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The European Electricity Market: Centralization of Regulation or Competition between Regulatory Approaches?

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The European Electricity Market: Centralization of Regulation or Competition between Regulatory Approaches?

by Lars Kumkar

CONTENTS

- The European Council and the European Parliament adopted the European Electricity Directive in 1996. Since the end of the implementation period in 1999, some parts of the European power sector have been liberalized. In most countries, e.g., in Germany, price reductions and comprehensive institutional changes, e.g., cross-border mergers and the establishment of new power exchanges, are on the agenda.
- The data for cross-border electricity trade and for price developments indicate the emergence of an internal European market for electricity following the implementation of the Electricity Directive. Even if it is highly questionable whether a completely integrated internal market already exists, the obvious evolution towards more competition and market integration does not seem stoppable anymore. The Electricity Directive of 1996 is unambiguously a success on the way to competition in the European electricity industry.
- On March 13, 2001, merely two years after the end of the Directive's implementation period, the European Commission presented far-reaching proposals for further steps. On the one hand, these proposals aim at an acceleration of the quantitative market opening. On the other hand, they contain a far-reaching revision of the existing Electricity Directive: The proposals would induce a Europe-wide harmonization of the substantive as well as the institutional design of regulatory policies. This holds both for the network-use model and for public service objectives.
- According to the Commission's proposals of March 2001, the member states would be obliged to establish independent regulatory authorities. In Germany, for example, this could result in a sector-specific regulation authority for electricity in addition to the already existing telecommunications authority and the competition authorities.
- Considering the technical characteristics of the electricity industry and the recent experiences with electricity market liberalization leads to a quite simple normative conclusion: the competence assignment should give maximum leeway for competition between different regulatory approaches, and, therefore, for more or less spatially restricted experiments. The goal must be to choose regulatory institutions that provide for competition between alternative approaches and allow ongoing improvements. Thus, there is a strong argument against the noticeable competence reassignment from the EU member states to the European level as proposed by the Commission.
- Recognizing the disadvantages of a far-reaching harmonization of regulatory policies, one need not regret that the Council of Gothenborg in June 2001 and the Council of Barcelona in 2002 did not reach definitive decisions on the Commission's proposals of March 2001. This "reprieve" should be used for an intensive discussion about a proper competence assignment between the EU and the member states.

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1 Introduction

The European Council and the European Parliament adopted the European Electricity Directive in 1996. Many years of irritation ended, concerning single-buyers, eligible customers, public service obligations, and the role of competition in a sector not traditionally seen as an appropriate target for liberalization. Since expiry of the Directive's implementation period in 1999, some parts of the European power sector have been liberalized. In most countries, e.g., in Germany, price reductions and comprehensive institutional changes, e.g., cross-border mergers and the establishment of new power exchanges, are on the agenda.

That is not the end of the story. Merely two years after expiry of the Directive's implementation period, the European Commission presented two new, far-reaching proposals for fur-

ther steps as a reaction to the fact that the European power market is still not a single market. Further measures would be necessary to accomplish the completion of a European Single Market for Electricity.

This paper discusses two questions: first, to what extent is the European power market already integrated and, second, whether the Commission's proposals are an appropriate answer to the state of affairs in the European power market. It will be argued that the assignment of regulatory competences should leave as much freedom as possible for competition between different regulatory designs, thus for regionally restricted experiments. This paper argues against the substantial shift of competences from the national to the European level as suggested by the Commission.

2 The Electricity Directive: A Success Story?

2.1 Essentials of the Electricity Directive of 1996

The Electricity Directive of the EU (European Community 1997) was adopted on December 19, 1996 and came into force on February 19, 1997. With regard to the substantive provisions, the Electricity Directive has aimed at a competitive opening of the traditionally monopolistically organized national markets (Britz 1997; Kumkar and Neu 1997).

First, the member states have to establish wheeling rights for existing transmission and distribution networks; in addition, they have to liberalize the construction of new facilities in generation and transport. The wheeling rights are supposed to allow independent firms (generators and traders) and non-resident utilities to supply final customers.

