Gaas. Enduser prices remain regulated.			
Prices	Estonian gas price is well below the EU average.			
	Euro/MWh	I4	I1	D2
	EE price	9	13	18
	EU average	17	22	40
Network Access	Regulation of transmission and distribution tariffs is based on RPI-X approach.			

COUNTRY SUMMARY: FINLAND

COMMON ISSUES

Main Legal Texts	Electricity Market Act (386/1995), Electricity Market Decree (518/1995) Gas Market Act (508/2000), Gas Market Decree (622/2000)
Unbundling	The electricity transmission system operator Fingrid is a company with ownership unbundling although part of the ownership remains within vertically integrated groups. For distribution companies unbundling requirements increase stepwise depending on their size. For gas Finland applies a derogation regarding unbundling based on isolated market.
Regulator	EMV is an independent agency under the Ministry of Trade and Industry. EMV regulates network tariffs and has a number of other tasks related to energy markets.
Interconnection	Interconnection capacity of Finland is about 3.800 MW with Sweden, Norway and Russia. A further increase has been decided, 600 – 800MW with Sweden and 350 MW with Estonia.
Security of Supply	The Finnish system had 16.488 MW installed capacity in 2004 while peak consumption was 13.570 MW. Reserve margins have been relatively low in the Nordic market in recent years but they are still considered sufficient. The market is supposed to provide necessary investments in time without Government intervention.
Other Issues	

ELECTRICITY

General/ Customer Service	The electricity market was opened 100% in January 1997. There are today 70 electricity retailers having the obligation to supply within at least one distribution network area of responsibility. The prices of electricity offered within the obligation to supply system do not have to be approved by the regulator before the supplier takes them into use. The Energy Market Authority may investigate either on the basis of a complaint received from a customer or at its own initiative the pricing of electricity.
Switching	The network operator may not charge a customer for the change of supplier unless the time elapsed from the previous change of supplier is less than 12 months. In the Finnish electricity retail supply market about 11% of household customers have changed the supplier by the year 2004. The share of electricity sold by non-local supplier or by the local supplier according to the negotiated contracts was in 2004 for household customers 30% and for small and medium-sized commercial users 82%.
Competition	The wholesale market in Finland is integrated to the Nordic power market. It consists of a bilateral trading market between generators on one hand and suppliers and industrial companies on the other hand, and a voluntary Nordic power exchange Nordpool which has a spot market and a forward market. The market share of Nord Pool Spot AS in 2004 was 42 % of the physical delivery in the Nordic countries.
Prices	Electricity prices have been rising slightly as a result of increased fuel prices and emission trading costs. The prices are significantly below EU average. Euro/MWh Ig Ib Dc FI price 47 64 78 EU15 average 56 101 96
Network Access	The EMV both sets the methodology for tariff calculation, with a four year regulatory period. Network charges are broadly in line with European average levels for small customers and significantly lower than average for large customers.

GAS

General / Customer Service	The Finnish natural gas market is relatively isolated with a pipeline connection only to Russia. Thus Finland has an exemption allowed by the Gas Directive. Following this, the natural gas market has not been opened for competition.
Switching	There is no switching as there is only one supplier.
Competition	There is only one supplier: Gasum Ltd. Enduser prices remain regulated. However, the Gas Market Act provides large-scale consumers buying at least 5 million cubic metres of natural gas per year with the possibility of mutual secondary market trading. A market place, operated by Gas Exchange Ltd, has been established for trading on the secondary market.
Prices	There are no price caps, but the prices have to be reasonable. Regulation of transmission and distribution tariffs is based on rate of return approach. There is only a limited number of household customers. Euro/MWh I4 I1 D2 FI price 18 - - EU average 17 27 40
Network Access	Regulation of transmission and distribution tariffs is based on rate of return approach.

COUNTRY SUMMARY: FRANCE

COMMON ISSUES

Main legislation	Loi 2000-108 du 10/2/2000 (électricité). Loi 2003-8 du 3/1/2003 (gaz et électricité). Loi 2004-803 du 9/8/2004 (gaz et électricité). Loi 2005-781 du13/7/05 (Loi orientation énergie)
Unbundling	The TSOs RTE-EDF, GRTgaz, TIGF are legally unbundled and are 100% subsidiaries of vertically integrated groups EdF, GdF and Total. Distribution companies will be unbundled by July 2007.
Regulator	The regulator, CRE: - is an independent body composed of 7 Members. They are nominated for 6 years which cannot be revoked nor renewed ; - regulates transport , distribution and access to LNG terminals; - approved the annual investment programme of the electricity TSO, - proposes network access tariffs for transport et distribution for both gas and electricity, as well as LNG installations for approval by the Ministry, - settles disputes for eligible clients; - judges cases relating to access to storage; - has shared competences with the national competition authority for wholesale electricity markets (including Powernext) including supervision of wholesale and cross border trade; - the regulator is not responsible for end user tariffs controls, which are set by the government.
Interconnections	France is reasonably well connected with neighbouring countries. In 2004 it began to import significant quantities from both Germany and Switzerland. Two new interconnectors with Belgium have been undertaken and will be operational during 2006. Despite the need for improved connections between France and Spain, little progress has been made on key projects For gas, new interconnection projects including pipelines (Euskador) and LNG terminals in the south (Fos Cavaou) will increase security of supply and improve competitive conditions.
Security of supply	The forecast peak consumption, expected in one year out of ten, is set at 90600 MW for 2006 et de 93000 MW en 2008. Installed capacity in France is 116000MW. The TSO estimates that an additional 1000MW per year will be needed after 2009
Other questions	New wind capacity of 1000MW has been constructed on the base of a tender process.

ELECTRICITY

General/ Customer Service	There are 33.5 million electricity consumers in France. All business clients and « collectivités territoriales » (68% of consumption and 4.5 million sites) are eligible to choose their supplier since July 2004. Considerable consumer protection measures are in place, especially for low income customers. Many prices remain regulated.
Switching	59,200 consumers had changed supplier by June 2005, representing 13% of the total volume of eligible consumption and 1.3% of the number of clients. Many other had negotiated a new contract with the incumbent supplier while leaving the regulated tariff.
Competition	EdF retains around 90% of installed production capacity. VPP (virtual power plant) auctions have released capacity of 42 TWh (6000MW) to other suppliers. The power exchange (Powernext) traded volumes of 14.2TWh for day-ahead exchange and 12.9TWh of futures in 2004, altogether 5.6% of consumption in France. 26 alternative supplies were active in France during 2005 of which 5 have production capacity in France.
Prices	Most customers are subject to regulated tariffs in France. These are considerably below the EU15 average prices. Euro/MWh Ig Ib Dc France 48 84 89 EU15 average 56 101 96 This regime is expected to continue at least until the end of 2007.
Network tariffs	Tariffs are proposed by the CRE for transmission and distribution networks. These have to be approved by the Ministry within two months.

GAS

General/ Customer Service	The gas market in France is open to all non households. A system of supplier of last resort is being set up. There are 11 million gas customers in France Public service obligations exist relating to low income and disadvantaged households. A contract has been concluded with GDF to deliver a series of other PSOs linked to vulnerable customers.
Switching	475 sites have already (until 1/8/2005) changed supplier out of 640.000 eligible clients. This represents 17% of eligible consumption.
Competition	The two main suppliers, GdF and Total, have around 95% of import capacity and control of the wholesale market. Six other companies are active in the market. There are also 21 companies potentially supplying eligible customers which are independent of network companies. Gas release programmes has been put in place for 48,3 TWh during 3 years from the end of 2004.
Prices	Regulated tariffs remain in place for non-eligible clients and those which have not changed supplier. These will be in place until the end of 2007. They are generally higher than the EU average Euro/MWh I4 I1 D2 France 21 29 50 EU average 17 27 140
Network tariffs	The CRE proposes the network access charges which are based on an entry-exit model. It also approved conditions for access to LNG facilities. The government must approve these within 2 months. Access to storage is by negotiation but the CRE settles any litigation.

COUNTRY SUMMARY: GERMANY

COMMON ISSUES

Main Legal Texts	The Electricity and Gas Supply Act – Energy Act (Gesetz über die Elektrizitäts- und Gasversorgung – Energiewirtschaftsgesetz [EnWG]) entered into force on 13 July 2005.
Unbundling	Most of the electricity and gas network operators are already legally unbundled. The process of unbundling of DSOs is not yet finalised. Germany has many (around 800) rather small DSOs, of which the largest part will be exempted from legal and functional unbundling in application of the 100.000 customer rules.
Regulator	The Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railways (Bundesnetzagentur) is designated as regulatory authority for electricity and gas networks in the Energy Act. It shares this competence with regulatory authorities established by the Federal States (Länder). The Energy Act gives the Federal Network Agency primary responsibility for transmission systems, as well as for distribution systems that cross at least one federal state boundary or to which more than 100,000 customers are connected, either directly or indirectly. It also discharges all duties that are not expressly assigned to another authority. The Federal Network Agency is at the same time responsible for regulating telecommunications and posts as well as access to railway infrastrucures (from 1 January 2006).
Interconnection	In electricity, Germany disposes of an interconnection capacity amounting to 14,4 % of installed capacity.
Security of Supply	The German system has approximately 114900 MW installed electricity capacity while peak consumption is 77200 MW. In 2004 installed capacity increased by around 3000 MW, of which 2180 MW were renewable projects.
Other Issues	There has been considerable growth in the use of renewable energy sources. Around 16.600 MW of wind capacity is in place. An obligation exists on network operators to purchase electricity from renewable resources for which it is compensated through a charge on network users.

