

# Understanding European policy on the internal market for electricity and gas

## Evaluation of the Electricity and Gas Directives

by

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## 1. Introduction

The European Commission's 2003 Directives on electricity and gas (2003/54/EC and 2003/55/EC respectively) required that the Commission carry out a review of their operation by 2006. This review would examine experience with the Directives and make recommendations on future policy, particularly whether the markets for electricity and gas should be opened further.

The European Federation of Public Service Unions (EPSU) commissioned the Public Services International Research Unit (PSIRU) of the University of Greenwich to carry out its own review of the operation of the Directive, which was submitted as evidence to the European Commission in September 2005.<sup>1</sup> The objective of this report is to review reports on progress with liberalisation published by interested parties since September 2005. The report also reviews experience since September 2005 on:

- Prices;
- Market concentration; and
- Quality of supply.

## 2. The Review requirement

The Electricity Directive contained a commitment to a review by 2006 in Article 28 while the Gas Directive contained a similar requirement in Article 31. The Electricity Directive required:

‘The Commission shall, no later than 1 January 2006, forward to the European Parliament and Council, a detailed report outlining progress in creating the internal electricity market. The report shall, in particular, consider:

- the existence of non-discriminatory network access;
- effective regulation;
- the development of interconnection infrastructure and the security of supply situation in the Community;
- the extent to which the full benefits of the opening of markets are accruing to small enterprises and households, notably with respect to public service and universal service standards;
- the extent to which markets are in practice open to effective competition, including aspects of market dominance, market concentration and predatory or anti-competitive behaviour;
- the extent to which customers are actually switching suppliers and renegotiating tariffs;
- price developments, including supply prices, in relation to the degree of the opening of markets;
- the experience gained in the application of the Directive as far as the effective independence of system operators in vertically integrated undertakings is concerned and whether other measures in addition to functional independence and separation of accounts have been developed which have effects equivalent to legal unbundling.

Where appropriate, the Commission shall submit proposals to the European Parliament and the Council, in particular to guarantee high public service standards.

Where appropriate, the Commission shall submit proposals to the European Parliament and the Council, in particular to ensure full and effective independence of distribution system operators before 1 July 2007. When necessary, these proposals shall, in conformity with competition law, also concern measures to address issues of market dominance, market concentration and predatory or anti-competitive behaviour.’

## 3. Evidence published since September 2005: The European Commission

### 3.1. The DG TREN report to the Council and the European Parliament

In November 2005, the Directorate General for Energy and Transport (DG TREN) of the Commission published its first report on progress in creating the internal gas and electricity market<sup>2</sup>. It found:

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,

<sup>1</sup> S Thomas (2005) ‘The European Union Gas and Electricity Directives’, EPSU, Brussels.  
[http://www.epsu.org/IMG/pdf/Report\\_EN\\_Directive\\_review\\_final.pdf](http://www.epsu.org/IMG/pdf/Report_EN_Directive_review_final.pdf)

<sup>2</sup> Commission of the European Communities (2005) ‘Report on progress in creating the internal gas and electricity market’ Communication from the Commission to the Council and the European Parliament, SEC (2005) 1448, COM (2005) 568 final, European Commission, Brussels.  
[http://ec.europa.eu/energy/electricity/report\\_2005/doc/2005\\_report\\_en.pdf](http://ec.europa.eu/energy/electricity/report_2005/doc/2005_report_en.pdf)

both in terms of competition and the fact that such contracts may be necessary to underpin the financing of major new gas infrastructure. 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.

We can examine the nine topics the Commission is required to report on in order.

### **3.1.1. Non-discriminatory access**

On non-discriminatory access, the report finds:

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.

### **3.1.2. Regulation**

The Commission's view on regulators is confused and confusing. It acknowledges that Member States have largely complied with the requirements of the Directive but lists 14 areas for concern. These include: 'regulators are not responsible for setting tariff methodologies for distribution companies below a certain threshold with this being done by local government', and 'regulators are not entitled to specify clear rules for cost allocation in the preparation of unbundled accounts'. Most of the areas of concern reflect the Commission's perception that regulators do not have enough powers, are not independent of government and their methods are not harmonised across the Union.

### **3.1.3. Interconnection infrastructure**

For electricity, the Commission finds: '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.' For gas it finds that: '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.'

### **3.1.4. Security of supply**

For electricity, DG TREN is satisfied with the level of generating capacity, stating that: 'the supply demand balance position is, in fact, developing favourably in most Member States.' On electricity networks, the Commission comes to no conclusions other than observing that there is wide variation from country to country. In fact, data is presented for fewer than half the Member States and for only one indicator.

For gas, while the report spends some time discussing the challenge of maintain security of supply against a back-drop of falling production in member states, it foresees no major problems: '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.'

### **3.1.5. Are benefits accruing to small users and households?**

Here, the Commission is less optimistic:

Whilst the rates of larger electricity customers switching continue to rise, gas consumers and small business customers and households, in Member States where they have the right to choose, remain reluctant to exercise their right to choose. Many factors contribute to this. Often competing offers are unavailable or are too similar to constitute a real choice. Dominant positions and insufficient unbundling, especially at the distribution level, seem to discourage switching, and changing suppliers is still often perceived as risky

The Commission regards this as a sign of 'a poorly functioning market'. It clearly assumes that a high level of switching indicates that consumers are benefiting from the reforms.

### **3.1.6. Are markets open and price developments**

This is clearly a big question that is not amenable to a simple answer but for electricity, the Report states that some benefits have been achieved, citing evidence from a Copenhagen Econometrics (CE) Study which claimed that electricity prices were 10-20 per cent lower than they would have been without liberalisation. Hall was highly critical of the CE study concluding that<sup>3</sup>:

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<sup>3</sup> D Hall (2006) 'Evaluating network services in Europe - a critique of the EC Evaluation of the Performance of Network Industries', EPSU, Brussels. <http://www.epsu.org/a/1994>

‘The EPNI [European Commission’s evaluation of the performance of network industries] and the CE study fail to support the defence that is offered for liberalisation. Without the CE study, the report has very little to offer in support of the benefits of liberalisation. The CE results do not stand up to much examination, and certainly do not support the claims made for them by the Commission in the EPNI.’

However, it noted the high level of concentration in the sector which it claimed led to a lack of confidence that prices were arrived at in a fair way. As argued later, reducing the level of concentration will be counterproductive if a genuinely competitive market cannot be achieved.

For gas, the Copenhagen Econometrics Study was even more optimistic claiming prices were 35 per cent lower than they would have been in countries where liberalisation was well advanced. However, the Report reports serious concerns about network access and the distorting effect of long-term contracts, and as a result, for many countries, ‘a competitive European market is still not in sight.’

### **3.1.7. Independence of system operators**

The Commission is critical of Member States’ implementation of the Directive in this respect stating: ‘unbundling is currently not being implemented in a sufficiently robust manner across all Member States’. It is particularly critical of implementation for distribution system operators threatening: ‘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.’

It lists six criteria for independence of system operators (e.g., existence of unbundled regulatory accounts with guidelines) and for electricity transmission system operators, only 13 out of 26 member states meet all six criteria, for gas transmission system operators only four countries comply fully, for electricity and gas distribution, the number complying is only two and one respectively.

### **3.1.8. Environmental consequences**

The DG TREN report does not mention the environment in its report although there is a brief section in the Technical Annex. This concludes;

‘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.’

### **3.1.9. Employment**

The DG TREN report contains no substantive analysis on employment consequences of the Directives claiming only that it: ‘will remain vigilant, in particular regarding the social and employment consequences of the restructuring of energy companies, the effect of competitive energy prices on employment in energy intensive industries.’

The technical annex contains little more although it does report:

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.

## **3.2. The Competition Commission Inquiry**

In June 2005 the Commission launched an Energy sector inquiry through the Competition Directorate. The final results of the inquiry were expected in 2006. Intermediate results were discussed in an issues paper of 15 November 2005<sup>4</sup> and this was followed up by a Preliminary Report in February 2006<sup>5</sup>. The picture presented inevitably has much in common with that shown by DG TREN, although, as noted below, there are some significant differences. The Preliminary Report lists five main impediments to competition in EU

<sup>4</sup> European Commission Competition DG (2005) ‘Energy sector inquiry: issues paper’ European Commission, Brussels. [http://ec.europa.eu/comm/competition/antitrust/others/sector\\_inquiries/energy/issues\\_paper15112005.pdf](http://ec.europa.eu/comm/competition/antitrust/others/sector_inquiries/energy/issues_paper15112005.pdf)

<sup>5</sup> European Commission Competition DG (2006) ‘Sector Inquiry under Art 17 Regulation 1/2003 on the gas and electricity markets’ European Commission, Brussels. [http://ec.europa.eu/comm/competition/antitrust/others/sector\\_inquiries/energy/#16022006](http://ec.europa.eu/comm/competition/antitrust/others/sector_inquiries/energy/#16022006)

energy markets: market concentration; vertical foreclosure; lack of market integration; lack of transparency; and price formation.

### **3.2.1. Market concentration**

For market concentration, the report focuses particularly on the wholesale sector. For gas, it identifies the low liquidity of the spot markets, the pre-existence of long-term gas supply contracts that allow little scope for new entrants and insufficient unbundling of network activities. For electricity, the report is also critical of the liquidity of spot markets and that markets remain essentially national in character.

### **3.2.2. Vertical foreclosure**

For gas, where the producers remain largely separate from the retailers, the report repeats its concerns on long-term contracts and inadequate unbundling. For electricity, the report cites vertical integration of generation and retail, which it says are a disincentive to trading on the wholesale markets. Inadequate unbundling of network activities is also mentioned.

### **3.2.3. Market integration**

For both gas and electricity, the report suggests the lack of cross-border trade, due to inadequate capacity or inability of new entrants to access available capacity, contributes to the lack of competitive pressure on the incumbents.

### **3.2.4. Transparency**

The report is critical of the lack of market information for both gas and electricity. For gas, the report also cites the lack of information on access to networks, transit capacity and storage capacity. For electricity, the concerns are similar with additional worries about reserve and balancing power and also the lack of harmonisation from state to state.

### **3.2.5. Price formation**

The report highlights a lack of trust in price-setting. For gas, there is concern about indexation to oil prices which it claims means the gas price is not sensitive supply and demand conditions for gas, while for electricity, the report mentions the co-existence of free markets and regulated markets.

## **3.3. The EC Presidency**

A third Commission perspective came from the European Commission President, Manuel Barroso, in September 2006<sup>6</sup>. He said: 'In energy terms I can tell you that I am more convinced than ever that we need new legislation concerning regulation. What we know is that the status quo isn't working. What we have to do is decide how we can most effectively reform the system to the benefit of business and consumers'.

However, unlike other pro-competition advocates, he believes competition can be made to work simply by enforcing a full unbundling of network activities: 'The bundling of generation, supply, pipelines, grids and distribution seems to be at the heart of the current failure.' Concentration and integration in the generation and retail sector would not be halted. The Financial Times reported that: 'Aides say he wants to create a framework where perhaps four or five big pan-European energy companies compete across borders for retail customers and carry enough clout to drive hard bargains with suppliers.' He was also reported to be considering introducing a new pan-European energy regulator.

