POWER FAILURE
The Politics of Energy in Western Europe

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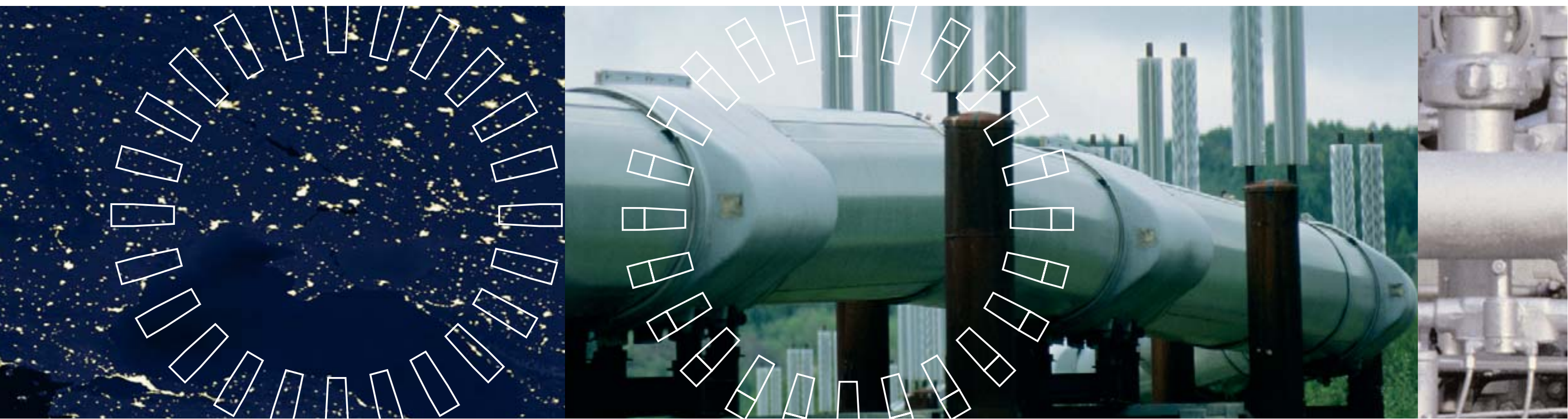

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Introduction
Sacha Kumaria & Peter Nolan

Energy stands at the top of the policy agenda in Europe. But for all the talk of state interference in Russia and instability in the Middle East, a vital part of the solution to the threats to reliable and economical energy supplies lies within the borders of the EU – increasing the competitiveness of the continent's gas and electricity markets. In this volume, we examine the benefits of energy market liberalisation within six Western European member states, and detail examples of half-hearted reforms that are failing to provide value for money to energy consumers.

New Pressure from Brussels

Since 1999, the price of crude oil on world markets has rocketed from ten dollars a barrel to record nominal highs of seventy dollars in mid-2006. A major cause is the recent re-linking of energy consumption and economic growth caused by the rapid entrance of China and India's heavy industry into the global market. Another factor is persistent political instability in the Middle East, currently exacerbated by the growing confrontation with Iran. Similarly, gas supplies to the EU were briefly cut off during a dispute on pricing between Russia and Ukraine earlier this year.

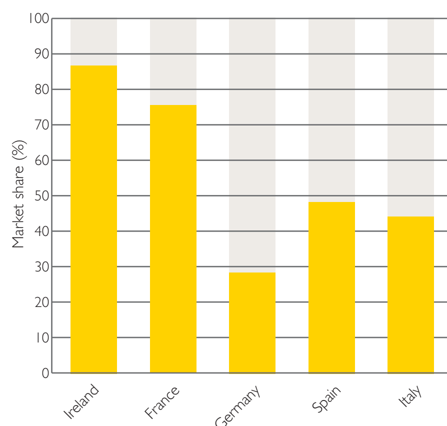
As businesses and consumers struggle to adjust to high energy prices and threats to supply, the European Commission and many EU member states are drawing up new national strategies for energy in the hope of guaranteeing a ready availability of reliable electricity, gas and oil supplies at affordable prices.

The European Commission considers the liberalisation of EU electricity and gas markets to be a key part of its Lisbon agenda to improve the performance of the European economy. Commission president José Manuel Barroso and Energy Commissioner Andris Piebalgs hope that reforms favouring free markets and liberal institutions will provide the right framework for investment and trade. Since the first Commission Directive on Internal Markets for Energy in 1996, which sought to create a pan-European market for electricity, the EU has taken an active interest in the liberalisation of the energy sector, but progress so far has been fitful. As Carlo Stagnaro points out in his examination of Italy, 'the biggest problem now is the divide between theoretical and actual liberalisation.' While some obstacles to new market entrants have been removed, firms seeking to invest in developing new energy capacity and infrastructure still often find themselves thwarted by an intricate web of regulatory barriers to entry.

Thus despite three major Internal Market directives on energy (the latest should guarantee all consumers freedom to choose their gas and electricity suppliers by July 2007, assuming all member states fully implement it – a big if), the Commission knows considerable progress must still be made. Following a full-scale enquiry into the energy sector, Competition Commissioner Neelie Kroes has concluded that excess concentration among state-owned or state-favoured incumbents have lead to higher prices for consumers, and consequently threaten energy security.

Equally, the Commission views with alarm the outbreak of what French Prime Minister Dominique de Villepin has called "economic patriotism" – the shielding of domestic energy firms in France and Spain from takeovers by companies based elsewhere in the EU. This trend of attempting to lock the electricity and gas industries into national silos, isolated from their neighbours by inadequate infrastructure (which hinders cross-border trade, and consequently, competition) run contrary to the ethos of the internal market. Instead, the Commission foresees a future in which energy producers compete in a truly integrated European markets for gas and electricity, delivering low prices and secure supply. Larger multinational firms could benefit from sharing of management expertise and economies of scale in purchasing. Each would be able to maintain a diverse generating base, insulating consumers from volatility in raw materials prices.

Figure 1. Market share of largest state-owned or state-favoured electricity generator



Not applicable to UK market

The Star Pupil and the Problem Children

Britain's energy policy has long been the most liberal in the EU. Since 1979, policies of privatisation, deregulation, freedom of inward investment and the cultivation of strong, independent regulatory bodies, the UK has enjoyed consistently falling prices, a reliable supply of oil and gas (largely drawn from North Sea reserves), and high levels of environmental protection. Indeed, Britain remains the continent's most competitive location for inward investment, receiving $78b in FDI in 2004, the highest in Europe. And the country is experiencing the longest expansion in the economy – 55 consecutive quarters – since records began over two centuries ago. Europe can have no better model for the EU energy market of the future.

However, Britain has just recently become a net importer of energy, exposing it for the first time to the less competitive markets of continental Europe.

For example, gas is sold at market prices in Britain, whereas on the continent long-term supply contracts, usually linking the cost of gas to the oil price, tie up the vast bulk of available supply. Liberalising these contractual arrangements, which keep new entrants out

Figure 2. – Prices of electricity in the six markets, and EU-15 for domestic consumption.

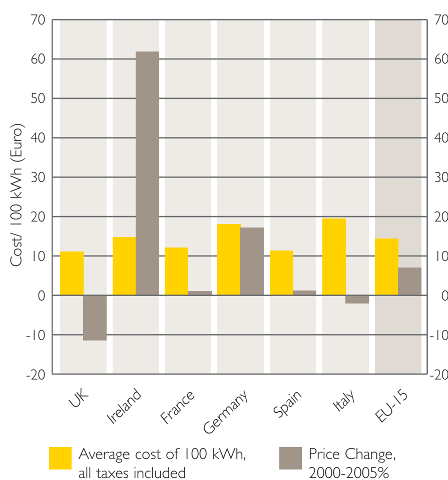
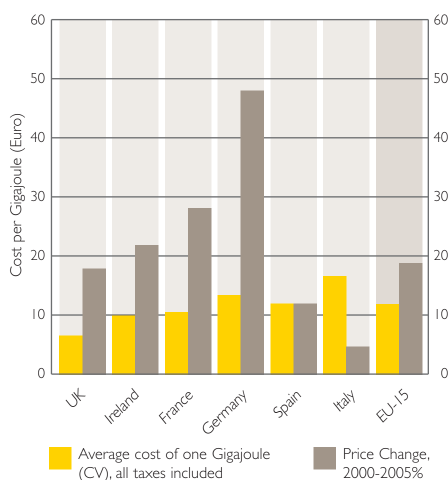


Figure 3. – Prices of gas in the six markets, and EU-15 for domestic consumption.



of continental gas markets, promises significantly more competition. Unless this occurs, British prices will rise as its North Sea gas supplies diminish and are replaced by shipments from continental Europe. And during winter, when Britain faced gas shortages because continental firms retained the gas rather than sell it on to Britain, prices skyrocketed to record levels. Angry British ministers and energy regulators have put the blame squarely on anti-competitive practises in European energy markets tolerated by other EU governments, and Chancellor Gordon Brown has asked Brussels to investigate.

