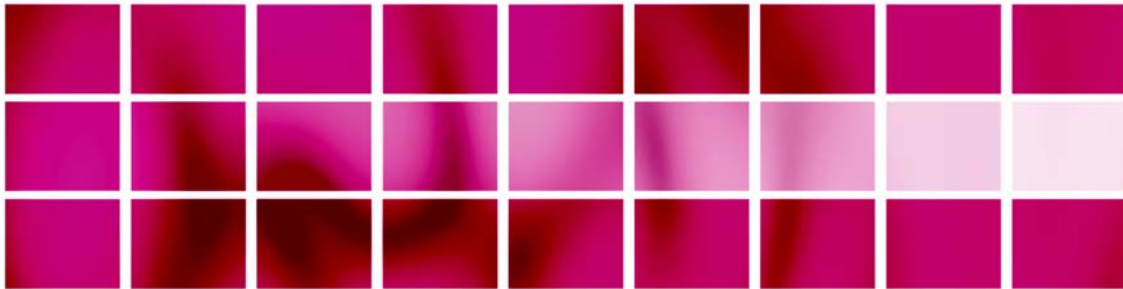


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**PRIVATISATION OF PUBLIC SERVICES AND THE IMPACT ON
QUALITY, EMPLOYMENT AND PRODUCTIVITY (PIQUE)**

Liberalisation, privatisation and regulation in the German electricity sector

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Country report on liberalisation and privatisation processes and forms of
regulation

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INTRODUCTION

This paper presents an analysis of the electricity sector, concerning the change of market structures, regulations, actors and ownerships before and during the liberalisation- and privatisation process. Furthermore, the roles of the government, other stakeholders and interest conflicts will be analysed.

For pragmatic reasons the terms “liberalisation” and “privatisation” have been defined as follows: “Liberalisation refers to the opening-up of markets for competing providers regardless of who owns the competing companies. Privatisation, on the other hand, usually refers to the existence of some privately owned shares in public service providers. In theory, there could be privatisation without competition.”¹ However, it has to be kept in mind, that from a more theoretical point of view “privatisation must be seen as a social intensification of capitalism and a shift in state-society relationships, rather than a mere collection of particular corporations taking over, or partnering in, public services delivery” (Donald and Ruiters 2006: 9).

In order to analyse the electricity sector as a network industry this paper distinguishes between three different segments:

“generation” of electricity,

“transport”, which includes a) transmission” (at supra-regional level) and b) “distribution” (at regional and municipal level) of electricity and

“supply and retail activities”.

Depending on the different fields of business activities, owner structures, actors and regulations vary.

According to the EU requirements on liberalisation the modes of regulation have been reorganised. Business activities of the different energy supply companies and owner structures have changed since the (formal) liberalisation started in 1998.

Before liberalisation the electricity sector was organised by a coexistence of public, private and mixed-economy enterprises. The regulation framework regarded the electricity sector as a natural monopoly. Hence competition was not tolerated.

The National Energy Act of 1998 transformed the EU directive 96/92/EC. Theoretically, legal competition which guaranteed access to the electricity transport system for electricity producers, became possible. But the complete and seamless liberalisation process did not lead to competition, but to proceedings and market concentration due to mergers and acquisitions.

After the EU acceleration directive (2003/54/EC) a new National Energy Act was enacted in 2005. Before that date the negotiated third party access was practised, which was transformed in 2005 to a regulated third party access. Additionally, regulatory

¹ For these definitions see Verhoest and Sys (2006a: 2).

agencies were implemented which were responsible for the legal unbundling of the electricity transport sector from production and supply. The following table gives a first overview of main developments:

Table 1: Liberalisation and privatisation of the German electricity sector – new legislations and main developments

1996	EU directive 96/92/EC: free entry to the transport segment must be assured and regulated for all energy supply companies; different regulation modes of access to the transport segment are possible (e.g. regulated or negotiated third party access).
1997	First mergers and acquisitions of large energy supply companies
1998	National Energy Act of 1998: <ul style="list-style-type: none"> - complete seamless liberalisation; - access to the transport net had been regulated by the "negotiated access" though "association agreements between energy producers and industrial consumers" (without a special regulatory agency); - unbundling from production- and supply segments from the network segment through "separation of accounts"
1999	New electricity provider appeared, electricity prices declined
2000	Strong increase of market concentration due to mergers and acquisitions of energy supply companies
2001	Further merger waves; new electricity provider disappeared due to low energy prices
2002	Electricity prices increased
2003	EU acceleration directive (2003/54/EC): Obligation for "regulated third party access" through a regulatory agency, as well as for "legal unbundling" of electricity production and supply from the network segment until 1 July 2004
2005	National Energy Act of 2005: <ul style="list-style-type: none"> - "regulated third party access", - a regulatory agency for the network segment and - legal unbundling have been enacted delayed
2006	First electricity net price reductions, nevertheless (end) electricity prices for private households increased considerably
2007	Price authorisation of end consumer prices will end in July 2007, after: no control
2008	Start of net price regulation, based on incentive regulation

Source: Own composition.

1. MARKET STRUCTURE

1.1. Market structure before liberalisation

In contrast to a multitude of other industrial countries in (west-)Germany there was never a broad government monopoly in the electricity sector – compared with the former “Central Electricity Generating Board” in Great Britain or the French state-owned enterprise “Electricité de France” (Monstadt and Naumann 2003: 15). Instead the electricity economy in Germany is shaped traditionally by a *coexistence of public, private and mixed-economy enterprises* (Dieckhaus and Dietz 2004: 47).

The system of “territorial monopolies” was characteristic and can be described as follows: After World War One distribution areas were established by demarcation contracts between energy supply companies. In this way the energy supply companies obligated themselves not to be active outside of their own territories. By means of the National Energy Act of 1935 (“Gesetz zur Förderung der Energiewirtschaft vom 13. Dezember 1935“) the system of territorial monopolies was strengthened. Varied linkages between municipal utilities and energy supply companies developed, also due to investments of municipals in the respective local or regional energy supply company. Municipal utilities in ownership of the municipals received electricity from that electricity producing energy supply company in which they were involved and in doing so assured the marketing of the electricity producing energy supply company. In the meantime the municipalities participated via the profits of the larger energy supply companies. Generally speaking this system, which had been stabilised by exceptions of the electricity economy from the Anti Trust Law of 1953, ensured security of supply and profits for energy supply companies and municipal utilities and functioned for almost one century in Germany (Nagel 2006: 16; Nagel et al. 2006: 85-86).

In Germany energy supply companies are classified in either “network energy supply companies”, “regional energy supply companies” or “municipal utilities”. They are active at municipal, regional or at supra-regional level. Before the liberalisation process started in 1998 there was the following division of labour (Renz 2001: 71-74):

- The *supra-regional level* was represented in 1997 by eight network energy supply companies, which produced 79% of the electricity. Additionally they had been – and still they are – active in transmission. They had been active only in the framework of their territorial monopoly. Some network energy supply companies (RWE, VEW, EnBW, BEWAG und HEW) had been active in all segments of the value chain – from production to supply of end consumers. Others (PreussenElektra AG, Bayerwerk AG, VEAG) had just been active in production and transmission.
- At the *regional level* around 80 regional energy supply companies with a production share of 10%, total took over the electricity from the large network energy supply companies. The regional energy supply companies distributed electricity to end

consumers on the one hand and acted as distributors for the municipal utilities on the other hand.