Second, the Directive has assigned wide discretionary scope concerning its implementation to the member states. This scope allows, for example, the retention of central government investment planning methods ("tendering procedure" for new power stations) by the member states. In addition, it allows the definition of public service obligations which electricity firms have to follow and which may justify exemptions from the Directive's competition rules.

Third, the stipulated competitive opening of the national markets has been restricted quantitatively: for the time being, the definition of an "eligible customer" allows the exclusion of many end users from participating in the competitive markets. In 1999, the member states should have reached a market opening of at least 27 percent. This share of the national market increased to 30 percent in February 2000 and should amount to 35 percent in 2003.

Table 1: Quantitative Market Opening in the EU Member States (percent)

	2000	2003	Later
		(planned)	
Austria	32	100	100
Belgium	35	50	100 (2007)
Denmark	90	100	100
Finland	100	100	100
France	30	35	n.a.
Germany	100	100	100
Greece	30	35	n.a.
Ireland	30	40	100 (2005)
Italy	35	70	70
Luxembourg	40	56	75 (2005)
Netherlands	33	100	100
Portugal	30	35	n.a.
Spain	54	100	100
Sweden	100	100	100
United Kingdom	100	100	100
<i>EU</i>	66	75	83

Source: EC (2001b).

2.2 Implementation of the Electricity Directive

The Electricity Directive is no law directly in force, but needs implementation into national rules. The member states had time up to February 19, 1999 for the implementation.¹

In the meantime, the Directive's implementation in the member states was completed.² Over and above that, the scope of application of the Electricity Directive was expanded onto the European Economic Area countries Norway, Iceland, and Liechtenstein, with effect of July 1, 2000.

¹An extension of this period was granted to Belgium, Ireland and Greece.

²Belgium marks the exception due to some missing regulations. For more detailed information about the implementation of the Electricity Directive, see the working document of the Commission (EC 2001b) and the country reports, to be found on http://europa.eu.int/comm/energy/en/elec_single_market/implementation/index_en.html and the recent Commission's First Benchmarking Report on the Implementation of the Internal Electricity and Gas Market (EC 2001e). Further information can be found in Oxera et al. (2001).

2.2.1 Quantitative Market Opening

Numerous member states have opened their markets much further than stipulated by the Electricity Directive (Table 1). The Scandinavian countries and the United Kingdom are especially noticeable, in which market opening had moved on already (or was foreseeable) before the Electricity Directive. The example of Germany is also striking, a country in which the market opening was discussed very controversially and vehemently. In the end and with the support of the Electricity Directive, the liberalization proponents gained the upper hand in Germany, however, and pushed through a complete market opening. France marks the other extreme with a market opening of just 30 percent.

In sum, the quantitative market opening is much larger than the Electricity Directive prescribes. The Europe-wide market opening reached 66 percent in 2000, far above the mark of 30 percent demanded by the Directive.

2.2.2 Qualitative Market Opening

The effects of market opening depend as well on quantitative measures, as on qualitative aspects.

Obviously, a formally eligible customer is not necessarily able to choose his supplier freely. Two aspects of the Directive influence the intensity of actual competition between different power providers: on the one hand, the so-called reciprocity clause of the Electricity Directive may limit the degree of competition. This clause allows the member states to refuse imports for their eligible customers if they do not belong to the group of eligible customers in the exporting country. Eight member states, including Germany, have used this authorization.³

On the other hand, the general design of the wheeling rights significantly determines the extent of competition. This concerns the issue of the member state's definition and enforcement of a model for the establishment of network-use rights. In this respect, it is appropriate to distinguish substantive from institutional aspects.

2.2.2.1 Substantive Aspects

Network-use Model

The Electricity Directive has formally given the member states the right to choose between a so-called "single-buyer procedure," a "negotiated access procedure," and a "regulated access procedure" as alternative models for the establishment of network-use rights.