## **3.4. Assessment of DG TREN and DG Competition reports and the Presidency's position**

The EPSU report listed six major reasons why free markets in gas and electricity were not achievable, regardless of whether they were desirable. These were;

1. Inability to store power and expense of storing gas, which means stocks cannot be used to dampen price movements;
2. Need for supply and demand to match at all times, which will mean prices will be very volatile in a market because of the huge cost of system failure;
3. Lack of substitutes, which means consumers cannot easily respond to price signals;
4. Vital role in modern society;
5. Electricity and gas are standard products and a market will force prices down to an unsustainable level; and
6. Environmental impacts of gas and electricity production and use.

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<sup>6</sup> Financial Times, 'Barroso plans energy sector reforms' September 12, 2006, p 12.

The EPSU position paper<sup>7</sup> supported these conclusions and included evidence from the USA arguing that the 2003 Blackout in the North East was a direct result of liberalisation measures.

Neither the DG TREN, nor the DG Competition is prepared even to acknowledge that these are legitimate issues that must be addressed and they both totally fail to address them.

Even if it is assumed that these six issues can be overcome or are not significant, this does not answer the other fundamental question: is a free market in both electricity and gas a better way to organise these industries than a regulated monopoly? Again, neither the DG TREN, nor the DG Competition is prepared even to acknowledge that this is a legitimate question and they both totally fail to address this question.

There is little disagreement on the basic facts about progress with the Directives from all sides. The following basic points are widely agreed, even though, as argued later, the actions required are much more controversial:

- The corporate structure is highly concentrated and mergers and acquisitions mean concentration is increasing;
- Wholesale markets lack liquidity and consequently are not trusted nor do they provide reliable price signals;
- Long-term contracts in gas and vertical integration of generation and retail in electricity mean there is little scope for the wholesale markets;
- Small consumers are generally not interested in switching their retail supplier;
- In many countries, there is little corporate separation between ownership of competitive activities, and ownership of the network and the system operator functions; and
- Most electricity and gas markets remain national in scope with limited trade between countries and little scope for consumers to buy directly from foreign-based retailers.

#### 3.4.1. Differences of emphasis

While there is, not surprisingly, a great deal of common ground between the two reports, there are some significant differences of emphasis particularly on vertical foreclosure of markets. The Competition Directorate report identifies 'vertical foreclosure' of markets – integration of generation and retail in electricity and long-term contracts for gas - as a major obstacle to the creation of efficient markets.

##### Electricity

While the DG TREN report comments extensively on long-term gas contracts, it has almost nothing to say on integration of generation and retail. The report merely states:

In certain electricity markets there also seems to be a tendency towards growing vertical integration between generation and supply activities, which might lead to a reduction of liquidity on the wholesale markets concerned, aggravating the risks associated with concentration.

However, the report does not explain why this entirely predictable development was not anticipated in either the 1996 or 2003 Electricity Directives, nor what measures might be taken to counter it. Integration of generation and retail has compelling strategic advantages for electricity companies. In an integrated company, the generation sector will be able to sell much of its output directly to final consumers rather than through a wholesale market. Large final consumers are generally on at least an annual contract while most small consumers seldom if ever change supplier. This makes demand relatively easy to predict at least one year forward. By contrast, wholesale markets are generally operated on a 30 minute basis so companies will have to compete continuously to sell their power. Effectively, companies selling through an efficient and liquid wholesale market would not know how much power they would sell and what price they would receive from one hour to the next. For the retail business, integration makes the cost of power purchase much more predictable and means companies are much less exposed to a volatile wholesale market where they might have to pay higher costs than they can recover from their consumers.

While integration of generation and retail has compelling advantages to companies, reducing the risk of both their retail and generation businesses, the impact on the competitiveness of the markets is adverse. The wholesale market ceases to be an important price-setting arena in integrated markets and the barriers to entry for new retailers and generators will be formidable in a strongly integrated market. New generators will have no market in which to sell their power, while new retailers will have no market from which to buy power.

<sup>7</sup> EPSU (2005) 'EPSU Contribution to the Progress Report on the Internal Market for Electricity and Gas' EPSU, Brussels. [http://www.epsu.org/IMG/pdf/EN\\_Adopted\\_Comments\\_on\\_future\\_of\\_EU\\_int\\_mkt\\_gas\\_electricity-2.pdf](http://www.epsu.org/IMG/pdf/EN_Adopted_Comments_on_future_of_EU_int_mkt_gas_electricity-2.pdf)

These characteristics were clearly illustrated in the UK. A decision in 1998 to allow integration of generation and retail quickly led to the takeover of all 14 major retailers by just 5 large generation companies and led to the bankruptcy of all independent generators except those with long-term contracts with integrated companies. Of the 5 large integrated companies, three are subsidiaries of the three dominant electricity companies in Europe, EDF (France) and the two German companies, E.ON and RWE.

The major positive aspect of integration of retail and generation is that it may help ensure there is sufficient generating capacity. As California found to its cost in 2001, a de-integrated system gives generators no obligation or even incentive to ensure there is sufficient generating capacity. Given the high barriers to entry for new generators, generators make higher profits from a shortage of capacity, which leads to high prices than they would from fully satisfying demand. At least with integrated companies, they would have an incentive to ensure that their own consumers received reliable and affordable supplies of electricity. While reliable supplies, albeit from an uncompetitive market structure may be preferable to unreliable supplies from a more competitive market structure, it is hardly ideal. We return to the issue of supply security later.

### Gas

The DG TREN report does seem to acknowledge that long-term arrangements might be a necessary to ensure security of supply. For example, it states: ‘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.’ It is hard to avoid the impression that DG TREN is trying to ‘have its cake and eat it’ here – it wants the competitiveness of a market and the certainty of planning. Either the wholesale gas business is organised as a market or it is subject to long-term planning, the two options are mutually exclusive.

The Competition Directorate report is similarly ambiguous. It consistently cites long-term contracts as a barrier to competition, yet it appears to acknowledge the need for long-term contracts to make financing feasible: ‘A number of projects are already underway either to construct new transport infrastructure (for instance the BBL interconnector from the Netherlands to the UK) or to upgrade existing infrastructure by increasing its capacity<sup>128</sup>. Since such projects require significant capital investment, the nature of the financing arrangements is crucial in order to ensure their viability. Typically, project developers attempt to mitigate their risk by long-term contracts, guaranteeing the developers sufficient future revenue to meet the costs of financing the project. It is important, therefore, that the regulatory regime strike a balance between providing the right incentives to build new capacity and ensuring that any long-term contracts do not have detrimental effects on competition.’

Both the DG TREN and Competition Directorate report acknowledge that the UK wholesale market is the only liquid gas market in Europe. Wright, in his detailed analysis of the UK gas industry<sup>8</sup>, agrees that the UK wholesale gas market is working well. However, he argues that it is precisely because the market is working well that prices are highly volatile and insecurity has increased. He argues that arrangements that were previously carried out by administrative means, for example, system balancing, are now carried out via markets and potential insecurities are immediately translated into very high prices. He totally rejects the widely propagated suggestion that volatility and high prices for gas in the UK were due to the failure of the rest of Europe to liberalise. He argues that if gas industries in other European countries were to be as competitive as the UK, prices in their markets would become as volatile as those in the UK.

### 3.5. Issues not addressed

Whilst both reports include a large amount of evidence, what is most notable is the range of issues that they do not address or address inadequately. These include:

- Is a free market in gas and electricity compatible with security of supply?
- Will a free market in gas and electricity provide consumers with lower and more stable energy prices than a regulated monopoly?
- Will a free market in gas and electricity allow the poorest consumers to receive energy supplies at fair prices?
- Will a free market in gas and electricity allow environmental objectives, especially those on greenhouse gas emissions, to be met?

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<sup>8</sup> P Wright (2006) ‘Gas prices in the UK: Markets and insecurity of supply’, Oxford University Press, Oxford.

The other three factors are far less obvious. Lack of ‘market integration’ refers to the lack of interconnecting capacity between member states. In an efficient market, the existence of a high level of interconnector capacity between countries should increase competition because it will allow foreign-based companies easy access to export markets. However, interconnectors are generally very expensive to build, especially undersea cables, and they are often environmentally controversial providing visual intrusion in remote unspoilt regions.

DG TREN does not seem to understand that there would only be scope to generate large price differences if the wholesale market was not working well. If the wholesale market is efficient, the wholesale price is likely to be very similar for all competing retailers, as it is in other commodity markets while network charges should be the same for all companies. This effectively leaves only the retail element of the bill for companies to compete over. Since the retail element represents only a small part of the overall cost, it is likely that competing offers will be similar. Nor does DG TREN even countenance the idea that consumers simply do not want choice in this sector.

The issue of integration of retail and generation, a development that if allowed would inevitably mean that wholesale markets would have little significance and would mean barriers to entry for new generators and retailers would probably be insuperable is barely touched. The report states:

In certain electricity markets there also seems to be a tendency towards growing vertical integration between generation and supply activities, which might lead to a reduction of liquidity on the wholesale markets concerned, aggravating the risks associated with concentration.

However, the report does not explain why this entirely predictable development was not anticipated in either the first Directives (1996 for electricity and 1998 for gas) or their 2003 replacements, nor what measures might be taken to counter it.

On security of supply, DG TREN apparently believes that its Directive on Security of Supply will solve any problems:

Under this directive [Security of Supply], which has to be implemented by the end of 2007, Member States will provide for a reliable regulatory framework conducive to new investment in both electricity generation and infrastructure.

DG TREN does not examine the risk that measures that will ensure adequacy of generating capacity are incompatible with a free market.

The Commission is complacent on the employment consequences of liberalisation. Given that EPSU estimates that more than 300,000 jobs have been lost in the European Union electricity sector since 1990, it is hard to see how the Commission can justify its claim that it has been ‘vigilant’ in monitoring employment effects. The loss of 300,000 jobs has clearly provoked no actions by the Commission so it is not clear what practical value the Commission remaining vigilant has unless its vigilance is backed by a willingness to act. The Commission is equally complacent on environmental issues. It does not acknowledge any problems to date, nor does it anticipate any.

### **3.6. The Presidency**

Comments by the Presidency reinforce perceptions of the Commission’s views, that it is entirely comfortable with markets dominated by oligopolies, partly because it allows European ‘Champions’ to emerge and partly on a (mistaken) view that it can control oligopolies.<sup>9</sup> A pan-European regulator if given significant powers would be even more remote and unaccountable than the existing national regulatory bodies. It would be highly unlikely to be politically acceptable to member states, which would see it as usurping powers and decisions that should be rightly exercised at the national level.

## **4. Other bodies**

### **4.1. The European Regulators Group for Electricity and Gas (EREG)<sup>10</sup>**

EREG was set up under the terms of the Directives<sup>11</sup> and in December 2005, published its own review of the European energy market<sup>12</sup>. The report finds:

<sup>9</sup> For example, see S Thomas. The seven brothers. Energy Policy 2003; 31(5): 393-403.