ELECTRICITY

General/ Customer Service	The electricity market has been open 100% since 1998. Consumer protection rules are contained in specific legislation for household customers and in general consumer protection rules. Special tariffs for vulnerable customers do not exist – protection is provided by means of general rules under the Federal Social Assistance Act. Supplier of last resort in a given network area is the supplier having the highest number of customers.
Switching	Switching rates are 41% for large industrial customers, 7% for commercial customers and 5% for households.
Competition	The wholesale market in Germany is currently largely a bilateral trading market, even if an increasing share of overall trade (around 10%) is done at the German power exchange (EEX). Around 70% of total generation capacity is owned by four companies, of which the largest two (E.ON and RWE) are considered by the German competition authority to maintain together a dominant position. At the moment the number of newcomers on the market amounts to around 13.
Prices	End-consumer prices for households will continue to be regulated (price caps) until 1 July 2007. Prices are above EU-average. Euro/MWh — Ig — Ib — Dc DE price — 71 — 155 — 135 EU average — 56 — 101 — 96
Network Access	Individual network access charges have to be approved ex-ante by the Regulator. Charges have to be calculated on the basis of a methodology outlined in government ordinances. The current methodology is “cost+” but the Federal Network Agency is charged with preparing, by July 2006, a report on introducing incentive regulation to the Federal Government. The Federal Government may then adopt an Ordinance on incentive regulation.

GAS

General / Customer Service	The electricity market has been open 100% since 1998. Consumer protection rules are contained in specific legislation for household customers and in general consumer protection rules. Special tariffs for vulnerable customers do not exist – protection is provided protection is provided by means of general rules under the Federal Social Assistance Act. Supplier of last resort in a given network area is the supplier having the highest number of customers.
Switching	Reliable information on customer switching activities in gas is not available.
Competition	The share of the three largest suppliers in overall gas supply amounts to 80%. In general, the German gas markets suffer from a lack of liquidity, i.e. access of alternative gas suppliers to gas production. Furthermore, long-term supply contracts between the incumbent companies and distributors prevent access of new suppliers to customers. The competition authority has launched recently an initiative aimed at an adaptation of such long-term supply contracts to ensure compliance with competition law. The impact of new entrants on the structure of the German gas markets has been thus far negligible. The competition authority has also launched an inquiry into the current practice of gas supplier to justify price increases with the oil-gas price link.
Prices	End-consumer prices are not regulated. Gas prices have risen significantly since the second half of 2004 and are higher than the EU average Euro/MWh I4 I1 D2 DE price 22 33 55 EU average 17 37 40
Network Access	Individual network access charges have to be approved ex-ante by the Regulator. The system has thus far been “point-to-point” and will in future be replaced by an “entry-exit-scheme”. Charges have to be calculated on the basis of a methodology outlined in government ordinances. The current methodology is “cost+” but the Federal Network Agency is charged with preparing, by July 2006, a report on introducing incentive regulation to the Federal Government. The Federal Government may then adopt an Ordinance on incentive regulation.

COUNTRY SUMMARY : GREECE

COMMON ISSUES

Legislation:	Legal texts in place Law 2773/99, and 3175/2003. The 2005 Grid and Power Exchange Code on Electricity will be implemented progressively from this October. The new Electricity Directive is yet to be transposed into national law. Gas, Greece has been granted a derogation as an emerging gas market regarding the implementation of the Directive 2003/55/EC until November 15, 2006.
Unbundling:	Electricity, a separate company, the "Hellenic Transmission System Operator" S.A. ("DESMIE" or HTSO), established by Ministerial Decree 328/12.12.2000 is the Transmission System Operator. 51% of the HTSO is state owned and 49% is owned by the generators. The Public Power Corporation SA (PPC) is the only power generator in the Greek territory, therefore PPC controls 49% of the shares of the HTSO and appoints members to the Board of Directors of HTSO. Most of the employees of the HTSO are coming from PPC, and are members of PPC's trade union.. The ownership of the transmission network is with the incumbent company (PPC). Legal unbundling has not yet been implemented for the Distribution System Operator. PPC, the exclusive owner of the Distribution Network, is appointed as the Distribution System Operator under the legislation in force.. PPC is the single distributor in Greece.
Regulator:	The Regulatory Authority for Energy (RAE) is an independent administrative authority. RAE's Board consists of five Members. According to a Law recently enacted by the Parliament, two more members will be added to the Board, and the number of Vice-Presidents will be increased to two, while the President and the Vice-Presidents are appointed by a Decision of the Cabinet of Ministers acting on a proposal of the Minister of Development and following the simple opinion of the competent Parliamentary Committee.. RAE has mainly an advisory role to the Minister of Development. The full competences of the Regulatory Authorities laid down in Articles 23 and of 25 of the Electricity and Gas Directives, respectively, have not been accorded to RAE.
Interconnection:	Electricity, for the year 2004 the total net transfer capacity of the Northern interconnectors is 600 MW in each direction. The net transfer capacity of the undersea interconnector between Greece and Italy is 500 MW for imports to Greece and 300 MW for exports to Italy. There are plans to build new interconnection capacity, notably with Turkey and Bulgaria and upgrade interconnection with FYROM.. Gas, Two infrastructure projects are in the pipeline with Turkey and Italy.
Security of Supply:	Electricity, the total installed capacity in the interconnected system is 11.350 MW. The total installed capacity in the non-interconnected islands is 1.605 MW. The peak demand on July 12th 2004 (when a brown out occurred) reached the 9.600 MW. A 400 MW CCGT power plant is under construction (owned by Hellenic Petroleum) and expected to be commissioned before the end of the year. Another 400 MW gas fired CCGT power plant is currently under construction by PPC S.A., scheduled for its initial synchronous operation by mid 2006. This plant shall substitute equal capacity from old PPC plants that will be retained as cold (emergency) reserve. Finally the gas-fired peaking power station (147 MW) of IRON THERMOILEKTRIKI in Viotia is in operation under a contract with HTSO for the provision of ancillary services.. According to a baseline scenario of the HTSO and an average annual demand increase of 3,9% it is therefore estimated that 400 MW of additional capacity should be built every year to cover the demand of the interconnected system until 2008. Further capacity needs will be met from market participants and it is a challenge that the Greek electricity market has to cope. The new Grid and Power Exchange Code and the anticipated new law on electricity could provide a stable regulatory framework conducive to new investments.
Other Issues:	Greece has delayed to comply with the Electricity Directive 2003/54/EC. A new Law which fully transposes the provisions of this Directive into the Greek legal order is expected to be approved until the end of 2005. Competition is not developed in the Greek

	market. It is necessary that the market environment improves and provides incentives for new investments to meet increasing demand.

ELECTRICITY

General/Customer	The electricity consumption is split as follows in the various customers' categories: Industrial sector 29%, commercial, agricultural and public sectors 36% and domestic sector 34%. There are no specific provisions on Public Service Obligations. Families with more than three kids, consumers in the agricultural sector and PPC employees enjoy discount retail tariffs.
Switching:	Practically, all customers connected to the medium and low voltage system are supplied by PPC. A few licensed suppliers operating in the retail market supply small amounts of electricity (via imports) to commercial and light industrial sectors' customers. In 2004 this amounts to 398 GWh thus 0,78% of the overall consumption in the interconnected system.
Competition:	The 2005 Grid and Power Exchange Code allows for the development of an organized daily wholesale market, where all electricity generated and consumed in Greece will be transacted. The HTSO has the task of Market Operator. The 2005 Grid and Power Exchange Code also introduces a generation capacity assurance mechanism with the view to increasing the security of supply. This mechanism is designed to reduce business risk of the investors of the new power plants, by providing guarantees for covering part of their capital cost. On the other hand, by the same mechanism suppliers can ensure restricted volatility of the wholesale prices. There no real-time market balancing arrangements. The whole balancing mechanism is based on the ex-post, administrative settlement of imbalances among the market participants. Since 2001 12 generation licence have been granted to anticipated gas-fired non-PPC producers for a total capacity of 4.153 MW. However, only two have proceeded in investments. Investment in renewable is promising. RES producers are under a protected regime.
Prices:	Electricity prices increased by an average of 3,5% in 2005. Prices are still among the lowest in the EU, especially for households. Euro/MWh Ig Ib Dc GR 54 95 64 EU average 56 101 96
Network access:	Network tariffs are calculated on the basis of the annual system cost, which is defined as the sum of the annual barter owed by the HTSO to PPC SA (i.e. the sum of the annual depreciation of the assets of the Transmission System, its operational and maintenance expenses and the return on the non-depreciated capital of the Transmission System, with the rate of return being approved by RAE) and the annual cost of any works for the expansion of the System, which are paid by the HTSO. System charges are then allocated to generation -including imports- (G) and load –including exports- (L) according to a 30% - 70% split until 1 January 2006 (according to the 2001 Grid Code), which will then change to 15% - 85% (according to the 2005 Grid Code).