The first model, however, if implemented by a member state, has to be complemented by a negotiated or regulated access procedure for the supply of electricity to eligible customers. Hence, the single-buyer model can be implemented in the case of non-eligible customers only. However, the competition-oriented rules of the Electricity Directive do not really handle the supply for non-eligible customers. Succinctly formulated: the single-buyer model is no alternative to the negotiated or regulated access model. Not surprisingly, not a single member state has established a single-buyer model according to the Directive.⁴

Of greater importance is that the Directive has granted the member states a right to choose between the negotiated access model as a minimum standard, and the regulated access model. The latter model differs from the former one in that network-use prices are not negotiated between network users and network owners, but are so-called regulated and published prices. These regulated prices obviously are to be understood as normally *ex ante* regulated prices, known from other intensively regulated sectors and sufficiently known from the traditional regulation model for the electricity industry, as regards (at least smaller) final customers.

Germany is the only EU member state that has formally chosen the negotiated access model. All the other states have decided in favor of the regulated access model. It must be taken into account, however, that in practice the systems do not differ much: for example, the new German electricity law contains in Article 1, §6(2) (or Article 1, §7(5) for the case of a single-buyer model) an authorization of the Federal Minister of Economics to enact a regulation on network use. An actual use of this authorization would lead to a regulated access model through the back door and may already work as "a regulation threat" disciplining the network owners. In addition, the new German electricity law requires that network operators publish "indicative prices" for network use.

Furthermore, the German legislature puts its hopes in a so-called association's agreement (*Verbändevereinbarung*) from the beginning on. This agreement is a legally non-binding contract between the associations of the power generators, network owners and large energy consumers. In the meantime, the agreement exists in a second and again revised version (BDI et al. 1999, 2001). It will be of importance for anti-trust cases before the Federal Cartel Office (*Bundeskartellamt*) and the courts in spite of its

³It is not clear to what extent these national reciprocity clauses actually reduce cross-border trade. Apparently, the reciprocity clauses are circumvented in practice through successively more sophisticated trade arrangements (EC 2001c).

⁴Italy and Portugal created single-buyer models for non-eligible customers. Since the supply of these customers is

not handled, however, by the competition-oriented provisions of the Electricity Directive, but is a purely national decision, these single-buyer models are of no interest here. Similar arguments hold for the German case in which small single-buyer models (on the regional level) are temporarily allowed as an alternative to a negotiated access model.

missing direct binding effect for individual network-use negotiations.⁵

Unbundling Regulations

Of some importance for the regulation of the network operators are the nationally different formulated unbundling rules—independent of the fact whether negotiated or regulated access is chosen nationally. In this respect, the Electricity Directive prescribes an accounting unbundling of generation, transport, and supply as a minimum standard, complemented by an organizational unbundling for the transmission business. This minimum unbundling has been chosen by several member states, among others by Germany and France. Other member states, for example Italy, Portugal, and Denmark, require the formation of legally independent transmission firms. A third group of member states demands the strictest form of structure regulation, the lasting separation of the ownership structures. Finland, Sweden, the United Kingdom (at least England and Wales), as well as Spain have to be mentioned here.

Public Service Obligations

Finally, attention must be paid to the public service obligations that have been imposed on the existing companies in the member states. The Electricity Directive gives member states quite wide discretionary power to define such obligations. Several member states indeed have used their power and defined different regulations “in the public interest.” Examples are provided by the regulation of prices for small and poor consumers, by measures with an environmental target (promotion of combined heat and power generation, renewable energies, and energy conservation), and by different measures in the interest of the security of supply (in the meaning of technical system stability). Furthermore, the German protection rule for lignite must be mentioned under this heading.

Remarkably, not a single member state announced these measures to the Commission. Obviously, the member states take it for granted

⁵See Scholtka (2002) for a recent survey on proceedings before the Federal Cartel Office and the courts.

that their measures are directly compatible with the competition-oriented provisions of the Electricity Directive, in which case they do have not to notify the Commission of such a measure.