- At the *local level* in 1997 around 900 municipal utilities supplied end consumers in their municipalities with electricity, gas, water or district heat. They produced 11% of the electricity in Germany.

The different energy supply companies were linked firstly via long term contracts (typically for 20 years). Additionally, as a result of capital investments large network energy supply companies steered their (subsidiary) regional energy supply companies. In contrast to the regional energy supply companies municipal utilities remained autonomous before the liberalisation and were minority capital owners of the large network energy supply companies (for data see section 3).

Altogether, in the framework of territorial monopolies the production, transmission and distribution segments were clearly in the hands of the large network energy supply companies. The municipal utilities participated in the profits of the network energy supply companies by capital shares. The supply to the end consumers was organised mainly by municipal utilities, but the electricity sold to end consumers came from network energy supply companies (delivered from the regional energy supply companies) and municipal utilities (see Table 2 below) in approximately equal quantities.

Table 2: Market structure before and after the liberalisation

	Before the process of liberalisation	After the process of liberalisation	
	1997	1999	2004
Generation (not capacity)	<ul style="list-style-type: none"> - 8 network energy supply companies with 79% of electricity production: RWE, VEW, EnBW, BEWAG, HEW, PreussenElektra AG, BayerwerkAG, VEAG - Others with 21%: - regional energy supply companies with 10%; - municipal utilities with 11% 	<ul style="list-style-type: none"> - 6 network energy supply companies with 73.8%: RWE: 28.4%; E.ON: 24.7% EnBW: 7.2% VEAG: 8.9% HEW: 2.6% Bewag: 2.1 % - Others with 26.2%: - municipal utility - regional producers - new local producers 	<ul style="list-style-type: none"> - 4 network energy supply companies with 95.6%: RWE: 38.7% E.ON: 26.5% EnBW: 13.8% Vattenfall Europe: 16.2% - Others with 4.4 %: - municipal utility - regional producers - new local producers
Transmission	<ul style="list-style-type: none"> - 8 network energy supply companies with 100% in their territories 	<ul style="list-style-type: none"> - 100% share by 6 network energy supply companies 	<ul style="list-style-type: none"> - 100% share by 4 network energy supply companies
Distribution (low voltage power supply)	<ul style="list-style-type: none"> - 80 regional energy supply companies - 900 municipal utilities 	<ul style="list-style-type: none"> - regional energy supply companies - municipal utilities 	<ul style="list-style-type: none"> - 50 regional energy supply companies - 700 municipal utilities
Sales to end consumers	<ul style="list-style-type: none"> - 5 network energy supply companies (RWE, VEW, EnBW, BEWAG, HEW) are also active in sales (51%-59% in 1995 (!) including by capital shares concerning regional energy supply companies) - 80 regional energy supply companies - 900 municipal utilities 	<ul style="list-style-type: none"> - 6 network energy supply companies with 61.6%: RWE: 29.1% E.ON: 18.5% EnBW: 6.1% VEAG: no data HEW: 4.8% Bewag: 3.1% - Others with 38.4% - municipal utility - regional producers 	<ul style="list-style-type: none"> - 4 companies with 72.8%: RWE: 16.8% E.ON: 22.1% EnBW: 19.5% Vattenfall Europe: 14.4% - Others with 27.2 % - 700 municipal utilities - regional producers

Sources: Nagel et al. (2006), Renz (2001); own figure.

1.2. The Process of liberalisation

1.2.1. Duration of the process of liberalisation

A new policy started with the Electricity Input Act of 1990 (“Stromeinspeisungsgesetz”): According to this act the net operators, that means the network energy supply companies, were forced to feed electricity with regenerative energy basis from new alternative electricity producers for fixed prices.

Then in 1998 the European Union Directive of 1996, which was passed by the EU after struggles lasting a considerable time, was adopted in Germany by the National Energy Act 1998 (“Energiewirtschaftsgesetz von 1998”). With this act the energy market in Germany was *seamless and completely (100%) liberalised for all segments of the electricity sector* (just formally, not factually) until 1999. Territorial monopolies were abolished.

1.2.2. Drivers of change

The process of liberalisation was pushed by the EU-Commission, but in the transformation of the EU directive 96/92/EC Germany went beyond it, with the National Energy Act of 1998 – by implementing an *immediate* and *complete* liberalisation for industry *and* households (Dickhaus and Dietz 2004: 46).²

Already before and in the early phase of the liberalisation process the large network energy supply companies reacted with a massive wave of mergers. The merger process started in 1997 with the merger of “Badenwerk” and “Energieversorgung Schwaben (EVS)” to the new network energy supply company “Energie Baden-Württemberg AG” (EnBW) and continued later at national and European level. This very early merger process and in particular the seamless liberalisation in Germany due to the National Energy Act 1998 are indications of the *influence of large German network energy supply companies within German legislation* in accordance with their own expansive market strategies (for the concrete form of influence on the legislation see in detail Becker 2005).

1.2.3. The European dimension

The role of the European Union has to be evaluated ambivalently: On the one hand in 1996 and in 2003 the EU gave impulses for national revisions of the respective Energy Acts, which aimed at fostering competition and the unbundling of energy transmission and distribution from production and supply.³ On the other hand, the European Union

² The question of who pushed the EU seems to be very interesting, but cannot be dealt with in this analysis.

³ For the content of the European Union directive see: Verhoest and Sys 2006b.

did not hinder market concentration due to mergers and acquisitions in Europe – even if the EU is now starting proceedings against network energy supply companies such as “E.on” for reasons of market power abuse and price agreements (Frankfurter Rundschau, 18. May 2006).

The merger process was decisive for market power, profits and electricity prices. Instead of acting against the merger process, the European Union – as well as the German legislation and public debate – focussed on the subject of unbundling.

1.2.4. *Forms and steps in the process of liberalisation*

From an institutional point of view the two energy acts of 1998 and 2005 were crucial for the course of the (formal) liberalisation process:

- In transforming the EU-directive of 1996 (96/92/EC) to the National Energy Act 1998, with regard to the regulatory regime of the access to the transmission system, Germany voted (as the only country in Europe) not for a “Regulated third party access” and regulatory agency, but instead for a “Negotiated third party access” to the transport system without responsible regulatory agency. The “Negotiated third party access” took place in the form of “associations’ agreements” between energy producers and industrial consumers concerning fixed modalities about the entry to the electricity net and net utilisation fees. Also, Germany did not take the opportunity of a stepwise liberalisation. Rather, the energy market was *seamless and completely (100%) liberalised for all segments, regions and clients of the electricity sector*. The territorial monopolies were abolished. Additionally, concerning the unbundling of the transport segment from electricity production and retail activities, the “separation of accounts” was enacted.

With the National Electricity Act of 1998 the EU directive of 1996 was transformed, but the regulation of the electricity net was given over to the network energy supply companies. Especially employees from large network energy supply companies had direct influence on the formulation of the new act in the Federal Ministry of Economics (Gamelin 2006: 29).

- After three “associations’ agreements” did not produce the intended effects, Germany abandoned resistance to the EU acceleration directive of 2003, which obligated Germany to replace the system of a negotiated access in favour of a regulated access until July 2004. Additionally Germany was obligated to pursue legal unbundling. With some delay the National Energy Act of 2005 was finally enacted. With that the regulated access was implemented, the legal unbundling was fixed and a regulatory agency (“Bundesnetzagentur”) was determined.