COUNTRY SUMMARY: HUNGARY

COMMON ISSUES

Main Legal Texts	Electricity Act CX of 2001 as amended Gas – Act XLII of 2003 on natural gas supply as amended.
Unbundling	Electricity : Accounts, Legal. The incumbent MVM (99,8% public) still owns the grid, which is operated by MAVIR (also public). It is understood that both will remain into public ownership. DSOs have the monopoly in supply to regulated customers. For gas, MOL has legally unbundled its gas sector in three units: storage MOL Foldgaztarolo, trading arm MOL Foldgazellato and gas shipment and system operator MOL Foldgazszallito. Sale of these units (probably 75% of share capital) is presently in progress.
Regulator	Hungarian Energy Office (HEO) fixes network access conditions, and handles complaints and appeals (within 60 days: 1393 in 2003), establishes rules for pricing and prepares tariffs. But the Ministry approves tariffs (ex-ante). It also approves Operating, Business and Distribution Codes, grants licences for power plants with capacity of 50 MW or more. In co-operation with General Inspectorate for Consumer Protection monitors supply and demand order to ensure security of supply and supports.
Interconnection	Electricity: Interconnection capacity is substantial (1,8 GW – 22% of installed generating capacity) nevertheless there is congestion. It is dealt with by explicit auctions (about two per year), while co-ordinated auctions with neighbouring TSO are planned for 2006; eventually market splitting. There is a strong need of a new interconnector with Slovakia. It is important to note that about 40% of the available interconnection capacity is allocated on the basis of old long-term import contracts. Gas: The main supply pipeline is that coming from Russia through Ukraine; it is congested in the winter, but there is some free capacity in the summer. There is free capacity in the interconnectors with Austria and with Serbia(for export). There is a working group for a new interconnector with Slovakia. There are also plans for a new interconnector with Croatia to be used either for export or for import. (Gaz de France plans to build a LNG facility in Krk island). The possibility of a new interconnector with Romania is also being examined and, of course, there is a strong interest in the Nabucco project (capacity 30 Bcm/year).
Security of Supply	Installed generation capacity amounts up to 8800 MW in Hungary, while peak demand for electricity is around 6357 MW. Security of supply obligations are incumbent to TSO.
Other Issues	Renewable energy is mostly represented by biomass. Geothermal looks promising.

ELECTRICITY

General/ Customer Service	There are 5.3 million electricity customers in Hungary, 4.9 of which are households. All non-domestic users are eligible, representing about 67% of the consumption. In practice 75-80% of the electricity is sold at regulated prices. Consumer protection minimum standards include: • Universal service (households) • Disconnection practice • Service quality • Default supplier at regulated price • Social welfare electricity allowance
Switching	The Hungarian electricity sector is divided into two parts; a regulated sector, which supplies captive customers and a market sector. Eligible customers are free to switch back and forth from regulated to competitive sector at no cost. The regulated sector wholesaler (MVM) purchases the electricity for the public utility sectors from import and from domestic generators (long-term PPAs) and has a legal monopoly to supply the regulated sector. The other segment is the competitive sector, supplying eligible customers who chose to enter the free market. Undertakings wishing to be active in both regulated and free market must establish legally separated companies. Presently this segment includes 1357 customers on 2603 sites. In June 2005, 1129 eligible customers had switched to the free market, representing 31,8% of national consumption.
Competition	The wholesale market in Hungary (i.e. the competitive sector) is currently a bilateral trading market between generators/traders and customers. The dominant position of the incumbent MVM is a major problem: it owns directly around 30% of generation capacity (including Paks nuclear power plant) but its share reaches 80% aDcing existing PPAs with other generators. MVM also controls 40% of import capacity, thus leaving little room for effective competition: it controls 100% of the public utility sector and 25.6% of the competitive one.
Prices	Electricity prices have been rising slowly in the last few years. As explained above most market is made by regulated prices. Euro/MWh Ig Ib Dc HU price 59 112 95 EU average 56 101 96
Network Access	The HEO both sets allowed revenues and approves the individual charges.

GAS

General / Customer Service	There are 3.5 million gas customers in Hungary; households are 3.1 million. Currently, all non-household customers are eligible to choose supplier which is in theory over 65% of total demand. The market will be fully opened in July 2007. Minimum standards are implemented through conditions in suppliers' licences and include: • Disconnection practice • Universal service • Regulated price
Switching	Like the electricity sector, Hungarian gas sector is divided into a regulated sector and a market sector. Switching is limited by lack of gas on the free market: none of the large power plants has been able to switch. Presently only 8% of the gas consumption is served by suppliers other than the incumbent (13% of the competitive market). HEO website mentions only 44 eligible customers who have actually switched into the competitive market versus a potential number of around 180.000. MOL has a legal monopoly to supply the public utility suppliers supplying regulated customers
Competition	The incumbent (MOL) supplies 96.74% of national gas sales. The number of traders on the competitive market is 13, but only 3 out of those are actually conducting commercial activities.
Prices	Over 90% of the gas is supplied within the public utility sector at regulated prices. Euro/MWh I4 I1 D2 HU price 19 21 24 EU average 17 27 40
Network Access	At end 2004 HEO published and enforced the ÜKSZ (Network and Commercial Code, which regulates the access to networks and storages, the schedule and the co-operation rules among the participants of the system. It stipulates that spare capacity of the transmission system and storages shall be published 15 months in advance, provides detailed rules for contracting capacity, and describes the scope of basic services provided by system operators. Capacity shortage occurs on the main import pipeline (from Russia via Ukraine). So far, capacity has been allocated by using capacity auction. Rules of the auction are included in the ÜKSZ. MOL Transmission, the transmission licensee, is required to publish on its website the available capacities for each entry and exit point of the transmission system. An entry-exit system of capacity reservation and transmission tarification was introduced in 2005. The fees for access to storage in the free market are negotiated.

COUNTRY SUMMARY: IRELAND

COMMON ISSUES

Main Legal Texts	Electricity Regulation Act 1999, Statutory Instruments 511/2005, 287/ 2005, 60/2005, 632/2003, 328/2003 304/2003, 217/2002, 145/2002, 445/2000, 49/2000 Gas – not notified
Unbundling	All network operators have been unbundled in management terms since 2001. The electricity transmission system operator is a legally separate company (Eirgrid\ESBNG) although the ownership of the network remains within the vertically integrated groups. The distribution network is owned by ESB network. Legal unbundling of the gas TSO has not yet been implemented leading to infringement procedures.
Regulator	CER regulates both network and end-user supply tariffs. CER is an independent body with three Commissioners which are appointed by the relevant Minister. In 2001 a five year investment programme was agreed between the regulator and network operator. A similar programme s agreed for gas.
Interconnection	The regulators and governments of the Republic of Ireland and Northern Ireland agreed to the creation of an all-Ireland energy market. Interconnection capacity is now 330MW following reconnection in 1995. A further increase is planned between the two jurisdictions. An undersea interconnector between Ireland and Great Britain of up to 1000MW is being discussed. New interconnection is seen as the key to dealing with ESB dominance of the electricity market.
Security of Supply	The Irish system has approximately 5800MW installed capacity while peak consumption is 4500MW. Reliable reserve margins have been low in recent years. CER have had to take considerable measures to maintain security of supply including a tender process for new capacity and an obligation on ESB to procure peaking plant. However, 750MW of capacity were aDced between 2000 and 2003 and aDcitional 550MW of capacity will be aDced to the system in 2006 of which 150MW will be CHP. It is now expected that further capacity needs will be met from market participants especially after a stable wholesale market framework is established. For gas there is adequate import capacity following the construction of the second interconnector with the UK in 2003. ADcitional local production from the Corrib gas field is expected by 2007-08.
Other Issues	There has been considerable growth in the use of renewable energy sources. Over 400MW of wind capacity is in place a further 2600MW is being discussed, around half the installed capacity. An obligation exists on ESB to purchase a certain quantity of energy from renewable resources for which it is compensated through a levy on all customers.

ELECTRICITY

General/ Customer Service	There are 1.85 million electricity customers in Ireland. The electricity market was opened 100% in February 2005. A range of consumer protection guidelines have been put in place by the regulatory agency. Minimum standards are implemented through conditions in suppliers' licences and include: • Disconnection practice • Contract transparency • Default supplier at regulated price • Marketing and billing standards
Switching	Customers can change supplier without charge or delay and around 30% have now either changed from the incumbent supplier or moved from a regulated to a competitively determined tariff. Most switching has been from industrial and commercial customers. However some households have changed to renewable suppliers.
Competition	The wholesale market in Ireland is currently a bilateral trading market between generators and suppliers. This is likely to be changed to a centralised Pool structure under the all-Ireland arrangements. Until 2000, the incumbent Electricity Supply Board (ESB) owned all generation plant. The main new entrant into the generation market is Viridian which has 400MW plant and is planning a further unit. ESB has also offered blocks of capacity for sale in VPP auctions. However its market share remains high, of the order of 80-90% of capacity. There are seven independent electricity suppliers and by mid 2005 their market share was 30% of total demand. This includes ESB (Independent). Four of the new entrants concentrate on selling renewable energy and CHP. Viridian and Bord Gas Eireann (BGE) are the main conventional energy competitors to ESB.
Prices	Electricity prices have been rising significantly as a result of aDcitional, network investment costs, fuel prices. For customers remaining with the default supplier, prices are regulated by the CER. Euro/MWh Ig Ib Dc IE price 77 143 120 EU average 56 101 96
Network Access	The CER both sets allowed revenues and approves the individual charges. Network charges are broadly in line with European average levels.