<sup>10</sup> [http://www.ereg.org/portal/page/portal/EREG\\_HOME/EREG](http://www.ereg.org/portal/page/portal/EREG_HOME/EREG)

It is the extent of customers' benefits and confidence in the market which decides the success or failure of the liberalization project. In efficiency terms production and wholesale competition influence the majority of added value, and wholesale markets influence the success of cross-border competition. However, competition in retail markets decides the distribution of these benefits between generators and shippers, retailers, and customers. In light of recent record profits of many incumbents and the sharp increase in energy prices there is a growing public sentiment that currently the majority of benefits are not passed on to customers but remain with the incumbent undertakings.

Two out of three of the main critical points it identifies relate to the powers available to regulators. The report states: 'Nevertheless, it is possible to identify some critical points delaying or hampering the development of more efficient and integrated electricity and gas markets in Europe. These points are related to:

- a) inappropriate or insufficient legal and/or regulatory provisions;
- b) excessive market power; and
- c) insufficient independence and/or capacity of regulatory authorities.'

Like the Commission reports, the ERGEG report cites inadequate unbundling, poor liquidity in wholesale markets, corporate concentration, lack of mobility amongst household consumers and lack of transparency in markets.

#### 4.2. The Council of European Energy Regulators (CEER)<sup>13</sup>

The CEER describes itself as a "not for profit association" which brings together the independent national energy regulators from the Member States of the European Union (EU) and European Economic Area (EEA). Its membership is largely the same as that of ERGEG, but with the addition of Norway and Iceland and the omission of Luxembourg.

It issued a response to the Competition Directorate's Preliminary Report of the Gas and Electricity Sector Inquiry<sup>14</sup>. It agrees fully with the analysis of the Competition Directorate and proposes the following measures:

- Review (implicitly increase) the powers of the regulatory bodies;
- Strengthen unbundling measures;
- Increase transparency of markets;
- Establish regional markets as a stepping-stone to a single European market.

#### 4.3. The Union of the Electricity Industry, EURELECTRIC<sup>15</sup>

EURELECTRIC is the association that represents the European electricity industry companies. In April 2006, it provided comments on the DG Competition sector inquiry<sup>16</sup>. It concluded that the preliminary report

<sup>11</sup> Article 16 of the Electricity Directive states: 'The Commission has indicated its intention to set up a European Regulators Group for Electricity and Gas which would constitute a suitable advisory mechanism for encouraging cooperation and coordination of national regulatory authorities, in order to promote the development of the internal market for electricity and gas, and to contribute to the consistent application, in all Member States, of the provisions set out in this Directive and Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and in Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity.

<sup>12</sup> European Regulators Group for Electricity and Gas (2005) 'A Preliminary Assessment of the European Energy Market by the European Regulators Group for Electricity and Gas (ERGEG)', E05-REP-03-04, Brussels. [http://www.ergreg.org/portal/page/portal/ERGEG\\_HOME/ERGEG\\_DOCS/NATIONAL\\_REPORTS/E05-REP-03-04\\_ERGEG\\_ASSESSMENT\\_20-12-2005.PDF](http://www.ergreg.org/portal/page/portal/ERGEG_HOME/ERGEG_DOCS/NATIONAL_REPORTS/E05-REP-03-04_ERGEG_ASSESSMENT_20-12-2005.PDF)

<sup>13</sup> [http://www.ceer-eu.org/portal/page/portal/CEER\\_HOME](http://www.ceer-eu.org/portal/page/portal/CEER_HOME)

<sup>14</sup> Council of European Energy Regulators 'CEER response to the Preliminary Report of the Gas and Electricity Sector Inquiry', CEER, Brussels. [http://www.ceer-eu.org/portal/page/portal/CEER\\_HOME/CEER\\_PUBLICATIONS/CEER\\_DOCUMENTS/C06-GA-21-06\\_DGCOMP-SI.pdf](http://www.ceer-eu.org/portal/page/portal/CEER_HOME/CEER_PUBLICATIONS/CEER_DOCUMENTS/C06-GA-21-06_DGCOMP-SI.pdf)

<sup>15</sup> <http://www.eurelectric.org/>

<sup>16</sup> EURELECTRIC (2006) 'Union of the Electricity Industry - EURELECTRIC contribution to the consultation on the sector inquiry' EURELECTRIC, Brussels. <http://public.eurelectric.org/3/CPKJNIMDPNFOAJGGGKHKIBES5HUOY66O4NHLVHY6U286YBFGI4O3PDBN967K9DBDW3P3TE4Q/eurelectric/docs/DLS/ContribtosectorinquiryFINAL-2006-394-0001-2-.pdf>

was: ‘a good analysis of the energy markets and a sound basis to discuss the way forward.’ Its report is structured around the concerns raised by the DG Competition Report.

#### 4.3.1. Market concentration

EURELECTRIC acknowledges the high level of market concentration but recommends increasing market size from national to regional markets and finally to a Single Market.

#### 4.3.2. Vertical foreclosure

EURELECTRIC claims that vertical foreclosure is not the actual problem, but a symptom of the real problem, which is lack of liquidity in wholesale markets.

#### 4.3.3. Market integration

EURELECTRIC agrees that market integration (between national markets) would improve the integration of national markets and help form a Single Market. However, it claims that the problem is often not lack of interconnector capacity lack of market-based mechanisms for management of interconnection capacity.

#### 4.3.4. Lack of transparency

EURELECTRIC claims lack of transparency erodes confidence in prices and calls for ‘data for generation, load, balancing and reserve power, transmission and access to interconnectors, and wholesale markets’ to be made publicly available

#### 4.3.5. Price formation

EURELECTRIC advocates the removal of all remaining regulated tariffs. It discusses the European Union Emissions Trading Scheme (EU-ETS) and recommends that it be allowed time to work and not be distorted by ‘regulatory interference, as is starting to be the case in some countries.’ The electricity industry ‘acknowledges the demands of large customers for long-term contracts and is ready to discuss ways to diversify the range of supply contracts offered to large industrial customers.’ However, it states: ‘Long-term contracts should be based on market terms and conditions.’

### 4.4. Eurogas<sup>17</sup>

Eurogas has not responded in detail to the DG TREN and DG Competition but it did produce a brief paper on the DG Competition Inquiry in June 2006<sup>18</sup> and a short paper on the future European gas market in July 2006<sup>19</sup>.

Eurogas is broadly supportive of the Inquiry and stresses the need to implement the Gas Directive, but it is critical of the DG Competition’s criticism of contracting in the gas industry. It claims that flexible contracts (which the Commission believes prevent buyers from using the spot market) and take-or-pay contracts are necessary, the latter to allow long-term investments in gas supply and transport.

The paper on the future gas market contains rather bland recommendations that few would disagree on, for example, rules should be transparent and clear, LNG is a useful option for future supply and security of supply is important to consumers. It does however conclude by again stressing the need for long-term, take-or-pay contracts, whilst still supporting the need for a more liquid market.

## 5. Prices

Along with service quality, prices are the main criterion by which consumers judge the effectiveness of the reforms included in the Directives. However, the method of organisation of the sector is one of several factors that impact on the prices paid by consumers. Other important factors include international fossil fuel prices, particularly for coal and gas, the need for investment for example, to deal with a backlog in investment or reduce the environmental impact of the sector. Movements in prices therefore are not by themselves a reliable indicator of the success of reforms. As a minimum, if conclusions are to be drawn on price movements, they must be based on a ‘counterfactual’, that is, a projection of what prices *would have been* had the reforms not taken place. Better still, the comparison should be with what the impact of

<sup>17</sup> <http://www.eurogas.org/>

<sup>18</sup> [http://www.eurogas.org/database/documents/06L389\\_Eurogas\\_position\\_on\\_sector\\_enquiry.pdf](http://www.eurogas.org/database/documents/06L389_Eurogas_position_on_sector_enquiry.pdf)

<sup>19</sup> [http://www.eurogas.org/database/documents/06NO343\(2\)%20-%20The%20European%20Gas%20Market%20-%20Eurogas%20views%20on%20the%20way%20forward.pdf](http://www.eurogas.org/database/documents/06NO343(2)%20-%20The%20European%20Gas%20Market%20-%20Eurogas%20views%20on%20the%20way%20forward.pdf)

alternative reform policies would have been. However, such comparisons are complex and the results seldom unequivocal. Projecting what would have happened is not something that can be done with any certainty.

There has been a tendency amongst those promoting the reforms to attribute price reductions to the impact of liberalisation and to attribute price increases either to other factors or to imperfections in the market.

In January 2006, EPSU published an analysis of evidence published on electricity price movements in the European Union<sup>20</sup>. It concluded:

‘Despite assertions by the European Commission and EURELECTRIC that electricity liberalization has resulted in significant price reductions for consumers, the evidence as produced, for example, by KEMA and the Commission itself does not support these assertions. The price reductions that have occurred in the past decade took place mostly in the period 1995-2000, before liberalization was effective in most of the European Union and since then, prices have risen steeply, in many cases wiping out the gains of the earlier period. Other factors, not properly accounted for, such as fossil fuel price movements, technological innovations and changes to regulatory practices are more likely to have led to the price reductions that occurred in the period 1995-2000 than reforms that had not then taken effect.

The liberalized model is now facing its most severe test to date. If it cannot cope well with volatile fossil fuel prices and if the market does not stimulate enough investment to prevent the apparent looming capacity shortages in much of the EU, the model will have failed. The unproven nature of the model makes morality of the Energy Ministers recommending the export of this model to neighbouring countries highly questionable.’

### 5.1. Recent experience of prices

Electricity and gas prices have increased sharply in the past two years. European Commission figures show that, from January 1 2005 to January 1 2006, gas prices for household consumers rose by 16 per cent and for industrial consumers by 33 per cent. Electricity prices for household consumers rose by 5 per cent and for industrial consumers by 16 per cent in the same period. However, these averages conceal wide variations particularly between regions. To make more sense of the figures, it is useful to divide the countries into regions (see Table 1). This allows differences in the state of liberalisation, resource endowments and fuel sources to be identified.

The main region is Central Europe, which includes the five largest countries in the EU. In some countries such as the UK, Austria and the Netherlands, the Directives have been most fully implemented, and in these countries there are no longer regulated tariffs for any class of consumer. However, other countries, such as France and Italy are proceeding at the minimum pace with implementation of the Directive and all other countries have regulated tariffs for at least some classes of consumer for electricity or gas. This is a considerable annoyance to DG TREN, which states in its review<sup>21</sup>:

‘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.’

The regulated tariffs have been particularly problematic in Spain, where regulated tariffs are below the market levels and the company divisions set up to supply the ‘free market’ have all closed down. While the need to protect consumers from the huge price increases that occurred in the Nordic market in 2002/03 and in the UK in 2006 is understandable, the co-existence of regulated and market tariffs for the same set of consumers is not desirable. The Commission would clearly like to see the removal of regulated tariffs at the earliest opportunity. The alternative, that the ‘free market’ is undesirable and that the EU should return to a system of regulated tariffs for final consumers is clearly not one that the Commission has contemplated.

In this region, the UK stands out, particularly with electricity as showing the largest price increases whereas increases in France and Italy, where regulated tariffs exist still, are generally below the average.