Further Steps

Sadly, the Commission has not, for reasons of political feasibility, gone far enough in proposing reforms. State ownership remains a significant obstacle to efficiency. Companies face little incentive to cut costs when consumers have no choice but to pay inflated prices. Management and workers in state companies have formed powerful lobbies to demand wages and benefits unjustified by static productivity growth. And governments find themselves treating gas and electricity monopolies as a source of revenue, working to maximise the flow of dividends to themselves rather than investing in infrastructure to ensure long-term profitability.

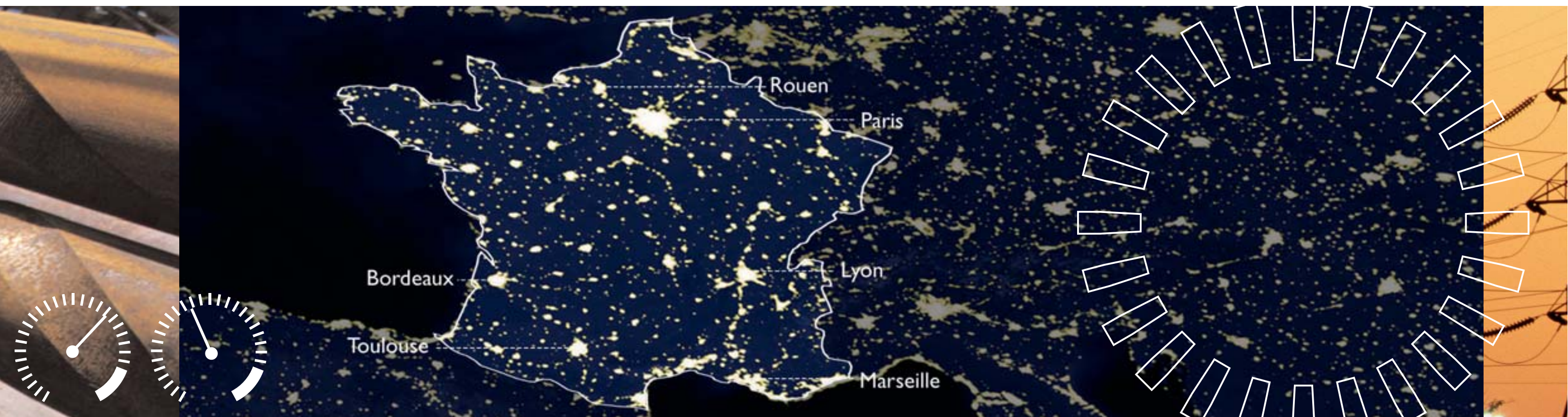
Throughout Europe, the approval process for new energy infrastructure – power stations, pipelines, sea terminals and storage facilities – often proceeds at a snail's pace, holding up critical projects. Approval for projects can take years (if at all), vastly raising the cost to new market entrants. As a consequence, most power stations in Western Europe are over twenty years old, with the oldest energy producing plants located in the United Kingdom, Spain and France. And many planned projects remain hamstrung by local regulation. In Ireland, for example the opening of production from the new Corrib gas field remains stalled, even after three reports on risks to residents living near a proposed pipeline.

Finally, the introduction of the EU Emissions Trading System for greenhouse gases, produced by the burning of fossil fuels, is already having adverse effects on energy users. Carbon permit prices reached a peak of €30 per tonne of late, a cost which is starting to hit energy-intensive industries already struggling to compete with China and India. The poorest households, which usually have the least insulation and have traditionally used the dirtiest fuels for heating, are also those most exposed to energy price rises. Compounding the problem have been the actions of many national governments in privileging large incumbents when allocating emissions permits, placing new entrants, including wind and other alternative sources, at a disadvantage. If governments want their citizens to enjoy cheap and reliable energy, thereby ensuring their national energy security (not to mention their political futures) they would do well to harness the power of the market.

Sacha Kumaria and **Peter Nolan**
Co-Editors, *Power Failure*

France

Jean-Paul Tran Thiet



Nearly a decade after the first EC directive on electricity market liberalisation, the French market is dominated by a long-standing monopoly. Électricité de France (EDF) owns more than 86% of electricity production capacity and its share of final consumption still exceeds 95%. Similarly, eight years has elapsed since the EC directive on liberalising gas markets, and yet Gaz de France (GDF) still controls almost all gas imports for household consumption, and its market share of deliveries to domestic and industrial users remains close to 90%.

Since July 1st 2004, all electricity and non-household gas consumers have been able to choose their providers, as long as some of the electricity or gas was used for non-residential purposes. However, this has not significantly changed the market situation. It is doubtful whether the next stage of market opening – from July 1st 2007, all domestic consumers will be able to choose among suppliers – will have a significant impact if several issues that impede the liberalisation of the French electricity and gas markets are not rectified.

Production

The first obstacle to a full liberalisation of the French energy market is that the electricity production capacity (86.7%) and gas importation infrastructure is almost entirely owned by EDF and GDF respectively. (Fortunately, Réseau de Transport d'Electricité (RTE) the transmission grid operator, has been operationally independent from EDF since 1999.) But by contrast, EDF's nearest competitor controls 2.5% of electricity consumption capacity. While EDF has had to cede small-scale distributed generation (7.8% of domestic capacity) and 'drawing rights' from its plants to other producers (7.4%), it still controls more than 75% of effective generation in France.

Moreover, new entrants cannot rely on electricity imports, despite the availability of interconnection capacity with neighbouring countries. This is mainly because EDF's massive fixed cost investments ensure their marginal costs are on average below those of other European producers. One factor unique to France is the fact that a significant part of EDF's production comes from nuclear power plants. As a consequence, its production costs remain relatively stable, and it becomes increasingly competitive as the price of oil, and subsequently gas – they are linked in continental Europe – rises.

In the gas sector, France's internal transmission network has been optimised according to the spread of deliveries between five existing entry points. Due to the importance of North Sea imports, four of the five are located in the North of France. This makes it very difficult to deliver gas at affordable prices in the South of France. The French transmission network is divided into five balancing areas, and transport tariffs are negotiated on a distance basis. As a result, alternative suppliers cannot supply eligible customers located far from the usual entry points into the French market as the transmission costs being too expensive. And despite the imposition in 2004 of a 'gas release' programme by the *Commission de Régulation de l'Énergie* (CRE – France's energy regulator) to facilitate the development of competition, the fact remains that only the creation of new infrastructure will radically change the situation. A new gas terminal, Fos 2, is being constructed in the southern France, but will not come on-line until 2007-8. Another is currently being built at Nantes on the Atlantic Coast.

Tariffs

For certain 'eligible customers' in the French electricity and gas markets, legislation still makes available regulated tariffs alongside the current market prices. Theoretically, the number of eligible customers' sites (a site is the location where electricity or gas is delivered; and a professional customer can own several sites) is 4.5 million for electricity and 640,000 for gas.

However, French law created an original regime of "optional eligibility". This scheme provides eligible customers with the option to keep either their existing contracts with the monopoly incumbent companies under the same terms and conditions or to opt out and negotiate a new contract with the supplier of their choice. Under the former regime, the price of electricity or gas provided under such contracts is regulated by the Ministry of Energy, and moves with the sales tariffs to non-eligible customers, (that is to say domestic customers), whereas for those who wish to switch provider, the price of electricity or gas is freely negotiated between buyer and seller.