GAS

General / Customer Service	There are 0.5 million gas customers in Ireland. Currently, all non-household customers are eligible to choose supplier which is over 80% of total demand. The market will be fully opened in October 2005. Minimum standards are implemented through conditions in suppliers' licences and include: • Disconnection practice • Contract transparency • Default supplier at regulated price • Marketing and billing standards
Switching	Already 64% of gas consumption is served by suppliers other than the incumbent. The major part of this volume reflects the fact that large electricity generators purchase their own gas.
Competition	Wholesale gas prices in Ireland are determined by those prevailing in the GB gas market. As well as the former incumbent company Bord Gas Eireann (BGE), electricity companies are also seeking to become gas supplier and Powergen has also entered the market. A new supplier, Flogas, has been nominated as the default supplier for newly connected towns in the west of Ireland.
Prices	For customers remaining with the default supplier, prices are regulated by the CER. Gas prices have risen to reflect market conditions and are higher than the EU average Euro/MWh I4 I1 D2 IE price - 33 63 EU average 17 27 40
Network Access	The CER both sets allowed revenues and approves the individual charges. An entry-exit system of capacity reservation and transmission tarification was introduced in 2005.

COUNTRY SUMMARY: ITALY

COMMON ISSUES

Main Legal Texts	**DL 79/1999** is Legislative Decree n° 79 of 16 March 1999. It is the main measure for the implementation of Directive 96/92/EC. **DL 164/2000** is Legislative Decree n° 164 of 23 May 2000. It is the main measure for the implementation of Directive 98/30/EC. **Law 239/2004** is Law n° 239 of 23 August 2004. It is the main measure for the implementation of Directives 2003/54/EC and 2003/55/EC.
Unbundling	Transmission network unbundling was realized according to the ISO model. Italy's ISO was created as a state-owned company. The separation between grid ownership and management is going to be superseded. Enel sold on 15 September 29,99% of Terna capital (the main grid owner) to Cassa Depositi e Prestiti (a public body).Enel own nowadays 5,14% of Terna, but the operation is subject to remedies defined by the Antitrust Authority. Terna will finally merge with the ISO unit dedicated to transmission and dispatching.Functional unbundling of DSOs has not yet been properly addressed.
Regulator	AEEG (Autorità per l'Energia Elettrica e il Gas is the Italian Regulator). AEEG regulates both network and end-user supply tariffs. It is an independent body with five Commissioners which are appointed by decree of the President of the Republic. This decree is issued after the approval of the nominee by the Council of Ministers upon proposal by the Minister of Productive Activities. Nomination are also submitted to the competent Parliamentary Committees for scrutiny and the appointment is based on a two-thirds majority vote.
Interconnection	Italy has 18 electricity interconnection lines: 4 with France, 9 with Switzerland, 1 with Austria; 2 with Slovenia, plus one sub sea cable with Greece and another with Corsica. Total capacity is 7.150 MW, but demand is much larger and there are serious congestion problems. Imports cover over 14% of the demand. For gas there are four import pipeline (Switzerland, Austria, Algeria and Libya) and a LNG regasification terminal (Panigaglia). Two more LNG terminals (Rovigo and Brindisi) are being built; more are planned.
Security of Supply	The Italian electricity system has approximately 80.000MW installed capacity while peak consumption is 54.100MW. Reliable reserve margins have been low in recent years when hydro plants where non available and thermal plants were undergoing maintenance or refurbishment. A major blackout occurred in 2003. More power plants are being built. For gas there is adequate import capacity and upgrading of import pipeline is planned. Italy imports from several producing countries.
Other Issues	

ELECTRICITY

General/ Customer Service	There are 7.59 million electricity eligible customers (measured as withdrawal points) in Italy (all non-domestic), plus about 20 million captive ones. Legislation provides for a range of consumer protection rules, including : • Universal service • Disconnection practice • Service quality The provision on labelling has not yet been implemented.
Switching	Eligible customers can change supplier without charge or delay; however only about 126.000 have actually switched supplier, representing around 60% of consumption.
Competition	An electricity exchange is active since 1 April 2004, consisting of: Day-Ahead Market - MGP; Adjustment Market – MA and Ancillary Services Market - MSD. The Italian electricity generation market is composed of one dominant operator, (Enel 43,9%), one main competitor (Edison 12,1%, but Edison also owns 40% of Edipower which has 9% of the market), two smaller competitors (Endesa Italia, 7,4%, ENI 6,0%) plus other minor actors, none of which has more than 2,5%. There are about 100 distribution companies, but Enel Distribuzione has more than 50% of the market.
Prices	For industrial users, electricity prices, both net and gross of taxes, continue to be higher in Italy than the European average. More specifically, for the central categories of industrial consumers, i.e. those using from 2 to 20 million kWh/year, Italian prices net of taxes are over 35% higher. Euro/MWh Ig Ib Dc IT price 82 120 151 EU average 56 101 96 For customers remaining within the captive market, prices are regulated by the AEEG.
Network Access	The AEEG both sets allowed revenues and approves the individual charges.

GAS

General / Customer Service	There are more than 18 million gas customers in Italy; all are eligible since 2003. Legislation provides for a range of consumer protection rules, including: • Default supplier at regulated price • Disconnection practice • Quality standards of service • Quality of gas • Marketing and billing standards
Switching	23% of large customers, 3% of medium customers and 1% of small customers have changed supplier. Together they represent about 60% on consumption.
Competition	The structure of the Italian gas market is similar to electricity: ENI supplies 67,5% of the total market of 79,3 BCM; Enel 20,5%, Edison comes third with 12%, and Plurigas follows with 4,4%. No other supplier has more than 2,5%. There are about 480 distribution companies; Italgas (ENI) has about 30% of the market. Activities involving the entire supply chain in the sector continue to be strongly concentrated in ENI hands: production, imports, transport and sale. The gas release programs have had only a limited effect on competition, and the infrastructure for import is entirely under the control of ENI. Import contracts linked to take or pay contracts, many of which were entered into by ENI shortly before the Directive 98/30/EC, make very little capacity available for new entrants.
Prices	Also gas prices, net of taxes, are generally higher than the European average and show considerable consumption-based differences between one customer category and another. While small domestic users benefit from low cooking gas prices, the cost of consumption for individual or collective heating is about 14% higher than the European average. Euro/MWh I4 I1 D2 IT price 19 35 40 EU average 17 27 40 Prices for consumption levels of around one million cubic metres per year are, on the other hand, in line with the European average.
Network Access	The AEEG both sets network entry-exit tariffs (including LNG regasification terminal) and approves the distribution tariffs set by DSOs.

COUNTRY SUMMARY: LATVIA

COMMON ISSUES

Main Legal Texts	Elektroenergijas tirgus likums Energetikas likums
Unbundling	The electricity transmission system operator Augstsprieguma tikls is a daughter company of the vertically integrated company Latvenergo. Latvenergo is also the main electricity distribution company in Latvia. For small distribution companies a light functional unbundling is required. Gas transmission, supply and distribution are done by Latvijas Gaze.
Regulator	Public Utility Commission is an independent agency under the Ministry of Economy. PUC regulates end user prices, network tariffs and has a number of other tasks related to energy markets.
Interconnection	Interconnection capacity of Latvia is about 3.000 MW with Estonia and Lithuania. Currently there is no congestion on interconnector lines.
Security of Supply	The Latvian electricity system has 2.684 MW installed capacity while peak demand is around 1.300 MW. The Latvian system is hydro based and depends on power imports with low water levels. All gas is imported from Russia.
Other Issues	

ELECTRICITY

General/ Customer Service	The electricity market was opened for all industrial customers 1 July 2004. In practise there are no alternative suppliers on the market. In addition to Latvenergo there are only 7 small local distribution companies in Latvia. The regulated end-user price is the lowest in Europe.
Switching	Not a single customer switching has taken place in Latvia.
Competition	There is no competition at the moment on the Latvian electricity market.
Prices	Electricity prices have been rising slightly as a result of increased fuel prices. The prices are among the cheapest in the EU. Euro/MWh[45] Ig Ib Dc LV price 33 64 70 EU average 56 101 96
Network Access	PUC sets the methodology for end-user price and network tariff calculation, based on a price-cap and on a three year review cycle.

[45] Eurostat categories, without taxes

GAS

General / Customer Service	Latvia has pipeline connections to Russia, Estonia and Lithuania. All customers are supplied by the vertically integrated company Latvijas Gaze.
Switching	There is no switching as there is only one supplier.
Competition	There is only one supplier Latvijas Gaze. Enduser prices remain regulated.
Prices	The prices are among the cheapest in the EU. Euro/MWh I4 I1 D2 LV price 12 14 17 EU average 17 27 40
Network Access	PUC sets the methodology for end-user price and network tariff.