1.2.5. *Determinates of the pace and direction of the liberalisation process*

The pace and direction of the liberalisation process was influenced by the network energy supply companies and their lobby organisations:

- Firstly, by the legislation concerning the National Energy Act of 1998 (in particular the decision for the “*negotiated access*”, as well as the decision for an immediate and complete liberalisation), which offered the old and new monopolies decisive advantages.
- Secondly, by the cartel office and ministerial decisions in the context of mergers and acquisitions (Becker 2005).

Especially the “associations’ agreements” caused many legal proceedings concerning the entry to the transmission network for new energy providers. In 2003 the Federal Council of Germany demanded an effective control concerning the regulation of the network access, transmission tariffs and demanded a participation of the federal states. But only after the acceleration directive of the EU in 2003 (2003/54/EC) and a monitoring report by the Federal Ministry of Economics in March 2005, the delayed installation of a regulated access was decided by the National Energy Act of 2005. However the National Energy Act of 2005 was also problematic, because the regulatory agency was confronted with many unclear concepts of law, which led to further legal proceedings (Becker 2005).

1.3. *Current market structures and remaining challenges*

At present the concentration of the electricity market is much higher than before the liberalisation process. Table 2 shows the results concerning the different segments of activities by comparing the status quo in 1997 with 2004:

- In the generation segment the number of network energy supply companies reduced from 8 to 4. Nevertheless the share of the network energy supply companies increased from 79% to 95%. RWE and E.on accumulated a duopoly of approximately 65% of the generation share.
- The transport segment was still in the hands of the large network energy supply companies, but their number reduced.
- The concentration of the market concerning sales to end consumers increased: While in 1995 five network energy supply companies on the one hand and regional energy supply companies together with 900 municipal utilities on the other hand had each a share of approximately 50%, in 2004 the four network energy supply companies had a share of almost 73%. The share of the regional and 700 municipal utilities declined to a level of 27%. The number of municipal utilities declined from 900 to 700 and additionally the network energy supply companies increased their capital share on the regional energy supply companies and municipal utilities.
- Furthermore, in the year 2000 two electricity exchange markets were established (in Leipzig and Frankfurt), which consolidated in 2002. The electricity spot market in Leipzig (called European Energy Exchange) increased its relevance, because around 12% of the electricity consumption in Germany was traded in 2004 on the spot market. The spot market on the one hand optimises the electricity production of the

network energy supply companies and produces more price- and market transparency (Monstadt and Neumann 2003: 42).

- After the merger process the now four network energy supply companies are active on new “sovereign” territories due to increased capital investments on regional and municipal utilities.

The liberalisation process has also to be related to the *international electricity market*:

- Generally, in Europe *two different developments* have been analysed. On the one hand the market concentration in Great Britain or in northern countries has declined, whereas on the other hand market concentration processes have increased in all other regions of Europe (Öko-Institut 2005). The four large energy supply companies in Germany, i.e. E.on, RWE, (German company), EnBW (in property of Électricité de France due to a contract with another main owner) and Vattenfall (Swedish company), also invest throughout Europe, e.g. in Spain, Great Britain or in Eastern Europe. E.on and RWE for example even interchange capital shares in Slovakia and Hungary by dividing up markets in the style of colonial powers (Gammelmin 2006: 28).
- At present RWE is the Number Three in Europe, due to its capital shares in Western Europe (e.g. in Germany the largest electricity provider, in Great Britain holding the tertiary position) and Eastern Europe (e.g. in Hungary holding the secondary position, in Slovakia the tertiary position and having further investments in Poland, Rumania etc.) (RWE 2005: 22). But E.on – the current “Number Two” in Europe (EdF is the Number One), with a net profit in 2006 of 2.85 billion Euro – is also very expansive and is trying to buy the Spanish energy supply company Endesa in order to use Endesa as a gate to the markets in South America (E.ON Energie AG: 2006).

Obstacles to full liberalisation

What are the remaining obstacles to full liberalisation?

1. All in all the market concentration and electricity prices have increased. There is no competition or effective price control at all. Consumers, who in praxis do not select new suppliers and municipal utilities, are the losers. Four network energy supply companies and their capital owner are the winners.
2. Consumer interest groups demand a property based unbundling, i.e. a nationalisation of the network infrastructure (Krawinkel 2006). Others demand an elaboration of the competition law (Nagel 2006).
3. The main problem is a political one and not a problem of technical regulation: the complex linkages between politicians, lobbyists and electricity industry at all political levels.

2. REGULATION

2.1. Instruments

2.1.1. Market regulation before the liberalisation process

Before the liberalisation process the electricity sector, as well as for example the public transport system or the telecommunication sector, had been organised as *public or public approved* monopolies. The proximity to the state and the abandonment of competition had been legitimated with

- the existence of a “*natural monopoly*” on the one hand, and with
- specific political aims of public concern whereby the state has to take care of the supply of infrastructure requirements for the population.

The “*natural monopoly*” was justified with the assumption that in the electricity sector a single company is more able to provide electricity at reasonable prices than a multitude of companies. Hence competition was not accepted. Specific political aims of public interest concerning the electricity sector were related to: the security of electricity supply, reasonably electricity prices, the independence of tariffs from the respective area of electricity consume, the promotion of technological innovations and since the 1970s also to environment protection (Monstadt and Naumann 2003: 8-10).

In order to assure these public interests the electricity market was the object of a special state *regulation system*:

(1) This regulation system before the liberalisation process was based on the National Energy Act of 1935 (“*Energiewirtschaftsgesetz von 1935 / EnWG 1935*”). The central aim of this law was the establishment of a cost-efficient and safe energy distribution. In order to do this, public influence on the energy distribution was to be assured and destructive competition was to be excluded (Becker 2005: 109). With this law territorial monopolies were also established. In order to legitimate and control the territorial monopolies, the public assured monopolies and the National Energy Act of 1935 were linked with a multitude of *provisions, aiming to regulate the sector*:

- a. The *Energy Supervision of the Federal States* (“*Energieaufsicht der Länder*”) was competent for the “*authorisation for taking up energy distribution*” (“*Genehmigung zur Aufnahme der Energieversorgung nach § 5 EnWG!*”), as well as for “*investment control*” (“*Investitionskontrolle nach § 4 EnWG*”) and for the “*price supervision for consumer prices in private households and trade*” (“*Preisaufsicht für die Tarifkunden in Haushalt und Gewerbe nach § 7 EnWG*”).
- b. *Electricity prices for industrial consumers* were controlled by the trust agencies of the federal state ministries, based on the *antitrust law* (“*kartellrechtliche Missbrauchsaufsicht nach dem Gesetz für Wettbewerbsbeschränkungen*”). This ex-post

control was orientated to comparisons with the prices of other energy supply companies. The trust authorities of the federal state ministries were also competent for *merger control*.

- c. Apart from the federal states the municipals had influence on the amount of energy distributed to their own municipal utilities. Often the distribution was organised by regional energy supply companies. In these cases the municipals gave concessions for the right to displace and run the electricity power lines in the municipalities. By means of the concessions the energy supply company got the monopoly over the transport system of electricity. The concession was linked with a levy⁴ and gave the municipals limited influence over the regional energy supply companies.

(2) To assure public interests the electricity distribution was often driven by public or private-public enterprises. The public activities, due to ownership or capital investments, were legitimated with profits, which flowed into municipal benefits. Since the 1970s it was also argued that structural change, which aimed at a more local and environmentally friendly distribution, would be better organised by public enterprises (Hölzer 2000: 13).

⁴ While the levy's amount can be determined by the municipalities, a federal decree sets upper limits (Growitsch and Müsgens 2005: 4).

