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The Liberalisation and Privatisation of the Gas and Electricity Sectors in Current and Prospective Member States of the European Union

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1 Executive Summary

The liberalisation of Europe's energy markets are set to expand and accelerate in the coming years. The expansion is due to the requirement for accession countries to meet the EU's market rules, while at the same time the EU is revising its regulations which will increase market opening. These processes are proposed despite serious concerns regarding the impact of liberalisation on the sustainability and functioning of the market.

The liberalisation and in most cases subsequent privatisation process has enabled a small number of companies to increase their dominance in the energy market. In particular, Electricité de France (EdF), RWE and Eon have increased their share of the EU market in recent years – by 7% in the last five years. However, as important as the overall EU market share, is the fact that these companies are acquiring dominant positions in the individual Member States markets, for example RWE and Eon obtaining the major non-nuclear generators in the UK, while also increasing cross utility ownership, such as the Eon/Ruhrgas merger. As a consequence these companies are gaining considerable influence in both the EU and national energy markets.

Unsurprisingly, these same companies are dominant in the acquisitions in accession countries. However, the degree of their control is alarming. Of the total number of mergers and acquisitions in accession countries by foreign firms, over 80% were made by EdF (with Gaz de France), Eon or RWE. Consequently, the market dominance that is already causing alarms in the EU will increase, not decrease following accession. The purpose of liberalisation was to increase competition but yet the process is actually restructuring the energy systems from national monopolies to regional oligopolies.

Such a process is bad for the market as it increases cross subsidy – on a national and transnational level – and reduce the relative power of the regulator. This will especially be true in accession countries where big companies, such as EdF, have a total economic turnover which is greater than the GDP of the countries they are investing in.

As well as increasing competition, market liberalisation was supposed to result in increase transparency, greater flexibility to deal with social and environmental concerns and the lowering of energy prices for the consumer. The degree to which this has occurred varied, but what is clear is that the full range of benefits that liberalisation could have brought to consumers have not reached the final customers. For example in the United Kingdom prices in the wholesales price of electricity have fallen by 18% in recent years, but the decrease in domestic consumers bills was only 2.5%, thus significantly increasing the profits of the electricity suppliers.

In 2003, the EU will adopt new proposals for the further liberalisation of the energy markets. These proposals are likely to further benefit the large and integrated electricity companies, who will be able to continue cross subsidy and increase their market dominance. Proposals to increase transparency have largely been ignored or distorted while amendments to increase public service obligations have been removed. The current proposals must not be passed as proposed and in particular accession countries, who will have entered the EU before the new rules are in force, must take note of the serious, environmental, social and economic consequences that they pose.

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2 European Union

2.1 European Union Energy Markets

Since the late 1980s significant changes have occurred within the electricity and gas industries. In Western Europe energy planners and free-marketeers have the ideological aim of creating a single electricity market across Europe, a trend which has been replicated across the world. As this occurs there have been far reaching social, environmental and economic consequences. In the short term it will impact particularly on the type of power stations chosen by utilities, in respect both to current usage and future construction.

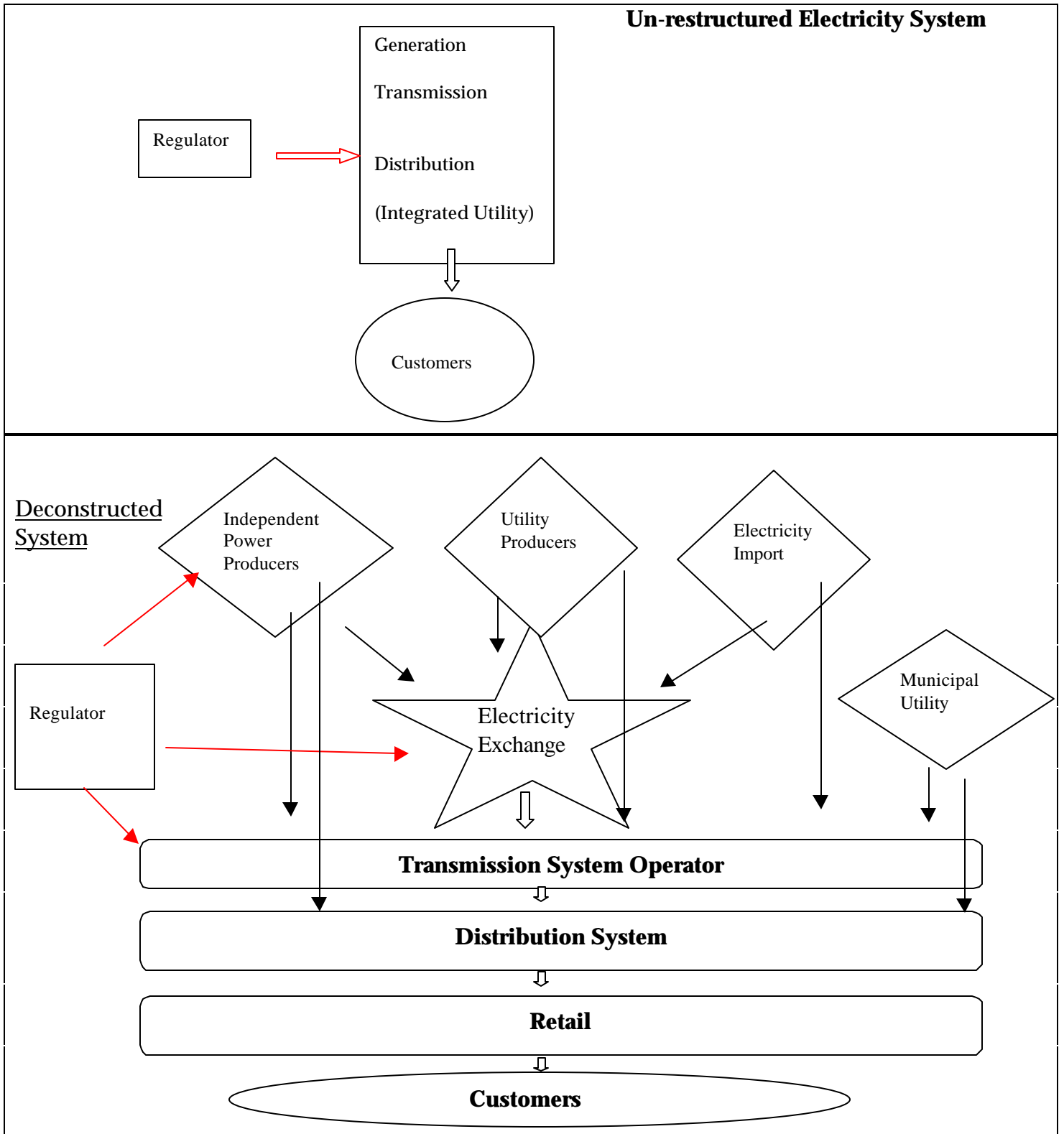
The annotated diagrams below highlight the changes that have occurred in the electricity market. In the “unrestructured” system, one company – often State owned - runs the generation, transmission and distribution. They also supply the consumers, who have no choice of electricity supplier and are a captive market. The regulator is charged with ensuring the monopoly does not abuse its position.

However, in the “de-constructed” system there are a variety of producers who sell their electricity either through an electricity exchange or direct to the transmission operators, who in turn sell the electricity to the distribution companies who supply the customers. This “unbundled” system should increase competition between the actors and thus lower the price to the final consumers.

The restructuring of the UK electricity industry began before most other countries in the EU and although it has definitely not become a template for other countries the process has become a yardstick, by which others can be measured. The partial privatisation of the UK industry began in 1989, however it was not until 1999 that the market was fully liberalized and small-scale consumers were able to choose their electricity supply. The decade of restructuring can be seen in five stages¹.

- **Privatisation.** The industry was previously wholly owned by taxpayers via central government and, over the next six years (but mostly in 1990 and 1991), it was progressively transferred to private shareholders;
- **Restructuring and de-integration.** The industry was divided into four separate parts, electricity generation, the high voltage transmission system, the local distribution system and retail to final consumers – in short, generation, transmission, distribution and supply. The existing companies (one large generation and transmission company and 12 distribution companies) were restructured and sometimes broken up along these de-integrated lines;
- **Liberalisation and introduction of competition to generation.** All central planning of the generation sector was effectively abandoned and barriers to entry for new generation companies removed.
- **Liberalisation and introduction of competition to supply.** All final consumers were to be allowed to choose their electricity supplier, not only from the existing companies, but also from any other company that chose to enter the field; and

¹ Has Privatisation Reduced the Price of Power in Britain? Steve Thomas SPRU, University of Sussex Monograph to be published by Unison November 1999



- **Re-regulation.** Prices for the activities regarded as natural monopolies, transmission and distribution, were to be set by a new Regulator using a 'price cap' or 'incentive' formula. Prices for competitive activities were to be set by the market, but under the scrutiny of the Regulator who had a duty to promote competition wherever possible.

2.1.1 European Union Legislation on Energy Markets

Discussions began on the liberalisation of Europe's electricity market in 1992, but did not come to fruition until 1996, when an agreement was reached on the Directive 96/92/EC concerning common Rules for the internal market in electricity. The reasons for the protracted negotiations were the degree of disagreement that existed between Member States on the extent of the Directive and its introduction timetable. However, the Directive was eventually agreed to and entered into force on the 19th February 1997 with transposition to be complete within two years. A similar discussion for a Directive for the Gas market was begun in late 1996. The Directive 98/30/EC concerning common rules for the internal market for natural gas was not however agreed to until 1998 with national transposition of the Directive due in August 2000.

The Electricity Market Directive requires the breaking up of the national monopolies of the electricity supply industries, increasing transparency of accounting and the gradual opening of the electricity market to domestic and foreign competition.

2.2 Impact of the Directive

There are many ways in which you can judge the impact of the changes underway in Europe's electricity industry, some of which are reviewed below.

2.2.1 Market Opening

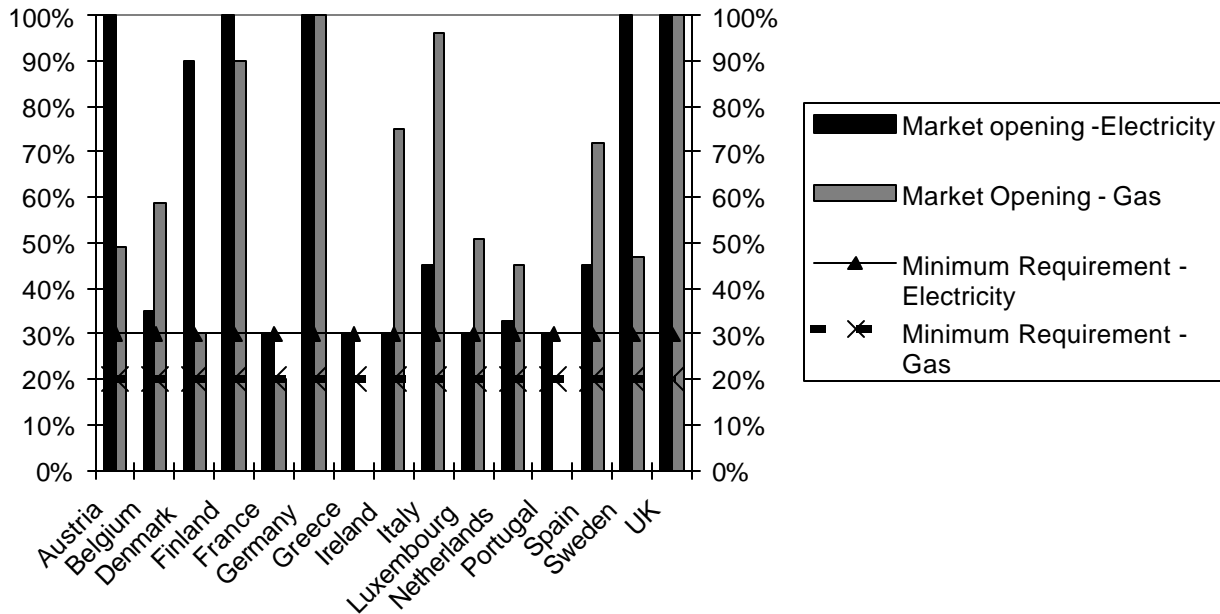
Both the Electricity and Gas Market Directives establish minimum timetables for the partial opening of the energy markets. The table below shows the threshold at which consumers must be allowed to choose their energy supplier decreases within the Directives timetables.

Electricity Market Directive			Gas Market Directive		
Year	Threshold	Market Opening %	Year	Threshold	Market Opening %
1999	40 GWh	26	2000	25 million m ³	20
2000	20 GWh	28	2005	15	28
2003	9 GWh	33	2010	5	33

However, experience within the electricity market has shown that companies and Member States are

often keen to move faster than the minimum required by the Directive. Consequently, approximately 69% of the current electricity market is open to competition, rather than the 28% required, as can be seen in the graph below. It is expected that a similar situation will occur with the Gas market, with approximately 79% of the market open, rather than the 20% of the directive requirement.

Opening of Energy Markets in EU

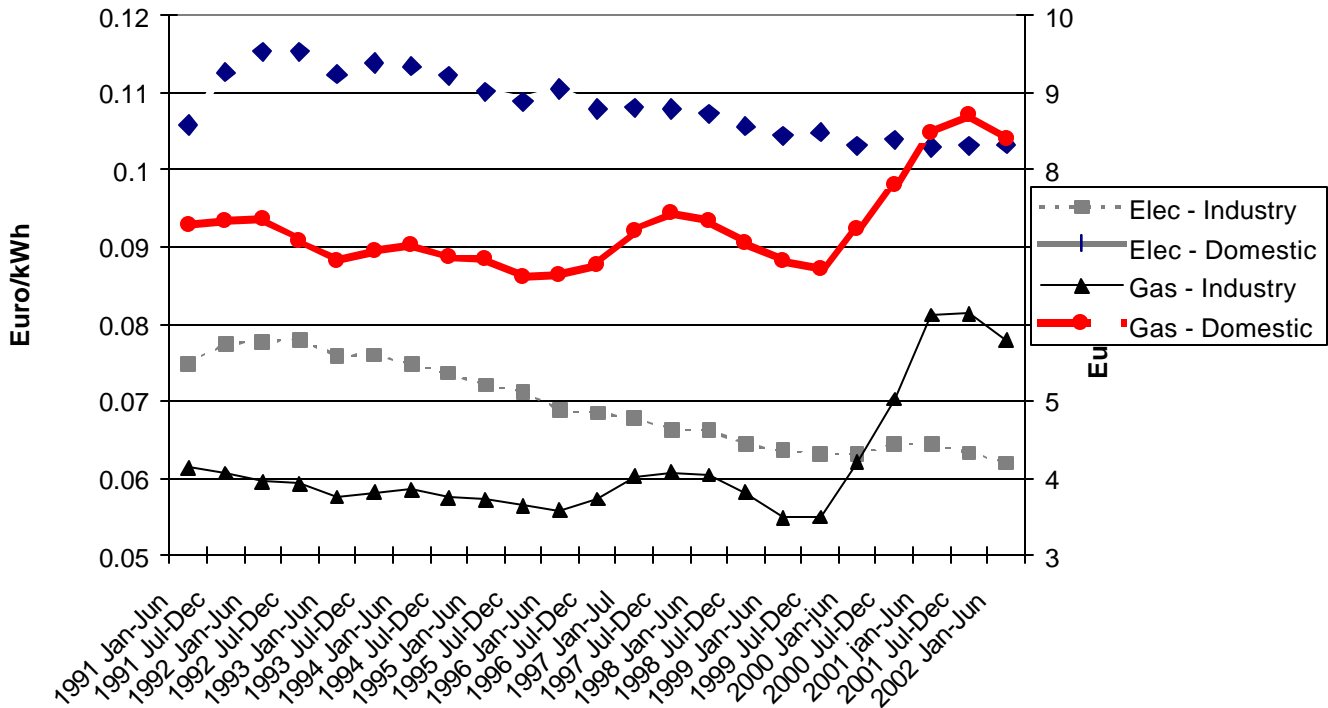


Given this situation, the Commission informally proposed at the Lisbon EU summit in March 2000 that full market opening for both sectors, gas and electricity, should occur by 2005. This was rejected by some Member States, reportedly the French, and instead a further discussion on the liberalisation of energy markets took place, which culminate in a agreement at Member State level in 2002 and expected to be concluded in the Parliament in early 2003.