However, once an eligible client decides to opt out of the regulated tariffs, this choice is irreversible. Given that the market prices have greatly increased during the last three years (due to combination of rising oil prices, the inclusion of the costs of CO_2 emission permits trading, and overall increasing demand) whereas the regulated tariffs have been relatively stable (due to the political sensitivity of any increase), the regulated tariffs remain far more attractive than market prices. Therefore most of the eligible clients – especially those that became eligible in July 2004 – have decided to keep their regulated tariff contracts with the incumbent operators. This situation of coexistence of market prices and regulated tariffs explains the extremely low market shares of non-GDF suppliers: 3.4% of eligible sites and 15% of eligible clients' consumption (less than 5% of the total consumption in France) for electricity, and 2% of eligible sites, and 17% of eligible clients consumption (about 10% of the total consumption in France) for gas. However, questions have been raised at EU Commission level about the effect of this dual-pricing system upon competition, and in April 2006, the Commission announced its decision to send a letter of formal notice to France for failure to transpose or to properly apply EC gas and electricity directives, in particular its maintaining regulated prices, which block the entrance of new suppliers.

State-ownership

While the degree to which firms' ownership specifically affects the liberalisation process is debatable, there is no doubt that when the

French government officially intervened by drafting a merger agreement between GDF and Suez, a private sector firm, in order to block a hostile take-over from ENEL, an state-owned Italian electricity firm, it did so as the main owner of GDF.

Indeed, while EU Directives do not contain specific provisions regarding the ownership of energy firms, a provision in French law mandates that the state retain a minimum 70% share in EDF and GDF after their partial privatisation. Yet if the planned merger between GDF and Suez becomes effective, the French state will own roughly a third of the new entity. Consequently, the existing law will have to be amended. So long as the government does not retain a golden share (a point on which the EU Commission will be paying close attention), this may actually lead to greater liberalisation in the longer term.

Barriers to Regulation

The CRE is composed of seven members appointed by the Parliament and the President of the French Republic. Its mandate is to regulate the electricity and gas sectors to ensure non-discriminative, effective competition and the efficient functioning of the market. To that end, the CRE advises the government on energy market regulation, settles disputes between network operators and parties seeking access to networks or storage capacity, and can investigate all activities of companies operating in the electricity and gas sectors.

Yet for all these powers, the CRE has a very limited impact on the market because it is not empowered to tackle the real issues that impede liberalisation – obstacles to infrastructure development, company ownership, and regulated tariffs. Indeed, the CRE has been requesting for months that the French government suppress these tariffs, but with a Presidential election next year, the French government are clearly reluctant to act.

Such a desire on the part of the CRE reflects the growing trend within French courts and independent regulatory authorities to seek to apply rules derived from the European Court of Justice (ECJ). The ECJ stated, in June 2005, that no preferential capacity for the cross-border transmission of electricity is to be reserved to the incumbent operators except where authorised by the Commission. The CRE then rapidly made the necessary steps to review the rules in order to introduce explicit auction methods for annual, monthly and next-day timeframes.

One might reasonably, therefore, expect to see French legislation amended so long as the EU Commission and the ECJ set out the rules to ensure a level playing field through Europe. To that end, on April 4th 2006, the European Commission announced its decision to send five letters of formal notice to France for failure to transpose or to properly apply EC gas and electricity directives. Two of the alleged grievances formulated by the Commission concern issues are critical to the liberalisation process – the existence of regulated tariffs for eligible customers, and the absence of, or insufficient legal unbundling, for distribution system operators in order to guarantee their independence.

In addition, the EU Commission announced that it will carefully scrutinise the proposed GDF-Suez merger to verify that it complies with EU merger regulations . It is becoming ever more apparent that, in the absence of domestic political will, the French energy markets will only liberalise under strict and constant pressure from Brussels.

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Germany

Wolfgang Mueller & Dietmar Ufer

Germany's energy industry has performed well over the last couple of decades due to its focus on three fundamental performance criteria: improved efficiency, service reliability and environmental protection. In the past, technological efficiencies meant that power costs were so low that even energy-intensive industries, such as metallurgy, chemicals and paper, could be based in Germany and still successfully compete in international markets. Equally, reliability of supply was excellent, with an average of only 15 minutes of disruption per client per year. And after expensive investment in clean technology, the emissions of pollutants like sulphur dioxide, nitrogen oxides and ash from power stations have been so reduced as to have negligible environmental impact. There have also been consistent improvement in energy intensity per unit of production in the economy as a whole, which has also helped maintain Germany's international competitiveness, and status as the world's largest exporting nation.

Consequently, primary energy consumption in Germany has broadly remained the same over the last 15 years both because of (moderate) economic growth and overall efficiency gains. In recent years, energy generation capacity has been raised through further modernisation, primarily through the construction of large lignite stations capable of producing 1000 MW at a generating efficiency of 43%. However, the entire industry was affected by the construction of approximately 17,600 new wind turbines with an installed capacity of approximately 18,500 MW. These turbines perform unpredictably, owing to the variation in wind strength, and as a consequence, an equal amount of backup capacity from conventional sources – a "warm" reserve – must constantly be available.

Liberalisation

Legislation effective from April 29th 1998 – *Gesetz zur Neuregelung des Energiewirtschaftsrechts* (the Energy Industry Act) – liberalised the German energy market. Existing local and regional monopolies were abolished, and the supply grids were made available to all competing producers, making it possible for customers to choose their energy supplier. However, constitutional issues prevented legislation separating power production from distribution, and in the face of sustained pressure from incumbents, the government declined to set up an independent energy regulatory body, instead relying on the *Bundeskartellamt*, the federal Cartel Office, and regional competition authorities, to prevent anti-competitive behaviour, as well as self-regulation by the industry itself. The law also resulted in the establishment of an energy exchange (EEX). Lower (pre-tax) electricity tariffs came about due to competition and rationalisation measures within the industry. Moreover, several thousand jobs were shed and enterprises in the sector consolidated.

Today, Germany is the largest electricity market in Europe, and after waves of merger activity, four leading private-sector companies – E.ON, RWE, Vattenfall Europe, and EnBW – control approximately 80% of electricity production and supply. They have also bought stakes in local power companies, which makes these unlikely to switch to other primary providers. Altogether, there are currently approximately 900 suppliers operating on a smaller scale, often within one *Land* (state) or a single municipality. These include both public sector utilities and regional services, controlled directly or indirectly by the four major national companies. In addition, substantial parts of the distribution network belong to the four major energy firms, and the number of new companies set up to trade electricity shrank within a few years from around 100 to less than ten.

As a scathing report by the federal Monopolies Commission in 2004 outlines, this market structure, and the absence of an independent energy regulator (the *Bundesnetzagentur* – federal network agency – was subsequently set up in 2005), was a failure of deregulation that had not resulted in true competition. And prices are also rising due to policies designed to ensure Germany meets its commitments under the Kyoto Protocol. An electricity tax was introduced, and the use of renewable energy sources – at controlled prices set well above market levels – was made compulsory. The introduction of carbon dioxide emissions certificates added to the cost of generation, for coal in particular. These increased energy prices caused energy-intensive industries to consider leaving Germany and some, such as copper producers, have already shifted their manufacturing base to cheaper climes.

While net prices for electricity (including production, transport and distribution) are still under the 1998 level, the total price, including taxes and fees, has risen above the pre-liberalisation levels. The size of this tax increased the average household's costs from €12.35 in 1998 to €20.85 per month in 2004, equivalent to 40% of the tariff. German electricity prices, both for households and industry, are above the EU-25 average. The 2005 average for households in Germany was €17.85 per 100 kWh. In France it was €11.87, in Great Britain it was about €10.65. The average price in the EU was €14.16 per 100 kWh.

A 2001 law, introduced by the Social Democrat-Green ('red-green') coalition, mandated the phasing out of all nuclear power stations in Germany by 2021, and some have already been taken out of production. As yet, no concrete proposal for replacing this generating capacity has been made. The loss of these plants, with their low production costs, will contribute over the medium term to pressure for further price increases. The cost of separating carbon dioxide from coal power plant emissions will require increased heavy further investment and lead to a reduction in efficiency due to a higher coal consumption per KW/H produced.