COUNTRY SUMMARY: LITHUANIA

COMMON ISSUES

Main Legal Texts	Electricity Law of 2002, amended in 2004 Gas law of 2001 currently being updated
Unbundling	For electricity, both the transmission system operator and the two main distribution companies are legally unbundled. For gas, the business remains vertically integrated. Separate accounts are prepared.
Regulator	The National control Commission for Prices and energy (NCC) has operated since 1998. It is responsible for network access and also licensing, NCC also have supervisory powers over the electricity and gas markets. It also regulates end-user prices. It operates independently of other government bodies.
Interconnection	Lithuania is well connected with the other Baltic Member States and also former USSR regions. But market opening is less well advanced and trade is still not easily achieved. Connections with Poland have not been advanced.
Security of Supply	There is approximately 4500MW of installed capacity compared to peak demand of around 2000MW. In addition there is considerable import capacity.
Other Issues	

ELECTRICITY

General/ Customer Service	All commercial customers are now able to choose their electricity supplier.
Switching	Around 15% of the large customers have changed supplier since market opening of which 12% are with new independent suppliers.
Competition	There are two main producers in Lithuania, the largest being Ignalina nuclear plant which is 50% of installed capacity. Lietuvos Elektrine is the second largest with 35%. There are 5 companies active in the supply market including some new entrants. The two largest retain over 85% of the market
Prices	The prices are among the cheapest in the EU, especially for small users. Euro/MWh I4 I1 D2 LT price 48 75 61 EU average 56 101 96
Network Access	NCC sets network tariffs covering a three year regulatory period.

GAS

General / Customer Service	The market is open for customers consuming more than 1 mcm/year. There are 27 customers in this category consuming 80% of the total demand.
Switching	No customers have changed supplier to date.
Competition	There are 5 suppliers of gas. All purchase gas from the same external source.
Prices	The prices are among the cheapest in the EU. Euro/MWh I4 I1 D2 LT price 10 14 21 EU average 17 27 40
Network Access	NCC regulates the transport and distribution tariffs of the vertically integrated company.

COUNTRY SUMMARY: LUXEMBOURG

COMMON ISSUES

Main Legal Texts	The directives have not yet been transposed into national law.
Unbundling	Legal separation has been applied to the two main transmission and distribution system operators for electricity. However this has not yet been applied to the gas networks.
Regulator	The regualtor (ILR) has not yet been given all the competences required by the Directive. Currently network tariffs are proposed bt the companies themselves, for approval by the Minister. The ILR provides advice on the decision taken.
Interconnection	Luxembourg has two electricity transmission networks that are not interconnected between each other, but are integrated into its neighbouring companies: Germany, and Belgium.
Security of Supply	Security of supply is not a relevant concept for Luxembourg taken alone due to the high level of interconnectin with neighbouring countries.
Other Issues	

ELECTRICITY

General / Customer Service	All non-residential clients are eligible to choose supplier. Public service requirements will be incorporated into the forthcoming laws implementing the Directives.
Switching	Customers with a total of around 10% of total national consumption have changed supplier.
Competition	Competition is mainly from neighbouring countries.
Prices	Prices are above the Eu15 average, especially for smaller companies and households. Euro/MWh Ig Ib Dc Luxembourg 42 147 131 EU average 56 101 96
Network Access	

GAZ

General / Customer Service	All non-residential clients are eligible to choose supplier. Public service requirements will be incorporated into the forthcoming laws implementing the Directives.
Switching	Only 2 customers have changed supplier to date.
Competition	The main incumbent is SOTEL currently controls the access to gas in Luxembourg.
Prices	Gas prices in Luxembourg are Euro/MWh I4 I1 D2 Luxembourg 16 27 46 EU average 17 27 40
Network Access	

COUNTRY SUMMARY: MALTA

COMMON ISSUES

Main Legal Texts	Electricity - L.N. 164 of 2003; L.N. 511/2004 – Application pending for derogation as “small isolated system”. Gas – LN432/2004 – No natural gas in Malta.
Unbundling	Electricity – TSO: Does not exist; DSO: accounts.
Regulator	Malta Resources Authority (MRA) in entitled by article 4 of MRA Act XXV of 29 September 2000 of a wide range of tasks. It fixes ex-ante electricity tariff structures.
Interconnection	No Interconnection. The possibility of an undersea electrical or gas interconnector with Sicily is being investigated, but no action is planned for the time being
Security of Supply	The Maltese system has 571MW installed capacity (2 plants) while peak consumption is 402MW. SoS is an issue: MRA registered 557 minutes/year/customer of power failure. No new generation capacity has been authorized to date, while demand could increase at the rate of 3-4%/year.
Other Issues	

ELECTRICITY

General/ Customer Service	There are 246000 electricity customers in Malta. The electricity market is entirely supplied by Enemalta, a vertically integrated company. A range of consumer protection guidelines have been put in place by legislative measures; they : • Disconnection practice • Subsidized tariffs (vulnerable customers) • Regulated tariffs • Standards comprehensive contract
Switching	Not possible.
Competition	Not possible.
Prices	Electricity prices might rise significantly as a result of growing fuel prices: the two plants are oil fuelled. Euro/MWh Ig Ib Dc MA price 56 83 60 EU average 56 101 96
Network Access	Not possible.

COUNTRY SUMMARY: NETHERLANDS

COMMON ISSUES

Primary Legislation	Elekticieitswet 1998 as amended Gaswet 2001 as amended
Unbundling	The transmission systems for electricity and gas are totally separated and owned by the national government as separate companies (ownership unbundling). The distribution networks are currently legally separate from supply businesses. The government has proposed ownership unbundling from 2007.
Regulator	The regulator DTE is an independent agency within the Competition Authority. The Ministry is not entitled to give instructions on individual cases and decisions. DTE regulates access to transport and distribution networks.
Interconnections	The Netherlands is quite well connected with neighbouring countries with a capacity of 3350MW. The construction of a cable 700MW with Norway has been started recently. Gas interconnection with the UK through the BBL pipeline will be completed at the end of 2006.
Security of supply	Peak electricity demand is around 16.5GW compared to generation capacity of 20GW. There is 1.1GW of wind energy. The Netherlands is an important gas producer and meets over 60% of its own consumption and also exports to other Member States. Imports from Russia and Norway are increasing.
Other issues	

ELECTRICITY

General/ Customer Service	The electricity market has been fully open to competition since July 2004. The customer service provisions in Annex A of the Directive have been implemented. The regulator has an important role in protection of small customers. It assures the transparency of the market in terms of price and freedom of choice and will investigate procedures such as billing.
Customer Switching	8% of households have already changed supplier since July 2004.
Competition	The 3 largest generators hold 69% of installed capacity and also have 83% of the supplier market. There are 18 other suppliers which each have a small part of the market below 5%. Around 15% of electricity is exchanged on the APX spot market. Auctions of production capacity (VPPs) were organised by Nuon during 2005. 200MW were made available.
Prices	There are no longer regulated prices for end users. Prices are a little above the European average. Euro/MWh Ig Ib Dc Netherlands 55 108 111 EU average 56 101 96
Network Access	Network changes are fixed by DTE.

GAS

General / Customer Service	The electricity market has been fully open to competition since July 2004. The customer service provisions in Annex A of the Directive have been implemented. The regulator has an important role in protection of small customers. It assures the transparency of the market in terms of price and freedom of choice and will investigate procedures such as billing.
Switching	5.5% of households have already changed supplier since July 2004.
Competition	Gasunie Trade and Supply controls around 80% of gas available in the Netherlands. Gas is traded freely on the TTF wholesale market and its volume is now around 5% of national consumption.
Prices	There is no regulation of end user prices in the Netherlands. Prices are lower than the EU average for large users, but much higher for the small household sector. Euro/MWh I4 I1 D2 Netherlands 14 28 58 EU average 17 27 40
Network Access	Network access tariffs are fixed by the regulator. Access to storage is negotiated. Storage operators must publish indicative tariffs and conditions on an annual basis.