<sup>20</sup> S Thomas (2006) ‘Recent evidence on the impact of electricity liberalisation on consumer prices’ EPSU, Brussels. [http://www.epsu.org/IMG/pdf/EN\\_PSIRU\\_paper\\_Elec\\_prices.pdf](http://www.epsu.org/IMG/pdf/EN_PSIRU_paper_Elec_prices.pdf)

<sup>21</sup> [http://ec.europa.eu/energy/electricity/report\\_2005/doc/2005\\_report\\_technical\\_annex.pdf](http://ec.europa.eu/energy/electricity/report_2005/doc/2005_report_technical_annex.pdf)

In the Nordic region, electricity price increases are very much lower, reflecting the recovery of water stocks after the shortages in 2003/04 which led to huge increases in electricity prices. If the huge wholesale price increases that occurred in summer of 2006 are sustained and passed through to consumers, the picture for 2006 could be very different with large price increases being imposed on consumers. Apart from in Denmark, the gas industries are too small for the figures to be significant.

**Table 1. Price rises for electricity and gas from Jan1 2005 to Jan 1 2006**

	Electricity household	Electricity industry	Gas household	Gas industry
<b>Belgium</b>	-2.6 (Y)	25.0	22.4 (Y)	33.6
<b>Germany</b>	2.6 (Y)	10.0	17.8	30.6
<b>Spain</b>	4.6 (Y)	5.0 (Y)	14.5 (Y)	54.7 (Y)
<b>France</b>	1.0 (Y)	0	10.9 (Y)	28.8
<b>Italy</b>	7.0 (Y)	10.5 (Y)	7.6 (Y)	15.2
<b>Netherlands</b>	6.8	6.4	11.5	19.8
<b>Austria</b>	-5.2	4.4	17.1	32.1
<b>UK</b>	14.2	36.2	11.4	48.4
<b>Central Europe</b>	4.0	12.2	14.2	32.9
<b>Denmark</b>	4.0 (Y)	12.4 (Y)	5.2 (Y)	3.0 (Y)
<b>Finland</b>	2.0 (Y*)	-1.7	-	12.7 (n.a.)
<b>Sweden</b>	5.7	30.5	20.3	37.2
<b>Norway</b>	-4.5	-2.6	-	-
<b>Nordic Region</b>	1.8	9.6	12.7	17.6
<b>Greece</b>	1.9 (Y)	3.6 (Y)	-	-
<b>Ireland</b>	3.8 (Y)	8.7 (Y)	25.3 (Y)	- (Y)
<b>Luxembourg</b>	8.5 (Y)	5.1	26.9	29.6
<b>Portugal</b>	2.8 (Y)	14.5 (Y)	17.7 (n.a.)	26.5 (n.a.)
<b>Small/peripheral</b>	4.2	8.0	23.3	28.0
<b>Czech Rep</b>	7.6 (Y)	15.3	26.8 (Y)	36.2
<b>Hungary</b>	2.7 (Y)	9.1 (Y)	21.6 (Y)	32.9 (Y)
<b>Poland</b>	4.7 (Y)	6.8 (Y)	17.3 (Y)	19.4 (Y)
<b>Slovenia</b>	1.4 (Y)	6.4	25.6 (Y)	35.1
<b>Slovak Rep</b>	7.1 (Y)	10.7	29.9 (Y)	46.4
<b>Bulgaria</b>	2.4 (n.a.)	7.1 (n.a.)	14.4 (n.a.)	19.2 (n.a.)
<b>Croatia</b>	6.2 (n.a.)	4.8 (n.a.)	0 (n.a.)	0 (n.a.)
<b>Romania</b>	37.5 (n.a.)	-4.0 (n.a.)	20.7 (n.a.)	30.8 (n.a.)
<b>Eastern Europe</b>	8.6	7.0	19.5	27.5
<b>Estonia</b>	7.8 (Y)	8.3 (Y)	0.1 (Y)	3.4
<b>Latvia</b>	0 (Y)	0 (Y)	17.7 (Y)	16.5 (Y)
<b>Lithuania</b>	0 (Y)	0 (Y)	15.3 (Y)	23.5
<b>Baltic States</b>	2.6	2.8	11.0	14.5
<b>Cyprus</b>	31.4 (Y)	38.4 (Y)	-	-
<b>Malta</b>	23.3 (Y)	0 (Y)	-	-
<b>Mediterranean</b>	27.4	19.2	-	-

Source: For electricity price information [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-NQ-06-011/EN/KS-NQ-06-011-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-NQ-06-011/EN/KS-NQ-06-011-EN.PDF), for gas price information [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-NQ-06-010/EN/KS-NQ-06-010-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-NQ-06-010/EN/KS-NQ-06-010-EN.PDF) and for information on existence of regulated tariffs [http://ec.europa.eu/energy/electricity/report\\_2005/doc/2005\\_report\\_technical\\_annex.pdf](http://ec.europa.eu/energy/electricity/report_2005/doc/2005_report_technical_annex.pdf)

Notes.

1. No information on prices of gas was published for Norway, Greece, Cyprus and Malta. For Ireland, only prices for residential consumers were published and for Finland only information for industrial consumers was published.
2. For countries with entries marked (Y), a regulated tariff still exists.
3. No information was published on whether regulated tariffs exist in Bulgaria, Croatia, and Romania and for gas consumers in Portugal and Finland.

For the small and peripheral countries and for the Baltic States, where regulated tariffs exist for electricity consumers, price rises are generally lower than in Central Europe, particularly Greece, Ireland and Portugal, where a single large company still dominates. For the peripheral countries, the gas industries are too small for the figures to be significant. The Baltic States buy all their gas from Russia and prices depend on political agreements with Russia.

For Eastern European electricity regulated prices exist for most markets. Apart from Romania, where some adjustment process appears to be taking place, price increases are generally lower than in Central Europe. For gas, if we discount Croatia, where a price freeze appeared to be in place, price rises are at least as high as in Central Europe, perhaps reflecting higher prices from Russia, the dominant supplier in the region.

## 5.2. Price movements in the Germany

Price rises have been less spectacular in 2006 than in the UK and the Nordic region but have caused political concern at the highest level. At the Leipzig futures exchange, electricity prices in August 2006 were quoted at 16 per cent higher than the same month of 2005. The German Economy Minister, Michael Glos, envisaged bringing in new regulations to the sector<sup>22</sup>:

'We need special rules for the energy sector. It is obvious that the wholesale prices in electricity have risen a lot more than the increases in costs to produce electricity.'

Glos said he was aiming to change the laws governing competition barriers in order to ensure that the supervisory agency can perform 'efficiently' to control market abuses. E.ON's chief executive Wulf Bernotat's response was that German utilities were being unfairly targeted by the politicians over rising energy prices<sup>23</sup>:

'They are turning the energy industry into a scapegoat for disappointments that have arisen as a result of false expectations associated with the liberalisation of the energy market'.

## 5.3. Price movements in the UK

It is useful to focus on the UK as the country to have fulfilled most completely the terms of the Gas and Electricity Directives. Table 2 shows that the 2005 price rises shown in Table 1 were not just an unrepresentative year. Indeed, price rises since the beginning of 2006 have escalated, with two suppliers' (EDF and Npower) gas prices going up by more than a half and one electricity supplier's (NPower) prices going up by 40 per cent (NPower's November 2005 increase came into force in January 2006). By September 2006, all suppliers had increased their prices at least twice in 2006 and there are strong rumours that there will be further price rises in autumn 2006.

Care should be taken in drawing a conclusion as to which is the cheapest supplier as the Table shows increases, not absolute prices. The companies with the lowest cumulative price rises may be ones that put up their prices just before the start of 2004 or which are expecting to put up their prices after September 2006. However, the apparent finding that Scottish & Southern has put up its prices much less than its competitors seems well-founded. Alone amongst the big six energy retailers in Britain, they appear to have chosen not to have matched other suppliers' price rises. In doing so, Citigroup calculated S&SE will lose about £1.2bn in revenue up to April 2007, a figure described by Citigroup as 'staggeringly high'. They estimated it would take 16 years for the company to recover these lost revenues assuming that none of the 2 million [the consumers it had gained by keeping prices low] left. This is seen as a long-term strategy to win and retain consumers and it remains to be seen whether shareholders will take a long enough view of the company to tolerate these lost profits.

This Table exposes the folly of consumer competition for small consumers, especially the advice of consumer organisations, the regulator and the government to switch to the cheapest supplier. Apart from the large expense of switches, met by all consumers, it is clear that the cheapest supplier at any one time is likely to be the cheapest supplier for only a short period of time. Unless consumers are prepared to switch, say, every three months, they will soon not have the cheapest deal. After the September 2006 price increase by Npower, the Allan Asher, the Chief Executive of the government sponsored energy consumer organisation,

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<sup>22</sup> AFX, September 8, 2006.

<sup>23</sup> AFX, September 13, 2006.

Energywatch, acknowledged that ‘the price rises showed competition in the utility market was not working, and urged policymakers to examine “what has gone wrong with the UK model”<sup>24</sup>’

**Table 2. Price rises imposed by UK energy suppliers from January 2004 to September 2006 (%)**

	1	2	3	4	5	6	Total
<b>B Gas</b>							
Gas	12.4 (8/4)	14.2 (8/5)	22 (2/6)	12.4 (7/6)			76.0
Electricity	9.4 (8/4)	14.2 (9/5)	22 (2/6)	9.4 (7/6)			66.7
<b>EDF</b>							
Gas	4.6 (2/4)	3.5 (8/4)	8.1 (1/5)	12.0 (7/5)	14.7 (2/6)	19.0 (7/6)	78.9
Electricity	6.7 (2/4)	3.8 (8/4)	5.4 (1/5)	10.7 (7/5)	4.7 (2/6)	8.0 (7/6)	46.0
<b>NPower</b>							
Gas	5.2 (1/4)	12.0 (9/4)	14.5 (11/5)	15.0 (3/6)	17.2 (9/6)		81.8
Electricity	5.8 (1/4)	7.6 (9/4)	13.6 (11/5)	13.4 (3/6)	9.9 (9/6)		61.2
<b>Powergen</b>							
Gas	4.9 (1/4)	3.1 (6/4)	9.6 (11/4)	11.9 (7/5)	24.4 (2/6)	18.4 (8/6)	95.4
Electricity	6.9 (1/4)		8.9 (11/4)	7.2 (7/5)	18.4 (2/6)	9.7 (8/6)	62.1
<b>S Power</b>							
Gas	11.8 (9/4)	2.5-5.0 (3/5)	12.0 (10/5)	15.0 (2/6)	17.0 (6/6)		72.7-76.9
Electricity	9.0 (9/4)		5.0-8.0 (10/5)	8.0 (2/6)	10.0 (6/6)		36.0-39.9
<b>S&amp;SE</b>							
Gas	9.0 (6/4)	9.1 (2/5)	13.6 (11/5)	16.5 (3/6)			57.4
Electricity	4.0 (6/4)	6.7 (2/5)	8.9-12.0 (11/5)	9.4 (3/6)			32.2-36.0

Source: Author’s research

Notes

1. Dates shown are when the price rise was announced.
2. Scottish Power’s (S Power) and Scottish & Southern Energy’s (S&SE) gas and electricity price increases have varied according to the region (whether it was their former home region) and method of payment.