Natural gas consumption in 2005 was 86.6b cubic metres, almost the same level as in 2004, making Germany the second largest gas market in Europe after the UK. Only 15% originated

from domestic sources, with significant imports from Russia (34%), Norway (25%) and the Netherlands (20%). These suppliers typically offer long-term contracts to the large incumbents, with prices linked to the world price of oil or refined oil products. Gas prices in Germany are still usually coupled to the oil price and are thus relatively high at present.

A number of large privately owned companies operate in the industry, including BASF-Wintershall and VNG Verbundnet Gas AG, though the sector is dominated by E.ON Ruhrgas following their merger in 2003. (Controversially, the government ignored the advice of the Cartel Office and the Monopolies Commission in approving the merger of Germany's largest electricity and gas firm. There motivation may have been to create a national champion to challenge the growing pan-European dominance of EdF, the French state-owned energy giant.

In total, there are approximately 800 gas distributors, including regional gas providers and public utilities. They are heavily involved in producing gas domestically or importing it from abroad and transporting it between regions. Smaller companies, many owned by state or municipal governments as well as private shareholders, distribute gas to smaller-scale users. Despite the liberalisation of the gas market in 1998, competition has yet to become fully effective. One cause is the limited diversification of the import nodes. However, a proposed pipeline from Russia's giant Shtokman gas field under the Baltic Sea, and new terminals for Liquid Natural Gas tankers, promise greater supply, and therefore, greater competition.

During the period of the 'red-green' government in 1998-2004, the gradual phasing out of nuclear power and new climate policies were introduced. The present Christian Democrat-Social Democrat ('black-red') coalition government has continued these policies. There is still no coherent statement of energy policy from the coalition, and as such, no indication as to the future state of the energy markets in Germany. Until such a time different agencies will continue to pursue opposite goals – some pushing for lower prices for gas and electricity, others restricting the number of carbon dioxide emission certificates available (leading to increased electricity prices). Moreover, Germany faces the prospect of a reduced reliability of electricity supply because of the massive increase in wind and solar generating capacity. Planned offshore wind energy plants in the North and Baltic Seas will have still higher costs than the existing inland plants, with reliable alternatives ignored out of fear of nuclear energy (a position unique within the European debate) and an aversion to coal generation. Such uncertainty of its energy future can only augur further harm to Germany's already tenuous economic growth.

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Ireland
Constantin Gurdgiev

In Ireland, responsibility for energy policy rests with the Department of Public Enterprise (DPE) and the Commission for Energy Regulation (CER). The DPE manages the interests of the government in five state-owned energy companies:

- The Electricity Supply Board (ESB), the dominant electricity generator and monopoly distributor
- EirGrid, the licensed monopoly electricity transmission system operator
- Bord Gáis Éireann (BGE) which owns and operates the natural gas transmission system and has an effective monopoly in natural gas distribution
- Bord na Móna which commercialises peat from Ireland's bogs and is the monopoly supplier of peat to ESB
- Irish National Petroleum Corporation, which is responsible for the maintenance of Ireland's oil stocks

Electricity Market

Since the early 1990s, Ireland has experienced a deepening crisis in the electricity sector. Wholesale electricity prices are some 50% higher in Ireland than in Britain and 31% above the EU average. For households, electricity prices jumped 41% from 2000 to mid-2005 and are now the highest increase in the EU15.

The CER's most recent determination proposes a 2006 Best New Entrant price of €66.10/mWh at the wholesale cost of €79.50/mWh – almost double the wholesale prices elsewhere in Europe, which range between €40 to €55/ mWh. And failures are increasing – there were 57 "amber alerts", notices warning of power cuts last year, more than double the 2004 figure of 27.

Now, the Government is talking of deregulation without first tackling the ESB monopoly. In February 2006, all consumers became eligible to choose their supplier. Some categories of larger industrial consumers were first allowed to do so in 2000. Despite this, supplier switching is relatively rare, primarily due to restrictive pricing practices by the ESB. Limited competition has delivered only minor savings over the ESB charges – in the region of 3% to 6%.

Today, the company is a *de facto* cash cow for the unionised workforce. In December 2005, the average industrial wage in Ireland was around €33,500 or €15.54 per hour. For the ESB, the average wage stood at €95,000 or about €43 per hour and reached €140,000 at one power station in Dublin. And then there are prospects of massive restructuring payouts, pensions and other benefits, to be demanded as the price of union acquiescence in deregulation and company restructuring.

The lack of effective competition is all too apparent. The ESB controls about 87% of Irish power generation, so with few alternative suppliers in the market, it can pass on its higher costs to consumers and the independents. Independent generators, under ESB pressure, are exiting the electricity markets.

A recent investigation by Dublin-based *Business&Finance* magazine found that, in the small production segment of the market, the ESB practices of not crediting production by the households and small businesses caused a virtual shutdown of the market for small wind generators in Ireland.

While Europe has made a determined drive for alternative energy, Ireland has had a moratorium on adding new wind generators to the national grid since 2003, leaving independent generators unable to bring alternative energy to market. On April 4th this year, the European Commission took a first step in initiating legal proceedings against Ireland for failing to meet the October 2003 deadline to comply with EU legislation on renewable energy.

Airtricity – a world leader in wind power – pulled out of the Irish residential market in 2006. The company complained that it had been "failed by the electricity market rules which have not provided a framework for any form of effective competition". Large multinationals who have pulled out of Ireland include major European power firms such as EON and RWE of Germany and Statoil of Norway.

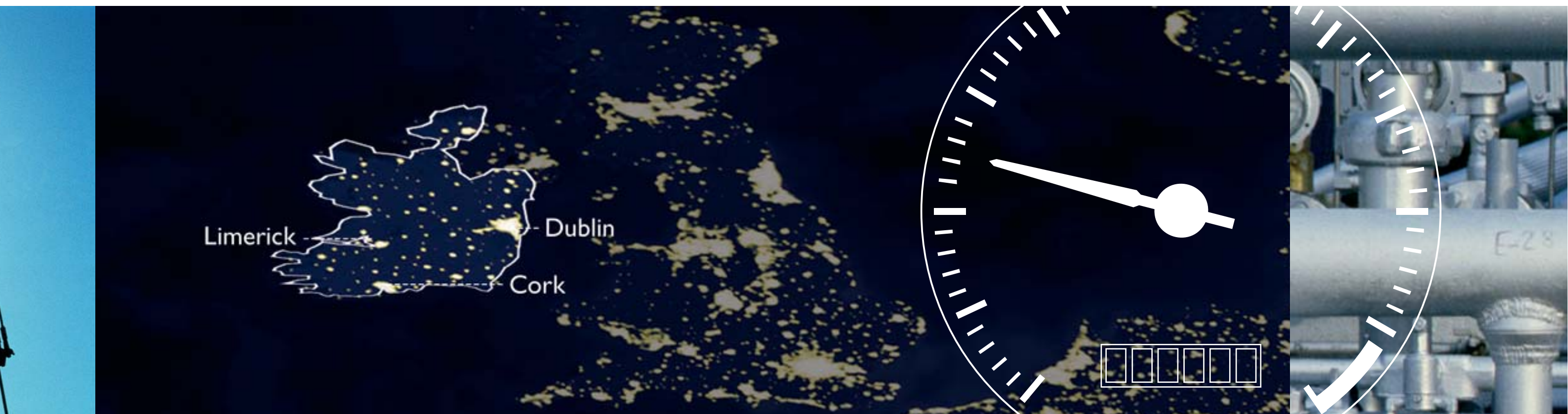
A recent independent economists' report found that between August and November 2005, ESB decisions on how to run the spill markets – which cover periods of demand for electricity – were "unusual", "arbitrary" and "unilateral". The report said that the ESB ran the most expensive oil-burning plants, passing the costs on to independent producers.