Table 3: Instruments of regulation concerning different National Energy Acts

	Before the process of liberalisation	After the process of liberalisation (1998-2005)	Status Quo (2005-2007)
General	<i>National Energy Act of 1935 and Antitrust Supervision of 1953:</i> - territorial monopolies	<i>National Energy Act of 1998:</i> - territorial monopolies are cancelled - investment control is cancelled - separation of accounts	<i>National Energy Act of 2005:</i> - price control of end consumer prices will be cancelled in July 2007 - legal unbundling until July 2007
Generation	1) authorisation for take up energy distribution 2) investment control 3) merger control (GWB)	<i>National Energy Act of 1998 :</i> - territorial monopolies are cancelled - investment control is cancelled - separation of accounts	<i>National Energy Act of 2005:</i> - legal unbundling until July 2007
Transmission	1) investment control 2) antitrust law 3) municipal concessions	<i>National Energy Act of 1998:</i> - regulated access - additionally legal proceedings with "ex-post control concerning net prices and entries" - separation of accounts - investment control is cancelled <i>National Energy Act of 2003:</i> - complainant has to prove the misuse concerning net prices and net entry	<i>National Energy Act of 2005:</i> - new regulation authorities competence: - Ex ante- control of net prices (until the end of 2007) - 2008: price- / revenue-cap regulation - authorisation concerning net entry - legal unbundling until July 2007 - system responsibility
Distribution	the same as transmission plus municipal concessions	regulation- same as transmission, concessions of communes	regulation – same as transmission, concessions of communes
Supply/ Sales	- price supervision for consumer prices (private households and trade) - price supervision for consumer prices (industrial clients) by trust authorities/law	- territorial monopolies are cancelled - separation of accounts	- price authorisation of end consumer prices ends in July 2007, after: no control - currently: trust authorities and courts examining complainants concerning the authorisation of end prices - market leading company in a supply area has obligation for basis supply

Sources: Monstadt and Naumann 2003; Becker 2005; Nagel 2006, Eickhof and Holzer 2006; own composition.

2.1.2. Steps and instruments in the process of regulation

The original idea of liberalisation was the enforcement of competition in the electricity economy due to the separation (unbundling) of electricity production and supply from the transport sector (transmission and distribution) and the opening of production and supply for competition.

For this reason with the National Energy Act of 1998 (“Gesetz zur Neuregelung des Energiewirtschaftsrechts 1998”) the state regulation was reduced in favour of a more market orientated coordination (Monstadt and Naumann 2003: 17):

1. *Territorial monopolies* over electricity production and supply were cancelled (not for transmission and distribution);
2. Investment control was cancelled;
3. *Separation of accounts* has been implemented as a first step towards the unbundling of electricity production, transport and supply (aiming on more price transparency);
4. The *Negotiated third party access* (instead of regulated access) was introduced: The owners of the transport sector (network- and regional energy supply companies) were obliged to open their net and to give distribution companies and energy consumers the possibility to choose their supplier. The pressure groups of the electricity economy received the order to come to an understanding about net prices and conditions of the net entry by an “*association agreement*” between energy producers and industrial consumers.

With these regulations strict requirements concerning the antitrust authorities were combined:

The antitrust authorities have merely the competence to permit a “competition unfriendly behaviour” and they are only allowed to interact, if a discrimination concerning net entry or net prices is well-founded. In practice the discrimination happens very often and discriminated (new) enterprises were confronted with *long-term proceedings* (Monopolkommission 2000: 84). Hence the merger control of the antitrust authorities – especially between 1999 and 2001 did not work (Becker, Peter 2005: 111).

The legislation responded in 2003 with an amendment: The National Energy Act of 2003 (“Erstes Gesetz zur Änderung des Gesetzes zur Neuregelung des Energiewirtschaftsrechts vom 20. Mai 2003”): The parliament decided paradoxically that in the case of proceedings against market power abuse a complainant has to prove misuse concerning net prices and net entry. In practice it is not easy for competitors to provide this proof (Becker 2005: 111).

Nevertheless, the following negative results of the regulation system (concerning competition) were presented in the monitoring-report of the Federal Ministry of Economics (2003) and in the report of the Monopoly Commission (2004):

- extensive proceedings of civil courts and antitrust authorities due to discriminations concerning net entry and net prices for new competitors;
- extremely rare changes of suppliers concerning private households.

2.1.3. Current market regulations

The *National Energy Act of 2005* (“Zweites Gesetz zur Neuregelung des Energiewirtschaftsrechts vom 13. July 2005”) enacted in July 2005. It transformed the European acceleration directive from 2003 (2003/54/EC). The amendment of 2005 makes a clear distinction between the (1) regulation of the transport segment and (2) the regulation of the competition segments retail and supply of electricity:

1) Current regulation of the transport segment

Since July 2005 new regulatory agencies have been responsible for regulation and unbundling of the electricity- and gas transport segments. One regulatory agency at federal level (“Bundesnetzagentur”) is located within and under supervision of the federal ministry of economics. Additionally, on the level of the federal states respective regulatory agencies located within the ministries of economics of the federal states (“Landesregulierungsbehörden”).

- a. Regulation of the Bundesnetzagentur includes authorisations concerning *net entry and the ex ante-control (cost based) of net prices* (limited until the end of 2007), which means net prices can be reduced from the Bundesnetzagentur (for details see Eickhoff and Holzer 2006: 270). Conflicts with the regulatory agency have to be decided by courts.
- b. In 2008 net prices will not be regulated any more on cost basis, but on the basis of an incentive regulation (based on a price-/revenue-cap regulation) (Cronenberg 2006; Ott 2006). In May 2006 the Bundesnetzagentur presented a draft for the incentive regulation (“Anreizregulierung”): The aim is rationalisation by means of separating cost from profits. *With the price-/revenue-cap regulation an energy supply company can merely increase their profit in minimising costs* (see in detail Eickhoff and Holzer 2006: 270-272). With the incentive regulation a several years’ regulation cycle is determined (according the National Energy Act of 2005 for two until five years). Owners of the transport segment need not be controlled every year (DIW 2006: 3).
- c. Furthermore, the Bundesnetzagentur is competent for “system responsibility” of the transport segment and for legal unbundling, which has to be finished by July 2007.
- d. The regulatory agencies within the economic ministries of the federal states are responsible in the same way as the Bundesnetzagentur concerning electricity transport companies with less than 100,000 clients and if their net is within the borders of the respective federal state.

2) Current regulation of retail and supply activities

- a. The ministries of the federal states are responsible for the ex-ante price authorisation of end consumer prices. This control ends in July 2007. Concerning the time after July 2007, there will not be an alternative price control for end consumer prices. Consumer organisations and some politicians demanded the withdrawal of the

temporal limited price control. The ministries of the federal states are not allowed to reduce the end-prices.

- b. Currently trust authorities and courts are examining complaints from the energy supply companies and consumers concerning the authorisation of end prices.
- c. Concerning the supply of electricity – the leading company on the market in the relevant supply area is obligated for basis supply.

2.1.4. Regulating Actors

Table 4 shows the different actors, decisive at the different local levels. It has to be stressed that the regulatory agencies are under the control of the ministries of economics. It is obvious that in the course of the liberalisation process the number of regulating actors as well as the proceedings have increased.