#### 5.4. Impact of increased energy prices on fuel poverty in the UK

Fuel poverty is defined as the need to spend more than 10 per cent of income on fuel. Clearly, a likely doubling of energy prices in only two years is likely to have a serious impact on the number consumers suffering from fuel poverty. UK government figures show that in 2004, before the large increases in energy prices took place, about 2 million households (1.5 million vulnerable households) in the UK suffered from fuel poverty, compared to 6.5 million in 1996<sup>25</sup>. However, much of this reduction was due to reductions in energy prices, since then reversed so it is likely that the number of households suffering from fuel poverty is rising again, making the government’s objective of eradicating fuel poverty for vulnerable households by 2010 and for all households by 2016 hard to achieve unless there are significant reductions in energy prices.

Fuel poverty is a complex subject involving considerations of social security, measures to improve the housing stock for vulnerable consumers, etc. However, the specific impact of liberalisation concerns whether it is likely to have raised prices in general and whether it has raised prices particularly for poor consumers.

The issue of whether it has raised prices above the level they would have been had liberalisation not occurred is a complex one that requires a construction of a counterfactual but the specific issue of how far it has affected poor consumers in particular is more easily addressed given that a large proportion of poor consumers use pre-payment meters. The report for EPSU showed that consumers on pre-payment meters paid significantly more for their energy than those paying by other means. The UK government estimates that about a quarter of those suffering from fuel poverty have some form of pre-payment meter

Pre-payment meters raise a number of issues, particularly the extent that pre-payment meters disguise the extent of disconnections – the number of consumers that disconnect themselves (because they can’t afford to pay) is very difficult to estimate. The number of consumers using pre-payment meters rose sharply after liberalisation reaching about 3.5 million electricity consumers and about 1 million gas consumers by 1996. In the past year or two, since prices began to rise, the numbers have increased sharply and by 2005, government

<sup>24</sup> <http://news.bbc.co.uk/1/hi/business/5324794.stm>

<sup>25</sup> Department of Trade and Industry (2006) ‘The UK fuel poverty strategy: fourth annual progress report 2006’ DTI, London. <http://www.dti.gov.uk/files/file29688.pdf>

estimated the number had increased to nearly 4 million electricity consumers and over 2 million gas consumers. How far this is a conscious decision by consumers to protect themselves from going into debt in the face of rising energy costs and how far consumers are falling into debt and have little choice but to accept a pre-payment meter is difficult to know.

Table 3 shows that companies continue to exploit consumers. Pre-payment meter consumers pay about 13 per cent on average more for their energy than direct debit consumers. If they remain with the former franchise suppliers – it might prove difficult to switch if they have accumulated debt, a likely reason for them using pre-payment meters - they will pay 36 per cent more than the cheapest deal. How far this differential reflects the costs incurred by suppliers is impossible to know now that prices are unregulated. However, targeting the best prices to those that pay by direct debit makes commercial sense, because it will tend to target richer consumers who are likely to consume more and who have the resources and skills to identify the best deals.

**Table 3. Energy prices for residential consumers in London, August 2006 (£/annum)**

	Direct debit+internet	Direct debit	Standard credit	Prepayment
<b>British Gas</b>	-	918	1000	1035
<b>EDF</b>	-	817	859	891
<b>Npower</b>	-	849	912	964
<b>Powergen</b>	794	812	865	947
<b>Scottish Power</b>	901	917	999	1016
<b>Scottish&amp;Southern</b>	-	810	857	935
<b>Mean</b>	847	854	915	965
<b>Incumbents</b>	-	998	1079	1079

Source: [http://www.energywatch.org.uk/help\\_and\\_advice/saving\\_money/index.asp](http://www.energywatch.org.uk/help_and_advice/saving_money/index.asp)

#### Notes

1. Prices are for a residential consumer in London consuming a 'medium' amount of energy per year (3300kWh of electricity and 20500kWh of gas) on a 'dual fuel' offer except for pre-payment meter users.
2. Figures were published in August 2006 but do not include price rises announced by EDF, British Gas and Powergen announced in June, July and August.
3. The row marked 'Incumbents' refers to consumers who have not switched from the previous incumbent supplier, in this case, British Gas for gas and EDF for electricity.

While the government, Ofgem (regulator) and Energywatch (statutory consumer body) recommend those on pre-payment meters to move to cheaper forms of payment, it is clear that such consumers often value the assurance that a serious debt cannot be run up that a pre-payment meter offers, while there have been problems for consumers with debt moving to cheaper suppliers.

For all payment methods, not switching from the incumbents is the worst option, generally costing on average about 16 per cent more than switching to the cheapest supplier. Clearly, supplying an existing consumer is not more expensive than supplying a new consumer, it is cheaper, so charging a higher price for existing consumers can only be seen as exploiting unfairly the inertia of existing consumers.

From a narrow individual perspective therefore, the advice to switch regularly is good advice, although as illustrated in the Box, the process of switching can be tedious and there can be little assurance that over the period until the consumer switches again that they will have saved money.

However, from a societal point of view, the advice to switch is far more questionable. If all consumers switched regularly, the costs spread over all consumers would be large and far outweigh any benefits of the competitive pressure this will place on retailers. From a strategic point of view, there would be serious consequences if the residential market became as mobile as the industrial market where consumers switch or renegotiate annually. Suppliers would not be able to predict their market share more than a year or two ahead and would therefore be unable to sign credible long-term gas or power purchase agreements making developing new production facilities even more risky and expensive – costs of course ultimately born by consumers.

## Changing energy supplier in the UK: The author's experience

On July 4 2006, I moved house. Previously I had been supplied by Powergen (E.ON) under a dual fuel offer operated via an internet account and paid using a monthly direct debit. This had been selected as the cheapest available offer several months before. The supply at my new house was via EDF, which owns the previous incumbent retailer, and under the UK rules, I was obliged, at least initially, to buy my energy from EDF. At the time of my move, Powergen was offering a cheaper deal than EDF, so I asked Powergen to transfer the gas and electricity supply at my new house from EDF to Powergen. On July 26, the transfer of the gas supply was completed, although the final settlement to EDF for the gas used in the previous three weeks was still in dispute six weeks later because EDF had only estimates of the meter readings, which were grossly inaccurate. A revised bill was eventually sent, but this included gas consumed after the transfer was completed, so another revised bill had to be sent

However, EDF refused the transfer of the electricity supply claiming that Powergen had not supplied all the relevant 'supply numbers' (the codes associated with each meter). After about 90 minutes on the phone in various queues, it emerged that the missing information might be for an 'off-peak' meter that no longer exists. The house had previously been heated by electric storage radiators but these had been removed when central heating was installed at least four years ago, the meter was removed and the account associated with the meter was closed. This was explained to both EDF and Powergen in further lengthy phone calls, but EDF refused the transfer on a further three occasions apparently because of continuing confusion with the non-existent meter and eight weeks later, the transfer was still not complete. Each time EDF refused the transfer, it was incumbent on me to phone EDF to try to determine what the problem was.

In the meantime, following the announcement of reduced profits for its UK business, E.ON announced Powergen would be increasing its gas and electricity charges by 18.4 per cent and 9.7 per cent respectively. In July, EDF announced increases to its gas and electricity charges of 19 per cent and 8 per cent and British Gas announced increases to its charges of 12.4 per cent and 9.4 per cent. In September, Npower announced price rises of 17.2 per cent and 9.9 per cent for its gas and electricity. The various cost comparison web-sites available had not all included these higher charges in their web-sites at the time of writing, so it is not clear yet what the relative position of Powergen is to the other suppliers, but simple calculations suggest that the cheapest deals are all with the two companies that did not increase their prices in after July 1. It remains to be seen whether these two companies will be cheaper in the long-term or whether they are also about to increase their prices.

If it turns out that Powergen is now more expensive than its competitors, the advice from the regulator (Ofgem), the government and from the consumer representation body (Energywatch) is to switch again. Under the UK rules, consumers are able to switch again after 28 days. It is highly likely that by the time a second switch was completed or soon after, new price changes would mean that my choice of supplier is no longer the cheapest. If I am only prepared to switch supplier, say, every 18 months (much more often than the average even for habitual switchers), I can have little confidence that the supplier I choose, on the basis that it is the cheapest supplier on a given date, will turn out to be the cheapest over the entire period until I switch again.

There would seem to be at least four important lessons from this experience:

- Small consumers cannot choose the cheapest supplier of energy over more than a month or two forward;
- The software for transferring consumers between suppliers in the UK is a shambles. The extra costs this inefficiency imposes will inevitably be borne by all consumers, mostly by the majority of consumers, who never switch supplier. The process of switching can be tedious and time-consuming, especially if things do not go as smoothly as they ought and is likely to dissuade consumers from switching as often as they would need to in order to get the best deals;
- Consumers will quickly become disillusioned with the process of switching if, soon after completing the transfer (or perhaps even before), their chosen supplier raises their prices; and
- Even where switching can make savings for consumers, those able to take advantage of this are likely to be richer consumers (with orderly bank accounts that can use direct debits) with the time and skills (easy access and competence with the internet) to exploit the system. Those for whom a cheap energy supply is most important, are unlikely to be able to exploit the possibilities to their advantage, especially if they use pre-payment meters. In short, retired professionals with good internet skills will do well while hard-working families on low incomes will not.

## 6. Market concentration

Since the EPSU report was published, there have been several significant developments.

### 6.1. Endesa

In September 2005, Gas Natural, Spain's largest gas company, launched a takeover bid for Endesa, Spain's largest electricity company, valuing the company at €22.5bn. This clearly raised concerns about concentration in the Spanish energy market and was also opposed by Endesa. In July 2006, the European Court of First Instance on Friday upheld an earlier decision by the European Commission on a complaint brought by Endesa that the decision should be taken at EC level that the EC did not have the jurisdiction to rule on this proposed takeover. The Court found that it was a matter for Spanish anti-trust authorities because most the merged group's activities would be in Spain.

In the meantime, a bid was placed by the German company, E.ON valuing the company at €27bn. It became clear that the Spanish government favoured the Gas Natural bid, widely interpreted as an unwillingness to lose a Spanish 'national champion' company, by allowing Endesa to fall into foreign hands. The European Commission cleared the E.ON bid in April 2006. For its part, Endesa seemed to favour the E.ON group subject to the condition that the bid was high enough to maximise the benefits for its own shareholders.

In July 2006, the Spanish energy regulatory body, CNE, announced that it would require 19 conditions to be met for it to approve the deal. The CNE's competence was only expanded to allow it to rule on these matters after the Gas Natural bid was placed. The CNE's conditions would require E.ON to sell off Endesa assets equal to about one-third of the target's Spanish energy capacity.

Both E.ON and Endesa filed appeals in Spain against the regulator's ruling on the E.ON bid and the EC requested further information on the CNE's ruling. The Spanish government in August sent its official response to the Commission's request for more information on the ruling. The EU could open an infringement procedure if it deems the Spanish ruling violates free movement of capital under EU rules. By August 2006, the Commission had not responded to the Spanish government's explanations. By August 2006, it was clear that the ownership of Endesa would not be resolved quickly and might take a further two years to finalise.