Airtricity further alleged that, for at least 3 months in 2005, "…when it actually came to the running of the system, 32% of the time the price was set by the most expensive plant, and that plant never ran. So the Irish consumer was being billed for something that never occurred for 32% of the time".

According to the report, "at the time when capacity was already tight, ESB plant failed to perform when required and caused a capacity crunch". The ESB also manipulated, it said, electricity prices by switching out of cheaper fuels into more expensive sources of energy, by "reducing output level" and using more expensive plants instead of the available cheaper facilities. Overall, this provided ESB with a "massive scope to set prices at any level" – a market power usually available to the unregulated monopolies.

Amidst the alleged abuses of dominant market power by the ESB, Irish regulatory authorities remain largely silent – at least in public – on the matter of energy security policy. A report from the state industrial technology advisory group Forfás, accused the ESB of leaving Ireland over-dependent on oil, all of which must be imported.

The review of the energy sector in Ireland prepared for Communications, Marine and Natural Resources minister, Noel Dempsey, said to have cost €1,200,000, is being kept secret. Any requests to the Department to release the study were met either with silence or with vague references to the need to protect decision makers from undue influence



by the industry players. One logical conclusion is that it is being watered down before release to make it more palatable to the interest groups currently driving our energy agenda – the ESB and its trade unions.

Gas Market

On paper at least, Ireland's gas market is considerably more liberalized, with 86% now open to competition, and plans for a full market opening announced in March 2006.

Ireland is a small open economy, which experienced rapid economic growth in an environment of severely limited indigenous energy resources. The gas pipeline connecting Ireland and the UK is running close to full capacity.

About 28% of gas supply is sourced domestically, primarily from the Kinsale and Ballycotton fields, but production is declining. There are no reserve gas storage facilities in the Republic, so any shortfalls in supply must mostly be covered by higher deliveries from the existing fields. A major source for supply smoothening is switching power plants to reduce gas use. This translates into added market power for ESB and has resulted in several instances of arbitrary capacity-switching to favour more expensive sources of energy, benefiting the ESB.

Despite the years of promised and attempted reforms, BGE dominates the gas market. The state-owned electricity monopoly, ESB and a single fertiliser plant account for about 64% of the total gas demand.

The Gas Regulation Bill of 2001 transferred responsibility for the gas sector to the CER. Third-party access rights were extended in 2000 to cover customers with an annual consumption at a single meter installation of 25 million standard cubic metres, as well as all gas-fired power generating stations, including operators of combined heat and power plants, irrespective of their annual consumption rate. At the time, the deputy Minister with responsibility for energy announced his intention to achieve full liberalisation of the gas supply market by 2005 at the latest. This did not take place.

New gas suppliers have yet to make their presence felt. There is little progress achieved in terms of offering flexible gas supply contracts, including re-float options, for larger users. A large proportion of gas users who switched from BGE have done so on the basis of fixed price supply contracts. These contracts deliver only minor savings of about 3% on average, against the BGE Regulated Tariff Formula (RTF), hardly sufficient in an environment of rising gas prices and volatility.

Following partial deregulation, four major suppliers emerged in the electricity market: Energia, ESBIE, BGE and Airtricity. In the gas market, there is little if any competition with just three marginal players: Energia, RWE and VAYU. All new entrants target the current RTF customers. Their penetration to smaller customers is hampered by the tariffs based on an element of the BGE-set price and the lack of any market price-setting mechanism.

Partial privatization, which has been mooted as a solution, is not going to resolve the problem of the dominant market power of ESB and BGE. Other proposals for splitting up the ESB, while allowing its components to run monopoly markets in energy sub-sectors are hardly convincing. Both 'reforms' will anyway necessitate massive payouts to buy off the unions, who maintain that they are merely 'guarding' Ireland's public assets.

The forthcoming general elections and a general unwillingness to tackle the special interests –the ESB and BGE state monopolies and their unions – mean that the political will to achieve real competition in Irish energy markets is absent.

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Italy
Carlo Stagnaro

Until recently, Italian energy markets were dominated by two state-owned monopolists, ENEL in electricity and ENI, the national champion in oil and gas. Following European Commission directives, a liberalisation process took place in 1999 and 2000 respectively.

At the time the main target of the reforms, which were promoted by centre-left governments, was to create the space for competition. That implied a reduction of state intervention. Partial privatisations of both companies were carried out, although the state still owns around 30 % of each. The government also aimed for a reduction of the size of the incumbents, with a road map setting out decreasing ceilings for the market share of the incumbents.

Both ENI and ENEL were re-organized as to favour a more efficient distribution of assets and, wherever possible, a separation of legal entities and ownership. The programme was pushed very far in the case of ENEL – the company was split up and assets sold to competitors in order to significantly lower the entry costs.

Ownership of the power transmission and distribution grid was given to Terna Spa, a government-controlled company of which ENEL owns a stake. However, the management of the grid was given to another government-controlled company, Grtn Spa.

A recent reorganisation of the sector unified ownership and management of the power grid in the hands of Terna Spa, which owns over 90% of the grid. The rationale of the move was that the grid manager should provide non-discriminatory access to all the operators, especially in the light of the full Europe-wide liberalisation that is expected by 2007. Tariffs to access the distribution network are fixed by the Italian Authority for Energy and Gas. The largest shareholder of Terna is the Cassa Depositi e Prestiti, a state-owned bank, which owns a 30% stake.

In the gas sector a different choice was made, and the grid was given to the ENI-controlled Snam Rete Gas Spa. ENI owns 51% of the shares of Snam Rete Gas. Originally it was stated that the state's holding should fall below 30% by 2006, but a recent law has postponed the deadline to 2008. Partly, this was a reaction to the so far unconfirmed reports that the giant Russian gas monopoly Gazprom was interested in buying Snam Rete Gas from ENI as part of its strategy of moving into the retail market in the European Union. For the same reason, the centre-right Berlusconi government passed a law that gives the state a golden share in Snam Rete Gas, so as to prevent hostile takeovers. This move has been strongly criticized by the European Commission.

Electricity Markets

In 2004, 86% of national demand of electricity was met by domestic generation, the remainder met by imports from neighbouring countries including France, Germany, Switzerland, and Slovenia. 81.4% of electricity is generated from fossil fuels, more than half of which is accounted for by natural gas, with hydro power accounting for 16.2% and renewables 2.4%.

In 2004, ENEL was still the dominant operator with slightly less than 50% of net national production – a share that has decreased to less than 44% in 2005. Two major competitors are Endesa Italia, a subsidiary of the Spanish electricity utility, and Edison, which is half-controlled by the French giant EdF.

Also significant players are the so-called *municipalizzate*, companies that are owned by municipalities. Of them, Milan's Aem is EdF's partner in Edison, while Brescia's Asm is the Spanish utility Endesa's partner in Endesa Italia. Other relevant *municipalizzate* are Amga in Genoa, Aem in Turin, Acea in Rome, and Hera in Bologna. All of these also operate in such sectors as water and waste management. The *municipalizzate* are a peculiar phenomenon because, despite their relatively small size compared with major companies on the European markets, they still are key players and enjoy protectionist privileges. Local regulations have in practise offset national efforts to liberalise the energy sector.

As far as the price-making process is concerned, a distinction should be made. In the market for households and small consumers, electricity is bought at a price that is fixed by the Autorità per l'Energia Elettrica e il gas, the energy authority. Industrial consumers instead have the choice of buying electricity either through bilateral agreements with the operators, or through the Borsa Elettrica, the Italian Electricity Exchange.

According to the European Commission's DG Energy and Transport, the level of market opening in the Italian electricity sector is 79%.

The price of electricity to Italian industrial consumers (€8.36 per 100 kWh in 2004) is significantly higher than the EI15 average of €5.79. The same applies to households: in 2005, Italian consumers paid €19.70 per 100 kWh against an EU-15 average of €14.16.

The price structure suggests that the major reason for the higher prices is an unbalanced generating mix: fuels account for 61% of the price, whereas taxes account for 10% and the so-called *oneri di sistema* (including subsidies to renewables, nuclear decommissioning charges, stranded and other costs) for 9.4%.