Table 4: Regulating actors

	Before the process of liberalisation	During the process of liberalisation (since 1998)	Since 2005
Federal level	1) Antitrust authority of the federal state 2) Federal Ministry of Economics	1) Antitrust authority of the federal state 2) Federal Ministry of Economics 3) Negotiated third party access	1) Antitrust authority of the federal state 2) Federal Ministry of Economics 3) regulatory agency on federal level
Regional level (federal states)	1) Antitrust authorities of the federal states 2) Ministries of economics of the federal states	1) Antitrust authorities of the federal states 2) Ministries of economics of the federal states 3) Negotiated third party access 4) Courts	1) Antitrust authorities of the federal states 2) Ministries of economics of the federal states (until June 2007) 3) regulatory agencies on the federal state level 4) Courts
Municipal level	1) Municipality	1) Municipality	1) Municipality

2.2. Problems

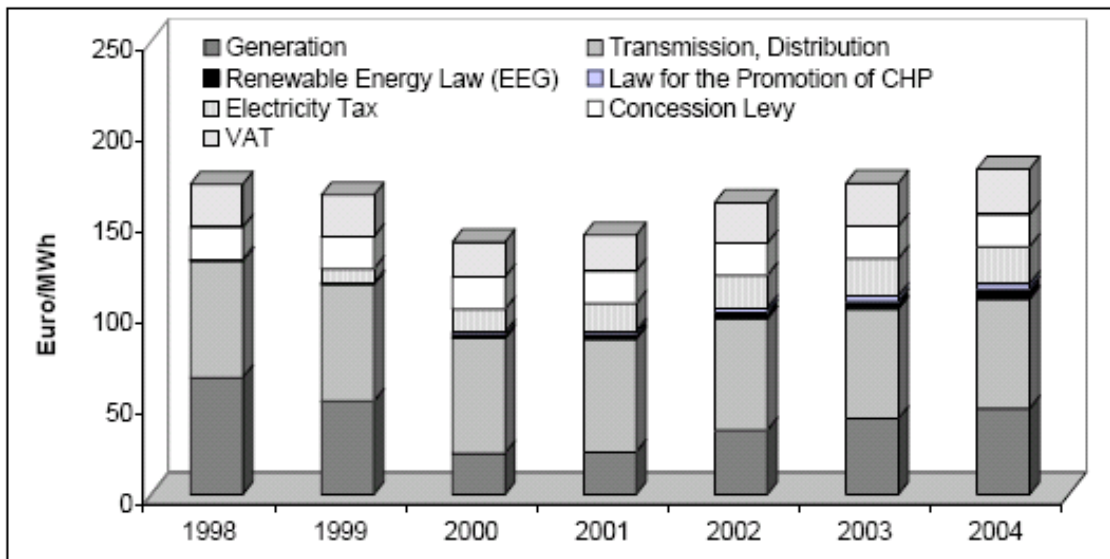
At first it must be recognised that the regulation authorities have not managed to reduce the increase of electricity prices for end consumers. After a decline of electricity prices between 1998 and 2000, since 2002 prices have increased and are nowadays higher than before the liberalisation process (Nagel 2006; Müsgens and Growitsch 2006: 41).

Three areas have influence on the electricity price:

- 1. The electricity price on the wholesale trade (generation costs plus profit),
- 2. costs for the transport (net price) as well as
- 3. public dues (value-added tax, electricity tax, contributions for renewable energy, municipal concession levy).

Each area is about one-third of the electricity price for private households (Cronenberg 2006; Figure 1).

Figure 1: Development of Electricity Prices, Representative Household customers, Euro2004/MWh



Sources: VDEW, EWI; Figure: Growitsch and Müsgens (2005).

Analysing the development of the single components up to 2006 it can be clearly seen that the electricity price in the wholesale trade has continuously increased in the last five years – in 2006 alone a plus of 30%. Currently, the regulatory agency has reduced net prices, but the electricity oligopoly is trying to substitute the reduced net prices by raising the end prices: Subsequent to the merger waves an oligopoly of just four network energy supply companies (E.on, Vattenfall, EnBW, RWE) was able to dominate the electricity price in the wholesale trade (Nagel 2006). In the past, applications for the increase of electricity end prices were refused only in extremely rare cases. So far it has happened only once when the federal state of Hesse refused the application in 2006 (Frankfurter Rundschau, 22.8.06). That means the price supervision of the federal states for private households was not functioning. In July 2007 the price supervision will be abolished completely!

Concerning the regulation of net prices it was criticized that the regulatory agencies are confronted with several unclear legal terms within the National Energy Act of 2005 – there are no clear legal aims (Becker 2005: 116, Nagel 2006: 21). Lawyers describe the current National Energy Act as a license to engage in proceedings. According to them it has to be expected that proceedings will stop the regulation system in future years.

Nevertheless, the main problem seems to be the high market concentration in the electricity sector: The *quality of regulating the transport sector is not so important* (Eickhoff and Holzer 2006: 276). Therefore *i a supervision of the electricity price in the wholesale trade was demanded* (Becker 2006: 115; Nagel 2006: 21).

3. ACTORS/OWNERSHIP

In this section the privatisation process will be sketched, as well as the most important actors (see Table 5) within the electricity industry in relation to the different parts of the network industry. For each actor a short description of the company before and after the process of liberalisation will be given with respect to its ownership structure, main activities and relations to other market actors. Overlapping with section 1 (market structures) might occur.

Whereas privatisations of the electricity sector in other countries took place in national reform programmes, in German the process of privatisation was rather creeping. Nevertheless the following *steps in the process of liberalisation* can be described:

- As a start, in the eighties privatisations were declared as a main element of economic policy. Capital shares of the federal state were sold, among capital shares on the energy supply companies VEBA AG (1984/785 and 1987) and VIAG (1987/88). Compared to privatisation in the United Kingdom the privatisation were rather modest. Until the middle of the nineties the federal states were very restrictive in selling their capital shares. Especially the municipalities even tried to expand their activities in the electricity sector.
- A particular case was the privatisation of the East-German electricity sector. In 1990 three electricity supply companies from West-Germany (RWE, PreussenElektra and Bayernwerk), the government of East-Germany and the “Treuhandaanstalt” (the meanwhile abolished “Treuhandaanstalt” was the privatization agency which was responsible for the privatisation of the East-German property in the frame of the German unification) agreed to a privatisation of the East-German electricity sector. In 1994 a privatisation contract was signed and the capital shares were divided between the large (West-German) energy supply companies. After the unification communes in the new federal lands (former East-Germany) established own municipalities until 1998.
- Since the middle of the nineties the federal states (in West-Germany) sold their capital shares on regional energy supply companies to large network energy supply companies. The communes also sold since the beginning of the nineties their capital shares concerning regional supply companies and concerning their municipalities (here via partial privatisations). *The privatisations obviously aimed at substituting deficits in public households, taking into account shortfalls in receipts resulting from profits of the electricity sector* (Monstadt and Naumann 2003: 15-17). In 2005 more than 50% of municipal utilities were organised in private forms (VKU-Kompakt 2005). About 50% were linked with the large network energy supply companies due to minority capital investments of the large network energy supply companies (Nagel 2006: 21).