2.2.2.2 Institutional Design of Regulation

Large differences do not only exist with respect to the substantive design of the regulation of network use, but also regarding the institutional design of regulation. The Electricity Directive did not prescribe any measures under this heading.⁶

While, for example, in Germany the regulation is being carried out by the Bundeskartellamt, the courts, and the responsible ministries at federal and state (Länder) level, in several member states more or less sector-specific regulation agencies were established for the regulation of the network companies. These agencies are, however, independent regulation agencies to a varying extent. In some countries, the regulation authorities have a high degree of independence and much discretionary power to regulate the electricity companies; in other ones, they may receive direct instructions from the responsible minister. In a last group of countries, regulation agencies with restricted advisory functions were formed.⁷ Thus, the Commission’s wording “In eleven Member States ... a sector specific regulator has been set up” (EC 2001b: 8) should not be misinterpreted. In some cases, the competences of the regulation agencies are extremely restricted.

⁶The member states must name a “competent authority, which must be independent of the parties,” for the mediation of quarrels in wheeling cases (Article 20 of the Directive). This arbitration board has, however, only very restricted competences and basically is responsible for deliveries of independent generators and auto-producers to their own premises and subsidiaries. Furthermore, “independence” in this context does not mean that the authority has to be independent of the general administration, but only from the electricity companies.

⁷For a survey of the institutional design of the electricity regulation in the OECD member states, see IEA (2001a).

2.3 Trade Developments since the Directive

Has the Electricity Directive actually been able to contribute to the emergence of a single European electricity market? This is not a trivial question in view of the national differences with regard to the quantitative market opening, the substantive, and regulatory designs, and the public service obligations.

To answer this question it seems appropriate, first, to consider the trade developments within the EU. Generally, a higher degree of market integration should lead to an increase in international trade. In this case, an increase in net trade, i.e., an increase in national trade balances, has to be expected in the medium and/or long term. In the short term, an increase in gross trade can be expected, possibly accompanied by unchanged national trade balances.

Net trade: Within the EU, the international electricity trade has traditionally been rather small. The exploitation of comparative advantages that could have led to larger net trade has not played a significant role. Relatively low net import ratios reflects this, although the net import ratios of some member states have risen since the beginning of the eighties. In particular, Italy and, to a smaller extent, the Netherlands have emerged as importing countries with significant negative trade balances and France as an exporting country with a significant positive trade balance. Germany traditionally has acted as a self-supplying country.

There have been only small changes since implementation of the Electricity Directive.⁸ The net import ratios for some EU member states of the EU depicted in have not shown a definite trend up to now, although, for instance, the increasing ratio of the Netherlands and Spain attract attention.

The small changes, for instance, in the case of Germany, should not be surprising considering

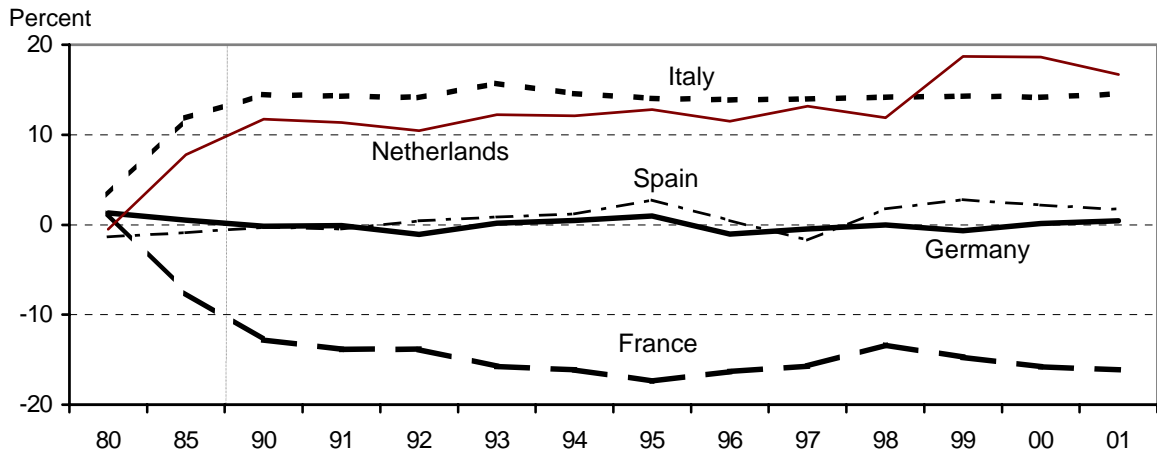
the short time period that has elapsed since the implementation of the Directive. The considerable excess capacities in the European electricity industries provide another argument for these small changes. Hence, at first, significant pressures on wholesale prices can be expected, not changes in quantities. Changes in national trade balances need more time, due to the longevity of power stations and the typically long-term nature of supply contracts.