It turns out then that government policies are the main reason for high prices. An unbalanced generating mix is the consequence of political decisions, such as that requiring an increasing share of natural gas and pushing for the virtual elimination of both oil and coal. This may be changing as far as coal is concerned and the political decision to shut down nuclear plants in 1987 may also be revisited.

Natural Gas Markets

The process of liberalisation is much slower in the natural gas market. Despite a formal liberalisation ENI still remains the dominant operator. Even in the gas sector, the law sets a ceiling to the market share of the major company operating in the country, but as often the idea itself of a ceiling misses the target. The real problem, in terms of open

access to the market, is not how much of the market a single company controls; it is rather how it gets to a given size and why competitors fail to grow.

Moreover, according to the European Commission, Italy has done an excellent job in terms of changing the law. In fact the level of market opening is 100%. Still ENI controls virtually all of the domestic production. It also controls over 70% of the imported gas, some of which is sold to competitors just before reaching the Italian border, so as not to exceed the market share cap.

Also, ENI owns a majority stake in both Snam Rete Gas and Stogit, which holds 98% of the national storage capacity. ENI owns or controls all of the international pipelines through which natural gas is imported, as well as the only operating Liquefied Natural Gas (LNG) terminal in the country. Finally, ENI holds 70% of take or pay contracts with producer countries. A recent decision of the Italian Antitrust Authority fined ENI for failing in increasing the import capacity, and forced ENI to invest in increased capacity which it has to make available to competitors.

Italy imports over 80% of its natural gas needs, mainly from Algeria (35%), Russia (33%), and the North Sea (22%). A smaller but increasing quota is imported from Libya (6%). As far as prices are concerned, natural gas in Italy is slightly more expensive than the European average. Unlike the case of electricity, the main driver of natural gas prices is taxes, which account for over 45% of the price to the consumers (30% is the cost of the gas itself, while the remainder consists of delivery and other infrastructure costs.

Prices to Italian households are higher than the European average, whereas prices for Italian industry are in line with the European average, even before taxes. This is in spite of ENI's ability to contract prices with foreign partners such as Russia's Gazprom and Algeria's Sonatrach that tend to be more favourable than those given to its Italian and European competitors. Therefore claims that ENI might be held responsible of abuse of dominant position have been made. In the household market (where there is a strong inertia towards changing operator) ENI is accused of monopolistic behaviour and excessively high prices. In the industrial market ENI, is charged with predatory pricing so as to keep competitors out. For several reasons, including but not limited to ENI's long-held relationship with foreign providers, the competitors have not been able to negotiate gas prices as low, with Russia and Algeria in particular.

However true may be such charges, they miss the basic point that the lack of competition is due to difficulties facing potential entrants to the market. In both the electricity and gas sector, the main obstacles to full liberalisation are not of a regulatory nature – even though the Italian legal framework is far from being perfect. Rather, the biggest problem now is the divide between theoretical and actual liberalisation. Local and environmental opposition, as well as many firms' failure to achieve an agreement with local communities regarding new infrastructure often greatly slows (and thereby raises the cost of) such construction, and sometimes precludes it entirely. Thus, while the Italian energy market is notionally open, it remains effectively closed to new entrants. And worse, such constraints, as well as antitrust ceilings, also prevents the incumbents from investing in new capacity. The result is an engineered form of competition that seeks merely to re-distribute the cake by awarding smaller pieces of it to a greater number of competitors. Real competition is rather about forcing competitors to cook a bigger cake for everybody.

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Spain
Gabriel Calzada

Traditionally, the Spanish market has been something of an 'energy island', with less than 5% interconnectivity with neighbouring countries, and an economic model different from most European states. Throughout most of Europe, the energy industry was once organised around national or regional monopolies. In Spain, public and private companies have competed in most energy and electricity markets for decades.

However, the vertical integration of many of these firms made them *de facto* regional monopolies, and resulted in wide variances in electricity costs across the country. As a result, the socialist government, unwilling to tolerate this inequitable distribution of cheap electricity, introduced in a 'Stable Framework Law' in 1987. This allowed the public authorities to fix an annual price that would be paid to energy producers, calculated on a standardised cost to the industry that would cover the cost of earlier infrastructure investment and ensure the long-term viability of the organisation.

Under this regulatory model, every company tried to lower its real cost below the theoretical one fixed by the government. The incentive structure that this law created – primarily a disincentive to invest in further generation capacity – had consequences that are still being felt today. Companies could either try to increase their efficiency (and thereby reduce their marginal cost) or lobby the public authorities to maintain the high standardized cost. Equally insidiously, this deepened the relationship between the energy sector and the government, and compounded the failing of a previous 'reform', which had in 1985 created the *Red Electrica Española*, the electricity distribution monopoly.

In 1997, following the first European Commission Energy Liberalisation directive, the 'Law of the Electricity Sector' was introduced. It established consumer's right to choose their energy provider, and forced companies to unbundle and sell-off their electricity generation and distribution assets. This caused a considerable shake-up of the wholesale market, which is now very competitive. However, the means of energy transmission from generator to supplier to consumer has been retained by *Red Electrica Española*, which has now been privatised. Companies gain access to the network by paying a fixed price.

In the retail market, early liberalisation (compared with most European nations) has unfortunately not resulted in total liberalisation. Since 2003, consumers have been able to both change their providers and to choose whether to pay either the market or the government-regulated price. Unfortunately, while prices have fallen by around 30% over the last decade, government subsidies mean that the regulated price is lower than the market one. This has meant that two years after the introduction of choice, 97% of consumers still pay the regulated price.

The gas market suffers from a similar stasis, despite the introduction in 1998 of a law to liberalise and privatise the sale of oil and oil-based gas products, as well as the deregulation of the natural gas market. Gas Natural SDG, S.A built up considerable structural and regulatory advantages during its many years as state-owned monopolist, and has since proved very difficult to dislodge even following its privatisation.

State support of renewable energy sources – wind and solar energy have been protected by the obligatory purchase of their output by the nearest electricity provider – and costs imposed by the Kyoto Protocol have both also raised the cost of energy to consumers. Moreover, renewable sources have made Spain's supply more vulnerable to the weather – in 2005, wave and wind energy represented 34% of the installed capacity but due to adverse weather conditions only contributed to a 13.5% of total electricity production. By contrast, the contribution of nuclear power, a reliable source of electricity, has been reduced from 30% to 20% in less than a decade due to legal restrictions and a government moratorium on new plants throughout the 1980s and early 1990s. And while construction is now in theory permitted, local and regional authorities refuse to issue the required licences. The closing of the nuclear plant at Zorita, on April 30th 2006, by the Spanish government – two years ahead of its authorised operating life of 40 years – has also ended all discussion about extending the life of all plants to 60 years.

Yet the demand for primary sources of energy has doubled since 1985 and it is expected to continue growing. Gas has replaced oil, partly due to environmental legislation, as the primary source of energy, but Spain remains more reliant on foreign sources of energy (75% in total) than most countries in the developed world (the EU average is 50%). Only six countries supply 75% of all the oil that is consumed in Spain, and this high dependence on imports is even more acute in the gas sector – over 50% is supplied by Algeria alone.

Neo-mercantilism

Of late, the Spanish government has also pursued a protectionist line that reveals how far the official programme of liberalisation has diverged from ensuring true competition. On September 5th 2005, Gas Natural, the domestic gas giant and largest shareholder in Repsol, a former state-owned oil company, announced a hostile bid for complete ownership of Endesa, Spain's largest (and the world's 8th largest) electricity producer. The bid, valued at €22b raised eyebrows in the international press because Gas Natural is controlled by La Caixa, a public savings institution, who are in turn controlled by the government of Cataluña, which is currently a radical left-wing nationalist-socialist coalition committed to the creation of national champions. Moreover, a member of the ruling Socialist party, Maite Costa, is also the President of the *Comisión Nacional de la Energía* (CNE), the Energy regulator. Thus, the CNE initially approved the merger, with minor conditions.