Table 5: Actors, market shares and ownership

	Before the process of liberalisation (1997: territorial monopolies)	After the process of liberalisation (2004)
Generation (not capacity)	<p>- 8 network energy supply companies with 79% market share; according to their volume rank:</p> <ol style="list-style-type: none"> 1. RWE (private profit company, 30% municipal; active in all sectors) 2. PreussenElektra AG/VEBA (generation, transmission, distribution) 3. BayerwerkAG/VIAG (profit company; 25% shares federal state "Bayern": generation, transmission, distribution) 4. EnBW (predominantly public ownership, 25.2% federal state "Baden-Württemberg", 66% municipal utilities, active in all sectors) 5. VEW (predominantly public ownership, 56% municipal utilities; 11 % Bayernwerk; active in all sectors) 6. VEAG (100 % capital investment by 7 network energy supply companies, mainly RWE, PreussenElektra, Bayernwerk ;production, transmission) 7. HEW (predominantly public ownership, 50.2% shares federal state "Hamburg", 15.4% PreussenElektra; active in all sectors) 8. BEWAG (active in all sectors; Preussen Elektra 23 %, Bayerwerk 26%) <p>- 80 regional energy supply companies with 10%; market share</p> <p>- 900 municipal utilities with 11% market share</p>	<p>- 4 network energy supply companies with 95.6% market share (private for profit, active in all sectors):</p> <ol style="list-style-type: none"> 1. RWE: 38.7% market share (DWS-Investmentfond) 2. E.ON: 26.5% 3. EnBW: 13.8% 4. Vattenfall Europe: 16.2% <p>Others: 4.4 %</p> <ul style="list-style-type: none"> - municipal utility - regional producers - (New) local producers, without own net
Transmission	- 8 network energy supply companies with 100% share in their territories	RWE, E.ON, EnBW, Vattenfall Europe (100%)
Distribution (middle +low voltage power)	- 80 regional energy supply companies; (mixed ownership; almost all are dependent on the network energy supply companies due to their capital investment; active in production, distribution, supply)	regional producers (private ownership of the network energy supply companies)
Sales (end consumers)	<p>- RWE, VEW, EnBW, BEWAG und HEW are also active in sales (51% -59% in 1995/ due to capital chares concerning regional energy supply companies)</p> <p>- 80 regional energy supply companies;</p> <p>- 900 municipal utilities (public ownership, profit companies, just 10 % are connected with network or regional energy supply companies by capital investments; active in production, distribution, supply)</p>	<p>- 4 companies with 72,8% market share:</p> <p>RWE: 16.8%</p> <p>E.ON: 22.1%</p> <p>EnBW: 19.5%</p> <p>Vattenfall Europe: 14.4%</p> <p>- Others: 27.2 %</p> <p>- 50 regional producers</p> <p>- 700 municipal utilities (mixed ownership): more than 50% are privately organised, 50% are connected with network or regional energy supply companies by minority capital investments</p>

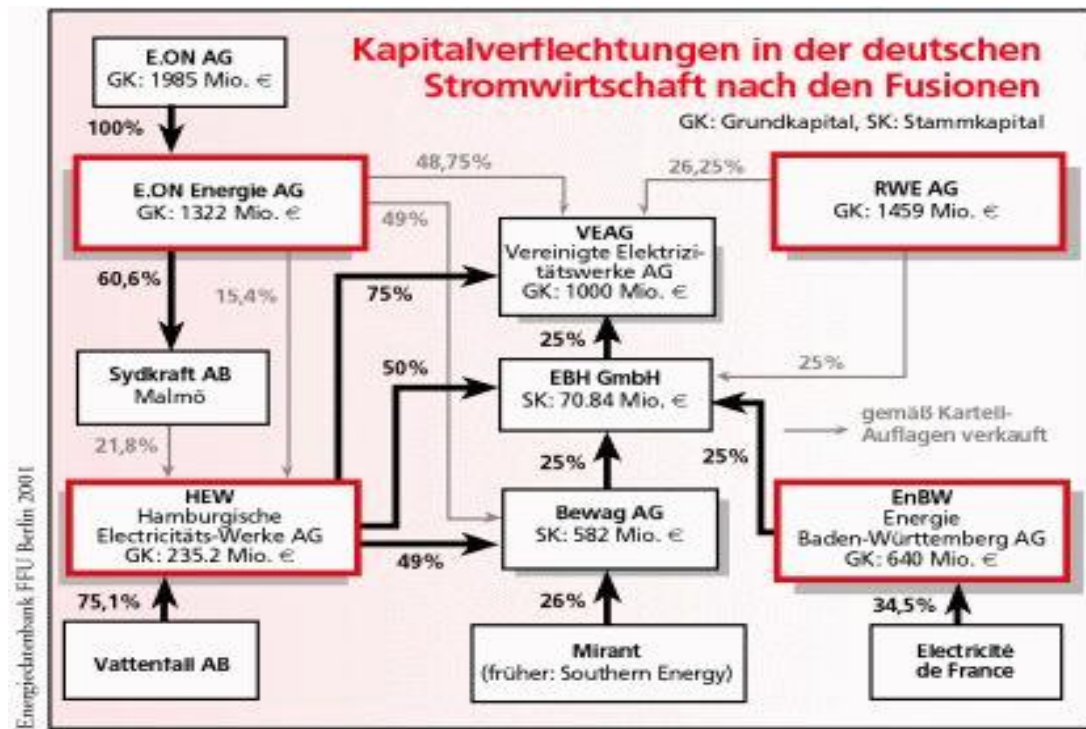
Sources: Nagel et al. (2006); Renz (2003), Monstadt and Neumann 2003. Own composition.

The different segments of the electricity economy are linked vertically (see section 1). They are linked directly (if an energy supply company is active in all segments) or indirectly. Before the liberalisation process due to capital shares between network

energy supply companies and regional energy supply companies; after the liberalisation process additionally due to capital shares of network energy supply companies concerning municipal utilities (see section 1.3).

There is also integration of capital between the large network energy supply companies. The following figure shows integrations of capital after the mergers and acquisitions (black arrows) as of 2001. The white arrows show sold capital shares:

Figure 2: New capital integrations after the fusions in 2001



Electricity generation

In 1997 eight network energy supply companies produced 80% of the electricity in Germany (see Table 5).

Every network energy supply company was a profit company. Energy supply companies with the largest turnover were “RWE AG“, “PreussenElektra” (each € 7.66 billion turnover) and “Bayernwerk AG“. These energy supply companies were in private hands, with minority investments by the state. Before the liberalisation process the three largest energy supply companies had a capital share concerning the East German “VEAG” of 75%. Further minority investments from “Bayernwerk” and “PreussenElektra” existed concerning “BEWAG“, “VEW AG” and “HEW AG” (Renz 2001: 73-74). In the course of the fusions waves, at the beginning of the liberalisation process, capital interweaving had been partly terminated due to requirements imposed by the antitrust agencies. Besides the above-mentioned larger network energy supply

companies, the remaining smaller network energy supply companies were in public ownership, but again linked with private investments.

20% of the electricity generation was in the hands of 80 regional energy supply companies and 900 municipal utilities.

Currently there are merely four network energy supply companies (RWE, E.On, EnBW und Vattenfall Europe), private for profit enterprises which have been able to increase their market share in electricity generation up to 95% (2004). On the other side municipal utilities and regional energy supply companies currently together are merely producing 5% (instead of 20% in 1997)! There are also some new local and ecological producers of electricity in private hands, but they are not relevant with respect to their quantitative share.

Transmission and Distribution

Before and after the liberalisation process the strategic important transmission power lines were completely in the ownership of network energy supply companies.

The distribution of electricity is mainly run by the *regional energy supply companies*, besides the municipal utilities. Before the privatisation process the ownership of the regional energy supply companies was mixed – depending on the ownership of the network energy supply company they belonged to (Metz 1997: 235). After the liberalisation process the ownership of the regional energy supply companies was private. Almost all regional energy supply companies are dependent on the network energy supply companies due to capital investment. Currently regional energy supply companies are active in production, supply and are also in part responsible for sales to end consumers.