2.2.2 Price.

One of the main justification for liberalisation was that it would result in a lowering of the energy prices paid by domestic consumers. The graph below shows the development of energy prices within the EU.

Development of Energy Prices in EU - 1991-present



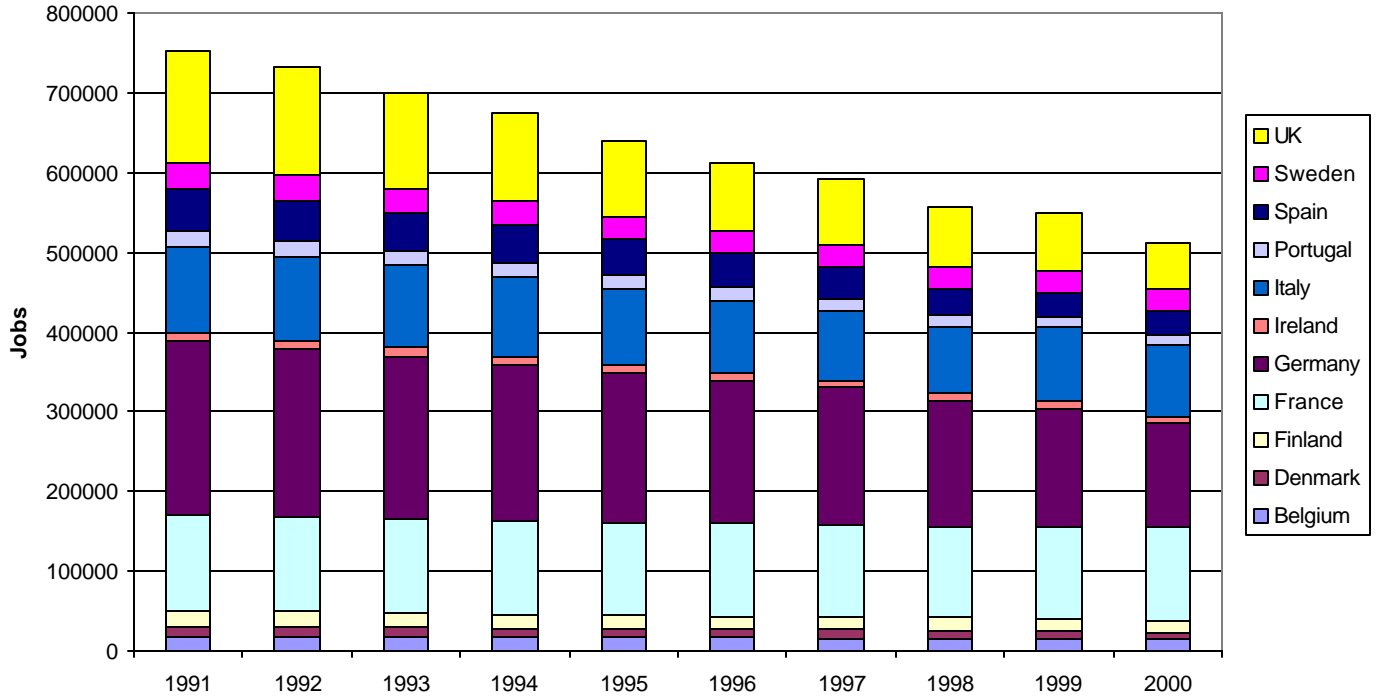
Source: Eurostat 2002

The data shows some interesting trends. In the electricity sector, over the last decade the price for domestic consumers has not changed significantly, with an overall decline of just 2%. This compares with a decrease of 12% for industrial consumers. While in the Gas sector, the reverse is true, with an increase in gas price of 15% for domestic consumers, while industrial consumers have seen a 40% increase in prices.

2.2.3 Employment Levels.

Figures produced by the European Public Sector Union (EPSU) shows the extent of the decline in the electricity sector, as seen in the graph below, show that there has been a fall of 250 000 jobs in the eleven countries surveyed.

Level of Employment in EU Electricity Sector



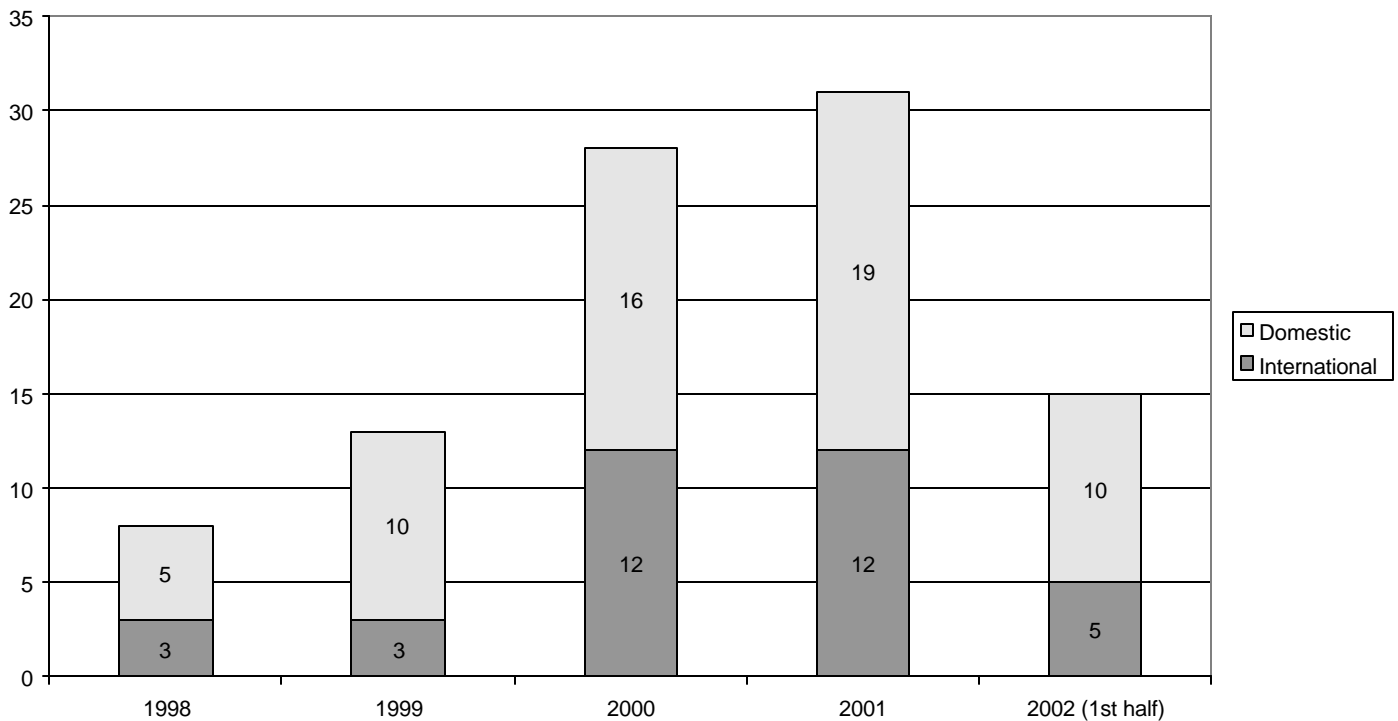
Source: EPSU 2002

Further and quite likely significant job losses might still be expected in the EU. In particular, in France, the new Government has signalled its intension to begin at least a partial privatisation of Electricité de France, which might a fore-runner to similar developments for Gaz de France. Over the past decade or so, employment in this combined companies has only declined by around 5% from 222 056 to 213 058, compared with a EU average of approximately 30%.

2.2.4 Ownership

The opening of the electricity markets have allowed and resulted in significant mergers and acquisitions between electricity companies in EU countries. In the preceding years most international attention was targeted at Asia, but due to the currency collapse and the liberalisation process in the EU, Europe became the region of the world with the most international trade in electricity companies. The graph below highlights the increase in activity. What is interesting to note is that domestic mergers still dominate in terms of numbers, but are likely to decrease as fewer purely domestic companies remain as the market tends is concentrating.

Mergers and Acquisitions in Western European Electricity Markets

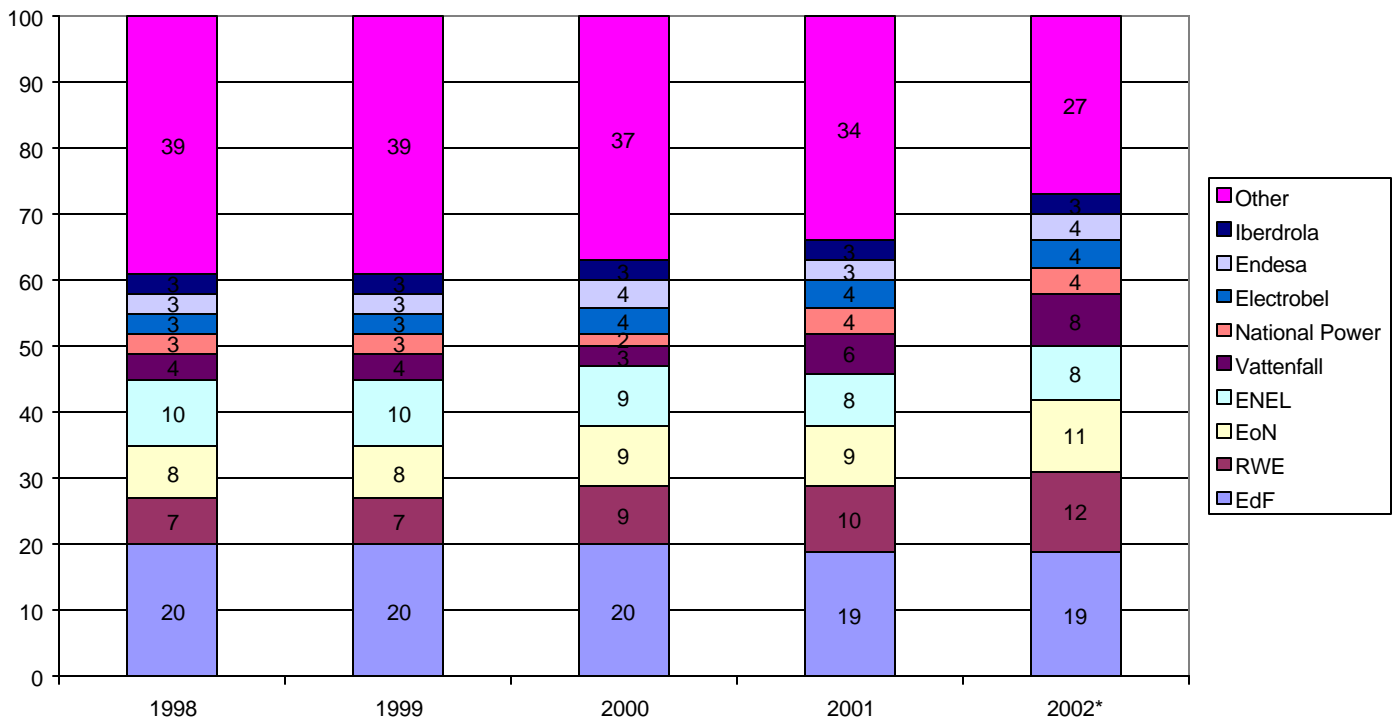


Source: Codonet et al, 2002²

The graph below highlights the activities of specific companies. In particular there are now 5 companies, Edf, Eon, RWE, ENEL and Vattenfall that dominate the EU electricity market, with nearly 60% of electricity sales between them. Some of this dominance is based on captive markets, in the cases of EdF and ENEL, but also on the market activities of the companies. In particular in recent months and years Eon, RWE and Vattenfall have been active and have significantly increased their power base in the EU.

² Mergers and Acquisitions in the European Electricity Sector, Cases and Patterns, Marc-Kevin Codognet, Jean-Michel Glachant, Francois Leveque, Maria Anne Plagnet, August 2002.

Electricity Market Shares in Western Europe 1998-2002



Source: Codognet et al 2002 and estimation for 2002

Many believe that these five dominant firms will increase their market control in the power sector and will further strengthen their position as these companies, or their strategic partners, dominate the gas sector. This can be graphically seen in the case of the Eon-Ruhrgas merger, which if eventually approved would give the new company greater overall dominance than EdF. Such a merger, not only threaten the stability of the current market, but set a trend in super mergers between different utilities and underlies the national desire to built up 'national champions' to defined the strategic interests of the nation State.

2.3 Revised Electricity and Gas Directives.

In November 2002, the Energy Council of the European Union reached a political agreement on the directives on the future liberalisation of the Electricity and Gas industries. The agreement agreed that market opening for all commercial clients in mid 2004 and mid 2007 for all household customers creates a large market with 15 and soon-to-be 25 countries participating. Size of opening means little, however, if market conditions for competition are of poor quality. However, the Council agreement fails to tackle real problems in a number of areas for the electricity industry³:

Market transparency. The Parliament in its first reading asked for the principle of ownership unbundling for transmission and at least legal unbundling for distribution. Neither demands were

³ This is taken from an article prepared by Claude Turmes, MEP, rapporteur in the European Parliament for the Liberalisation of Electricity Directive and published by Platts in Power in Europe, December 2002.

met by the Council, under pressure from German and French electricity companies and their governments. Opening the market for all commercial clients without ensuring complete independence of the distribution grid operators opens the way for all kinds of discrimination. Only a small number of commercial users are linked to the transmission grid; the vast majority use the distribution grid. The potential lack of transparency in this sector (distribution does not have to be legally separated until July 2007, three years after SME market opening) further benefits the dominant integrated companies and penalises both new entrants and SMEs in the very important first years of market opening when market shares are decided.

Market power for the small. Governments seem particularly eager to open up the household market. This might be a good thing on ideological grounds. But if we really want small customers to benefit from better prices - at least while there is overcapacity in the EU generation market - governments and regulators have to ensure that small customers have bargaining power in the market. Experience in the UK, Germany and even the Scandinavian market shows that large industrial consumers get the best deals. Domestic consumers have gained from reduced grid prices (under regulation), but are the last to see any benefits flowing from cheaper energy prices. Where is the bargaining power of "atomised" small customers? If wholesale market prices fall 40%, how do we make sure that small customers get a similar rebate?

Transparency of energy source. Customers have the right to make well-informed decisions when choosing supplier, and the Council endorsed the principle of mandatory information on the source of electricity. Under pressure from 'non-sustainable' companies, however, it proved beyond the Council to mandate a really clear and accessible set of rules. Customers will still have to undertake hours of research to assess the emission and radioactive waste impact of their supplies, thus enabling suppliers to hide the environmental impact of electricity production.

Market functioning. Existing market distortions between the different market actors have not been addressed. The Commission vetoed the EP's amendment preventing companies with large decommissioning funds to use them in the M&A market. How can we expect a market to function when there are ever fewer players? The Parliament will have to look again to tighten all measures related to market domination and distortions.

Security of Supply and Environment. The Commission and some countries continue to be optimistic on both issues, despite looming shortages in the Nordic markets. The Commission and Member States are not keen on proposals requiring minimum capacity reserve levels and appear to have forgotten to bring forward measures to promote the most powerful and economic means to ensure security of supply - energy efficiency. The required investments will not happen without the correct signals. Long-promised Commission proposals on an energy service directive to boost Europe's ESCOs, and a framework directive to transform the EU appliance and office equipment market to "sustainable consumption patterns", have still not been produced. It is hardly surprising that the Commission has held back a report that has monitored the environmental consequences of deregulation, a study scheduled for November of last year.

The directives will now be discussed in the European Parliament for the second time, it is expected that a final text of the directives will be completed in mid 2003.

3 Accession Countries

3.1 Czech Republic

3.1.1 Electricity

The electricity sector is dominated by the majority State owned company CEZ (former Ceske energetické závody). Today CEZ :

- provides about 60% of all supplies of Czech electricity market
- owns 70% of Generation capacity
- owns majority in 5 distribution companies and a blocking minority in the other 3 distribution companies
- owns 33% of the transmission system (the rest is owned by the state via the National Property Fund)

In 2002, the state offered CEZ for sale in a single package and EdF were reportedly the front runner with an estimated €5 billion bid. However, problems over the conditionalities of the sale and uncertainties over the future of the Temelin nuclear power plant resulted in the withdrawal of sale, prior to the elections in May 2002. It is reported that CEZ will not be sold at least until late 2003).