Endesa, a Madrid-based company, subsequently contested, with political backing from Spain's conservative opposition, the jurisdiction of the

Spanish authorities to evaluate the legality of the merger, arguing that the take-over had a European dimension because it does 36% of its business (according to EU accounting rules) in other European nations. On November 15th, Competition Commissioner Neelie Kroes announced the European Commission's rejection of Endesa´s appeal. However, within days it had emerged that secret talks had been held by Commission President Barroso and Spanish Prime Minister Zapatero to resolve the issue.

The situation was further compounded, following months of on-going legal wranglings, by (€29.1b) bid for Endesa by EON, the German energy giant. This bid was received much more favourably by Endesa's management, who resented the political pressure implicit in Gas Natural's earlier bid. Fortunately, the Spanish government has now having to balance their desire to create a national energy champion with the political cost of using their golden share in Endesa to block the bid of an EU-based firm. Mr Zapatero has publicly stated that he would only take a decision to block the bid "in truly exceptional circumstances which we certainly do not contemplate."

The bid was regarded favourably in Brussels, as there is little geographical overlap between E.ON and Endesa's spheres of operation, and was ultimately approved on April 25th 2006. However, it does raise broader questions about consolidation and competition within European energy markets, as Competition Commissioner Neelie Kroes has previously warned the continent's largest power firms that antitrust proceedings could be brought against them for squeezing out competition (and maintaining high prices) through acquisitions.

Whatever the result, the case of Gas Natural – Endesa – EON demonstrates the hypocrisy of European politicians who praise free markets in energy but attempt to maintain political control of power companies – either directly or through investment firms subject to political influence. Such distortions have a disproportionately detrimental effect upon the allocation of capital in the energy sector, which has the knock-on effect of entrenching incumbents' positions and limiting the true choice of the consumer. If Europe really wants to follow the Lisbon Agenda and be one of the most dynamic economies in the world, Spanish and European politicians will have to move beyond the rhetoric of liberalisation and enact true reform within the energy and electricity markets.

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United Kingdom

Peter Nolan

From Crisis to Reform

In the early 1970s, Britain was facing an energy crisis. The effects of the first oil shock, when global crude prices tripled, were compounded by a labour dispute in the coal industry. In an effort to conserve coal and oil, the government mandated a three day working week from December 1973 to February 1974. So desperate was the situation that Prime Minister Edward Heath declared a state of emergency. Indeed, the London stock market fell so much that prices were, for a time, lower than those immediately following the Dunkirk evacuation of 1940, when an invasion by Nazi Germany was thought to be imminent.

To restore Britain's economic competitiveness, governments since 1979 have pushed strongly for liberalisation of energy markets. Beginning under the Thatcher administration, government interests in oil and gas, including a large stake in the global oil company BP plc were sold off. In 1986, the state gas monopoly, British Gas, was floated. National Grid plc now also owns most of the gas transmission infrastructure.

The state electricity monopoly was broken up in 1990. Three generating companies whose business was operating power stations – Powergen, National Power and Nuclear Electric were created. The first two were soon privatised, and much (although not all) nuclear capacity was later privatised as British Energy. Distribution of electricity to industry and consumers was handed over to twelve Regional Electricity Companies (RECs) and privatised.

Over time, the distribution and generation businesses have become vertically integrated and gas and electricity companies have diversified into each other's industries. Moreover inward investment by foreign companies is almost unrestricted. As Tony Blair said, speaking of the Prime Minister's official residence, "Downing Street's electricity is supplied by a French company, the water by a German company and there is a choice of four gas suppliers, three of which are foreign-owned". In April, he has also signalled that his government will not stand in the way of the Russian state-controlled gas giant, Gazprom buying Centrica, a distribution company once part of British Gas. Already, major European utility companies have significant holdings in distribution and generation – RWE (npower) and EON (Powergen) of Germany and EdF of France.

One model already applied to the UK utility industry, although not yet in electricity or gas, is mutualisation. A customer-owned non-profit firm, financing itself entirely through debt, Glas Cymru controls the water utility for Wales, in a structure engineered by the City of London's investment bankers.

Privatisation has allowed the management of the new companies to cut costs without being subject to political interference. The problem of collective action, diagnosed by Mancur Olson, whereby special interests, a comparatively small proportion of the labour force, were able to overcome the general public interest in low cost energy uninterrupted by strikes, was overcome. The coal miners' strike in 1984-85 was defeated. Employment in the electricity distribution companies fell from 127,300 at privatisation to around 66,000 by 1996-97 and in British Gas from about 92,000 at privatisation to 70,000 by 1994.

As measured by market share among households, Britain has overcome concentration to achieve a healthy level of competition in the markets for gas and electricity.

By December 2005, nearly 11.7 million (46%) and 9.3 million (44%) of domestic electricity and gas consumers had chosen suppliers other than their regional incumbents. Over 300,000 customers change their gas or electricity supplier each month. Once the sole monopoly, British Gas barely retains barely 50% market share. Over the period of deregulation 1990-2004, British households paid £75b less than Italy for their gas, £67b less than in Spain, £35b less than France and £28b less than Germany. Now, according to Ofgem, the energy regulator, over 80% of customers surveyed are satisfied with their current suppliers, while those who have never switched supplier are losing an average of £100 (€135) by not seeking out the best deals on offer.

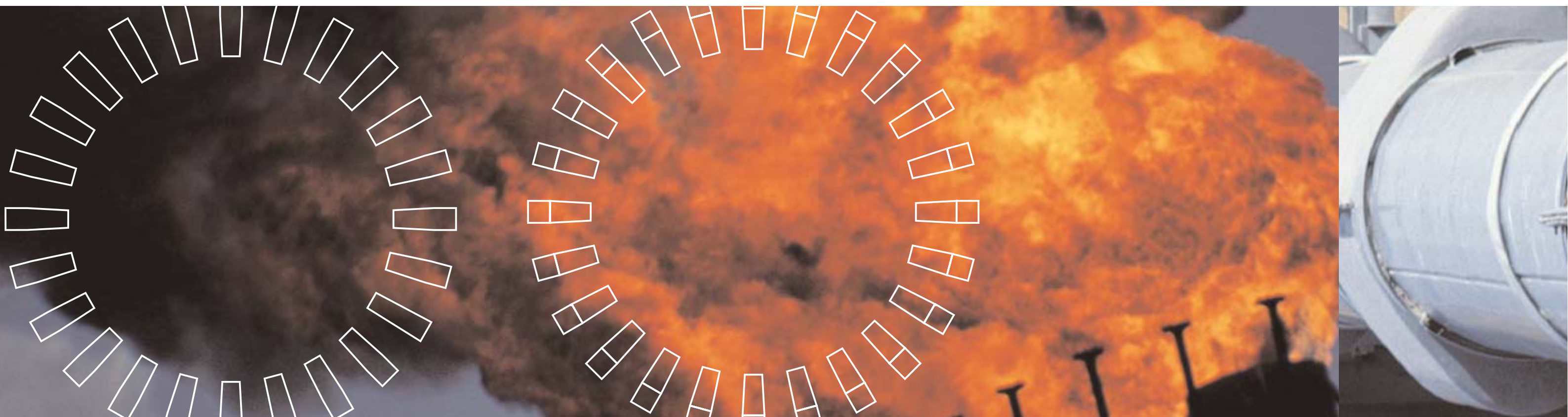
Regulation and Prices

Britain first introduced measures to open up the electricity market while leaving the incumbent monopoly in place. Unsurprisingly, this proved ineffective. Over time, as privatisation advanced, the state has been free to pursue regulation in the public interest, unencumbered either by pressures from labour or any desire to extract dividends for its own

Percentage of Customers Supplied by Energy Retailers, December 2003

Supplier	Gas	Electricity – National Market Share	Electricity – Local/Regional Market Share (post-deregulation)
British Gas	61	24	NA
EON Powergen	12	21	58
RWE npower	9	21	56
EDF Energy	5	15	64
Southern and Scottish	7	14	73
Scottish Power	6	11	61
Others	1	1	NA

Source: Price (2005)



budget. Gas and electricity markets in Britain are now under the authority of an independent government regulatory body, OFGEM.

The fall in energy costs has particularly benefited the poorest households, who proportionately spend much more of their budget on power. Ofgem figures show that around 1 million households have escaped circumstances of excess spending and inadequate heating through increased competition.