Supply and sales to end consumers

Before the liberalisation in 1997 about 900 *municipal utilities* had been in public ownership. Some of them held capital investments in regional and network energy supply companies. On the other hand capital investments of regional and network energy supply companies in municipal utilities existed with a mere 10% of the municipal utilities.

Regional energy supply companies were just as important as municipal utilities for supply... With their help the network energy supply companies were linked indirectly to the supply sector. RWE, VEW, EnBW, BEWAG und HEW had also been active in sales with between 51% and 59% in 1995 due to capital shares involving regional energy supply companies.

After the liberalisation process in 2005 more than 50% of municipal utilities were organised in private forms (VKU-Kompakt 2005). About 50% were linked with the large network energy supply companies due to minority capital investments of the large network energy supply companies (Nagel 2006: 21). The number of municipal utilities reduced between 1998 and 2005 from 900 to 700.

In Germany, but also world-wide, municipal infrastructures have been bought from large network energy supply companies. The classical municipal utility in Germany with water- and energy-distribution, refuse collection, local public transport systems and so on, has been partly dismantled in recent years. Municipalities bought their capital shares in municipal infrastructure and are currently engaged in private public partnership due to household problems. This privatisation politics has been criticised as short-term financial planning which is *not economically sustainable*, because in the long run receipts from municipal utilities in the case of privatisation are lost. Just as in the case of public private partnerships expenditures for the use of privatised infrastructures are too expensive in the long run and linked with a loss of control as regards the quality of these infrastructure benefits.

However, in practice there are alternative options: more recently, a few municipal utilities, which had not sold their capital shares completely, have joined together and tried to be active in all segments of electricity and gas economy (e.g. the cities Aachen, Rendsburg, Tübingen and Neuruppin). Municipal utilities are also trying more and more to produce electricity themselves. Currently (in 2006) a quarter of all German municipal utilities are planning to build their own power stations (VDEW 2006, press release 25 July 2006).

4. *ROLE OF GOVERNMENT AND OTHER STAKEHOLDERS*

4.1. *Role of government*

In referring to a natural monopoly and public interests in the last century there was a closed relation between the state and the electricity economy. But with the privatisation of public ownerships in the electricity sector (personal) *linkages between politicians and private economy* have not been interrupted. Also after the liberalisation process the German electricity economy can be likened to a powerful family clan. A multiplicity of different interest groups and about 1500 official persons (with special mandates) represent interests in German and European policy (Gammelin 2006: 28ff.).

From an institutional point of view the *ministries of economics are acting in a particularly ambivalent manner*: On the one hand they are responsible for public interests such as low prices for private households, but on the other hand they have to support energy supply companies in being competitive. But especially high electricity prices are linked with capital profits which offer options to foster market positions. Hence the ministries of economics did not always use regulatory instruments to the favour of private households. In the early phase of the liberalisation process the merger control was not working and still the control of consumer end prices is not functioning, respectively is planned to be abolished (Becker 2005).

Crucial for the German government in the course of the liberalisation process was probably the strategy to promote national champions (like RWE, Eon) at the level of international competition with regard to national and international markets. For example in the case of the fusion of Eon with the Spanish electricity provider Endesa, the Federal Chancellor of Germany Mrs Angela Merkel directly has been negotiated 2006 with the Spanish Government and with EU representatives.

4.2. *Other stakeholders*

The difference between private and public (consumer) interests are accompanied by a multitude of pressure groups with different power:

The *interests of the energy supply companies* are mainly represented by three associations:

1. The most powerful is the German Electricity Association (Vereinigung Deutscher Elektrizitätswerke, VDEW). Either directly affiliated or indirectly aligned via regional associations, its members include all the large companies, virtually all the medium-sized and most of the smaller companies involved in the public supply of electricity – altogether more than 750 suppliers from a total of approx. 1,000 in Germany (<http://www.strom.de>). The German Electricity Association is closely connected with the state actors in the Federal Ministry of Economics (Renz 2003: 79).
2. The employers' association of municipal companies (Verband kommunaler Unternehmen, VKU) represents the interests of the local authority public utilities in Germany. It represents over 1,380 member companies with 246,866 employees (in 2005) located throughout Germany. The companies organised within the Association of Municipal Companies are responsible for supplying electricity, gas, district heating and water. Many of them also run local public transport services. The association member companies represent a considerable economic force. Their combined turnover comes to around €62 billion (<http://www.vku.de>).
3. Another powerful association is the German association of network- and regional energy supply companies (Verband der Verbundunternehmen und Regionalen Energieversorger in Deutschland, VRE).
4. A less powerful organisation is the Federal association for renewable energy" (Bundesverband Erneuerbare Energie BEE e.V., BEE). The federal association for renewable energy is the umbrella organization of the associations for renewable energies in Germany. A long-term goal of the BEE is to completely convert to the use of renewable energy. The number of employees in this sector is currently about 170,000 – in contrast to the year 2004 (157,000 employees) an increase of 10% (<http://www.bee-ev.de>).

The influence of the organised *interests of consumers and environmental protectors* is comparatively modest:

5. The Association of the Industrial Energy and Power Industry (Verband der industriellen Energie- und Kraftwirtschaft, VIK) represents the interests of industrial electricity consumers.
6. The Federation of German Consumer Organisations (Verbraucherzentrale Bundesverband, VZBV) represents the interests of private electricity consumers, as well as the
7. Federation of Energy Consumer (Bund der Energieverbraucher). In the past the last two mentioned have been successful in supporting legal proceedings of private consumers – also with the help of the media – against high electricity prices.
8. Environmental associations and the environmental movement are currently not present in the media. But in the past they contributed to the social agreement about the necessity for an “energy-mix” resulting from traditional and renewable energy sources. This agreement was the basis for the introduction of the electricity tax and the renewable energy-contribution. Environmental associations had no decisive influence on the criticised practice of the supply of CO₂-licences (“CO₂-pollution rights”) from the government to the energy supply companies – free of charge. This practice was without influence on the CO₂-balance and gave the network energy supply companies reasons to raise the electricity prices (Krawinkel, in: Meiners and Mulitze 2006).

The *interests of the employees* are very well organised:

9. They are organised on the one hand at company level due to the members of the works councils (Betriebsräte) .In the private sector (e.g. the employees of the network energy supply companies) and the members of the staff councils (Personalräte) in the public sector (e.g. employees of municipal utilities). The interests of the employees in the public sector are also covered partly via municipal authorities, e.g. with the help of the “Association of municipal companies”. On the other hand their interests are also represented with the help of the unions at interplant level especially via the United Services Union (Vereinte Dienstleistungsgewerkschaft, ver.di,⁵ (e.g. if the regulatory agency tries to reduce net prices or tries to restrict possibilities for municipal cross-subsidisation – which would be linked with negative effects for the municipal employees).
10. Furthermore, the interests of the employees in the private sector are organised via the German right of co-determination in the supervisory-boards of large enterprises. The representatives of the employees – respectively representatives of the different unions – In the supervisory-boards are active at company level, as well as at interplant level. Concerning the large network energy supply companies e.g. via the United Services Union, which has representatives in the supervisory-boards of E.on (Erhard Ott)⁶ und RWE (Frank Bsirske),⁷ as well as via the “Mining, Chemicals and

⁵ Its approximately 2.4 million members make ver.di one of the largest independent, individual trade unions in the world. As a multi-service trade union ver.di looks after people employed in over 1,000 different trades and professions.