In October 2002, CEZ became an even more powerful actor on the market – for 32.1 billion CZK (€1,03 billion) the company bought from the Czech state its shares in eight major regional electricity distributing companies. Five of these were majority shares (more than 50%), other 3 were enough to give CEZ at least a blocking minority (34.34 and 33.4 %). On the other hand, CEZ sold 66.6% share of the electricity transmission system to the state for 15 billion CZK (€0.48 bil.), so now it owns 33.3% of the transmission system.

The electricity system in Czech republic is strategically important as it is the gateway for electricity exchange further East and makes up the majority of electricity exchange between the UCTE and CENTRAL regions. In 2001 the total exports from the Czech republic were around 12 Twh.

On 1st January 2001, the new Energy Act entered into force which harmonises the gas and electricity sectors with the current EU Directives. The law requires the unbundling of accounts between the separate entities of CEZ and the establishment of the Transmission system operator and the price setting by an independent regulator. Furthermore, in line with the Directive requirements the market has been open for users consuming more than 40 GWh/year (30% of the market). Furthermore, it is anticipated that by 2006 all end consumers will be eligible to choose their electricity supplier.

3.1.2 Gas

The main Czech gas company is Transgas, which is responsible for import and wholesale purchase, sales and distribution. Two thirds of its income comes from transit fees for piping Russian gas to Western Europe. There are eight regional distribution companies. Transgas was created in 1998 from the merger of two previous entities and was then fully state-owned. In January 2002, the Czech

government agreed the sale (97% of the shares) of Transgas to the German utility, RWE for \$3.64bn. The takeover was approved by the Czech competition office (UOHS) in May. The deal also gives RWE the shares in the 8 distribution companies that were owned by the National Property Fund, typically about 50% of the total. The final sum totalled €4.1 billion, about 125 bn CZK. Under the terms of the deal Transgas is not allowed in the next 5 years to gain financial control over Moravske Naftove Doly – the only competitor in the Czech market – and also, it will not buy any new shares in the electroenergy or heating industry in the Czech Republic.

Other shares in the gas distribution companies had already been sold to various companies, creating a complex pattern of ownership. In 2001, a new energy regulatory body was set up to oversee the liberalisation of the electricity and gas industries and to set prices for energy. Almost all (98%) of the Czech Republic's gas is imported with only 2% produced locally mainly by a British company, Medusa Oil and Gas. Imports are from Russia (78%), Norway (15%), Germany (6%) and the Slovak Republic (1%). Norwegian imports are expected to increase somewhat in the next few years.

3.2 Estonia

3.2.1 Electricity

The Estonian electricity network is connected to the UPS/IPS system of the former Soviet Union and together with Latvia and Lithuania have formed a Common Baltic Electricity Market.

In preparation for entry into the EU the account and in some cases legal separation of the parts of the electricity system have taken place. The State electricity company, Eesti Energia, still retains control of the transmission and production facilities, although attempts were made to sell the Narva power plant in 2001, but this was abandoned late in the negotiations. However, two thirds of the distribution networks have been sold, to Fortum OY and the Sthenos Group. The peculiarity of Estonian power engineering is very big role of oil shale. More than 90 per cent of the energy produced in Estonia is made of oil shale. The Estonian oil shale company Eesti Põlevkivi belongs to AS Narva Elektriijaamad (51%) and Estonian State (49%).

In preparation for Accession market opening for 40 GWh and above customers occurs in 1999 and a regulator has been appointed. A new Electricity Market Law is being prepared which is expected to be approved by the Parliament in 2003. Estonian gas companies are all private-owned. The biggest of them – Eesti Gaas – is owned by OAO Gazprom (37%), Ruhrgas AG (32%), Fortum Oil&Gas OY (18%) and small shareholders.

3.2.2 Gas

Estonia retains a monopoly company, Eesti Gaas, however, foreign investors are active in the company. In 1995 GdF attempted to buy a share of the company, but this failed and instead Ruhrgas purchased 15% with a \$5.7 million investment. Subsequent investments have lead to Ruhrgas

owning 34% of the company, with Gazprom also investing, along with Neste Oy of Finland. Preparation are underway for the sector to conform to the EU's Gas Market directive.

3.3 Hungary

3.3.1 Electricity

Hungary has for many years been the only country in CEE with a privatised power sector. In 1992, the Hungarian Power Company (MVM) was created which owned the transmission system and some power plants, including the country's only nuclear power plant at Paks. MVM remained in state control. The other parts of the electricity system, most of the power plants and all of the distribution companies were privatised in 1994 following the implementation of the Electricity Act (1994). During the accession negotiations Hungary did not apply for any derogation concerning the energy market liberalisation. To conform to the EU Directive a new Electricity Act was passed in December 2001 and from 1st January 2003 customers with an annual consumption of greater than 6.5 GWh of electricity will be able to choose their supplier, opening up 33% of the market.

However lots of steps have been taken to meet with the legal requirements including unbundling, there are some remaining legal problems that hinder the liberalisation in practice. The biggest problems are related to MVM's position. Formerly it ran and owned the independent system operator (Magyar Villamosenergia-ipari Rendszerirányító Rt: Mavir) which has to be independent according to the legislation, but so far the state has not been able to pay the price for Mavir to the MVM. Without the system operator the liberalisation can not get a start, the tariffs can not be clear. As of 30 November 2002 no possible market player announced to the regulator (MEHI) its willingness to change to the partially liberalised electricity market from January 2002.

The other big problem is the so called long term power purchasing agreement what the MVM contracted with the investors of the powerplants and electricity distributors back in 1995-1997 when their privatisation took place. According to the agreements that covers 90% of the electricity supply (7500 MW) capacity 15-20 years the wholesaler is committed to purchase electricity from the powerplants at the price in the contract even if it is not able to sell it. It is quite likely that some distributor will purchase electricity from other sources causing losses to the MVM. In theory the costs related to the agreements can be burdened on the consumers but the question is that how much will be accepted by the regulator.

3.3.2 Gas

The dominant oil and gas company in Hungary is MOL, the largest company in Hungary in terms of sales. It was established from the consolidation of nine enterprises controlled by the state-owned OKGT into a single entity in 1991. Initially its shares were held by the State Privatisation and Holding Company (APV Rt). Since then shares in MOL have been progressively sold off, initially to the general public, but subsequently also to international investors. The 1995 Privatisation Act requires that the State retain 25% (plus 1) of the shares in MOL and this point was reached in 1998, by which time, international investors owned 52% of the shares. Most of the remaining shares (16%) were held by Hungarian private and institutional investors. MOL's business is approximately half gas and half

oil. Government also holds a 'Golden Share' in MOL which gives it rights of veto over major changes in the company Hungary is currently examining changes to its laws so that they will be compatible with the EU Gas Directive for its expected accession to the EU. The Hungarian Energy Office (MEHI) is a government body with broad powers of regulation over the electricity and gas industry, however the main decisions are still made by the Ministry of Economic Affairs and Transport based on political interest. MEHI's limited pricing authority is debated by the energy industry and by the European Union's country report as well.

In 2001, there were proposals to separate the gas and oil interests of MOL into individual companies and to offer 49% of the shares to foreign investors. Companies such as Ruhrgas and GDF were keen to buy the shares but in February 2002, the Government announced the abandonment of the sale and that it would sell a majority of the shares in the new gas company to the national development bank (MFB). After the new elections in April 2002 the new government shows interest in selling its MOL shares to foreign investments.

In the gas sector, MOL's main activities are in production, wholesale trade, foreign trade and transportation. MOL is the biggest regional oil-gas company in the region as in the fall of 2002 it became the biggest shareholder in Slovnaft (Slovak Republic).

At present, more than 75% of Hungary's gas needs are imported of which 80-85% is coming from Russia. Hungary has contracts for gas supply with Ruhrgas (Germany) and GDF (France) but these involve mainly swaps with Russian gas, not physical delivery. Indigenous production fell back 95% in the 70's to 25% in 2000. Russian gas is much the cheapest source of imported gas on offer and while there are investigations into imports from other sources, these are unlikely to represent a major proportion of Hungary's gas supplies.

There are several reasons why the further privatisation of MOL is on the political agenda. On one hand the foreign capital flow into Hungary is decreasing while the government's debt is increasing. (These are the problems that were the primary reasons of privatisation in the early 90's.) On the other hand the problem of household gas prices and the compensation scheme still has not been solved. Household prices are regulated and in this way the wholesaler complains that it suffers losses due to increasing import prices. Household prices will surely increase as the gap between cheap domestic production and import prices are increasing. A compensation scheme is under development now but there are no publicly known details.

Distribution of gas is handled mainly by six regional distribution companies, Tigàz (much the largest) Egaz, Fogaz, Degaz, DDGaz and Kogaz. It was decided in 1994 to fully privatise these companies (retaining a Golden Share). For DDGaz, Degaz, Egaz and Tigàz, foreign investors now own at least 75% of the shares, but for Kogaz and Fogaz, local government retains 50% and 40% of the shares respectively

Main Owners of the Regional Gas and Electricity Distribution Companies in 2001 and in 2000⁴

DÉGÁZ: Southern Lowlands Gas Distribution Company

DDGÁZ: South Transdanubian Gas Supply Corporation

K GÁZ: Middle Transdanubian Gas Supply Corporation

F GÁZ: Budapest Gas Works Company

TIGÁZ: Trans-Tisza Gas Supply Corporation

ÉGÁZ: North Transdanubian Gas Distribution Company

TITÁSZ: Trans-Tisza Electricity Supply Company

DÉDÁSZ: Southern Lowlands Electricity Supply Company

ÉDÁSZ: Northern Transdanubian Electricity Supply Company

ELM : Budapest Electricity Works

ÉMÁSZ: Northern Hungarian Electricity Supply Company

	DÉGÁZ (2001)	DDGÁZ(2001)	K GÁZ	F GÁZ	TIGÁZ	ÉGÁZ	TITÁSZ	DÉDÁSZ	ÉDÁSZ	ELM	ÉMÁSZ
Gas de France	72,6% %					63.93%					
EdF									27,7		
RuhrGas AG		41.38%		16.3%							
E-ON			31,22%				92 %	92%	27,7		
EnBW										27,25	
MOL RT	27.18%	16.78%				35.46%					
Italgas-SNAM S.P.A					50%+1						
EVN			31,22%								
RWE		41,38%		32,7	30%					55,26	44%
Budapest Local Government				50%+1						10,5	
Local Governments	4.9%										
Other			37,54						44,61		
Number of consumers	469 559	256 475	260 152	786 298	984 588	242 933	743 00	704 486	909 540	1 319 000	709 472
No. Of household consumers	438 880	242 000	242 220	752 405	931 882	228 551					
Gas sold to households Mcum	593	343	310	892	1 414	358					
Gas sold to not- households Mcum	638	531	480	1 481	1 475	634 5					
Electricity sold GWh							3 628	3 763	7 092	8 789	4 862

⁴ According to the annual review of Association of Gas Distributors, MEHI and annual review of electricity distributors

3.4 Latvia

3.4.1 Electricity

A privatisation plan for the State energy Monopoly – Latvenergo – was adopted in 1998. However, this was never approved and September 2000, during the adoption of the Energy Law provisions were included to rule out any privatisation of the power plants, distribution or transmission systems. Steps are being taken to ensure that market Directive is conformed to and market opening of the electricity sector has begun

3.4.2 Gas

Latvijas Gaze comprises of an export company, a storage company, a transmission company and four regional distribution companies. It supplies 345,600 households and 358 industrial consumers. Foreign partners in the Latvian State company are Gazprom (which owns 16%) and Ruhrgas (26%). The other major investor is Vattenfall which operates a district heating plant connected to the Riga airport.

3.5 Lithuania

3.5.1 Electricity

Lithuania has by far the largest capacity of the Baltic countries and is dominated by the 2 GW Ignalina nuclear power plant. Ignalina was built as a regional nuclear power plant but following independence in 1992 became the asset of the Lithuanian State. The power station distorts the countries electricity market, producing around 80% of the countries electricity and is still used to export to the other Baltic countries – 1.11TWh in 2001 to Latvia and 0.18 TWh to Estonia, and in particular to Russia (0.82 TWh) and Belarus (2.06 TWh). In addition to Ignalina there is one large – 1800 MW thermal power station – and some smaller CHP and hydro power stations.

In 2001 restructuring of the power sector took place and Lietuvos energija was broken up and two generation and two distribution companies established. So far the only major foreign investor is Eon, but the further privatisation of the distribution companies is expected. The transmission system and Ignalina remain in solely State control.

In preparation for accession market opening has begun for large consumers (over 20 GWh) and by 2010 all customers are expected to be able to choose their supplier.

3.5.2 Gas

The Lithuanian Gas sector remains under State ownership and to date has no major foreign investors.

3.6 Poland

Polish energy sector has attracted significant foreign investments. In 2001 investments in this sector accounted for about 5% of overall foreign investments. Electricité de France, which holds shares of thermal power plants in Krakow, Gdansk, Rybnik and Wroclaw, was ranked fifth in the PAIS⁵ rating of the largest single investors in Poland with overall investments in 2001 totally \$411 million.

The privatisation and restructuring of the energy sector is not based on a coherent policy. Since 1989 subsequent governments have been reversing policies of their predecessors. Some approaches have suggested selling the energy companies, while others have opted for their consolidation. The socialist Polish government, which was elected in 2001, has reversed its predecessor's policy for energy privatisation. At the beginning of 2002 the government revised its *Energy Policy Strategy until 2020*. The revision included general guidelines for restructuring and privatisation of energy sector. With regard to power production sector the government proposed integration of brown coal mines with the power plants supplied by them. The revision anticipates grouping of the Belchatow (4,320 MW), Turow (2000MW) and Opole power plants, and making them a strategic energy source that will remain state-owned (ensuring energy security). In addition, the government declared its intention to continue the privatisation of the distribution sector. Privatisation plans in the distribution sector for 2002 include: sale of Warsaw Electricity distribution company (Stoen) and a group of eight distribution companies (G-8). In October 2002 the Ministry of Treasury signed the privatisation agreement of Stoen, with RWE Plus (Germany). The company will be sold for amount of PLN 1.5 billion. The agreement still needs to be approved by the Ministry of Internal Affairs and the Office for Competition and Consumer Protection.

3.6.1 Electricity

The Polish electricity sector is dominated by coal, with 94% of its capacity, the remaining capacity is hydro. Poland is the largest producer and consumer of electricity in the CENTRAL system, with an annual generation of 145 TWh. By the end of 2002, the gas and electricity sectors are expected to be fully in line with current EU market directives for these sectors. In 2000 Poland established the first Power exchange in the region, the Giielda Energii SA. Since January 2002 users consuming more than 10 GWh of electricity have been eligible to choose their supplier (51% of the market). It is anticipated that by 2005 all consumers will become eligible. A regulator has been appointed, and separate companies are now responsible for generation, transmission and distribution.

Enron's wholly owned subsidiary, Elektrociepownia Nowa Sarznya (ENS), owns and operates a 116MWe, 70MWth natural gas-fired plant in Nowa Sarznya in southeastern Poland. The \$132m plant, which entered into full commercial operation in June 2000, is the first gas-fired independent power project in Poland funded on a project finance basis. ENS signed a 20-year power purchase agreement with grid operator PSE in April 1997.⁶

In November 1999, the terms of the contract were re-examined by the Supreme Court at the request of five senators. The senators noted that in a situation where Polish power plants have problems

⁵ Panstwowa Agencja Inwestycji Zagranicznych – National Agency for Foreign Investments

⁶ *FT Energy Newsletters - Power in East Europe January 11, 2001 Power in East Europe*

selling their products due to a 30 percent oversupply in the market, the utility PSE agreed to buy Enron power over the next 20 years at higher than market prices. The region's other power plants are much disturbed by the contract that has already led to PSE refusal to buy their power even though the Enron power plant is just being commissioned.⁷

3.6.2 Gas

Historically, the Polish natural gas industry has been dominated by the Polish Oil and Gas Company (POGC). This was established in 1976 and in the oil sector is responsible for exploration, development and production (E&P) of oil as well trade in oil and oil products. In the gas sector, it was established as fully vertically integrated monopoly responsible for the entire gas value chain from exploration in Poland to retail supply to final consumers. At a local gas distribution level, it operates through regional enterprises covered by concessions. The Energy Law of 1997 began to introduce liberalisation measures of the type that would be needed for Poland to join the EU. These included provision for Third Party Access (TPA) to the transmission system and the control of tariffs by the Polish Energy Regulatory Authority.