With OFGEM ensuring freedom of competition and entry into the energy markets, electricity prices to households fell continually in real terms for two decades until 2003, with huge benefit for industry and consumers. With the New Electricity Trading Arrangements (NETA) for regulating the market in power contracts, there was a 40% fall in wholesale electric prices (National Audit Office, 2003). Full competition in the domestic electricity supply market was introduced in May 1999, and reduced prices by a further 10.3% in real terms between 1999 and 2003. As prices on world markets for oil, coal, natural gas (and now greenhouse gas emissions) have risen, prices have increased in 2004 and 2005. Nevertheless, in real terms, domestic customers paid about the same in 2005 as in 1999 levels. By 1993, domestic gas prices were already 25% lower, adjusted for inflation, than in 1983 and were at their lowest level in 30 years.

Interaction with European Markets

As its own reserves from offshore fields are depleted, Britain has recently become a net importer of natural gas. Over the winter of 2005-6, British prices for gas for immediate delivery reached historic peaks. As these were the highest in Europe at the time, huge profits could have been made by transporting gas from the European mainland by pipeline or in tankers carrying natural gas in liquid form (LNG).

The gas pipeline to Zebrugge in Belgium, completed in 1988, was not being used to ease the relative shortage in Britain, with about 30% of capacity idle most of the winter. OFGEM calculated that had enough supplies been offered to fill the pipeline, British gas users would have saved a billion pounds sterling over that period. Furthermore, the UK's first terminal for receiving tankers of Liquid Natural Gas, on the Isle of Grain, had by then only received four shipments.

The suspicion among energy traders was that the dominant incumbents in the gas industry in the EU might be manipulating the market, withholding supplies in order to force prices up. EU governments were also said to be prevailing upon their own gas companies, often state-owned or usually given some degree of protection as 'national champions', to hold their stockpiles rather than trade with Britain, prioritising a national strategy for protection against interruption in gas supplies. Gas prices in Britain are no longer tied to world oil prices, as was standard practise before deregulation and is still the norm elsewhere in Europe.

Ofgem complained to the European Commission DG Competition and asked it to investigate the operation of the European gas market. British Chancellor Gordon Brown echoed their complaint, saying that these problems had cost Britain £10 billion. Ofgem's Chief Executive wrote that "experience from the UK gas market shows that there is little doubt that stronger competition in Europe would have diluted any oil price effect and its significant impact on [British] customers' energy bills."

However, another factor in rising UK gas prices has been tax policy, with oil and gas production in UK waters hit with a doubling of the windfall profit tax in this year's budget. As any farmer knows, high prices make an excellent fertiliser and are a reward for investment and a spur to more exploration, exactly as the North Sea and Alaska were opened up after the first OPEC oil shock. However, both the taxation and the added uncertainty about taxes are likely to prove a barrier to further investment to prolong the useful life of remaining UK reserves.

Environmental Protection

The electricity industry has been largely free to make its own choices about what fuels to use in power generation. The resulting switch away from coal to natural gas has also paid off handsomely in environmental improvements.

To protect employment, at the time of electricity privatisation the domestic coal industry was given long-term contracts to supply generators at rates above world market prices. When these came to an end, cheap and abundant natural gas became the fuel of choice for electric generation. This provided major benefits for the environment. Coal is relatively dirty as a fuel, producing sulphur dioxide that causes acid rain when burned. It also emits twice the amount of carbon dioxide, the most common greenhouse gas, as natural gas does. And already, the UK has comfortably met its targets under the Kyoto Protocol.

The new EU Emissions Trading Scheme is expected to see the costs of carbon emissions passed on consumers, although generators in the UK have largely taken a hit to profits rather than increasing prices. As David Porter, chief executive of the Association of Electricity Producers told the *Financial Times* that they "will absorb what they can, because it's a competitive market." Unfortunately, the growing environmental regulatory burden will eventually see these costs passed on to customers. For the British consumer, the long summer of cheap energy may soon be coming to an end.

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Brochure design: Relish

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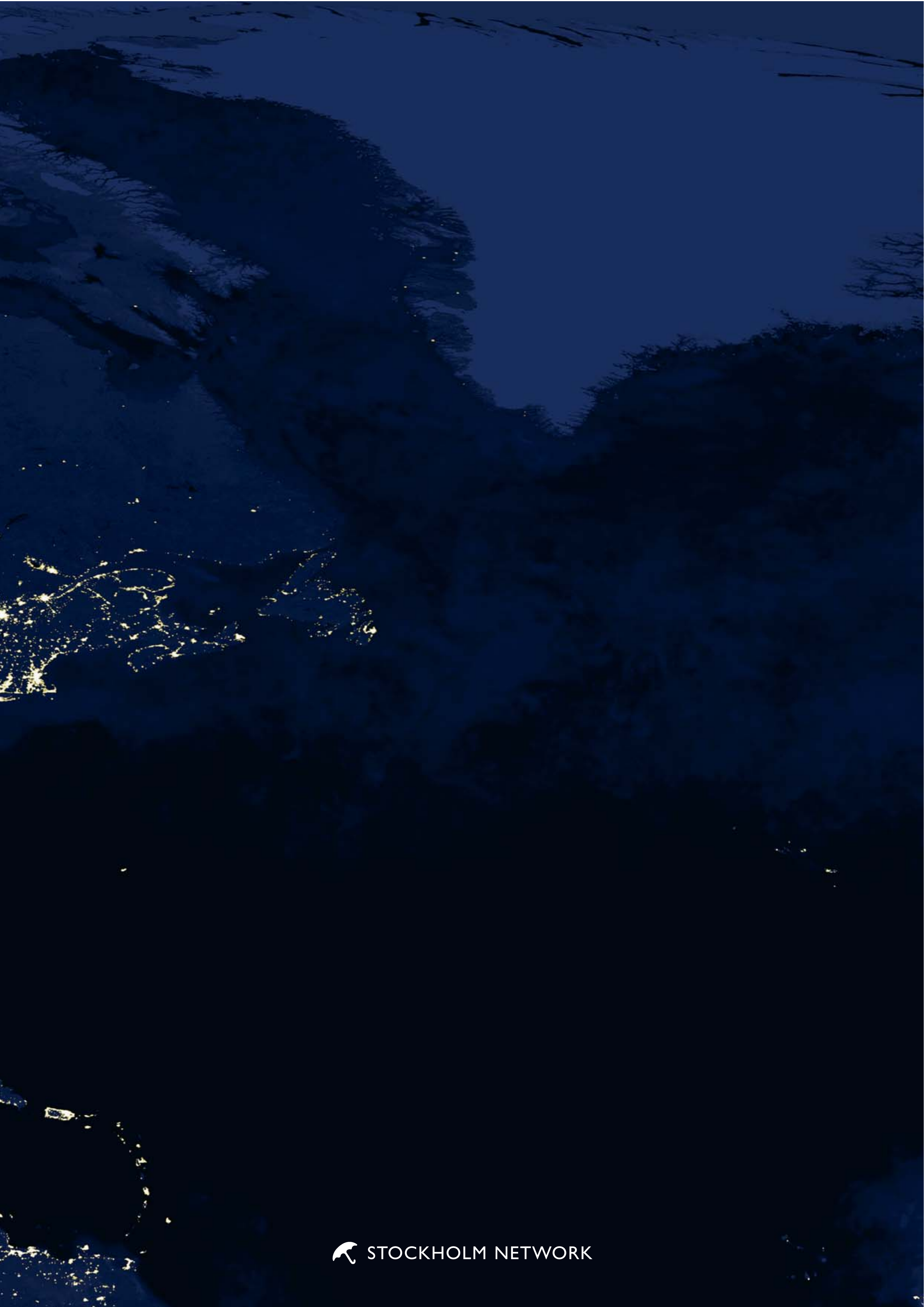
The Editors would like to extend their gratitude to the authors of this work, all of whom took time out of their busy schedules to contribute, and to the Stockholm Network staff who willingly read drafts and offered valuable comment. And lastly, we owe a considerable debt of thanks to designer Sarah Hyndman.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