In September 2006, the prime ministers of Spain met the German Chancellor met to discuss a mutually acceptable deal to resolve the issue, expected to involve the sale of about 25 per cent of Endesa's Spanish assets, somewhat less than the Spanish regulator was asking for. The Commission was very perturbed by this process and a spokesman for the Competition Directorate was quoted as saying: 'If member states interpret and resolve issues of community law on a bilateral basis, the risk is that the single market and the Union as a whole would descend into chaos'<sup>26</sup> In mid-September 2006, the Competition Commissioner, Neelie Kroes, said she would decide by the end of September whether the Spanish government had violated competition rules by imposing conditions on the planned acquisition by E.ON of Endesa.

### 6.2. Suez/Electrabel

In early 2006, rumours of an impending takeover bid for Suez by ENEL led to a counter proposal of a merger between Suez and the largest French gas company Gaz de France. ENEL was previously the dominant state-owned Italian electricity company, but it has been progressively broken up and privatised. It now owns about 50 per cent of Italy's generation (down from about 80 per cent), much of the network has been hived off and government's share is down to 32 per cent. GDF was also fully state-owned until August 2005, when the government sold off 20 per cent of the shares. Suez is a diversified investor owned group operating mainly in electricity, gas and water and is owned by French interests. Its largest electricity business is Electrabel, the dominant company in the Belgian electricity sector, in gas, it owns the largest Belgian gas company, Distrigas, while in water its main business is in France (formerly known as Lyonnaise des Eaux).

In response to ENEL's rumoured bid, a proposal to merge Suez and GDF was announced by the French prime minister, Dominique Villepin. This was greeted with hostility by the Italian government which characterised the merger as protectionist. ENEL's bid has never materialised but it is monitoring the situation and could still step in if the Suez/GDF merger is not completed

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<sup>26</sup> AFX International Focus, September 8, 2006.

As with the Endesa takeover, the deal is far from complete. Some of the uncertainties include: whether the French parliament would pass the legislation necessary to reduce the minimum state holding from 70 per cent, as now required, to 35 per cent; whether the whole of the Suez group would be involved in the merged company or whether the water business would be hived off; what the results of a European Commission in-depth investigation into the merger, announced in June 2006, will be; whether if the merger fails, ENEL would formally launch a bid and whether it would include Electrabel or the whole of the Suez group. The deal is not expected to be completed soon and the Commission decision will not be for 90 working days (October 25, 2006) from announcement of the inquiry.

In September 2006, it was reported that the European Commission had confirmed that it told the French government it could legally keep a 'golden share' in Gaz de France after the planned merger between GDF and Suez, a situation that would let the government continue to influence key decisions.<sup>27</sup> This would mean that a company in which the French government owned a Golden Share would control strategic energy interests in Belgium.

### 6.3. Centrica

Since 2004, there has been continual speculation that Gazprom, the largest Russian gas company, has had an ambition to increase its share of the UK gas market to about 20 per cent by 2015, initially through supplying large consumers and power stations. It holds a 10 per cent stake in the gas interconnector that connects Britain to continental markets via Belgium.

In January, its representatives seemed to suggest they were interested in buying a UK company was interested in buying a British company involved in gas supply. The deputy chairman, Alexander Medvedev stated: 'We are aiming to secure 20pc of the (British) market by 2015. To start from scratch in retail would be impossible, but through acquisitions, yes, we do not rule this out.' This was interpreted as signalling a possible intention to bid for Centrica, a retail gas business. Alexander Shkuta, the deputy head of Gazprom's export arm, seemed to confirm interest in Centrica in February saying a bid for Centrica was 'being analysed and under consideration'.<sup>28</sup>

The UK Department of Trade and Industry (DTI) responded saying 'We are aware of speculation about possible Gazprom interest in Centrica. Security of energy supply to the UK's consumers is paramount. This has been achieved in the UK by being pro-competition and pro-liberalisation. An effective market has delivered for UK consumers and we've been pressing other EU member states to follow suit. But any new ownership would face robust scrutiny by the regulatory regime before entering that market.'<sup>29</sup>

By April, there were reports that the DTI was considering changes to the mergers and acquisitions regime in the UK to allow it to block takeover bids on grounds of security of supply<sup>30</sup>. These measures did not materialise. By August 2006, no bid had been made, but speculation about Gazprom's intentions to buy a UK energy company continued, although in June 2006, Gazprom did buy a small UK gas retailer, Pennine Natural Gas for an unspecified sum. Speculation continued in September about take-over bids for Centrica, with Norsk Hydro (Norway), Vattenfall (Sweden) and Shell mentioned as possible bidders as well as Gazprom.

### 6.4. Essent/NUON

The two largest electricity and gas companies in the Netherlands are Nuon and Essent, both currently owned by local authorities. The Dutch energy regulator supported by the Dutch government is pushing through measures requiring the ownership unbundling of the gas and electricity networks from the commercial businesses, although by August 2006, it was unclear whether these measures would command sufficient political support for this to be passed. In response, there has been considerable interest in takeovers and mergers with the commercial activities (generation and retail) of the main Dutch companies, especially Essent and Nuon. Centrica and RWE have been mentioned as possible bidders. In June 2006, management of the companies confirmed discussions were taking place but by August, a deal had not been completed. It is

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<sup>27</sup> AFX International Focus, September 8, 2006

<sup>28</sup> Press Association 'Russian bid would face 'robust scrutiny'' February 2, 2006

<sup>29</sup> *ibid*

<sup>30</sup> Financial Times 'Ministers resort to sabre rattling in face of Gazprom's advances Russian interest puts laissez faire approach to takeovers to test', April 17, 2006, p 2.

not clear what the attitude of the Dutch authorities including government, energy regulator and anti-trust authorities would be to such a merger.

## 6.5. Analysis

A number of common themes emerge from these somewhat diverse cases:

- Most merger and acquisition activity is leading to even greater levels of concentration and is not being diluted by new entrants to the market. Many deals do not in themselves constitute a major concentration of the market, but the cumulative effect is to lead to a dangerously concentrated market. High barriers to entry to the sector mean these deals cannot be balanced by new entrants coming into the market providing fresh competition;
- Security of supply is a major concern for governments and it does not seem that the introduction of market has diminished this concern. High fossil fuel prices, concerns about declining EU reserves of gas and worries about over-dependence on particular gas-supplying countries, especially Russia, have meant that security of energy supply is high on the political agenda in the Member States;
- National ownership of major energy companies is still a major priority for many Member State governments. This is often portrayed by market advocates as crude protectionism for 'national champion' companies, but this is simplistic and a belief that nationally owned companies will provide a higher level of security of supply than a foreign owned company; and
- It is often far from clear whether a specific M&A proposal should be scrutinised at a national or EU level. Important deals are often not subject to major scrutiny because they do not constitute a large enough change at a national level or at an EU level but are a major concentration. For example, the proposed takeover of Endesa by E.ON would not seem to reduce competition in the Spanish market because E.ON is not present in the Spanish market while at the EU level, E.ON would still be far from having a dominant position.

## 7. Quality of supply

A key concern with the reforms required by the Directives was that the very high standards of security of supply, both for availability of energy and on the integrity of the network, generally provided under the existing industry structure should be maintained under the new regime. The adequacy of gas and electricity supplies is discussed in section XX, but here the quality of the networks is discussed.

The issue of reliability of the networks is only briefly addressed and only for electricity in the DG TREN report and not at all in the DG Competition report. The report only looks at 'average duration of interruption per year', one of many indicators now being calculated. The approach adopted by the regulators has been to impose performance standards on regulated companies. These standards can be divided into guaranteed standards applied to individual consumers and overall standards. The individual standards, for example, time taken to reconnect a consumer after a fault, are enforced usually by requiring companies to automatically compensate consumers on a pre-determined scale, whose service does not reach the specified standard. Overall standards, for example, 'Minimum percentage of supplies to be connected, following faults, within 3 hours', must be met by the company. The sanctions for failure to achieve the specified standard varies and may include fines or just adverse publicity, but may ultimately jeopardise the company's license.

The PSIRU report for EPSU concluded:

'More formal regulation has often been accompanied by the introduction of incentive regulation. Under this, the regulator pre-approves operations & maintenance spending and investment for a period of usually five years and if the company believes it can make savings against these projections, it can keep the savings as extra profits. This gives companies an incentive to operate the networks more efficiently but it also gives them an incentive to make short-term cost reductions. To counter the risk that the savings will be at the expense of system reliability, regulators are introducing performance standards that network owners must meet. These raise a number of issues:

- Can performance indicators be an accurate enough measure of actual system reliability? In the UK, the regulator is now requiring network companies to install comprehensive system monitoring equipment to measure system reliability rather than partial performance indicators.
- Will under-expenditure show up as poor performance before lasting damage is done to the infrastructure? In the UK rail industry, train punctuality was at a historic high before a series of accidents from 1999 onwards revealed the neglect of the system. It is expected to be about 2013 before punctuality levels return to those achieved in 1999.

- Will the rapid turnover of ownership in the electricity industry mean that owners will sell their stakes before the consequences of their actions are apparent? In Britain, ownership of the Eastern distribution network changed five times in a six-year period.'

## 7.1. CEER

The CEER issued its 'Third annual benchmarking report on quality of electricity supply 2005' in December 2005<sup>31</sup>. There is no equivalent document for gas. The report is divided into four main sections corresponding to the main groups of indicators.

### 7.1.1. Continuity of supply

Indicators covered under continuity of supply include: System Average Interruption Duration Index and System Average Interruption Frequency Index. The report concludes that for most countries, the number and duration of unplanned interruptions shows a downward trend.

### 7.1.2. Quality regulation

The area covered under quality regulation is mainly continuity standards. The report acknowledges that the use of incentive regulation will, if quality standards are not imposed, provide incentives to companies to reduce service quality because the savings made can be kept as extra profits. It suggests that quality standards, perhaps enforced by penalties/incentives might avoid this problem. It is the first time the CEER benchmarking report has covered this issue and no strong conclusions are drawn.

### 7.1.3. Commercial quality

Indicators covered under commercial quality include: connection of the customer to the network; customer complaints; and meter reading, billing. Measures include objective and subjective indicators (for example, opinion polls). The report found that the indicators used and the methods of enforcement vary widely between countries making comparisons difficult. The report does seem to recommend that automatic meter reading be introduced at least on a monthly basis (see below).

### 7.1.4. Voltage quality

This covers areas such as: supply voltage variations; flicker severity etc. This is also a relatively new issue for the CEER and the CEER does not identify any trends in performance.

## 7.2. EURELECTRIC response to the CEER Benchmarking Report

EURELECTRIC published a response to the CEER's report in May 2006<sup>32</sup>. On continuity of supply, its main comments are on the need to harmonise data collection requirements to ensure comparisons are valid. On standards and incentives, EURELECTRIC states a preference for incentives over penalties, it also questions whether consumers really are demanding higher standards, especially if it increases prices. On standards of commercial quality, EURELECTRIC opposes the compulsory introduction of automatic metering. On voltage quality, EURELECTRIC opposes increases in required standard without a cost-benefit analysis.