In 1996, it was changed to a joint stock company but all its stock was held by the state. An ambitious programme of restructuring and privatisation was planned, which would involve the divestment of 17 construction, repair, manufacturing, geophysical and drilling companies, the establishment of separate oil and gas companies. Little of this plan was carried out and the Treasury subsequently proposed that POGC be split into six entities, four regional distributors, a trade, transmission and storage company and an upstream company. This plan ran into opposition from other ministries and POGC independently carried out what it called a 'little restructuring', which involved the establishment of six regional transmission divisions, 23 independent gas distribution units and an upstream unit. POGC is beginning to form joint ventures with Western companies, such as FX Energy (USA) and Eurogas to explore for and produce oil and gas.

At present, Poland's imports of gas come almost exclusively from Russia, but POGC recently signed a letter of intent with the Dutch company, Gasunie for imports of gas from the Netherlands and it signed an agreement with Danish companies that would allow import of Norwegian gas through a new gas pipeline via the Baltic Sea. It is also considering imports of LNG from Qatar and Nigeria although this would require major investment in a new LNG terminal. However, demand is not increasing as rapidly as expected and the deal to buy Norwegian gas is being delayed.

For the future, the Yamal pipelines that will bring supplies of gas from Western Siberia to Western Europe will be crucial. Work on the first Yamal pipeline started in 1996 and gas deliveries to Germany and Poland began in 1999. It is expected to reach full capacity in 2003. A second pipeline has been under discussion for several years, but its route has not been established and demand for gas in Western Europe may not warrant its construction. Nevertheless, the Yamal pipelines will bring additional revenue to Poland and given the huge volumes expected to be transported (of the order of 10 times Poland's demand), it will be difficult to justify imports of gas from the West given the cheap and easy access to supplies from this pipeline.

⁷ *Polish News Bulletin 17 November 1999 PSE - Enron Contract Suspected By Senators*

3.7 Slovakia

3.7.1 Electricity

The dominante player in the Slovak electricity industry is the State owned Slovenské elektrárne (SE) which accounts for 85% of the countries electricity production. There are three regional distribution companies which are responsible for the distribution of electricity to final customers (distribution and retail). In 2001 these were transformed into joint stock companies and then privitised in 2002, one each being sold to EdF, RWE and Eon.

In December 2001 SE was separated into three companies, the grid operator (SEPS), the generator (SE) and a new combined heat and power company (TEKO). The further privitisation of SE is expected in the coming years, with up to 49% of the company being sold. The current ownership of Slovak electricity enterprises can be seen below. After the first "road show" with potential investors, the privatisation adviser of Slovak government for the sale of SE (Slovenske elektrarne - State owned monopoly producer), Pricewaterhouse Coopers, announced that among 22 addressed foreign investors (12 of them American, 10 European ones), 11 showed their clear interest. One of the goals of this first "round" was also to test how far the proposed ways of the SE privatisation reflect the investors' ideas.

The government recently officially stated 2 options for the privatisation of SE (except hydro power plant Gabčíkovo which is a subject of the international suit with Hungary in Hague and therefore, it will still remain in the State ownership). First, to sell SE as a whole, or second, to establish 2 subsidiaries - one with the nuclear power plants, the other one with all remaining power plants - hydro, coal power plants- and to sell them separately. The second case requires restructuring of SE, before its sale. Most companies prefer to bid for a restructured SE, the companies interested in the purchase of the whole SE are in minority. The adviser did not comment more details. Among potential interested companies (according to the very first dealings) belong e.g. E.ON, RWE, EdF, British Energy, Enel, International Power (UK), Iberdola.

Until the end of July 2002, the official advertisement for the tender started the process. The transaction is expected to finish in the 1st half next year. It is supposed that the last step of the current government will be the creation of so-called short list of interested companies. At the same time as the privatisation process the complicated issue of nuclear stranded costs will be resolved by government - related to the decommissioning of the Bohunice A1 reactor, and the premature shutdown of the Bohunice V1 two reactors and two non-completed units of Mochovce 3-4.

All three electricity distribution companies have already been privatised - ZSE (Western Slovak Utility) by E.ON Energie, SSE (Central Slovak Utility) by EdF and VSE (Eastern Slovak Utility) by RWE Plus. Since January 1, 2002, the grid has been separated from SE, and remains in the complete State ownership. Privatisation of all electricity companies means the sale only upto 49% of any one company. The Energy Act of 1998 lays out the framework for the power sector to conform to the market Directives. As such from the beginning of 2002, 26% of the electricity market has been opened to competition – those consumer more than 100 GWh, by 2005 this threshold will be reduced to 20 GWh.

3.7.2 Gas

Transmission, distribution and sale of natural gas in the Slovak Republic are carried out by Slovensky Plynarensky (SPP). Like Transgas of the Czech Republic, its major activity is transit of Russian gas to Western Europe, accounting for 45% of its turnover with 70% of Russia's gas exports to Western Europe passing through the pipeline. It transmits twice as much gas as Transgas. Local gas production is small and the vast majority of its needs are met by Russian gas. An independent Office for Regulation of Network Industries is being established to regulate the industry. In March 2002, after a tender process in which only one bidder finally placed a bid, the government decided to sell 49% of SPP to a consortium of the French national gas company, GDF and the German gas company Ruhrgas (itself subject of a take-over bid by E.ON, the German utility). Once the stake has been acquired, the Russian gas company, Gazprom, will acquire up to a third of the consortium's shares. The acquisition will not only expand the scope of the three companies involved, it will also increase security of supply for Gazprom to its Western European markets.

3.8 Slovenia

3.8.1 Electricity

The government has split the electricity company and is selling off 45% of the 5 distribution companies, and shares in some generating companies. Krsko remains wholly state-owned. There is a long-running dispute with Croatia's HEP, which claims part ownership of the nuclear power plant at Krsko. Up to the start of the year 2000, HEP had claimed \$80m 'rent' from Slovenija's electrical company for its exclusive use of Krsko. The power sector is already unbundled and consists of the TSO, 4 generating companies and 5 distribution companies. Slovenia is joint owner, with Croatia, of the Krsko nuclear power plant.

3.8.2 Gas

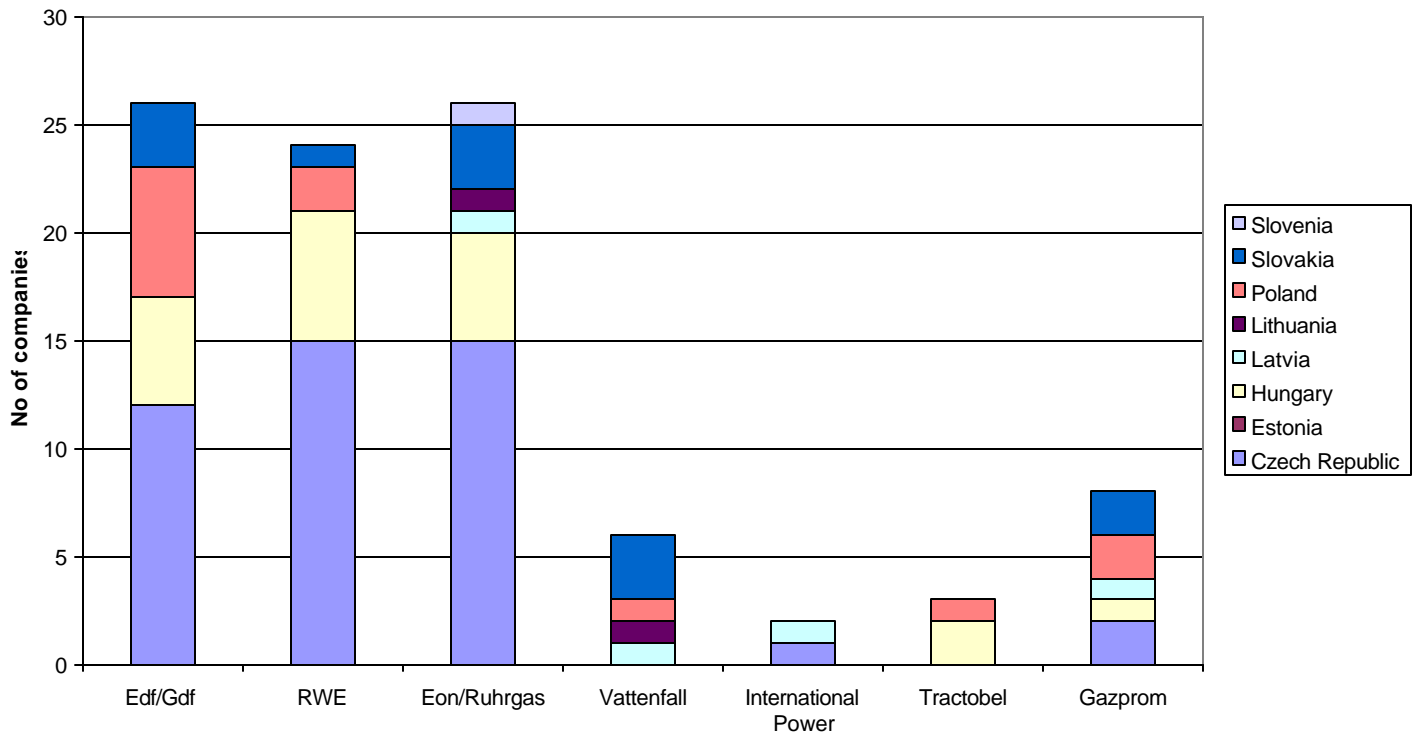
The main gas company in Slovenia is the state-owned Geoplin, which owns the gas grid and is responsible for the purchasing and wholesale of natural gas. It also transmits Russian gas to Croatia. 19 municipal organisations carry out distribution to final consumers. Geoplin is 24.5% owned by the state, 34.6% owned by 6 of the regional distributors, with the rest owned by a range of shareholders including some of the other distributors. In September 1999, a new Energy Law led to measures designed to liberalise Slovenian energy markets and to the creation of a Slovenian Energy Agency, which will determine consumer prices for gas and electricity. About 60% of Slovenia's natural gas comes from Russia, with the rest coming from Algeria via the Trans-Mediterranean pipeline through Tunisia and Italy. In 1995 Italgas (part of Italian energy group ENI) bought a stake in one of the regional gas companies Adriaplin. Italgas now has 51% with the remainder held by Austria's Steirische Ferngas and the Slovenian state gas company Geoplin. The initial project for Adriaplin is development and expansion of a regional network, with focus on the municipal areas of Ljubljana and Maribor. It has access to both Algerian and - via Hungary - Russian gas. The deal gives Steirische Ferngas access to Algerian gas as well as Russian gas supplied via Hungary to Slovenia. Adriaplin has also bought Slovenski Plinovodi, a group based in Nova Gorica, Slovenia, which controls seven thirty-year gas distribution concessions and one concession for the purification of water from the urban network.

4 Impacts in Central Europe

4.1 Mergers and Acquisitions

Across the region there is the clear dominance of a few EU companies in the energy market. As can be seen the graph below, EdF/GdF; RWE; and Eon/Ruhrgas overwhelmingly dominate the foreign investments within the region. Between them these three energy groups make up over 75% of the foreign investment from the major companies. The clearest example of the dominance of these companies is in the case of the Slovak distribution companies. During its privatisation the sector was divided geographically into three parts which were then bought by EdF, RWE and Eon. A similar trend could be said to overtake the whole region.

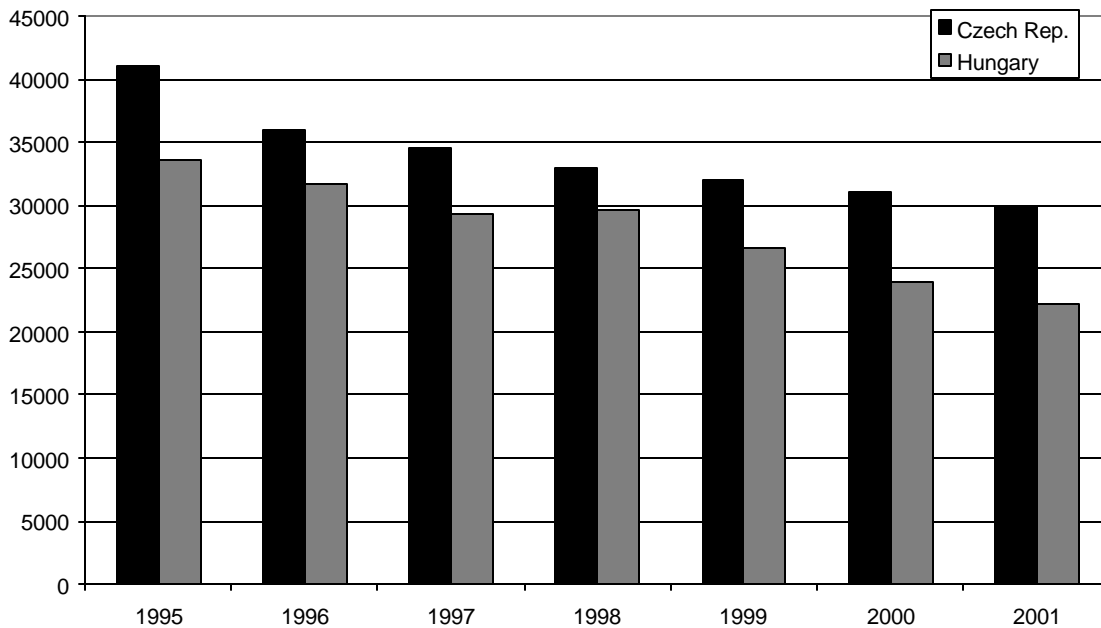
Investors into Energy Sector in Prospective EU Members



4.2 Employment

As with other industrial sectors the restructuring is resulting in job losses and as in other areas, these job losses are much higher in CEE than in the EU. As can be seen the graph below in the period 1995-2001 there has been a 30% loss in jobs in Czech Republic and Hungary, compared with an EU average over the same period of 20%.

Employment Levels in Czech and Hungarian Energy Sector



4.3 Impact on Price

In Croatia Sept 2002: The Croatian Employers' Association (HUP) on Friday 20 September asserted that with the implantation as received of a new tariff system the power became considerably expensive for the economy as well, although the government and the Croatian Power Industry (HEP) claimed that this would not happen.

The price of **electricity** has become higher by average 18.5 per cent for legal entities, the employers complained. The government and HEP previously promised that the new system for the payment would disburden the industry.