Gross trade: The average gross import ratio of the EU member states (Figure 2), however, indicates a remarkable upward trend of trade activities within the EU. Presumably, this upward trend can be attributed to intensified exploitation of short-term and medium-term economies. These economies are due to improved cross-border coordination of the operation of individual power stations, with the aim of better responses to seasonal, weekly, daily, and hourly variations in electricity demand. Because of this increasing utilization of existing interconnection capacity, significant congestion seems to exist already at a number of borders, notably at the borders of the Benelux countries, Italy, Spain, Germany, and the United Kingdom (EC 2001f: 5).

Even if, as Figure 1 suggests, the market opening still has not led to larger trade balances according to the comparative advantages of the member states, at least the short-term and medium-term oriented trade has risen clearly. This can be taken as a first indicator for an increasingly integrating European electricity market. The technical restrictions for further integration stemming from network bottlenecks, however, are becoming more important.

⁸It should not be discussed in this paper, at which exact time reactions to the Directive have to be expected. Conceivable are reactions in anticipation of the adoption (pre-1996), reactions after the adoption of the Directive (since 1996), and reactions to the implementation into national rules (since 1998).

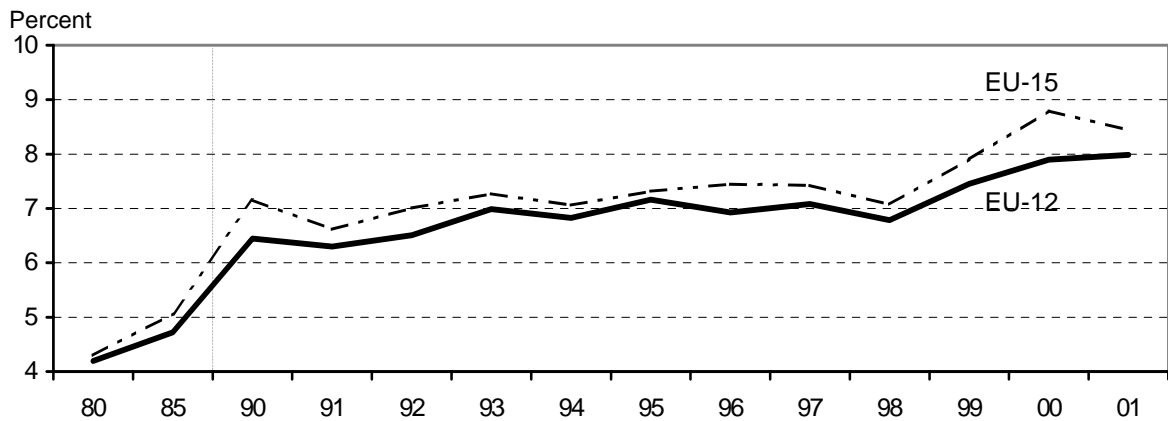
Figure 1: Net Electricity Import Ratios of Selected EU Member States



Note: Net import ratios are calculated as the ratio between the trade balance and consumption (including losses, excluding consumption by power facilities); 2001: January–October.

Source: IEA, *Electricity Information* (various issues); IEA (2001c); own calculations.