## 8. Regulatory independence, ownership and accountability of regulatory bodies

Contributions from the two regulatory organisations, ERGEG and CEER leave a number of clear impressions, even if these are not always explicitly stated:

- Regulators want to be fully insulated from government pressure;
- Regulators want more resources and more power;
- Regulators' decisions do not involve value judgements; and
- Regulators prefer private to public ownership.

<sup>31</sup> CEER (2005) 'Third annual benchmarking report on quality of electricity supply 2005', C05-QOS-01-03 CEER, Brussels. [http://www.ceer-eu.org/portal/page/portal/CEER\\_HOME/CEER\\_PUBLICATIONS/CEER\\_DOCUMENTS/2005/CEER\\_3RDBR-QOES\\_2005-12-06.PDF](http://www.ceer-eu.org/portal/page/portal/CEER_HOME/CEER_PUBLICATIONS/CEER_DOCUMENTS/2005/CEER_3RDBR-QOES_2005-12-06.PDF)

<sup>32</sup> EURELECTRIC (2006) 'Union of the Electricity Industry – EURELECTRIC Comments on the CEER 3rd Benchmarking Report on Quality of Electricity Supply 2005' Eurelectric, Brussels. <http://public.eurelectric.org/2/MAHBFKBBAKBHCCOLLMDKPCY59VLOL5RVG5TR8MLIRGCIT5LVJ51RJFYGD2YBDE37E3E9YBDE3P6A3BDBN9Y971KM/eurelectric/docs/DLS/82EURELECTRICCOMMENTSONCEERREPORT24052006FINAL-2006-233-0006-2-.pdf>

Whilst at least some of these impressions sound intuitively reasonable, closer examination suggests they are not as uncontroversial as they might seem.

## 8.1. Representation and autonomy

Few would disagree that regulators must be independent of the industry they regulate, that they should have the resources and expertise to carry out analyses in the same depth as the companies they regulate and that industry should not be able to evade the judgements of the regulator. However, should the regulator really be fully autonomous from government?

Governments are elected by the public and therefore have democratic legitimacy. In the USA, regulatory bodies are also elected in some cases, but this does not happen in Europe, where decision-makers in regulatory bodies are generally appointed by government. This raises the issue, how representative are regulatory bodies and who should they be accountable to?

### 8.1.1. Representation

Typically, the decision-making bodies within the regulatory agencies are dominated by business interests with no more than a token presence of other interests. For example, of the five-person executive board of the UK's Gas and Electricity Markets Authority, four have a predominantly business background and one has a background in government. This suggests a perception that regulatory decisions can be made on purely techno-economic grounds with little or no value judgement. This is of course far from the case. Regulatory decisions have social and environmental dimensions and for regulatory bodies to be well-balanced and representative, interests such as consumers, trade unionists, environmentalists and those working in social welfare need to be represented at the highest level.

Regulatory processes are generally open in principle, but the volume of material produced and its technical nature of it mean that discussions are closed to all but major corporate interests, i.e., energy companies and large users. In the UK, there is little evidence that the publicly funded energy consumer body, Energywatch, interacts to any significant extent with the regulator, Ofgem, for its major decisions. If the public is to have confidence in regulatory bodies, they must work much harder to engage the public in their decisions.

Regulators also adopt a rather sanctimonious attitude to politicians. For example, on funding, ERGEG states:

‘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.’

And on ownership:

‘the government or ministry may choose not to follow the proposal prepared by the NRA. This could be for political objectives such as protecting state-owned incumbents that are soon to be privatized.’

To imply that politicians’ motives tend to cynical while regulators never have other agendas is hard to justify. The public perception of regulators is not helped by the cases of regulators moving to highly paid jobs in the industries they previously regulated.

### 8.1.2. Autonomy

On the issue of budgets, whether the regulator’s budget is taken from the state budget or from consumers, as is normally the case, the amount allocated clearly should be subject of independent scrutiny – it would clearly not be appropriate for regulators to unilaterally decide on their budget. A democratically elected government is surely the most appropriate body to make this decision. If regulators feel they have to curry favour with ministers in order to get an adequate budget, they should have the integrity to alert the public to the situation and, if necessary, resign.

ERGEG and CEER complain that in some countries, regulatory decisions are only advisory. ERGEG writes:

‘First there are situations where the decisions are only prepared by regulators, but the government then takes the decision itself. Secondly there are situations where the decisions are taken by the public authority itself and the government has – under certain conditions – the right to overrule this decision. In the first case regulators only advise on the decision and the government or ministry may choose not to follow the proposal prepared by the NRA. This could be for political objectives such as protecting state-owned incumbents that are soon to be privatized.’

And

[Regulators must] be independent of Governments in exercising their regulatory powers, especially where the State controls parts of the industry. In some Member States key regulatory decisions are shared with or taken (or subject

to overrule) by Governments. Such Government control risks undermining economic principles and bringing regulatory uncertainty to the market, inhibiting investment and market confidence.

This displays a misguided set of priorities. The objective of the regulators is to ensure consumers receive a reliable, affordable and environmentally acceptable supply of electricity. Adhering to 'market principles' and retaining 'market confidence' might be means to achieve this objective, but they are not worthwhile objectives in themselves. Regulators must be more aware of the free market, private sector values that is influencing their decisions. If they choose to make decisions on narrow grounds of 'market principles', they should expect that governments, which must keep a broader perspective, including social and environmental issues must reserve the right to override their decisions in the interests of maximising social welfare.

## 9. Will liquid markets inevitably lead to consumer price volatility?

Most reports stress the need for liquid wholesale markets as essential if market signals are going to stimulate investment in new supplies of gas and new generating capacity. However, apart from capacity release schemes, there are few ideas about how this might be achieved, other than rather unspecific calls for greater transparency and greater regulatory consistency. In the case of gas, capacity release schemes require dominant companies to release to the market some of the gas they have contracted long-term, while for electricity, they require dominant generators to release capacity to the market, at least short-term.

If the lack of liquidity is due to a 'Catch 22' that they are not trusted because the prices are not reliable and prices are not reliable because they are not trusted, this might 'kick-start' the markets by forcing liquidity. However, if there are fundamental reasons, for example that new investments cannot be financed on the basis of prices in an unpredictable spot market, the liquidity will be temporary. However, if we make the assumption that liquid wholesale gas and electricity markets can be created, how stable will prices be?

All experience suggests that prices will be highly volatile for a number of reasons. First, for many consumers, short term price elasticity of demand is very low. In other words, when consumers need electricity or gas, for example, to operate industrial machinery, power shops and offices, provide heat and light on cold evenings their need is immediate and unavoidable. Shops cannot choose not to open just because the weather is cold and it is highly undesirable that small consumers should not heat their homes in cold conditions. So if the margin between capacity and demand is small, the wholesale price is likely to rise very steeply because the market cannot respond quickly to price signals. This was clearly demonstrated in California (albeit that the shortage was artificially created) in 2000 and in the Nordic markets in 2002/03.

Of course, in a monopoly market, the cost of meeting peaks in demand is also high because little used sources, such as peak generators have to be used. However, a monopoly utility can plan to have the optimum amount of capacity available that strikes an agreed balance between security of supply and cost. Also the price of peak power will be priced according to cost; it will not include a scarcity premium.

While wholesale markets have little liquidity and power purchase agreements are not strongly indexed to spot prices, the impact of such price spikes on consumers will be limited. However, the NordPool is liquid, most contracts are indexed to the spot price and consumer prices usually pass through wholesale price rises to consumers. This meant that small consumers had to face high energy prices on cold winter days and industry not protected by long-term contracts outside the market (see section 11) had to pay huge increases in the price of one of their main costs. In California, electricity retailers were not allowed to pass on price rises to consumers and were quickly effectively bankrupted.

So while creating liquid wholesale markets is a logical objective in narrow market terms, achieving it will almost certainly lead to greater volatility in prices. For energy intensive industry, unpredictable energy prices would be intolerable: management would not know from hour to hour whether producing metals, chemicals, paper etc would be profitable. For small consumers, the social impact of exposing especially poor consumers to high prices at times when they need energy most would high.

## 10. Is automatic metering for all desirable?

If a wholesale market exists, logically, prices for final consumers should be related to those prices to give them signals about the costs they are incurring and to ensure that their suppliers are able to recover the costs they incur – this was not possible in California and the retail companies were quickly bankrupted.

Since the wholesale price typically changes every 30 minutes or every hour, logically, this requires the use of 'smart meters' so that energy retailers know how much their consumers have used in each 30 minute or hour

period. Smart meter technology is well proven and the meters themselves are cheap to buy, but transmitting and processing the data is much more expensive. For large consumers, and in the UK, these costs fell initially but 'plateaued' at several hundred pounds per year. Such a sum is feasible for consumers with electricity bills of tens of thousands of pounds per year, but prohibitive for small and residential consumers. As a result, no country with retail electricity competition for residential consumers has installed smart meters for small consumers.

The normal solution to this is the use of profiling. Under this, consumer meters are read, as previously, perhaps quarterly and it is assumed that the demand profile is the same for all consumers so the three months of consumption is allocated to each 30 minute period in the three months. As argued in the earlier EPSU report<sup>33</sup>, this is a very poor solution neither allocating demand accurately nor giving consumers price signals.

So far, in most cases, large consumers have not been exposed to the potential volatility of wholesale prices because of the lack of liquidity of wholesale markets has meant that their energy suppliers are buying most of their energy on long-term contracts not sensitive to spot prices. Large users have been able to use their smart meters to make small adjustments to their demand pattern saving money for themselves and their energy suppliers. Some even have interruptible contracts that allow their supplier to interrupt supply in return for lower prices if it is expected that the market price of power will be high.

However, without the insulation that long-term power purchase and gas purchase agreements provide, the effect of these smart meters would be much less benign. If we assume that these cost issues can be overcome, what would be the impact of smart meters on residential consumers? There is much facile discussion of intelligent appliances operating only when energy prices are low, for example, washing machines turning themselves on at 3.00AM. Leaving aside the issue of how many people want a noisy machine operating in the middle of the night, will such effects have any impact?

The response to price signals can either be to postpone or to forego demand. For example, freezers can be switched off (perhaps automatically) for an hour or two if prices are high. This is useful in reducing the overall cost of supplying electricity to the nation as long as demand is being shifted from a 'peak' to a 'trough'. Once the trough has been filled, shifting demand any more will be counterproductive because it will be creating a new peak. The difference between peaks and troughs an hour or two is generally quite small and it is far from clear that the ability to 'shift' more demand than can already be done through interruptible contracts and other price signals would be useful. In addition, most residential energy demand is not postponable. Demand for energy for appliances such as televisions, lighting, heating and cooking cannot realistically be postponed.

To have a real impact on the electricity industry's costs, demand has to be forgone, not just shifted to another time. To persuade consumers to forego consumption would neither be easy nor desirable. To produce prices so high that consumers would be persuaded not to heat their houses or cook their food would require very high prices and would have serious social consequences if poor consumers were not able to keep themselves warm and fed in cold weather.