COUNTRY SUMMARY: POLAND

COMMON ISSUES

Main Legal Texts	Prawo energetyczne (“Energy Law”) 10 April 1997, latest modification 2005 no. 62 item 552
Unbundling	The Transmission System Operator is a legally separate company (PSE - Operator) as part of the PSE Group. PSE also is involved in the generation market and is the counterparty to long term contracts with come generators. PSE is owned by the state which also has generation interests. DSOs have not yet been legally separated from supply businesses. The situation is similar in the gas sector, where a legally separate TSO (OGP Gaz System) has been established , but DSO unbundling is still not implemented.
Regulator	The regulatory authority (URE) has a full range of competences including those required by the Directive. URE also co-operates with the competition authority (OPCC) on market surveillance issues.
Interconnection	Poland is not very well connected with neighbouring Member States for electricity. The available capacity with Germany and the Czech Slovak Republics is rather poorly developed and some network reinforcements would appear to be beneficial. These are planned for the 2005-09 period. There is no connection with Lithuania. In all, available capacity is barely equivalent to 10% of generation capacity. For gas, Poland is an important transit country for gas imported through Russia. In theory it should be able to receive nominations from other sources of gas, although in practice this is difficult due to the lack of integration of network access at European level.
Security of Supply	The Polish system has approximately 35000MW installed capacity with 28000MW reliably available. Peak consumption is around 23000MW. Reserve margins are relatively comfortable at present although new investment is neededin coming years as demand is expected to grow rapidly, while older plant will need replacing. An additional 2000MW capacity is expected in the next few years. For gas, Poland is highly dependent on supplies from Russia. Current import capacity may not be adequate for future needs and the possibility of diversification into LNG is being examined.
Other Issues	

ELECTRICITY

General/ Customer Service	The Polish electricity market is open to all non households corresponding to 80% of demand. Domestic customers are still served by the distribution company. The regulator still approves end-user tariffs for all customer groups. The energy law imposes certain requirements on suppliers, especially relating to disconnection.
Switching	Switching rates have, to date, been low, mainly, it is argued, due to inadequate separation of distribution companies from supply operations. To date only around 20% of large users have changed supplier and less than 1% of smaller businesses.
Competition	The wholesale market in Poland is a bilateral trading market, with brokered deals. There is also a power exchange, Gielda, although liquidity is low. Around 50% of generation plant is tied to contracts with PSE which, in the past, acted rather like a single buyer. However these contracts are being restructured at present, which should increase liquidity. Generation is not concentrated, the largest two groups own around 45% of capacity. In the supply market, the distribution companies are still dominant in their particular region although new traders are entering the market, often linked to one of the main generators.
Prices	Electricity prices are relatively low in Poland and are largely still under regulatory control Euro/MWh Ig Ib Dc Poland 44 90 71 EU average 54 103 106
Network Access	URE sets a revenue cap for network companies with benchmarking of the operating distribution companies using regression techniques. The Benchmarking was implemented in 2002 and used for 33 distribution companies, existed in 2002. After consolidation of distribution companies the benchmarking was adapted to existing 14 companies. URE also monitors network performance. Balancing charges are set on the basis of offers from generators to increments and decrements to their production i.e. a market mechanism.

GAS

General / Customer Service	The Polish gas market is also open for all non-households and this corresponds to 72% of demand. End user prices are still regulated and there are strict controls on disconnections as for electricity.
Switching	No switching has taken place in Poland due to many barriers that exist to a functioning free market, specifically the monopoly structure at wholesale level, inadequate unbundling of DSOs and insufficient metering arrangements.
Competition	Competition in Poland is not functioning at present. Only one company has access to the market and other avenues for gas transmission appear to be blocked in other Member States
Prices	Gas prices a regulated by the URE. They generally reflect existing purchase agreements for which prices are relatively low by EU standards Euro/MWh I4 I1 D2 Poland 17 23 27 EU average 17 27 40
Network Access	Network access is based on an entry exit system. Capacity is provided on a first come first served basis. There are considerable long term contracts for capacity rights.

COUNTRY SUMMARY: PORTUGAL

COMMON ISSUES

Main Legal Texts	Decree-Law nº 182/95, of 27 July, amended by Decree-Law nº 56/97, of 14 March: implement Directive 96/92/CE. Directive 2003/54/EC has not yet been implemented: an infringement procedure is presently open: 2004/2249. Gas – "Emerging market": derogation until 2007.
Unbundling	Electricity: TSO: ownership; DSO: EDIP Distribuição is a subsidiary of EDP - legal unbundling is assured regarding generation and supply in the liberalised market, notwithstanding EDP Distribuição performs simultaneously activities of distribution and regulated supplier. Gas: legal unbundling between TSO and DSOs.
Regulator	ERSE established in 1995, it approves tariffs (ex-ante), fixes network access conditions, and handles complaints and appeals. Sufficiently independent from Government.
Interconnection	Mibel (Mercado Ibérico de Electricidade) should have started in 2003, but it is not yet operational. Few market operators now expect it to be working before 2007. The new market will need both harmonisation of regulations of the two countries and an upgrading of interconnectors. Present interconnection capacity is around 1000/1545 MW (depending on season and direction) and should reach 1610/2330 MW by year 2007-2008. In 2004, the relative contribution of imports from Spain was 14,1% of total demand. Natural Gas was introduced in Portugal in 1997 after the construction of the Maghreb-Europe pipeline, which transports the natural gas of Algerian origin from the Algerian-Moroccan border to the Iberian peninsula. For the imports of natural gas through this pipeline, Transgás signed in 1993 a long term take-or-pay ("TOP") agreement with the Algerian company Sonatrach. A LNG terminal and re-gasification plant started operating in 2004 in Sines. The maximum annual capacity of this terminal is 5,256 bcm. The terminal is owned and operated by Transgás (GDP) which holds all capacity rights.
Security of Supply	The Portuguese system has 11708MW installed capacity while peak consumption is 8249MW, but growing. Reliable reserve margins have been low sometimes, when drought makes some hydroelectric capacity unavailable. There are plans for 2650MW of new gas fired power plants, as well as 4500MW of wind generators. With a total import capacity of 8,95 bcm/year against a 2004 consumption of 3.54 bcm in 2004 Portugal enjoys a relative security of supply, even allowing for the growing consumption
Other Issues	• After approval by European Commission, the Portuguese

	Government published a Decree-Law that establishes the regime for cessation of the long-term agreements between binding generators and the transmission system operator, as well as the forms of calculation and payment of the associated stranded costs. • The Government has announced that a framework law for the electricity sector will be adopted to replace the 1995 legal framework and transpose directive 2003/54/EC to the Portuguese law. The Government also announced that a new framework law for natural gas will be adopted to transpose directive 2003/55/EC to Portuguese law and establish a liberalisation timeframe for this sector.

ELECTRICITY

General/ Customer Service	There are 6 million electricity customers in Portugal. The existing regulatory model of the power market began to be structured in the beginning of the nineties. The electricity market was opened 100% in August 2004. A range of consumer protection guidelines have been put in place. Minimum standards are implemented through conditions in suppliers' licences and include: • Universal service and SoLR • Social tariff (max 400 kWh/year) • Quality of service • Commercial Relations Code
Switching	Since 2004 all electricity consumers are eligible. However, eligibility of household customers can only be implemented when the required computer platform becomes operational (expected to 2006). There is a dual regulated and free market system in Portugal. Customers can change supplier without charge or delay and switch back to the regulated tariff. Switching out of the regulated sector represents 19.8% of national market (by volume).
Competition	The wholesale market in Portugal is currently a bilateral trading market between generators and suppliers. The incumbent EDP still generates 52.9% of national consumption, and owns 69,4% on installed capacity. The main new entrants into the generation market are Turbogás (13.4%) and Tejo Energia (9,6%); imports cover 14,1% of demand. Retail competition was mainly developed through imports from Spanish suppliers.
Prices	Electricity prices have been relatively stable in the last few years, for customers remaining within the regulated price. Euro/MWh Ig Ib Dc PT price 66 109 131 EU15 average 56 101 96
Network Access	ERSE both approve network charges and sets conditions for access to network.

COUNTRY SUMMARY: SLOVAKIA

COMMON ISSUES

Primary legislation	Act No. 656/2004 of 26 October 2004 on Energy and amending some other Acts : it implements both the Directives 2003/54/EC and 2003/55/EC
Unbundling	The TSO is a separated 100% state owned company ('ownership unbundling'). The 3 main distribution companies are partially owned (49%) by EON, EDF and RWE. The remaining share is with state govnerment. There is no legal separation from associated supply companies. SPP remains the owner and operator of the gas transmission system. There is no legal unbundling in place.
Regulator	Regulatory Office for Network Industries (RONI) established in 2001 determines and approves the method, procedures and conditions for both connections and access to a national networks, and for pricing for transmission and distribution of elektricity, transport and distribution of gas ; it approves tariffs for supply of both electricity and gas to the households ; it lays down rules of operation of the market
Interconnections	
Security of Supply	Peak electricity consumption is 4350MW with installed capacity of 8270 MW. 1600 MW of nuclear capacity will be closed in 2008. Slovakia is an important transit country for gas and there is no shortage of import infrastructure for its needs. In fact it is 12 times the national consumption. Currently, long term contracts with Gazprom serve 97% of consumption. Slovakia also has important storage resources close to the potential hub at Baumgarten.
Other issues	

ELECTRICITY

General / Customer Service	The market is open for all non-households. Prices are still regulated for households.
Switching	Around 1% of consumers have changed supplier up to 1/1/05.
Competition Issues	SE produces 84% of electricity in Slovakia
Prices	Euro/MWh Ig Ib Dc Slovakia 65 95 112 EU average 56 101 96 Prices are rather above the EU average for large users but lower for smaller business and households.
Network Access	

GAS

General / Customer Service	All non-household customers have been eligible to choose their supplier since 1 January 2005			
Switching	No switching has yet taken place in the gas sector.			
Competition Issues	SPP supplies 98% of customer demand.			
Prices	Euro/MWh	I4	I1	D2
	Slovakia	19	20	38
	EU average	17	27	40
Network Access	Network Tariffs are based on a postage stamp model. Entry-exit tariff system for transit.			