Figure 2: Average Electricity Import Ratio of All EU Member States



Note: The average electricity import ratio is calculated as the ratio between total imports of all member states and total consumption (including losses, excluding consumption by power facilities) of all member states; 2001: January–October.

Source: IEA, *Electricity Information* (various issues); IEA (2001c); own calculations.

2.4 Price Developments since the Directive

Changes in trade volume are a theoretically plausible and empirically already visible result of market integration. Price reductions are another result if they can be traced back to potential or actual cross-border competition. After all, the enormous regional price differences within the EU were the central argument of the Commission in 1988, when it started its attempts to

restructure power markets Europe-wide. In this respect, it has been a striking feature of the European electricity market that the price differentials between the member states increased in the nineties, whereas an at least weak convergence was evident until the end of the seventies.

Generally, a higher degree of market integration should lead to price changes in the member states. Above all, price reductions should be expected in the short term in the traditionally high-price countries. Following further market inte-

gration, a gradual (weak) convergence of electricity prices can be expected.⁹

The picture of electricity prices has changed quite dramatically since 1996. In general, the electricity prices have declined in traditionally high-price countries; most prominent are the developments in Germany. This basic message holds particularly for industrial consumers, from which, in the following, medium-sized enterprises are taken into account. Figure 3 depicts price developments for some selected cities.¹⁰ The figure suggests that the trend of increasingly diverging prices, observable in the first half of the nineties, seems to have been broken. The price cuts are generally higher in countries which opened their markets quantitatively to the largest extent. For the chosen type of customers, the lowering of prices in Düsseldorf amounted to impressively 36 percent between 1995 and 2000, in Lisbon to 15 percent, in Rotterdam and Madrid to 32 and to 23 percent, respectively.

This statement holds also for private customers, albeit in a slightly weaker form.¹¹ Here, the price cuts set in later. However, the case of Düsseldorf with price cuts around 9 percent between 2000 and 2001 is quite impressive. With respect to the price development for private households, it is particularly important to bear in mind the considerable reaction delay of the individual consumers that has to be expected after a liberalization. Hence, the statistically shown price cuts most probably underestimate the price cuts to be achieved relatively easily by individual households.¹²

⁹In the long-term equilibrium of an internal market, price differences are due to transport costs. Therefore, no complete convergence but an incomplete (weak) convergence should be expected.

¹⁰The recent price data provided by Eurostat are somewhat implausible, stemming from considerable and unexplainable price volatility at some places. The statistics provided by the International Energy Agency (IEA 2001c) (based on other raw data) for energy prices, however, essentially deliver the same message as the price data depicted in Figure 3 and Figure 4.

¹¹In Figure 4 prices for medium-sized households are depicted. The assumed electricity consumption volume corresponds to a typical 4-person household in the case of Germany.

¹²For example, many German municipal electricity companies responded to the market entry of new electricity com-

I do not want to elaborate in detail to which factors the price cuts can be attributed. Candidates are the higher national and international degree of competition and the associated smaller mark-ups, the higher efficiency within the companies and/or in the trade transactions, or sunken input prices, especially for natural gas. All of these factors can most probably explain part of the price developments.