Like liquid markets, smart meters are a logical step in narrow market terms but the social and industrial consequences they would generate if wholesale markets were liquid enough and if the resulting price volatility was passed through to consumers would probably be unacceptable. Smart meters may have a place in a regulated system, encouraging small shifts in demand patterns to smooth out peaks and troughs in demand but in a market system, they are dangerous.

## 11. Can a market ensure security of supply?

This is perhaps the ultimate test for the reforms required under the Directives. If the reformed system cannot match the secure supplies of energy that the previous regulated system offered, it will have failed. Experience in the Nord Pool, widely acknowledged to be the most competitive wholesale electricity market in the world, with liquidity in excess of 30 per cent is particularly interesting.<sup>34</sup> Demand is strongly seasonal

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<sup>33</sup> S Thomas (2005) 'The European Union Gas and Electricity Directives', EPSU, Brussels., p 70.

[http://www.epsu.org/IMG/pdf/Report\\_EN\\_Directive\\_review\\_final.pdf](http://www.epsu.org/IMG/pdf/Report_EN_Directive_review_final.pdf)

<sup>34</sup> For further information on the Nordic reforms, see A Midttun (1997) 'The Norwegian, Swedish and Finnish reforms: Competitive public capitalism and the emergence of the Nordic internal market' in A Midttun (ed) (1997) 'European electricity systems in transition: a comparative analysis of policy and regulation in Western Europe' Elsevier, Oxford

due to the dominance of electric space-heating in Norway. Peak prices are usually in December or January and lowest prices are usually in July. Prices are also heavily influenced by precipitation, particularly in Norway. Availability of power in Norway could be more than 50 per cent higher in a wet year than in a dry year and if at the end of summer, levels in reservoirs are low, prices could be high and equally if there has been a warm, wet winter, prices in January could be low.

In 1996, prices were at a historic peak, nearly three times the level they were at in 1993, but declined over the next four years before beginning to rise slowly to mid-2002 (see Table 4). From July to December 2002, however, prices rose by a factor of more than 5 to a peak of NOK550/MWh (€66/MWh). Prices fell somewhat after then but remained at levels near the 1996 peak until winter 2005, when prices began to rise, continuing to rise after the winter had finished. By August, prices were near the peak levels of 2002/03, about 75 per cent higher than the previous August high. This was only partly the result of problems with the Swedish nuclear sector that resulted in the unplanned closure of two units at the end of July, but even before this, prices were around NOK400/MWh in July, 60 per cent higher than in any previous July.

**Table 4. Elspot monthly price in Oslo (NOK/MWh)**

	Highest monthly price	Lowest monthly price	Yearly average/ 3 year rolling average
<b>1996</b>	342.96 (Sep)	186.03 (Jan)	256.70
<b>1997</b>	227.62 (Jan)	87.57 (Jul)	137.45
<b>1998</b>	163.28 (Jan)	49.81 (Aug)	115.86 / 170.00
<b>1999</b>	140.54 (Dec)	53.98 (Jul)	109.20 / 120.83
<b>2000</b>	135.15 (Dec)	48.61 (Jul)	97.70 / 107.58
<b>2001</b>	220.23 (Oct)	150.75 (Feb)	185.95 / 130.95
<b>2002</b>	550.14 (Dec)	108.14 (Jul)	198.49 / 160.71
<b>2003</b>	532.56 (Jan)	195.99 (Jun)	293.93 / 226.12
<b>2004</b>	273.68 (Aug)	215.68 (Dec)	246.06 / 246.16
<b>2005</b>	272.19 (Dec)	188.21 (Jan)	233.12 / 257.70
<b>2006</b>	311.41 (May)	533.10 (Aug)	385.39 / 288.19

Source: <http://www.nordpool.com/>

Note: In September 2006, €1=NOK8.3

Previous periods of high prices had relatively little impact on Norwegian electric-intensive industry. In 1992:

‘The Government explicitly exempted heavy industry from the reform, and the practice of giving energy intensive industry politically guaranteed prices through special contracts continued. Stortinget (parliament) thus approved of a new round of contracts in 1992, running to year 2010. For about a third of the power produced in Norway, the market reform, therefore, had little or no impact.’<sup>35</sup>

As these contracts near their conclusion, it will be instructive to see how Norwegian electric-intensive industry responds. It is inconceivable that electric-intensive industry could operate successfully when the price paid for electricity could vary by a factor of more than three from day to day. By contrast, Norwegian residential consumers, who have high winter bills and whose prices are more directly related to the spot market than in the other Nordic countries were hard hit in 2002/03 and unless prices fall sharply soon, face even higher bills in winter 2006/07.<sup>36</sup>

The factor that seems to be underlying the increased frequency and severity of price spikes in the Nordic market is the lack of investment in new generating capacity since liberalisation, in 1991 in Norway and from 1997 onwards in the other Nordic countries.

The suggestion that markets would provide investment price signals seems highly implausible. In 1996, prices were at a historic high, surely a clear signal of the need for investment, yet only a year later, prices were only a third of those a year earlier. In Britain in 1997/98, the expectation of future high wholesale prices led to a huge wave of ordering, but by the time these plants were coming on stream, the wholesale price had collapsed leaving 40 per cent Britain’s generating capacity in the ownership of essentially bankrupt

and A Midttun & S Thomas (1998 ‘Theoretical ambiguity and the weight of historical heritage: a comparative study of the British and Norwegian electricity liberalisation’ *Energy Policy*, Vol. 26, No. 3, pp. 179-197.

<sup>35</sup> A Midttun & S Thomas (1998 ‘Theoretical ambiguity and the weight of historical heritage: a comparative study of the British and Norwegian electricity liberalisation’ *Energy Policy*, Vol. 26, No. 3, p. 193.

<sup>36</sup> D Finon, T A Johnsen, & A Midttun, (2004) ‘Challenges when electricity markets face the investment phase’, *Energy Policy*, 32 (2004) 1355–1362

companies. Financiers are unlikely to lend money to build a plant, designed to last for 30 years or more on the basis of a price signal that might last only a month or two and is highly likely not to apply by the time a new plant enters service.

Any plant genuinely exposed to the market, in other words, without long-term guarantees of the volume of sales and the price that would be paid could not be financed or would attract such a large risk premium on borrowing as to be uneconomic. The ways of reducing this risk, such as long-term power purchase agreements at priced unrelated to the market price, or construction by a strong/dominant integrated generator/retailer all effectively by-pass the market.

If there is no major new investment in the Nordic region in the next year or two, it is likely that the Nordic region will suffer increasingly frequent and severe price spikes. Ironically, the one possibility that might avoid this is if electric-intensive industry closes freeing up spare capacity to supply the rest of the market.

## 12. Conclusions

The fundamental questions that must be asked in evaluating the Directives are: Can efficient, sustainable markets be created for the electricity and gas industries? And even if markets can be created, are the costs of running the industries on competitive lines less than the benefits of operating them in this way? Neither the DG TREN, nor the DG Competition is prepared even to acknowledge that these are legitimate questions and they both totally fail to address them. This report identifies a number of reasons why markets in electricity and gas might not be sustainable and why the costs of creating and running the markets might be higher than any conceivable benefits.

If markets cannot be created, the standard pro-competition measures, such as breaking up dominant companies, forcing liquidity into markets will be counter-productive. Large, stable companies with strong capabilities, long-term strategies and good employment practices will be replaced by much less stable companies with little commitment to the long-term development of the sector. Liquid spot markets will make long-term investment so risky as to impose a substantial risk premium on investment costs, raising overall costs substantially. Liquid spot markets will also tend to generate a large amount of price volatility because prices will tend to collapse if there is a surplus and sky-rocket if there is a shortage. This will make life intolerable for consumers, especially electric-intensive industry and poor residential consumers, both of whom rely on predictable, affordable prices to survive. The introduction of automatic meters for residential consumers, to allow consumers to be charged rates more closely related to market prices and perhaps even time-of-day prices will expose consumers to even greater risk. Free markets will also make security of supply difficult to achieve because unless entry and exit to and from the market can be controlled, security of supply depends on a happy coincidence that just enough suppliers can remain profitable as are needed to ensure there is sufficient supply

Consumers will judge the reforms on the perceived impact of the reforms on prices and on reliability of service. However, on prices, it is difficult for consumers to judge the impact because other factors, especially fossil fuel prices, will inevitably have a much larger impact on electricity prices than the way in which the industry is organised. While fossil fuel prices were falling, market advocates were happy to attribute the resulting reductions in electricity and gas prices to market liberalisation, but now that fossil fuel prices are much higher, the resulting consumer price rises are attributed either to external factors or to imperfections in the market, rather than any fundamental problems with the market. If the Commission is to make claims on the impact of liberalisation on prices, this can only be supported if a rigorous counter-factual is presented, in other words, an analysis of what would have happened to prices in the absence of any reforms.

Regulatory bodies have failed in their duty to engage with the public. They remain aloof and unrepresentative of the broad range of interests that are concerned about energy prices. Much of their argumentation seems to be based on a misapprehension that their judgements can be value-free technical judgements that have no political content

## Annex Why free markets in gas and electricity might not be achievable

1. **Inability to store power and expense of storing gas.** Storing products allows consumers and producers to smooth out demand and price peaks by drawing down stores when prices are high and building stores when prices are low;
2. **Need for supply and demand to match at all times.** In an electricity system, supply and demand must always match if the whole system is not to collapse. Without control over producers, a system operator does not have the tools to ensure security of supply. A free market implies free entry and exit and does not oblige producers to offer their products to the market. For gas, the requirement for supply and demand to match is not quite so stringent but still strong;
3. **Lack of substitutes.** For most products, there are ready substitutes that can be used if supplies are scarce or prices are high. The threat of switching to substitutes acts as a discipline on producers on price and availability. For many uses, electricity has no ready substitutes and even where substitution is theoretically possible, consumers are generally locked in to electricity by the equipment they use. For gas, there are substitutes in some cases, albeit not so convenient but users are again often locked in to gas by the equipment they use;
4. **Vital role in modern society.** Modern society is now dependent on reliable supplies of electricity for it to function. A failure of the electricity system will lead to immediate and serious welfare and economic impacts, as the blackouts of 2003 amply demonstrated. For most products, a market failure can be mitigated by use of substitutes and stores but this is not possible for electricity. As a result, the demand for electricity cannot easily be influenced in the short-term by price changes. The furore caused by shortfall of Russian gas supplies;
5. **Electricity and gas are standard products.** In an interconnected network, electricity and gas are standard products. Switching to another supplier cannot produce 'better' electricity or gas, so markets are purely price driven and will be exploited by those who have most to gain by cheaper power (large users) as well as the skills and negotiating power to get the best deal. If the market is functioning well, prices will inevitably be driven down to the short-run marginal cost, too low a level to justify new investment; and
6. **Environmental impacts.** The environmental impact of electricity generation and gas use must be added to the traditional list of special features. Electricity generation and gas combustion play key roles in greenhouse gas emissions and attempts to deal with climate change have to focus on the electricity and gas sector (and transport). The market will not deliver the necessary emissions reductions and market mechanisms are no more than one of many tools that will have to be used, not the complete answer.