COUNTRY SUMMARY: SLOVENIA

COMMON ISSUES

Main Legal Texts	The “Energy Act” covers both electricity and gas
Unbundling	The electricity TSO is 100% state owned. Electricity DSO serve all more than 100.000 customers and has to unbundle in legal terms by 1 July 2007. The gas as TSO is legally unbundled, all gas DSOs are below 100.000 and are exempted from unbundling.
Regulator	The Energy Agency determines ex-ante methodologies and individual network access charges and conditions. Ministry has veto right with respect to methodologies.
Interconnection	In electricity interconnection capacity amounts to around 70% of installed capacity. However, interconnections with Italy and Austria are congested. Slovenia benefits from a temporary with respect to the obligation contained in the Regulation on cross-border exchanges in electricity to allocate capacity “market based”.
Security of Supply	The Slovenian system has approximately 2760 MW installed capacity while peak consumption is around 12000 GWh. In gas, Slovenia depends entirely on exports, with Russia being the largest supplier (56,8%)
Other Issues	

ELECTRICITY

General/ Customer Service	There are 860.000 electricity customers in Slovenia. The electricity market has been open for all non-household customers since 1 July 2004 (amounting to a degree of market opening of around 75)
Switching	The network operator is obliged to carry out a change of supplier within one month. Around 3% of low-voltage customers and 6,4% of medium voltage customers have switched supplier.
Competition	The wholesale market in Slovenia is currently for the largest part a bilateral trading market between generators and suppliers and around 2% of total volume is currently traded at the electricity exchange. The state owns the majority of the shares in all electricity production companies and network operators. The largest electricity producer has a market share of around 70%. Concentration at the retail level is significantly lower with 2 suppliers having a share of around 20% and three of around 10%.
Prices	Electricity prices for eligible customers are not regulated and they were below EU-average in 2004. Euro/MWh Ig Ib Dc SI price 53 105 87 EU average 56 101 96
Network Access	Charges appear to be above EU average

GAS

General / Customer Service	There are around 106.000 gas customers in Slovenia Currently, all non-household customers (around 8900 customers) are eligible to choose supplier, amounting to a degree of market opening of 90%.
Switching	No switching activities: all gas in Slovenia is supplied by the incumbent supplier (GEOPLIN), directly or indirectly via distribution companies.
Competition	The only wholesale supplier is the incumbent supplier GEOPLIN, of which the state is the larges shareholder (31%). As a result, at the moment there is in practice no competition in Slovenia. No new suppliers entered the market.
Prices	Prices for eligible customers Euro/MWh I4 I1 D2 SI price 19 - 35 EU average 17 27 40
Network Access	

COUNTRY SUMMARY: SPAIN

COMMON ISSUES

Main Legal Texts	Electricity Power Act 54/1997; Hydrocarbons Act 34/1998; Royal Decree 1955/2000; Royal Decree 1434/2002.
Unbundling	All network operators have been unbundled in legal terms so that all trading corporations which conduct regulated activities must have as their exclusive corporate purpose the development of such activities and, consequently, they are unable to carry out production and commercialisation activities. In the case of corporate groups, activities which are incompatible as per the Law can be carried out provided that this is done by different companies. The electricity TSO only undertakes regulated activities. Both the electricity DSOs and the gas TSO and DSOs however supply energy on the "regulated market". Functional unbundling of the gas TSO and of the gas and electricity DSOs has not yet been implemented.
Regulator	The CNE (*Comisión Nacional de Energía*) has a wide range of functions to ensure effective competition, and the objective and transparent functioning of the markets. The Ministry however decides over access tariffs. The CNE is composed of nine Commissioners which are appointed by Royal Decree.
Interconnection	The allocation mechanism of capacities for international interconnections comprises two related processes, one based on implicit auctions, executed within the Daily Market, and the other based on explicit auctions for the allocation of capacity to bilateral transactions. These capacity allocation mechanisms serve to define the use of the capacity at the borders with Portugal and Morocco. As regard, the interconnection with France, in January 2005 the Spanish and French regulators agreed on a new joint allocation mechanism, which is pending application. In the case of the interconnection between Spain and Portugal, the level of congestion has been reduced with the increase in capacity which took place in December 2004 with the connection of the new line between Alqueva and Balboa.
Security of Supply	A planning procedure was established leading in 2002 to the drawing up of a Planning Document for the 2002 – 2011 period. The planning process for electricity and gas transportation infrastructures is being revised. As a result of concern regarding security of supply, the National Energy Commission has drawn up, on an annual basis, a study for medium term electrical and gas coverage. In the gas sector, no investments in new natural gas production fields are expected over the next three years. Several projects for increasing entry capacity over the next three years are underway. The promotion of an increase in the entry capacity to the system is secured via centralised planning and the application of an appropriate rate of remuneration for the infrastructures. The Law renders it compulsory for all agents incorporating gas to the system (i) to maintain minimum security stocks of 35 days of sales or final consumption; and (ii) to diversify supplies, in order that the proportion thereof deriving from a single country should not exceed 60%.

ELECTRICITY

General / Customer Service	Since January 2003, all household and non-household customers are eligible to choose suppliers. Consumers can however also be supplied by the distributors under a regulated tariff, which is reviewed and published annually by the Government. Minimum requirements for contracts signed with domestic customers are set out in the Law. The contracts must clearly specify information such has the duration of the contract, the conditions for renewal and the causes of cancellation and termination thereof; the dispute settlement procedure; information on applicable prices and rates. This information should be constantly updated through billing. Consumers should be duly notified of any intention to change the contract conditions and informed of their right to terminate the contract upon receiving this notification.
Switching	Procedures currently exist for the change of supplier prepared by the Spanish National Energy Commission, but which have not yet been published in the Official State Gazette and which, based on the experience accumulated in these years of deregulation, are now being reviewed and updated. At present no charge is being applied for a change in the energy hiring modality (tariff to market or vice versa) or for a change of supplier. For low voltage, the change of supplier must take place either within 15 days of the request for a change or after the meter reading cycle (max. two months for residential consumers).
Competition	The companies with the largest market shares are. Iberdrola, Endesa and Unión Fenosa, whose market shares are up to approximately 84%. There are 11 companies which act in the market and which are independent of the electricity transport network and distribution managers, although the sum of their market shares amounts to just 9%. Nine commercialisation companies of a non-Spanish scope have penetrated the retail market, including EDP and ENEL which have entered the Spanish market through the acquisition of Hidrocantábrico and Viesgo. The market share of the external commercialisation companies is of about 8%. The production market is to be managed by two Operators: the Market Operator (the company, Operadora del Mercado Español de Electricidad, S.A. – OMEL), which is responsible for the market's economic management, and the System Operator (Red Eléctrica de España – REE), which is responsible for its technical management.
Prices	Euro/MWh Ig Ib Dc ES price 58 104 90 EU average 56 101 103
Network Access	Regulated third party access to electricity networks is in place. The System Operator, RED ELECTRICA DE ESPAÑA, is the authority responsible for the system's technical management, its purpose is to guarantee the electricity supply's continuity and security and the production and transport system's correct co-ordination. As regard access tariffs, each year the Government approves both the electricity sector's access tariffs and integral tariffs, through the publication of a Royal Decree. The CNE has the function of participating, through proposals or reports, in the process of drawing up projects on the establishment of tariffs, tolls and the remuneration of energy activities. It is currently working on the development of a methodology for establishing the individual remuneration of each distributor company.

GAS

General / Customer Service	Since January 2003, all household and non-household customers are eligible to choose suppliers. Consumers can however also be supplied by the distributors under a regulated tariff, which is reviewed and published annually by the Government. In 2004, 80% of all supplies was made through the deregulated market. The consumer protection measures specified in Annex A are not regulated, and there is no legislative reform regarding these consumer protection measures, although some of these measures are already included in the industry's current regulations.			
Switching	Matters relating to switching suppliers are regulated. Any consumer may request, either themselves or through a dealer, to switch suppliers. Applications to switch suppliers must include a number of information determined by Law. Switching from a fixed-rate supply to the deregulated market shall not involve any costs for the consumer or for the supplier.			
Competition	In 2004, 46% of the deregulated market was supplied by companies other than the incumbent (Gas Natural which also owns the entirety of domestic production). The three largest supply companies accounted for 73% of the domestic market. A high number of suppliers was however participating in the market.			
Prices	Euro/MWh	I4	I1	D2
	ES price	17	30	48
	EU average	17	27	40
Network Access	Regulated third party access to gas networks and gas storages is in place.			