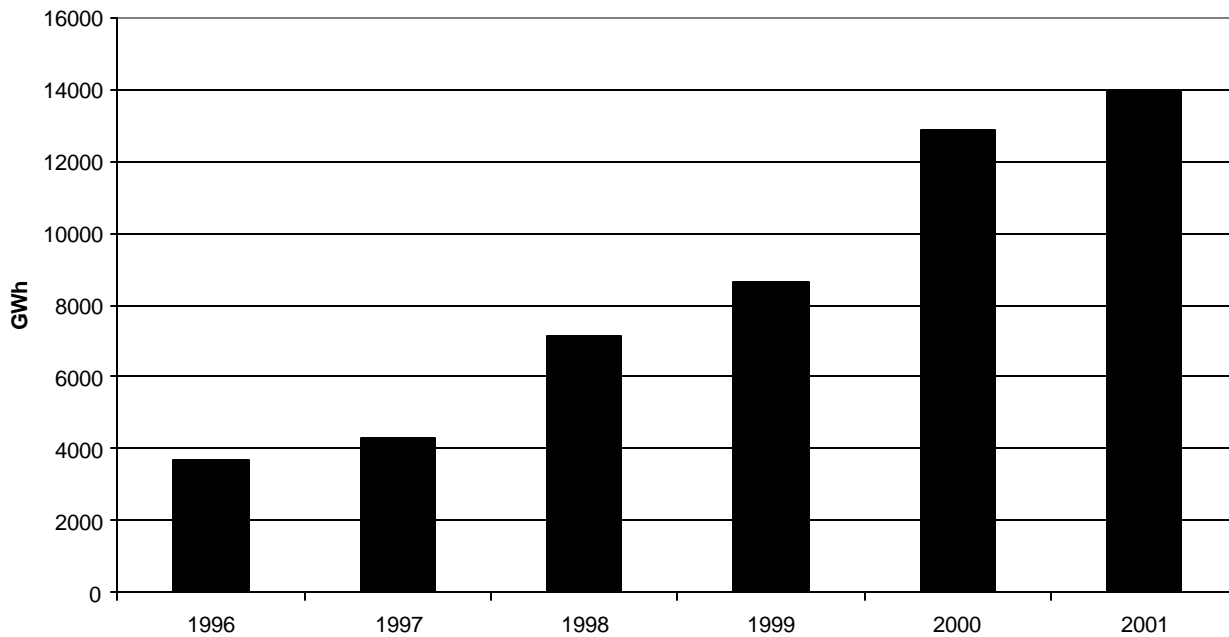
4.4 Electricity Import/Export

Export from CENTRAL countries to the EU continues at pace as can be seen in the graph below. Over the past six years there has been more than a three fold increase in electricity export. The largest exporter is the Czech Republic, which acts as the conduit for electricity export for the region (as it imports a significant volume of electricity from Poland). As part of the accession process projects are being developed to further strengthen the export/import infrastructure, these include: -

- Enhancements of transmission capacity between Slovakia and Hungary, Poland, Austria and Ukraine;
- Enhancements of transmission capacity between the Czech Republic and Poland, Slovakia, Germany and Austria
- Lithuania-Poland electricity interconnector (as part of a larger Baltic Ring)

- Reinforce interconnections Poland-Germany

Export of Electricity from CENTRAL and UCTE Areas



Source: UCTE 2002

4.5 Impact of Nuclear policy

Nuclear power has historically been more than just an electricity generation, it was borne out of the nuclear weapons program and has been used as a vehicle for political control. In Eastern Europe, Moscow organised the construction of nuclear power stations across the region, but retained full control of the supply of nuclear fuel and its removal once used and thus retained key control as they were the only country manufacturing this particular technology. Furthermore, in the case of Ignalina in Lithuania, the reactor was built as regional reactor, supplying electricity in particular to Belarus and the NW of Russia.

The political changes in Eastern Europe in 1989 and 1992 have also had a significant impact on nuclear power in the region and the operation of the facilities have been used by all parties as a negotiation for further reforms and financial assistance.

Since 1989 the international community has had a stated policy objective of the closure of the oldest designs of reactors in Eastern Europe, those being the VVER 440-230s and the RBMK. This included ten VVER reactors operational in Armenia, Bulgaria, Russia and Slovakia and fifteen RBMKs operation in Lithuania, Russia and Ukraine (however, the final reactor at Chernobyl was closed in December 2000). Two major initiatives have been put in place to close this generation of reactors.

a) Accession Agreements: The closure of reactors is included in Accession Partnership Agreements, with Bulgaria, Lithuania and Slovakia. The dates finally agreed to in December 1999 were on average five years later than originally envisaged in Agenda 2000, the original blue-print of enlargement of EU. However, even the current dates, as outlined below now appear in danger and in particular the Bulgarian Government is keen to operated units 3 and 4 of Kozloduy will beyond the dates envisaged and the Slovak nuclear industry has made repeated statements that following its retrofitting program, Bohunice V-1 is now safety to operate on the long term.

In order to reach agreements on closure, considerable financial assistance has been given to the countries concerned, specific programs have been set up, such as the Nuclear Safety Account – to enhance safety – or the Decommissioning Fund. Although nuclear plays a fundamentally important role in the energy sectors in these countries, there has been a disproportionate level of funding to these reactors, rather than investing in the alternatives to enable their closure.

b) Chernobyl: In 1995 the EU and G7 signed a Memorandum of Understanding with the Government of Ukraine that sought the closure of the Chernobyl nuclear power plant by 2000. In return a package of grants and loans worth €2.3 billion was proposed to enable the closure of Chernobyl. The MoU stated that “In order to support the closure of the Chernobyl nuclear power plant the investment program will identify least-cost power supply investments to meet Ukraine’s future national power requirements in the context of a competitive market-based power sector”. One of the projects mentioned was the funding for the completion of the part built reactors Khmelnytsky 2 and Rovno 4. The inclusion of these reactors was as it was claimed that they were the only base load power plants that could be completed by 2000 to enable the Chernobyl reactors to closure. However, despite the closure of the final unit of Chernobyl in December 2000, no decision has been taken on the funding of K2R4.

In November 2001, the day before the final deal loan agreement was to be reached in the EBRD, the Ukrainian Government asked that some of the loan conditions, namely the level to which electricity prices must rise for domestic and industrial consumers. This situation was almost identical to the first attempt by the EBRD to lend for a nuclear power plant at Mochovce in Slovakia, when the Government withdrew the project due to the rapid reforms – price rises – included within the loan agreements.

In both Slovakia and Ukraine, the funding of the nuclear power plant has been used by the EBRD to try and force through sector reforms. The reforms are gambling that the countries concerned want the nuclear power plant funded enough to undergo the pain of very rapid reforms. In the case of Mochovce, it would have required 20% within days of the loan agreement being signed and in K2R4 that wholesale and retail electricity prices be raised by 24% and 30% respectively. Although these increases are justified by a requirement to pay back the loan, given that the prices are required across the whole electricity market and given that paying back the loan is not required for some years, the rapid rises cannot solely be justified in the light of one particular project.

5 Continental Themes and Trends and issues

5.1 EU Market Energy Market Directives, EU Accession & IFI pressures

In continental Europe a concerted effort is placed upon States to reform their energy sectors and embrace the liberalisation and privatisation of their energy sectors. The major institutions that are preparing this are: -

European Commission

Energy Directives: The Commission, with the mandate of some Member States is pushing for the acceleration of the energy market liberalisation by revising the gas and electricity Market directives. These directives are currently under review within the European Council and must then be re-reviewed by the European Parliament, before finally being adopted by Member States, however, the current drafts of the directives require: -

- Bring forward dates for the full market opening of both the electricity and gas markets.
- Increase the unbundling (separation) requirements of energy companies.

This will both require increase in the rate of reform leading to the full liberalisation of the energy market in Member States and increase the likelihood that privatisation will follow. It is expected that during 2003 even the French electricity giant Electricité de France will be partially privatised. Furthermore, other measures being instigated the Commission, in particular through the Trans-European Networks (TENs) program is increasing the physical capacity of interconnectors between Member States – specifically in the electricity sector – to increase the flow of energy between Member States. The purpose of which is to create one single EU energy market, rather than 15 individual but liberalised ones.

Accession: Initially through the PHARE program, but now thorough the Accession partnership agreements, the EU institutions require that countries wishing to join the EU must liberalise their electricity and gas markets. As of July 2002 the energy chapter has been closed (negotiations completed) for all accession countries except for Bulgaria and Romania. This means that the countries must have to made the following reforms including⁸: -

- Decided on a overall energy policy with clear timetables for restructuring the sector.
- Prepare for the internal energy market –electricity, gas and renewable energy.
- Improve network links to create a real European market.

However, what is not always transmitted to the wider world is that within the EU there is a range of patterns of ownership, including state ownership of generation in some countries (Sweden, France, Ireland) partial state ownership in others (Italy, Finland), mixed municipal/private (e.g. Netherlands) while distribution may be state-owned (France, Italy), municipal, private (UK), joint municipal-private ventures (Belgium), or a mixture (Germany).

⁸ Enlargement of the European Union; Guide to the Negotiations Chapter by Chapter, July 2002.

Despite this the political pressures for privatisation remain significant and the impact of the electricity and gas market goes beyond the accession countries and is seen to be a driving force for reform across Eastern Europe as a whole, ‘ *A major factor has been the adoption of energy Directives (electricity and gas) by the EU; these have strongly contributed to the emergence of a model, which is now generally accepted in the region*⁹. The IFIs also use their economic leverage to encourage restructuring of the power sector which is usually a euphemism for privatisation. The EBRD was established in 1990 at a time when the privatisation of energy utilities was just beginning in Western Europe. The EBRD sees great benefits in the introduction of private companies in the power sectors and has lent significantly to countries, such as Albania, Armenia, Balkans, Moldova, Russia, Slovak Republic and Ukraine to encourage privatisation of the power sector. The Bank’s energy policy makes clear its desire to see private investors in the energy sector and in particular its preferred options for this to occur are through privatisation of the existing system or by use of the assets in the energy system, see box below.

EBRD – Energy Policy on Privatisation¹*Private participation in generation and distribution/supply should be encouraged as a means to promote competition and operational efficiency in the energy sector.* The Bank believes that in its countries of operation, given the heritage of poorly managed state controlled monopolies, that the introduction of the private sector in a well regulated / competitive context will lead to the most efficient outcome. The private sector may be introduced in three main ways: (i) by divestiture of state or municipal ownership through sale of shares in energy companies or sale of their assets such as generating plants, (ii) by concessions for the use of state or municipally owned assets by private operators, and (iii) by encouraging investment in green-field projects, though this third way is likely to be less frequent in Bank Countries of Operation in the short term.

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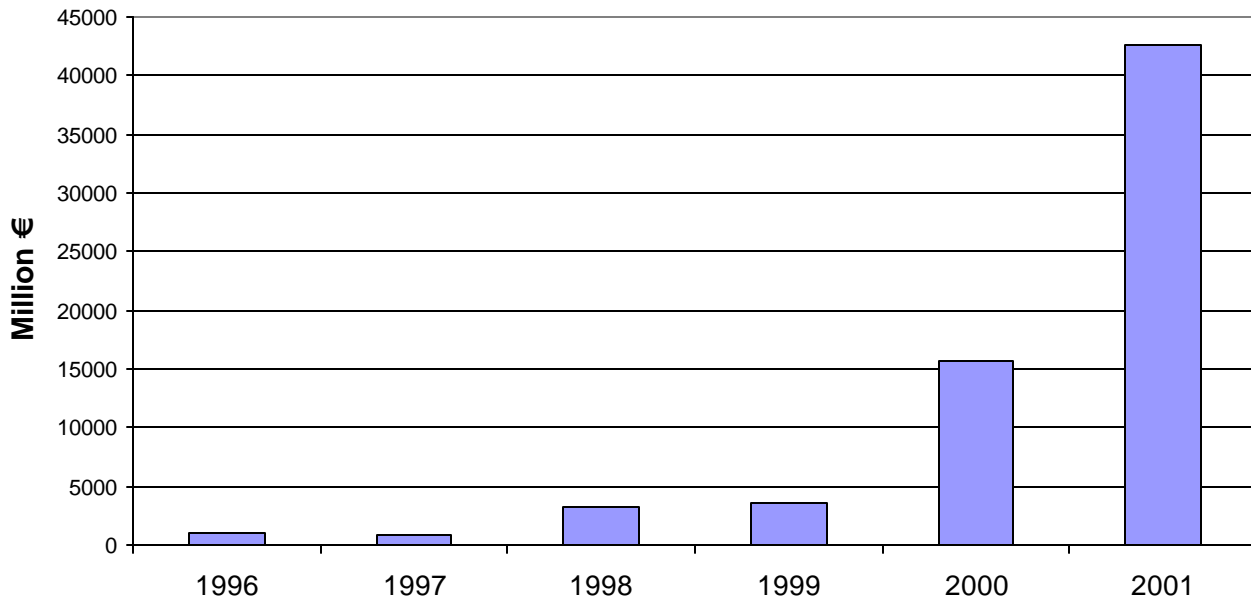
5.2 Market Concentration Across a Enlarged Europe

The prime purpose of engaging along the privatisation and/or liberalisation road was to increase competition. This, it was said, would result in lower prices and thus benefit consumers. However, it is now increasingly clearly, at least within the EU, that this process will not on the long term lead to increased competition, but rather a small number of companies will dominate the power sector. The graph below highlights how the mergers and acquisitions involving the seven largest electricity companies in continental Europe over the past few years. This concentration dynamic has reached a

⁹ Energy Policy of European Bank for Reconstruction and Development, 1998, page 6

dramatic level during the last two years with acquisitions rising from €3.5 billion to €42 billion, a 12 fold increase.

Combined Acquisitions of EdF, Eon, RWE, Enel, Vattenfall, Endesa and Electrabel, 1996-2001



Source: *Electricite de France 2002*

The dominance of these companies in the mergers and acquisitions market has not been regional and they are prevalent and predatory in Western Europe as they are in Eastern Europe. Many believe that within a decade only a handful – probably five – companies will dominate the whole of Europe’s energy market. This raises two specific problems: -

- 1) This reduces the competition and thus undermines the whole ethos of liberalisation.
- 2) The relative political influence of these multinational companies is huge in relation to the national regulators. This is particularly important in the case of electricity, which cannot be stored and thus is more open to market manipulation than other commodities.

5.3 Social and Environmental stresses created by privatisations

5.3.1 Employment

It is clear that within EU Member States there has been and will continue to be a decrease in employment within the energy sector as a result of its restructuring. As noted earlier, within the electricity sector alone, the EPSU noted that in the 1990s there was a loss of 250 000 jobs across the EU. Similar decreases might be expected within the gas sectors – although probably less pronounced, as the tendency to increase the use of gas, both for domestic heating and as fuel for power stations. However, further restructuring, especially in France, is likely to result in the further lowering of the workforce in the energy sectors in the EU.

The data for Accession countries is less complete. However, in the Czech Republic between 1995-2001, there was a 30% decline in jobs in the energy sector, a greater decline than in the EU over the same period. Given this, and the general theory that within most former communist countries there was a tendency to overstaff within the State run companies, it is assumed that there will be a significant fall in employment numbers in the energy sector in the region.

The main driver to reduce employment levels is to decrease production costs and increase efficiency. However, there are concerns that if the reduction is too great that it will impact upon the safe running of facilities and therefore negatively impact upon the efficiency. This has already been seen within the nuclear sector. In Sweden, it was reported in May 2001 that the regulator was concerned that pressure to cut costs in a deregulated electricity market may “tempt license-holders to take short-cuts at the expense of safety.” Similar concerns have been raised in other Member States, including the UK.

5.3.2 Price

The privatisation and liberalisation of the energy sector, was largely promoted as a mechanism to ensure that consumers received cheaper energy. However, as can be seen that has not been reflected in the final bills to small consumers. In the EU prices for domestic consumers have fallen by only 2% over the last decade, but prices for industrial consumers have fallen by 12%.

In the UK, the introduction of a new electricity trading regime in 1991 resulted in the decrease in the wholesale price of electricity by around 18% in its first year of operation. However, over the same time period the price of electricity to domestic consumers fell by only 2.5%, according to the UK body EnergyWatch. Furthermore, they calculate that at minimum, given that 50% of the price of electricity is accounted for by generation costs, that consumers should have seen at minimum a 9% decrease in their bills. Across the whole of the UK therefore domestic consumers should have seen a saving of £568 million (€950 million) but rather they received only £153 million, therefore the distribution companies made an addition profit on domestic consumers of approximately £400 million (€660 million).

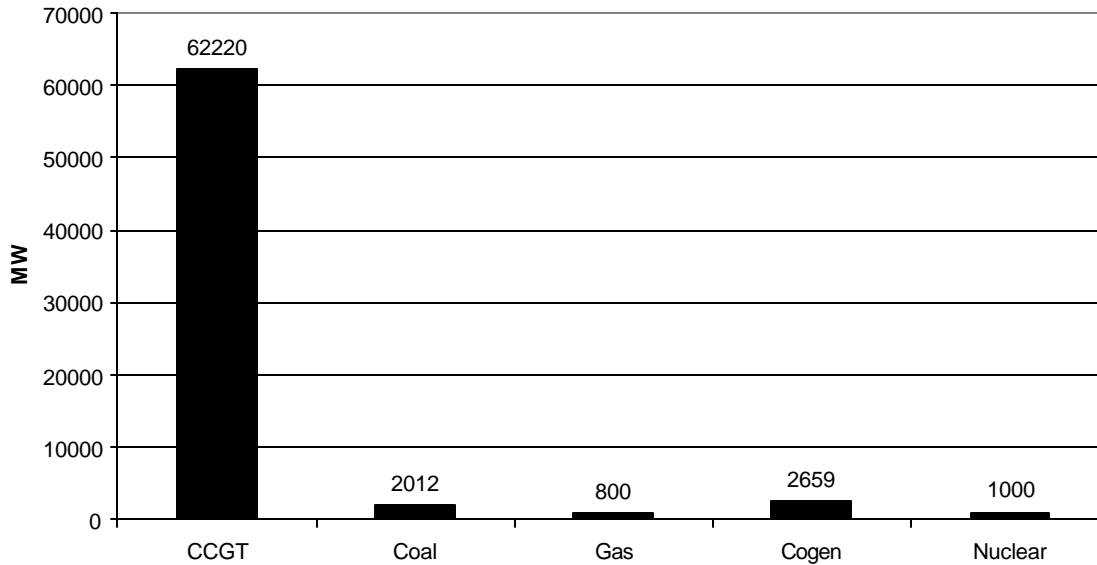
5.3.3 Security of Supply

The introduction of a fully liberalised electricity market raises serious concerns on security of supply, as there is little incentive to save energy and thus demand will increase, there is a trend to only build gas fired power stations and there is a tendency to ignore environmental considerations.