⁶ Erhard Ott is divisional director for distribution and supply within the United Service Union.

⁷ Chairman of the United Services Union

Energy Industrial Union” (Industriegewerkschaft Bergbau, Chemie, Energie, IG BCE), which also has a representative on the supervisory board of E.on (Hubertus Schmoldt)⁸. Moreover there is the “German Metalworkers' Union” (Industriegewerkschaft Metall, IG-Metall) representing on the one hand the employees of companies which produce station- based power from renewable energy and on the other hand employees of companies producing power based on traditional energy sources.

4.3. Conflicts

Currently there are conflicts between the actors concerning the *end prices of electricity*:

The “Federal association for renewable energy” criticises the “German Electricity Association”, saying they direct the energy supply companies to lift their electricity prices without any reasons. Not only the European Commissioner for Competition, Neelie Kroes, criticises the fact that the German network energy supply companies shut down power stations in order to reduce the electricity capacity (with a view to the wholesale trade of electricity and the respective prices) and by doing this they raise the electricity prices. The European Commission started preliminary proceedings in 2006 against Eon and RWE concerning price manipulation and the corruption of politicians (Scheytt 2006: 37).

Similarly the consumer associations criticise the fact that the large network energy supply companies sell the electricity on the electricity exchange market (to the wholesale trade) at 100% over the production price (Meiners and Mulitze 2006).

The German Minister for Economics, Michael Glos, warned the large network energy supply companies against lifting their electricity prices after the federal regulatory agency reduced the net prices. At this point the “Federation of German Consumer Organisations“ demanded that the end price supervision should not be abolished in July 2007 (Frankfurter Rundschau 25 August 2006). Currently the federal state of North-Rhine Westphalia is trying to start an amendment in order to implement again the price supervision concerning household prices. In the legislative procedure to the National Energy Act of 2005 price supervision was demanded by the Federal Cartel Office. Finally the price supervision was abolished with the argument that price supervision would diminish competition (Becker 2005: 115).

The *obstruction of competition by the network energy supply companies and their linkages with the politicians* was already sketched in the example of their influence on the legislation of the National Energy Act of 1998 (Becker 2005) or concerning their influence on the practice of merger control (Nagel 2006). Large energy supply companies also have been able to implement their interests, because the energy supply companies (who are traditionally political advocates of atomic energy) gave their agreement for the finalisation of atomic energy (June 2000), while in return the

⁸ Chairman of the Mining, Chemicals and Energy Industrial Union.

government renounced a consistent competition policy to the favour of the large energy supply companies (Gammelín 2006).

Concerning competition it has been questioned if *unions and consumers are partners, or if unions as representatives of the producers are partners of the energy supply companies* (see Meiners and Mulitze 2006).

The United Services Union argues liberalisation produces pressure to make cuts in staffing.. Representatives of consumers argue more competition, low prices and personnel cuts cannot be stopped in the future. Hence, employment structures should be restructured concerning a more local energy production and the ecological reconstruction of buildings. Here consumer representatives argue in the same way as the federal regulatory agency (Cronenberg 2006).

Especially in focusing on the *conflict about the net regulation* different interests between consumers and trade unions are obvious:

Consumer organisations demand lower net prices, especially concerning low voltage supply lines (owners are partly municipal utilities) or even better for the socialisation of the electricity transport sector in arguing the transport system in the past was already paid by the consumers (Schindowky 2006).

The “United Services Union is against a property rights based unbundling, as the strict separation between electricity suppliers and net operators, which is under discussion in Brussels” (Ott, in Meiners and Mulitze 2006: 13; translation T. B.) and fears that price reductions could mean personnel costs and manpower could be reduced. The United Services Union argues the reduction of net prices has almost no effect on end prices for private households. The union stresses the point that *profits from the electricity economy are essential for the earnings of the municipalities*. Because of this – they argue – *the municipal cross-subsidisation* (for other municipal benefits like the local public transport system) should not be abolished in the course of liberalisation and unbundling policy. Here consumer associations simply argue the financing of the communes should be reorganised, without saying how this could be done (Meiners and Mulitze 2006; ver.di newsletter August 2006; Ott 2006). Unions and local politicians in this respect are political partners. Hence, the interests of the municipal utilities, which are still largely public property and represented by the “Association of municipal companies”, are towards the regulation of municipal electricity transport systems. Contrary to Belgium the property rights based on unbundling in municipalities in Germany does not seem to be enforceable.

The following table shows how the numbers of staff in the German electricity sector were reduced between 1991 and 2002:

Table 6: Employees in the German electricity sector 1991-2002

	Employees	Change in relation to the previous year (%)
1991	217 600	
1992	210 200	- 3.4
1993	204 400	- 2.8
1994	196 300	- 4.0
1995	187 900	- 4.3
1996	178 900	- 4.8
1997	171 100	- 4.4
1998*	160 426	- 6.2
1999	151 076	- 5.8
2000	137 197	- 8.1
2001	130 507	- 4.9
2002	131 600	+ 0.8

Source: Verband der Elektrizitätswirtschaft (VDEW), Berlin;

* since 1998 Federal Statistical Office (annual average); own figure

CONCLUSIONS

All in all, the German process of liberalisation and privatisation is primarily characterised as a *privatisation process, which strengthened the market power of the large network energy supply companies*. And not only at national level because large energy supply companies bought public and private energy supply companies throughout liberalised Europe.

Positive liberalisation effects – such as lower electricity prices for private households – have not occurred. However, employment has been reduced (directly after the liberalisation process it was higher than before), whereas employment conditions have stayed relatively constant. Profits made by the energy supply companies have increased enormously.

The described conflicts primarily took place in the public debate via media or via proceedings. Up to now these conflicts have not resulted in public demonstrations. However, at local level privatisations are partly objects of stronger public dispute in the local policy. In some cities petitions for a referendum have been started; sometimes with the help of trade unionists from the United Services Union. One case study is the city Düsseldorf. In a 2001 referendum 89% of the participants voted against the privatisation

of 29.9% of the capital shares of the municipal utility. But the privatisation was not stopped. Although 90,000 citizens of Düsseldorf voted in 2005 in a petition for a referendum against the privatisation of further 25% of the municipal capital shares, further participation took place in 2006 ([http://www.mehr-demokratie.de/duesseldorf.html?&no_cache=1&sword_list\[0\]=Stadtwerke](http://www.mehr-demokratie.de/duesseldorf.html?&no_cache=1&sword_list[0]=Stadtwerke)).

Another prominent example is the city “Mühlheim an der Ruhr” (in the federal state of “North-Rhine Westphalia”). There at the beginning of 2006 the first Europe-wide petition for a referendum contra all types of future privatisations of municipal infrastructures was successful after the voting of the citizen of “Mühlheim an der Ruhr” (<http://www.mbi-mh.de/>). This petition for a referendum is currently a model for further petitions at municipal level in other municipalities (<http://www.mehr-demokratie.de/120.html>). However, this development is not representative for the past: The normal case was a more silent privatisation of municipal infrastructures, which currently is proceeding mainly in the form of private public partnerships.

In order to develop alternative perspectives in a constructive manner, it seems to be necessary firstly to make the lobbying in the electricity sector more transparent (so the political result of this analysis). Secondly, the identification of joint interests of different actors seems wise, in order to give incentives for potentials of joint political action.

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