COUNTRY SUMMARY: SWEDEN

COMMON ISSUES

Main Legal Texts	Ellag (2005:404) Naturgaslag (2004:403)
Unbundling	The electricity transmission system operator Svenska Kraftnät is part of the Swedish state. Distribution companies have been ownership unbundled already in the past, functional unbundling is required with the new law for companies with more than 100.000 customers. Legal and functional unbundling is required for all gas network companies.
Regulator	Swedish Energy Agency (SEA) is an independent authority. SEA regulates network tariffs and has a number of other tasks related to energy markets.
Interconnection	Interconnection capacity of Sweden is about 8.500 MW with Norway, Finland, Germany and Poland. A further increase has been decided, 600 – 800MW with Finland.
Security of Supply	The Swedish system has about 33.000 MW installed capacity while the highest peak consumption has been 27.000 MW. Reserve margin is relatively low in Sweden, but in the Nordic market as a whole, taking into account the interconnectors, it is still considered sufficient. The Swedish TSO has contracted temporarily reserve capacity which can be used in extreme demand conditions.
Other Issues	

ELECTRICITY

General/ Customer Service	The electricity market reform started already in 1996. However, customers who wanted to switch supplier were obliged to install equipment for hourly metering. This requirement was abolished in 1999, giving all electricity users the opportunity for free choice of electricity supplier. The market is characterised by vertical integration of distribution and retail business. There are about 200 distribution areas, partly run by the same company, and about 150 electricity retailers. There are no major public service obligations, competition is supposed to provide good service for customers. There are some provisions regarding the disconnection of customers in case of non-payment.
Switching	In the Swedish electricity retail supply market about 54% of household customers have changed the supplier or renegotiated their contracts between 1996 and 2004.
Competition	The wholesale market in Sweden is integrated to the Nordic power market. It consists of a bilateral trading market between generators on one hand and suppliers and industrial companies on the other hand, and of a voluntary Nordic power exchange Nordpool which has a spot market and a forward market. From a Nordic perspective, the three largest electricity producers had about 40 % of the total Nordic electricity production.
Prices	Electricity prices have been rising slightly as a result of increased fuel prices and emission trading costs. The prices are significantly below EU average. Euro/MWh Ig Ib Dc SE price 46 71 81 EU15 average 56 101 96
Network Access	EMI monitors the tariff with a tool called “Network Performance Assessment Model”. This tool compares the tariff to the costs of a theoretically optimal network and indicated whether the tariff is reasonable. Network tariffs vary considerably depending on the area covered.

GAS

General / Customer Service	The Swedish natural gas market is relatively small with a pipeline connection only to Denmark. Only the South-Western part of the country is covered by a gas network. The market opening has followed the minimum requirements, household customers being eligible only in 2007. However, most of the gas is consumed by commercial customers, 95% of the consumption is eligible since 1 July 2005.
Switching	Very few customers have changed supplier or renegotiated their contracts. No specific studies have been made on the subject until now.
Competition	There are 7 distribution companies in Sweden, all of them are also retail suppliers. Dong, a Danish company, imports all gas used in Sweden, hence there is limited scope for competition.
Prices	Gas prices in Sweden are somewhat above the European average. There are only a limited number of household customers. Euro/MWh I4 I1 D2 SE price 22 40 42 EU average 17 27 40
Network Access	Transmission and distribution tariffs are approved ex-ante by SEA.

COUNTRY SUMMARY: UNITED KINGDOM

COMMON ISSUES

Main Legal Texts	Electricity Act 1989, Utilities Act 2000, Energy Act 2004, Electricity Order (NI) 1992 modified by Order 335/2005, Energy Order (NI) 2003. Gas Act 1986 (amended 1995), Petroleum Act 1998, Utilities Act 2000, Energy Act 2004, Gas Order (NI) 1996
Unbundling	In Great Britain (GB), both the electricity and gas transmission system operator are totally separate companies owned by National Grid. GB has gone beyond the requirements of the Directives to get as close as possible to full ownership unbundling. The introduction of the British Electricity Transmission Trading Arrangements (BETTA) introduced a single system operator, independent of generation and supply interests for the whole of GB. The transmission network in Scotland is owned, but not operated, by SP and SSE (both gas and electricity suppliers and electricity generators) in a legally separate holding. Regarding distribution, legal unbundling has been in place since 2000. Some local networks are fully ownership unbundled. SSE also now own part of the gas distribution network. In Northern Ireland the regulations have just been signed which will provide for legal unbundling of the TSO.
Regulator	Ofgem's role is to protect the interests of consumers, wherever appropriate by promoting effective competition. It regulates the monopoly companies that own the gas pipes and electricity wires. Ofgem is also responsible for market monitoring and has competition policy competences. Ofgem is an independent non-ministerial government department with a Chairman and a Board of at least two members. Regulation is incentive based with allowed revenues normally set for a five year period. Ofgem also issues all licences and most regulatory policy is conducted through licence conditions. Detailed industry codes (e.g. network operation, balancing code) are also approved by Ofgem. The government may provide Ofgem with general guidance on social and environmental policy. Large generation plant requires authorisation from the Ministry. Ofreg is the regulator for Northern Ireland.
Interconnection	There are interconnectors between GB and Belgium and Ireland (gas) and between GB and France and Ireland (electricity).I Increased connections between Republic of Ireland and Northern Ireland are likely in the context of the creation of an all-Ireland energy market. A new undersea interconnector between Ireland and Great Britain of up to 1000MW is being discussed. A project between the UK and Netherlands is also possible on a merchant basis. For gas, a new pipline between the UK and Netherlands is under construction, in addition to expansion of the interconnector with Belgium.
Security of Supply	The UK system has approximately 77000MW installed capacity while peak consumption is not expected to exceed 60-62000MW [54100MW is the historic peak]. Reserve margins have been around 20% in recent years. Mothballing of some plant appears to have been reversed recently in response to higher electricity prices. Ofgem considers that a market with freely determined prices will deliver new investment in coming years and several companies have made

	announcements to this effect. An additional 1800MW capacity is expected by 2008. For gas the decline in North Sea production is expected to be met by additional import infrastructure, currently under construction. Capacity of up to 85bcm/year should be in place by 2007/08 which will reverse the current tight position.
Other Issues	Considerable new capacity from offshore wind farm developments are expected including 280MW capacity next year.

ELECTRICITY

General/ Customer Service	There are around 26 million GB electricity customers. The market has been fully open since 1998 and all price controls were removed in 2002. As well as incentives to improve network performance there are arrangements for compensation payments for poor service. There are also a range of consumer protection guidelines also in place in supply licences including: • a code of practice on billing and late payment • protection of vulnerable customers • transparency relating to contract conditions • rules for terminating contracts
Switching	Customers can easily change supplier and around 45% have now changed from the incumbent supplier. Some have changed back to their old supplier. Almost all industrial and commercial customers have changed supplier at least once.
Competition	The wholesale market in GB is a bilateral trading market, with brokered deals. There is also more than one power exchange, although UKPX has the largest volume. Ownership of generation capacity is rather diverse with 8 companies sharing around 70% of capacity. There are six main suppliers active in the household market with additional companies active in the large user sector. The main new entrants are Centrica and GDF. Originally there were 14 regional suppliers.
Prices	Electricity prices have risen somewhat in the last two years and the UK prices are above the EU average for households, slightly below for the industrial and commercial customers. Euro/MWh Ig Ib Dc UK price 46 99 108 EU average 56 101 96
Network Access	Ofgem sets allowed revenues and approves the individual charges submitted by companies. Network charges are usually lower than European average levels. A well developed balancing market is in place so that imbalance prices reflect the costs imposed on the system. The 2004/05 average TSO buy and sell prices were 27.5€/MWh and €40.1/MWh respectively, a spread of €12.5/MWh.

GAS

General / Customer Service	There are 21 million domestic gas customers in the UK, all of which are eligible to choose supplier. Conditions in suppliers' licences apply to both gas and electricity relating to • a code of practice on billing and late payment • protection of vulnerable customers • transparency relating to contract conditions • rules for terminating contracts
Switching	Already 64% of gas consumption is served by suppliers other than the incumbent. In the household market also 50% of consumers have switched supplier since market opening in 1998.
Competition	The GB gas market has a high level of competition with around 10 companies active in the wholesale market. As with electricity, 6 companies account for the majority of the domestic supply market. Other than Centrica, the remaining five are new entrants to the gas supply market. Larger users buy direct from the wholesale market, which also includes many major oil companies.
Prices	Gas prices for large users have risen to reflect market conditions and are now at around the EU average after a long period of being much lower. However prices for household users are still well below the EU average. Euro/MWh I4 I1 D2 UK price 17 26 30 EU average 17 27 40
Network Access	Network access is based on an entry exit system under which entry capacity is auctioned over different time frames, the longest of which is 15 years. There are clear use-it-or-lose-it rules in place. Imbalance settlement is based on a market based framework.

APPENDIX 1

List of respondents to consultation

Established energy companies

Eurelectric
Eurogas
OGP
Vattenfall
EMT (Hungary)
Electrabel
EDF
Dansk Energi
VKU (Germany)
UNESA
VEO (Austria)
Iberdrola
Svensk Energi
CEZ
Finnish Energy
Enel
AEP
Centrica
Statoil
GDF
DEGAZ (Hungary)
Uprigaz
PGNIG
BG Group
Association of Energy Trading Poland
Airtricity
Scottish and Southern Electricity

Network operators

ETSO
UCTE
Nordel
GIE
CEDEC

Vattenfall Transmission Europe

Large users

IFIEC
Eurometaux
VIK (Germany)
WVM (Germany)
ECSLA

Energy traders and market operators

EFET
Europex
Barclays capital

Small distributors / suppliers

GEODE
FNCCR

New entrant groups

BNE (Germany)
Natgas
AFM+E

Small commercial and household users

BUEC
UAEPME

Unions

EPSU

Renewable Energy Producers

WWEA