This was a phased development in the UK when the ruling was changed to allow the construction of gas fired power stations at the end of the 1980s. Previously, the use of natural gas was restricted to industrial and domestic use, as the fuel was considered ‘too valuable’ to burn in power stations. The change in policy resulted in the ordering of around 20 GW of new gas fired power stations which resulted in significant overcapacity in the UK. A similar dependency on gas for the future ‘conventional’ power stations can be seen in the figures new build in the EU today. The graph below

shows the dominance of natural gas across the EU and shows that approximately 90% of new build is being done using CCGT technology.

Capacity of New Power Plants within the EU in August 2002



Source: Platts, *Power in Europe 2002*

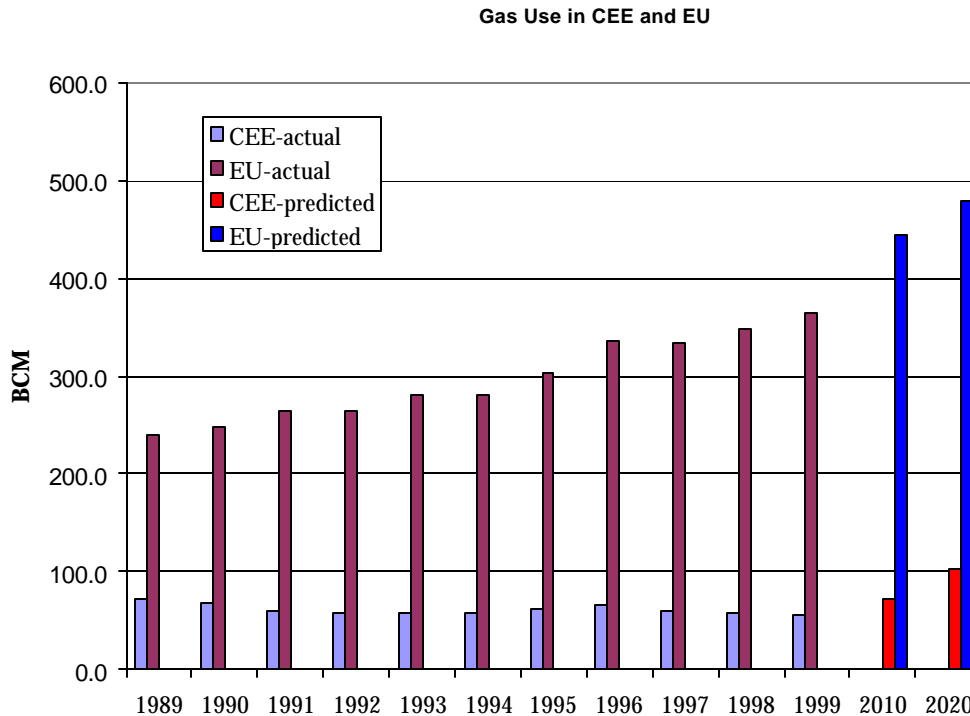
The reason for this 'build only gas' philosophy is three fold:

1) The price of construction on gas fired power stations is cheaper and quicker than the alternatives. A nuclear power plants costs around \$2000/kWh; a coal station around \$1000/kWh, but a gas station only around \$500/kWh. Furthermore, as gas station will take around 3 years to build while a nuclear up to 10 years. Therefore investors have to put up less and receive a return on their investment much quicker.

2) The gas fired power stations tend to be made up of smaller units that are more flexible and can be turned on and off to both follow demand and price. Thus increasing their attractiveness.

3) They produce less Co₂/kWh than coal and don't produce nuclear waste, thus are more environmentally attractive.

It is widely expected that Member State's and accession country's use of natural gas will increase significantly in the coming years. This increase will occur both as a result of an increase in demand within the Union and gas being used as a replacement when the older, nuclear and coal, power plants are closed. The graph below shows the historical development of gas use in both the CEE and the EU.



Source: European Commission and BP Statistical Review 2000

Of interest to note is the huge variation between consumption levels in the two regions, with the CEE currently using only one seventh the amount of the EU, despite having 25% of the total European population. Also, during the 1980s gas use in CEE declined by only 20%, which is somewhat surprising, as this was a similar decline in energy use as a whole. Given that much of the gas had to be imported at high cost to the national economies of CEE, it is surprising that there was not an even greater decline in its use.

Within the CEE, use of natural gas will increase nearly three fold over the next two decades while, in the EU, the increase is predicted to rise to less than a quarter of this. Within the power sector, natural gas use is expected to increase from 77 Mtoe in the EU in 1995 to 186 Mtoe in 2020, while in the CEE, over the same time period, the increase will be from 8.5 Mtoe to 47.2 Mtoe. Once again, there is a much greater rate of increase within the CEE, with, on average, an annual increase of 7.1% compared to 5.0% in the EU.

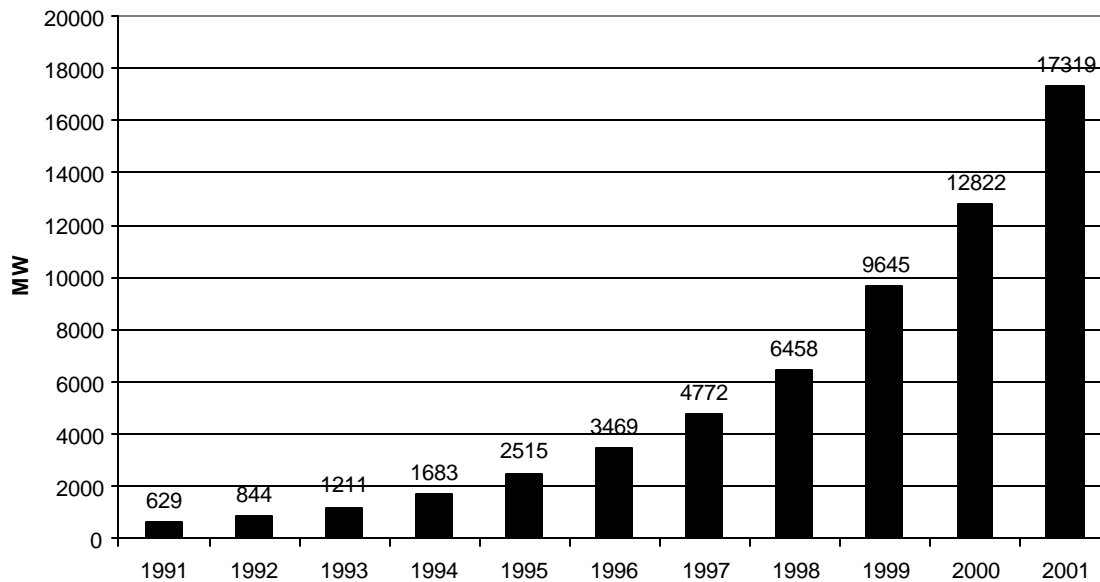
5.3.4 Environmental

It is clear that within the power sector the liberalisation process have brought many advantages. In particular the opportunity for independent power producers, which are often smaller renewable

energy companies. Within the EU there has been a significant increase in the speed of introduction of renewable energy as a result of the national legislation to support renewable energy technologies. However, on the EU level, the Council of Ministers, refused to introduce binding targets for the introduction of renewable energy. The 2001 Directive on renewable energy, instead set a EU wide target of 12% of renewables by 2010, including 22% of electricity. However, many believe that without binding targets this highly ambitious goal will not be met.

In the EU some renewables, in particular, wind power is extremely successful. The growth of wind power has been constantly increasing over the last decade, with the installed capacity rising from 629 MW in 1991 to 17 319 in 2001. The graph below demonstrates this increase.

Wind Power Cumulative Capacity in EU



Source: BTM Consult and European Wind Energy Association, 2002

Of important to note is the massive contribution that Germany makes, over 50% of the EU's total. This has been achieved in recent years due to the support mechanism used. In Germany, and in Spain, Denmark and Italy a 'feed in tariff' system has been adopted, whereby the producer of electricity from renewable energy is guaranteed a set price for their electricity.

Other renewables have not fared as well, in particular biomass has so far not increased its installed capacity and energy or electricity use as originally envisaged. While other new renewables, solar pv, wave power etc have yet to be able to compete commercially with conventional power sources.

Nuclear power is clearly disadvantaged from the introduction of a liberalised electricity market. In recent years it is clear that the global trend of more liberalised electricity markets has reduced orders for and construction of new nuclear power plants. Liberalisation has forced some utilities to take a more market-orientated approach, which has tipped the balance against nuclear power in a number of key areas.

5.4 Inadequate democratic/transparency gains from processes

There are three key stages along the road to the reform of the energy sector. Firstly, a body – usually an international body, the European Union, World Bank etc, proposes a particular model of reform. Secondly, this is adopted by a particular country. Thirdly it is implemented. To assess the transparency and democratic base of the reform of the energy sector, it is important to assess each of these stages. It is interesting to look at each of these, but in reverse order.

5.4.1 Energy Reforms lead to increase Public Accountability?

One would assume that the process of liberalisation of the energy sector would lead to increase transparency – in particular of accounts – and thus increased public accountability. This is especially the case when compared to the tightly controlled State energy sectors of many countries in the former Soviet Union. However, there is growing recognition that the liberalisation and privatisation process in the energy sector is moving control from a state owned monopoly to a private regional oligopoly. This can be seen in the extent of the domination of a small number of companies within the EU energy sector and increasingly in Accession countries and Eastern Europe. This can lead to a reduction in public accountability for the following reasons:

The international ownership of the companies often means that the decision making may ultimately be made in the parent company headquarters, geographically and socially far removed from the public which a energy utility may serve.

The requirement for private companies to give ‘share-holder value’ will take precedence over the views or needs of the society which a company may operate in.

The turnover of these ‘super-utilities’ are vast and often this translates into political influence. This raises concerns given the political influence that these companies have, especially in relation to the energy planning departments or the regulator. This is particularly true in Eastern Europe, for example of EdF in 2000 has a global turnover of €34.4 billion, which recently purchased one third of Slovakian distribution network. The total GDP of Slovakia, in 1998 was \$18.15 billion (€18.00 billion).

5.4.2 Public Consultation for Reform Processes.

The public has not been consulted on the transformation of the power sector in the countries concerned. The Governments and international institutions tend to give the view that there are two options, the status quo or the privatisation of the sector, with no other possible ways forward. This is very much the view of the international institutions, who often make funding in the sector conditional on the privatisation.

5.4.3 Public Consultation within International Bodies.

The economic and political influence of the large energy companies plays an important role in the development of the policies of the international bodies, in particular the European Commission and the International Financial Institutions (IFIs). Despite considerable pressure by civil society public accountability of the institutions remains weak. Furthermore, the power of countries from Eastern Europe remains weak or non-existent.

5.5 Other Factors Effecting Restructuring

There are two over-riding drivers for the restructuring of the power sectors of different countries. Firstly, the general trend towards privatisation of previously state owned sector and in particular utilities, e.g. energy, communications, transport, water etc. In some sectors there is some reflection and change of direction e.g. water, but in general Western financial assistance in these areas is conditional upon greater involvement of the market. This can be graphically seen in the recent, September 2002, Ukrainian Country Strategy report produced by the EBRD, which is included in the text below. This highlights how privatisation is the key requirement for investment in the utility sectors.

EBRD - Ukraine Country Report: September 2002

Financing will be offered for large-scale privatisation-related investments as well as smaller private sector investments in power generation and distribution. Regular policy dialogue on energy sector reform and privatisation with the authorities, co-ordinated with donor agencies and other stakeholders, has proved successful in the preceding strategy period, resulting in milestone privatisations of electricity distribution companies and significantly increased cash collections. The Bank will continue to play a leading role in this dialogue, encouraging the government to address additional challenges such as chronic sector indebtedness. The Bank also plans to be active in rail and air transportation, areas where both the public and private sectors are involved, and where the Bank can have an impact on tariffs, procurement practises, sector consolidation as well as further privatisation. In telecommunications, the Bank will only propose investments when the government can demonstrate a consistent approach to sector reform.

Secondly, the sale of the sector, or at least parts of it, are needed to raise revenues either for investments in the sector or general improvements in the country's balance of payments. To attract such sales, wholesale restructuring of the sector is required. Under these conditions it is difficult to achieve partial restructuring.

6 Policy Recommendations

Opportunities during restructuring to move towards a fair and sustainable energy system.

It is clear that in all energy sectors improvements can and should be made to make the systems more democratically accountable and more environmentally sustainable. Changes therefore need to be made across the whole energy network, but can be categorised into the following areas:

Ownership

The promotion of liberalisation and privatisation of energy sectors comes from all of the international institutions. However, it should not be overlooked that even within Western Europe and across North America there is a variety of models for the energy market currently in place. Furthermore, in many of these companies operating within the energy sector have not been sold but remain under State or municipal ownership. The international institutions need to reflect this, and encourage the adoption of particular ownership models for different sections of the energy industry to suit the individual country situations.

The desire of countries, to reduce their debts, by privatising companies and utilities, must be recognised as of secondary importance compared to the overall development of a sustainable energy policy.

Involvement of Multinational Companies

The involvement of multinational utilities can bring real advantages to the overall operation of an energy company, with the input of capital, experience and technology. However, there are also a number of dangers that are often downplayed or ignored, these include: -

The use of facilities in Eastern Europe and the subsequent import of electricity or energy into the EU, maybe to reduce costs associated with social requirements or environment protection. This regulatory flight must be avoided by ensuring that imported energy is produced at the same environmental and social standards as is required within the EU.

Investing companies have their own agenda, dictated by shareholders and other interests not directly related to the local community or country of operation.

Market Rules

Regulation: In a 100% state owned energy sector or in one that is fully privatised the regulator must be sufficiently independent and powerful to act in a way that it sees fit, without undue influence. In order to enable this to happen, the following should/could be adopted

Each country should establish an independent regulator.

The regulator should have a board of trustees which must not be appointed directly by the Government.

The regulator must have an advisory body which includes representatives of interested parties, such as consumers, unions, environmental NGOs, heavy users and producers.

Independent Power Producers: Market rules should exist that favour independent power producers and small decentralised power sources, this would include: -

Exception from transmission fees

Accelerated authorisation for power stations below 50 MW

Priority access to the distribution system for small power stations, IPPs and locally owned utilities.

Renewable energy and Combined Heat and Power Targets: Specific targets should be set to encourage more environmentally sustainable technologies such as those from most renewables energy and combined heat and power. The current EU targets for 22% of electricity from renewable energy by 2010 should be adopted across the region and more ambitious binding targets should be adopted for 2020 and 2030. Similar binding targets should be adopted to encourage the retention and introduction of CHP facilities.

Public Service Obligations: In any public or privately owned energy system Public Service Obligations (PSOs) must be introduced and maintained to ensure that the more vulnerable or geographically disadvantaged are given equal treatment as other consumers.

Investments

Public/Private Ratios: Many IFIs have distinct lending targets for their public or private sector loans for a particular country. For the EBRD this is 40:60 (CHECK) and makes a clear priority in favour of private investments. Such random ratio's do not reflect the variation of conditions in different countries in Eastern Europe nor the sector variations. As such the ratio's should be abandoned and investments assessed on their individual merits.

Energy Service Companies (ESCOs); Priority should be given to investments that target the delivering of an energy service as opposed to the sale of energy. This enables the introduction of energy efficiency technology or practises to be given an equal financial status as solely energy sales. ESCOs have been introduced in Hungary, Poland etc.

Renewable Premiums: Within the EU a number of different mechanisms have been introduced to encourage the rapid introduction of renewable energies. However, one of the most successful is the establishment of a feed-in tariff, which gives supplies of a particular renewable energy a guaranteed price for the electricity they produce. A liberalised market is susceptible to price fluctuations, which can have a negative impact on investment. By guaranteeing the price of electricity one variable is removed from investors concerns of new technologies.

Public Accountability

Liberalisation and privatisation is supposed to increase competition and increase consumer choice. However, unless concrete actions are taken the small consumer and/or the public do not benefit from the transition.

Disclosure of Electricity Sources-electricity labelling: In many parts of the world any liberalisation and/or privatisation of the power sector requires full disclosure to the final consumer of the sources used to generate the electricity sold. It is thought that without this information the consumer is unable to make a fully informed decision on the company selling them electricity and thus it is an essential part of the liberalisation process. Within the EU the revision of the Electricity Market Directive is expected to require company disclosure in the electricity sector.

Public Participation: Consumers must be given a voice, this should be through the establishment of a Energy consumers council to : -

- To champion the interests of all gas and electricity consumers, to enable them to set the agenda with energy companies and other key organisations and to be instrumental in developing an effective and competitive market.
- To understand and protect the needs of all gas and electricity consumers, particularly in relation to customer service, fuel poverty, safety and the disadvantaged.

Role of International Bodies: A body along the lines of the World Commission on Dams should be established to assess the privatisation policies of IFIs in the energy sector over the last decade. This must assess the decision making within the IFIs, the companies involved in both project development and execution and the in country impact

Changing Priorities

The restructuring of the power sector must take into consideration a number of over-riding issues, that must take precedent over market and economic issues, these being: -

Public Service Obligations: Given the essential nature of heat, light and appliances in modern society it is essential that there be adequate control to ensure that these vital services are available at reasonable prices to all.

Environmental Considerations: The energy sector is responsible for more atmospheric pollutants than all other sector put together. Furthermore, it produces virtually all radioactive waste and is responsible for most of the global particulate emissions. Finally, through extraction and transport – in particular the construction of natural gas pipelines, the energy industries are responsible for the destruction of large numbers of marine and terrestrial ecosystems. Because of all of these impacts greater priority must be given to environmental issues in all aspects of the energy cycle. Priority for investment, both domestic and international must be give to renewable energies and energy efficiency.

Public Involvement: The movement from national state owned utilities to privately owned regional oligopolies is to the detriment of public involvement and accountability. Measures must be introduce to ensure public accountability increases rather than decreases in a liberalised and privatised energy sector.

Security of Supply: Energy and in particular electricity is an essential part of modern society. The inability to store electricity makes it essential that adequate capacity is available and is effectively regulated to avoid market manipulations and power shortages.

7 Annex 1: Foreign Investors in Energy Sector in Central Europe

Czech Republic

Electricity

Sector	Company	%	Via	Parent	Capsule
Electricity	EOP	96		International Power	Public-private partnership between NP and the Cities of Chrudim, Pardubice and Hradec Kralove. In May 1998, NP acquired from the municipalities an additional stake of 25%, to be added to the previous 48%. The total cost of the additional stake was around CZK 1,261m (£24 million).
Electricity distribution	PRE Holding	15		RWE	Holding company which owns the majority in Prague electricity utility, PRE. PRE Holding is 51% owned by Prague municipality, 15% by RWE and 34% by GESO.
Electricity distribution	Severoceska energetika	29	MEAG	RWE	MEAG and HARPEN are active in the Czech Republic. MEAG's primary undertaking is in the energy sector, for example, with a share in the Czech regional supplier Severoceska energetika a.s. (SCE), in Decin, in the traditional industrial area of North Bohemia. HARPEN's primary business is in the decentralised energy supply sector.
Electricity distribution	Vychodoceska Energetika	42		Eon	Czech subsidiary to the Swedish Vattenfall, with sales of 6TWh and 600,000 customers . In 1999, Vattenfall seemed interested in the purchase of a 33% stake from local municipalities and 50% from the state. "According to preliminary results, VCE generated a net profit of 267 mil Kc in 1998, 6% more compared to 251 mil Kc in 1997. Its outputs rose to 9.14 bil Kc in 1998, by 423 mil Kc compared to 1997." Vattenfall sold its 42% stake to Eon in November 2000 because of disenchantment with the plans handed down by the Czech government for privatisation of both gas and power.
Electricity Distribution	Západo eská energetika	34		E.On	
Electricity Distribution	Západo eská energetika	11		Energie Oberosterreich	
Electricity Distribution	Jiho eská energetika	13?		E.On	
Electricity Distribution	Jiho eská energetika			Energie Oberosterreich	
Electricity Distribution	Jihomoravská energetika	45		E.On	
Electricity Distribution	Jihomoravskáenergetika	6		Energie Oberosterreich	
Electricity Distribution	Stredoceska energetika	35		RWE	

Electricity generation	ECKG		EPG	El Paso Corporation	"In Kladno, we will expand the facility with a 354MW coal-fired and gas-fired addition to the existing 28MW plant. Called Energy Center Kladno Generating (ECKG), the project is the first independent power project to be financed in Central Europe. Construction is scheduled to be completed in 1999". In October 1999 El Paso Energy International owned 17.8%, NRG 45%, the Czech regional electricity distributor STE 11%, and Nation Energy 26.2%. ECKG has executed a 20-year agreement to supply electricity to STE and thermal energy to the district heating company in the city of Kladno, and has executed long-term fuel supply agreements with Céskomoravské Doly (CMD), the company which owns the local Kladno mines. ABB Energetické systémy, s.r.o., a Czech subsidiary of ABB, has secured the turnkey construction contract and will begin construction this month".
Electricity generation	ECKG	45		NRG	
Electricity trading	Czechpol Energy	100		Cinergy	Energy company specializing in structured, cross-border transactions for the purchase and sale of electricity in Central Europe, acquired by Cinergy, February 2000. Based in Prague, Czech Republic with additional offices in Sviadonov, Czech Republic; Zug, Switzerland; Warsaw, Poland. Has subsidiaries in Switzerland, Czech Republic, Slovakia, and Ukraine. Description: Engages in structured, cross-border power transactions including deal origination and financing. Commercial operations began 1992. Power Contracts: Buys and resells power in 13 European countries including Czech Republic, Poland, Slovakia, Hungary, Slovenia, Switzerland, Austria, Germany, Greece, and Ukraine. Shareholders: Cinergy Global Power 100%. Financing: Equity 100%.
Energy	ECK		EPG	El Paso Corporation	Czech generating company jointly owned by Czech regional supplier STE and US utilities including NRG "In 1994, NRG became part owner of ECK, an energy complex that can supply 28MW of electricity and 150 MWt of steam and heated water". "NRG and El Paso have an existing business relationship related to the ownership of Energy Center Kladno (ECK) and together have majority ownership in the Energy Center Kladno Generating (ECKG) facility currently under construction in Kladno, Czech Republic".
		44.5		NRG	
Energy	Harpén CR		VEW	RWE	"MEAG and HARPEN are active in the Czech Republic. HARPEN's primary business in the decentralised energy supply sector. The subsidiary HARPEN CR bundles activities of HARPEN AG in the Czech Republic, holding shares in heating suppliers and acquiring its

					own energy supply projects. Currently, since the middle of February 1998, the most important project is the safety work on the energy supply to a lorry plant in Prelouc".
Energy	Moravske Teplarny	100		Cinergy	Also known as Teplarna Svit (TS). 400MW heating capacity plant, with additional electrical capacity. It was acquired by Cinergy in 1998.
Energy	MST		Dalkia International	EDF	Czech combined heat and power utility, Moravskoslezke Teplarny. GdE bought 53% in November 1997. The acquisition also gives control of the power company TEK. Independent Power is the local partner to Dalkia in the venture. "The two companies, which employ almost 3,000 people, supplied 22,588 TJ of heat and 781,200 MWh of electricity in 1996 for net sales of almost FF900m. MST and TEK own a 680km primary distribution network for steam and superheated water, and a 40km secondary network".
Energy	MST		Dalkia Holding	Vivendi Environnement	
Energy	Plzenska Energetika	100		Cinergy	Plant with 400MW of heating capacity, with additional electrical capacity. It was acquired by Cinergy in 1998.
Energy	Praha-Pariz-Rekonstrukce	50		GDF	
Energy	SETUZA	100		Cinergy	230MW district heating company North of Prague, with 92 employers. It was acquired by Cinergy in Feb 1999 from Setuza a.s. (one of the largest Czech producers of food, household and oleochemical products). About 85% of the company's sales, including heat, electricity and industrial water, are to the former owner. In addition SETUZA Energetika has about 13MW of electric capacity, which is primarily sold to a regional electric distribution company.
Energy	SkoEnergo			STE	Founded in 1995 to build and operate a power plant at the Skoda factory in Mladá Boleslav. The German-Czech consortium consists of RWE, OBAG AG, Stredoceska energetická a.s. (STE) in Prague, VW Kraftwerk GmbH and SKODA AUTO a.s. in Mladá Boleslav. The DM220mn bituminous-coal-fired cogeneration station has an electrical capacity of MW70 and a thermal output of MW300. The plant also supplies the city of Mladá Boleslav with district heat. SKO-ENERGO will also be responsible for the supply of gas, water and compressed air as well as the disposal of waste water under an agreement on the future supply of the SKODA factory.
		34		Volkswagen	
		21		RWE	
			Bayernwerk	E.On	

Energy	TEK		Dalkia International	EDF	TEK is controlled by GdE since it bought 53% of MST in Nov 1997. Independent Power is the local partner to Dalkia in the venture. "The two companies, which employ almost 3,000 people, supplied 22,588 TJ of heat and 781,200 MWh of electricity in 1996 for net sales of almost FF900m. MST and TEK own a 680km primary distribution network for steam and superheated water, and a 40km secondary network.
			Dalkia Holding	Vivendi Environnement	
Energy	Westinghouse (Cz)	100		Westinghouse	
Energy	Teplarny Brno	84		MVV Energie AG	

Gas

Sector	Company	%	Via	Parent	Capsule
Gas	MND	22	Transgas	RWE	MND (Moravske Naftove Doly) is the only natural gas producer in the Czech republic. It operates several underground reservoirs in the South Moravian region. It is owned 49.9% by SPP Bohemia, 22% by Transgas Czech and 25% by JMP (Jihomoravska plynarenska).
	MND	49.9		SPP Bohemia	
Gas	SPP Bohemia	50	Ruhrigas	Europgas	
Gas	FGN	100		Ruhrigas	FGN has operated in Czech republic since 1999. It installs and runs gas-fired combined heat and power plants, and is also interested in buying Czech gas utilities.
Gas	Linde Technoplyn	100		Linde	
Gas	Prometheus (Cz)	50		Prager Gaswerke	
		50		RWE	
Gas	Sofregas (Cz)			GDF	
Gas	Transgas (Czech)	97		RWE	Czech gas transmission company. Previously kept as a state monopoly to allow alternatives to Gazprom - there is a policy target for 3/13ths non-Russian gas. Sold to RWE in January 2002 for \$3.64bn
Gas distribution	JCP Jihoceska Plynarenska	33.99		Communes	
		12.87		Eon Energie	
		5.55		OF Oberoesterreichische Ferngas	
		46.7		RWE	

Sector	Company	%	Via	Parent	Capsule
			Eon Energie	Eon	
Gas distribution	JMP Jihomoravska Plynarenska	38.5		Eon Energie	
		2.33		SPP Bohemia	
		2	GDF (France)	GDF	
		1.19		Ruhrgas	
		50.11		RWE	
Gas distribution	PP Prazska Plynarenska	25.6		Communes	
		12.05		Ruhrgas	
		61.73		RWE	
Gas distribution	SCP Severoceska Plynarenska	20.2	Wintershall	BASF	
		1.14		GDF (France)	
		25.61	VNG	Statoil	
		0.82		Transgas (Czech)	
			Gerosgaz	Gazprom	
			EEG	GDF	
		50.23		RWE	
Gas distribution	SMP Severomoravska Plynarenska	2.08		Communes	
		1.9		GDF	
		8.52		Slovak Gas	
		20.5		SPP Bohemia	
		9.57		Ruhrgas	
		58.14		RWE	
Gas distribution	STP Stredoceska Plynarenska	31	Wintershall	BASF	
		2		Communes	
		1.63		GDF	
			Gerosgaz	Gazprom	
		14.27		Ruhrgas	
		51.1		RWE	
Gas distribution	VCP Vychodoceska Plynarenska	0.5		Communes	
		3.15		GDF	
		10		Slovak Gas	
		18.76		SPP Bohemia	
			GdF	State	
		16.52		Ruhrgas	
		50.05		RWE	
Gas distribution	ZCP Zapadoceska Plynarenska	20.3		Eon Energie	
		0.9		GDF	

Sector	Company	%	Via	Parent	Capsule
		27.5		Ferngas Nordbayern	
Gas distribution	ZCP Zapadoeska Plynarenska	50.11		RWE	
Energy	British Gas (Cz)			BG	Contracted to monitor pipelines of Czech company Transgas.

Estonia

Electricity and Gas

Sector	Company	%	Via	Parent	Capsule
Electricity	Läänemaa Elektrivõrk	95		Fortum	Energy company privatised in Nov 1998 after competitive tendering.
Electricity transmission	Narva Elektrivõrk	49	Startekor	Cinergy	Power grids located in North-east Estonia. In November 1998, 49% was bought by the Cinergy/local jv for EKr 58mn (US\$ 4.142mn). Startekor has the right to purchase an additional 18% of the company. The remaining 33% of the shares are being auctioned in 1999 but the buyer remains uncertain. However, Cinergy claimed that it was selected by "the Estonian Privatization Agency to acquire the remaining 51% from the government".
Energy	Eesti Energia	100		State	Estonian state power grid monopoly
Energy	Westinghouse (Est)	100		Westinghouse	
Energy	Eesti Gaas	9.5		Itera	Estonian national gas monopoly. Ruhrgas bought 15% stake for \$5.7m in April 1995 (a previous deal with Gaz de France had fallen through). In January 1999, Ruhrgas increased its shareholding by purchasing another 11.38 % of the shares, Ruhrgas raised its stake in the Estonian gas company to just under 34 %. The other shares in Eesti Gaas are held by OAO Gazprom of Russia and Neste Oy of Finland as well as investment funds and small shareholders.
		10		Fortum	
			Itera	Gazprom	
		19.2		Gazprom	
		32.73		Ruhrgas	
Energy	Startekor			Cinergy	"Startekor Investeeringud involves the U.S. energy concern Cinenergy Corp. and the Estonian investment company Sthenos Grupp".

Hungary**Electricity and Gas**

Algyinvest	Energy		Tractebel-Suez
AES-Borsod	Electricity generation	171-MW coal-fired power plant, operated by AES since 1996. (AES-10-K-03-30-1999.rft). Due to environmental legislation and the replacement of its capacity by an other power plant, AES Borsod should have been closed. It decided to carry out a biomass retrofit as the first joint implementation (JI) project under the framework of climate negotiations. AES Borsod runs the Lyukobanya Mine	AES
AES- Tisza II. Eromu Kft	Electricity generation	From 2000 it is a separated company. 18 billion HUF capital, 25 billion HUF turnover annually. Fuelled by oil and gas.	AES
Budapest Eromu	Electricity and heat generation	Electricity and heat producer, that is an important heat supplier of Budapest District Heating Company.	EDF
Csepel	Electricity	An independent power producer which owns and operates 2 gas-fired plants in an industrial park on Csepel Island in Budapest. Csepel I is a 116 megawatt (MW) thermal plant, and Csepel II is a 389 MW gas turbine power generating station. Csepel II reached commercial operation in November 2000 and is the primary facility. Csepel was bought by NRG in July 2001 from Powergen. Powergen bought it in 1995 for about \$12m, and said it planned to invest about \$200m to build additional gas-fired capacity at the plant by 1999 - subject to agreement on supply contracts with MVM, the state electricity company. This was not one of the state companies auctioned at the end of 1995, none of which were bought by Powergen. Recently (2002 fall) a Swiss investor group (80% owned by RWE) bought out Csepel. The name has not been published yet.	NRG-Xcel Energy RWE!
GTER Kft	Electricity generation	Operates the three gas fired powerplant for the peak supply security. (Powerplants are in Sajoszoged, Liter and Lorinc.)	MVM
Matra	Electricity generation		RWE
Dunamenti	Energy	Hungarian power generator: tractebel owns 73.74% directly, and 24% is owned by Kazak Energo BV, which is itself 75% owned by Tractebel. Tractebel originally	Tractebel-Suez

		bought 48.8% of Dunamenti shares in 1995 for \$141m, with an option to take a majority stake by end-1997. Its capacity is 2200MW, which makes it the second largest of Tractebel's generating companies outside Belgium (third after the acquisition of EPON in Nov99).	
OVIRT			
DDGAZ	Gas	„A VEW AG subsidiary is active in Hungary: WGV, primarily involved in the gas market. WGV, together with Ruhrgas AG, has a share in DDGAZ, based in Pecs, in southern Hungary”.	Ruhrgas
DDGAZ	Gas	„A VEW AG subsidiary is active in Hungary: WGV, primarily involved in the gas market. WGV, together with Ruhrgas AG, has a share in DDGAZ, based in Pecs, in southern Hungary”.	RWE
Dedasz	Electricity generation	Regional electricity distribution company. In March 1997 Bayernwerk took an unsuccessful court action to try and prevent an IPP in the region from selling power to a large customer. Bayernwerk argued that it had bought Dedasz as a regional monopoly, and it should be entitled to protect that monopoly against competition from IPPs.	Eon
Degaz	Gas distribution	One of the two Hungarian subsidiaries to GdF. Through the two subsidiaries, which supply 625,000 customers, GdF has a 22% share in Hungarian natural gas market. Total revenues from Degaz and Egaz amount to FRF 1.4 billion, following a 36% increase Both Degaz and Egaz are located in the same regions where EDF owns two electricity companies. Under a 15-year contract, signed at the end of 1996, Gaz de France supplies 400 million m3 to the Hungarian company MOL	GdF
Demasz	Electricity distribution	EDF overall customer base in Hungary is of 1.6 million. It registered pre-tax profits of HUF 1.6bn in the first quarter of 1999, 19.35% up on the same period in 1998, and net sales of HUF 13bn, 16.7% up.	EDF
Edasz	Electricity distribution	Electricity distribution company, 48% bought by EdF at the end of 1995. In June 1997 it sold half its stake to Bayernwerk (Viag)	EDF
Edasz	Electricity distribution		Eon
Egaz	Gas distribution	One of the two Hungarian subsidiaries to GdF. Through the two subsidiaries, which supply 625,000 customers, GdF has a 22% share in Hungarian natural gas market. Total revenues from Egaz and Degaz amount to FRF 1.4	GdF

		billion, following a 36% increase Both Degaz and Egaz are located in the same regions where EDF owns two electricity companies. Under a 15-year contract, signed at the end of 1996, Gaz de France supplies 400 million m3 to the Hungarian company MOL	
Elmu	Electricity distribution		RWE
Ema Power	Electricity generation	In 1996, EGP „acquired (for \$ 25m) existing gas and oil-fired energy production facilities (70 MW) with option to expand facility to 140 MW. The expansion (to be funded via capital and financing) is expected to be in service by October 2000”. „The expanded facility will meet the total energy requirements of the Dunaferri industrial complex and the total heat requirements of the city of Dunaujvaros. Excess power will be sold to national grid operator MVM under a long-term power purchase agreement.”	El Paso Corporation
Emasz	Electricity distribution		RWE
Fogaz	Gas distribution	VEW Energie and Ruhrgas will acquire 39% of Fogaz, Hungary’s largest gas distribution company, for \$129mil „A VEW AG subsidiary is active in Hungary: WGV, primarily involved in the gas market. WGV, together with Ruhrgas AG, has a share in the Budapest Gas Company FÖGAZ”.	Ruhrgas
Fogaz	Gas distribution		RWE
Kogaz	Gas distribution		Eon
Panrusgaz	Gas	A joint venture of MOL Hungarian Oil and Gas Company and Russia’s Gazprom. This firm accounts for all of Hungary’s natural gas import needs in a 50:50 partnership with the Hungarian state-owned oil and gas company MOL.	Gazprom
Tigaz	Gas distribution	„A VEW AG subsidiary is active in Hungary: WGV, primarily involved in the gas market. The company has shares in the three largest Hungarian gas companies, among others, the largest gas supplier, TIGAZ	ENI
Tigaz	Gas distribution		RWE

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Latvia

Electricity and Gas

Sector	Company	%	Via	Parent	Capsule
Energy	Latvenergo			State	Electricity producer and supplier, supplies heat to Riga. In 1993: produced 3882m. KWh of electricity generated and supplied 5183 thousand G cal of heat
Energy	Latvijas gaze			State	Latvijas Gaze comprises an export company, a storage company, a transmission company and four regional distribution companies. It has 1236km of transmission pipelines and 3047km of distribution pipelines. It supplies 345,600 individual and 358 industrial consumers It has an underground storage facility with a capacity of 2.1 BCM. Foreign partners to the Latvia state are Gazprom and Ruhrgas. (cee98rep.doc) PreussenElektra also purchased a 6.5% stake in 1997
		16.25		Gazprom	
		25.59		Ruhrgas	
			Preussen Elektra	Eon	
Energy	Vattenfall Latvia	100		Vattenfall	Vattenfall won a 15-year district heating contract with Riga airport in 1998.
Gas	Itera Latvia	50		American National Power	
			American National Power	International Power	

Lithuania

Electricity and Gas

Sector	Company	%	Via	Parent	Capsule
Energy	Lietuvos Energija			State	Electricity company of Lithuania. Vattenfall bought 5% of shares in 1998.
		5		Vattenfall	Electricity company of Lithuania. Vattenfall bought 5% of shares in 1998.
Energy	Lithuania Gas	100		State	

Poland**Electricity**

Sector	Company	%	Via	Parent	Capsule
Electricity	ENS	73		Enron	Constructing 116MW gas-fired IPP at Nowa Sarzyna
Electricity	Rybnik Power		EDF	State	Rybnik power station: 35% sold to EdF in 2001.
Electricity	Rybnik Power Plant	50% +1share		Consortium EdF and EnBW	
Electricity distribution	Gornoslaski Zaklad	15		Employees	
			Vattenfall	State	
		31.8		Vattenfall	After two years since signing the privatisation agreement the investor is granted a right to purchase further 35% of shares (currently owned by the state) for amount of Euro 186 million. According to the agreement Vattenfall has to invest PLN 2.8 billion within next ten years.
Electricity distribution	MEAG Polska		MEAG	RWE	All five VEW AG management companies are active in Poland. MEAG is active in the fields of power station construction and energy distribution, with its own subsidiary MEAG Polska sp. Zo.o (Warsaw) and with co-operation, for example, in regional supply in Jelenia Gorá (Hirschberg), Łódz, Bedzin and Walbrzych (Waldenburg). The office in Warsaw serves the intensification and co-ordination of such communal projects".
Energy	Elektrocieplowni e Warszawskie	15		Employees	In February of 2000 Swedish power company Vattenfall acquired a 55% stake in Elektrocieplownie Warszawskie, Poland's largest CHP producer, with annual electricity outputs of 4 TWh. Warszawskie supplies 98% of Warsaw's heating requirements and 68% of its electricity demand. Vattenfall plans to convert the five coal-fired facilities from coal to natural gas use. Privatisation agreement obliged the investor to make the investments amounting to USD 600 million within 10 years period.
		30		State	
		55		Vattenfall	
Energy	Energy Group (Poland)		TXU Europe	TXU	In September 1997 reached an agreement to acquire a 49% interest in the development of three 70MW co-generation projects in Poland.
Energy	IWO Polska	100		Fortum	IWO's engineering and consultancy branch in Poland.
Energy	Krakow Leg	6.6		Employees	Krakow electricity and heating company, with four coal fired cogenerating units (1,450 MW

Sector	Company	%	Via	Parent	Capsule
					thermal capacity and 450 Mwe). EDF finally bought controlling 55% of shares in 1997 (indirectly through a stake acquisition in the State company ECK - SA). "ECK - SA had 1996 revenues in the region of US\$ 100 million
		28.05		State	
		65.35		EdF	
Energy	MEC (Pila)	100		MEC	Gas plant acquired by CalEnergy in 1997, covering the same area served by EPSA (for which MEC intended to bid).
Energy	Poznan power (Poland)		GdF	State	
Energy	Poznan power (Poland)	50		BG	
Energy	Poznan power (Poland)			GDF	
Energy	Poznan power (Poland)			Southern Company	
Energy	Vattenfall (Poland)		Vattenfall	State	participations in two heating companies in Poland
Energy	Vattenfall (Poland)	100		Vattenfall	participations in two heating companies in Poland
Energy	Wingas	65		Wintershall	Joint venture between Wintershall (BASF gas subsidiary) and Gazprom. Set up to convey Gazprom gas across Germany.
		35		Gazprom	
Energy	EC Bialystok S.A.	52.28		Societe Nationale d'Electricite et de Thermique (SNET)	In February 2001 SNET paid Euro 48.95 million for 45% of the company's shares. Additionally, SNET is obliged to make investments of Euro 55 million within next five years (Euro 16 million invested in increasing the company's capital). In result of this increase the shares of SNET increased to 52.28%.
Energy	EC Wybrzeze S.A.	50.12 (planned)		EdF	Investment programme within next seven years amounts to Euro 162 million
Energy	Wroclaw Cogeneration	48.83		EdF	The company is noted at Warsaw Stock Exchange.
Energy	EC Bedzin S.A.	69.56		Mitteldeutsche Energie AG (MEAG)	
Energy	Power Plant in Polaniec	25		Tractebel (Belgium)	In September 2002 the Council of Ministers decided to sell 60% of shares to the Belgian investor (currently 25%).

Gas

Sector	Company	%	Via	Parent	Capsule
Gas	Europol	50		Gazprom	Polish gas company, 50% owned by Gazprom, in partnership with POGC

Sector	Company	%	Via	Parent	Capsule
Gas	KRI	49		RWE	Polish gas distributor which has 25 employees, supplies 33,000 customers with gas, RWE Gas said in a faxed statement. The remaining 51 percent stake is held by Piecobiogaz GmbH. Kri aims to expand its grid to sell 250 million kilowatt hours of gas per year within the next two years from about 80 million kilowatt hours per year now.
Gas	McKenzie Methane	100		Eurogas	
Gas transmission	PowerBridge			MEC	"In 1998 CalEnergy subsidiary CalEnergy International Ltd. was part of a consortium (the PowerBridge Group) that won a contract to develop, synchronize, and transmit up to 1,000 MW of electricity from Lithuania to Poland, at an estimated cost of \$400 million".
Gas trading	Gas Trading	43.41		PGNiG (Polish Oil and Gas Company),	
		36.17		Bartimpex	
		2.7		Weglokoks	
		2.7		Vintershall	
		15.88		Gasexport (Russia)	

Slovak Republic

Electricity

Sector	Company	%	Via	Parent	Capsule
Energy	EdF-Slovelec	50		EdF	The company engaged in helping complete the Slovak nuclear power station Mochovce. Up to 1995 EDF believed it had the contract to develop Mochovce, with funding from EBRD. However, during 1995 the Slovak government took up alternative funding from Russia and the Czech republic, and the main contracting work went to Czech, Slovak, Russian and German companies. In early 1996, however, EDF was once again given part of the contract. In FY 1997, EDF continued to provide its assistance and advice to the SEAs project leader in matter of safety
			Bayernwerk	eon	
Energy	Energoinfo	100		Union Fenosa	Union Fenosa holding company for operations in central and eastern Europe. Informe anual 1997: 'En el Area de Europa, la actividad de Unión Fenosa ACEX man-tuvo un ritmo de crecimiento sostenido, tanto en la obtención de nuevas operaciones como en la apertura de nuevos merca-dos. Energoinfo, la filial de Unión Fenosa ACEX para Centro-europa, dispone de oficinas en la República Checa, Eslovaquia, Hungría, y Polonia, y tiene entre sus clientes a catorce empre-sas de servicios públicos que suponen el 34% del mercado de gas y electricidad de estos países. En Hungría, se

Sector	Company	%	Via	Parent	Capsule
					completaron las implantaciones del Open SGC en la distribuidora eléctrica del Noreste (TITASZ) y en la distribuidora de aguas ERV. Se firmaron nuevos contratos con DDGASZ, que suministra gas a la zona sur del país, y con KOGAZ, distribuidora de gas en la zona suroeste de Hungría. En la República Checa, la actividad se centró principalmente en la implantación del Open SGC en cuatro distribuidoras de gas (STP, VCP, SCP y ZCP), así como en los proyectos de las empresas eléctricas SME y JCE. En la República Eslovaca, continuó el proyecto de Optimización de la Gestión para la empresa ZSE y se ha firmado un nuevo contrato con la empresa SSE para la implantación del SIGMA en una central de generación de calor, que posteriormente será extendido al resto de la empresa. En Ucrania, se ha logrado un contrato para la implantación del Open SGC en Kievenego, empresa de distribución de electricidad de la ciudad de Kiev'
	ZSE			E.ON	(Western Slovak Utility)
	SSE			EdF	(Central Slovak Utility)
	VSE			RWE	(Eastern Slovak Utility)

Gas

Sector	Company	%	Via	Parent	Capsule
Gas	Slovrusgas	50	SPP		Slovrusgas, a joint venture owned equally between Slovak Gas (SPP [Slovensky plynarensky podnik]) and Russia's Gazprom. This company turned over 2.3bn korunas in 2000 and supplied Slovakia with 370m cubic metres of gas and other raw materials. 2001 year's volume should, as agreed with Gazprom, be close to last year's, the company said on 22 August. Of the Russian gas delivered by Slovrusgas, approximately 40 per cent is financed by supplies of goods from Slovakia. Slovrusgas Director-General Daniel Sulik said supply contracts worth 16.2m dollars were signed last year with Gazprom. In the first half, 6m-dollar worth of supplies were delivered, with the rest to follow in coming months. Slovrusgas imported 8,000 tonnes of chemicals, worth approximately 2m dollars, in the first half, and will receive a further 5,000 tonnes by the end of the year.
		50		Gazprom	
Gas	SPP	51		State	Slovak gas company SPP, 49% owned by Ruhrgas/GdF/Gazprom consortium from 2002. SPP supplies some 1.3 million gas customers in Slovakia with 80.25 billion kWh of gas. The SPP transit system handles the transit of Russian gas to western Europe and also the import, transport, storage and sale of gas within the country. It comprises 2,270 km of pipelines carrying about a sixth of European gas demand. The system is currently being expanded. In 2000, SPP's turnover totalled approx. 55 billion Slovak crowns (1.3 billion euros). 49 % of the SPP shares are being sold to the consortium, which will be responsible for running the company. The other 51 % will remain state-owned.
		16.33		Gazprom	
		16.33		GdF	
		16.33		Ruhrgas	

Slovenia**Gas**

Sector	Company	%	Via	Parent	Capsule
Gas	Adriaplin	51		Italgas	Slovenian gas company, two-thirds owned by Italgas/SNAM, 21% by Slovenian company Petrol Zemeljski Plin, and 15% by Austrian utility Steirische Ferngas. Adriaplin is developing a regional network. It has access to both Algerian and - via Hungary - Russian gas.
		15		Steirische Ferngas	
			Geoplin	Ruhrigas	
Gas	Gazprom (Slovenia)			Gazprom	
Gas	Geoplin	24.5		State	Geoplin is the national gas company of Slovenia. The state still owns 24.5% . Six of the 12 regional gas distributors hold 34.6%, with the remaining 40.9% held by 133 shareholders, including the other six distributors. The IMF has said this is too much like the old Yugoslav system, with a parallel workers council.
		5.19		Ruhrigas	
Gas	Slovenska Bistrica			CPL	
Gas	Slovenski Plinovodi	100		Adriaplin	
			Adriaplin	Italgas	
			Geoplin	State	
			Adriaplin	Steirische Ferngas	