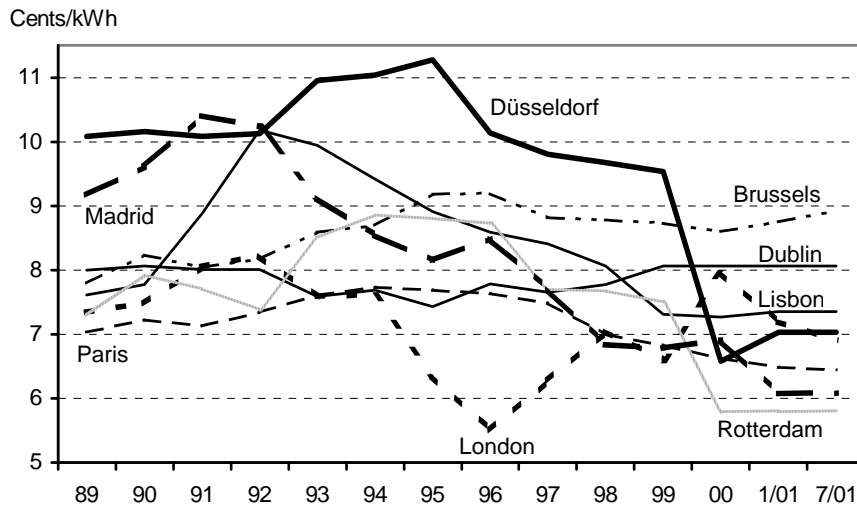
Of more interest under the topic of this paper is the development of the price differentials that appears in Figures 3 and 4. This development is made even clearer in Figures 5 and 6. In both figures, coefficients of variation as a measure of the relative variation are shown. The coefficient of variation is greater, the greater the national prices differ from each other. Both figures show that the trend towards increasing price variation has recently been broken. This is particularly striking for the EU-12 member states (and Austria).

The data for the EU-15 (industrial consumers) deserve a brief explanation. The two Scandinavian countries Sweden and Finland, although traditionally low-price countries, opened their electricity markets completely in the nineties, independently and ahead of the Electricity Directive. Therefore, the prices in Sweden and Finland have declined further, hence temporarily increasing price dispersion in the EU-15.

The data suggest that not only a weak trend to the convergence of prices seems to exist, but also that the national prices decline further more, the larger the quantitative market opening is. Both observations form the basis for the presumption that a further convergence of prices can be expected in the course of ongoing restructuring and increasing market opening in the member states.

panies by significant price cuts. Normally, the customer has to choose these new prices (to be more precise: these new supply contract rates) explicitly or to pay the old, higher rate. In the case of the municipal utility of Kiel, for example, the above-mentioned 4-person household could achieve a reduction in its electricity bill by 13 percent simply by one telephone call. According to an opinion poll commissioned by the Verband der Elektrizitätswirtschaft (German Electricity Association), 28 percent of household customers have chosen a new contract with their old suppliers, receiving better conditions than before. Only 3.7 percent of the customers have chosen a new supplier (VDEW 2001).

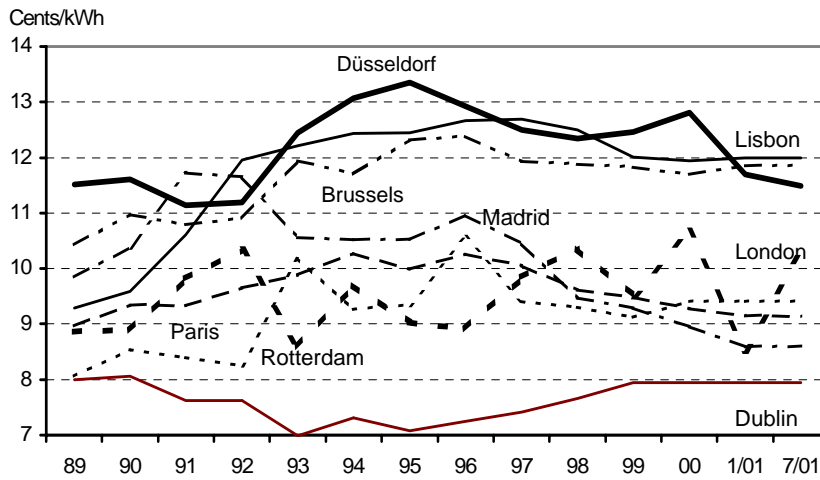
Figure 3: Price Developments for Industrial Consumers in Selected EU Member States



Note: Standard industrial consumers according to the Eurostat code Id with 1,250,000 kWh annual consumption, without taxes and levies; 1989–2000: January values.

Source: Eurostat, *Electricity Prices* (various issues); *Statistics in Focus - Environment and Energy, Theme 8* (various issues); own calculations; missing values were extrapolated.

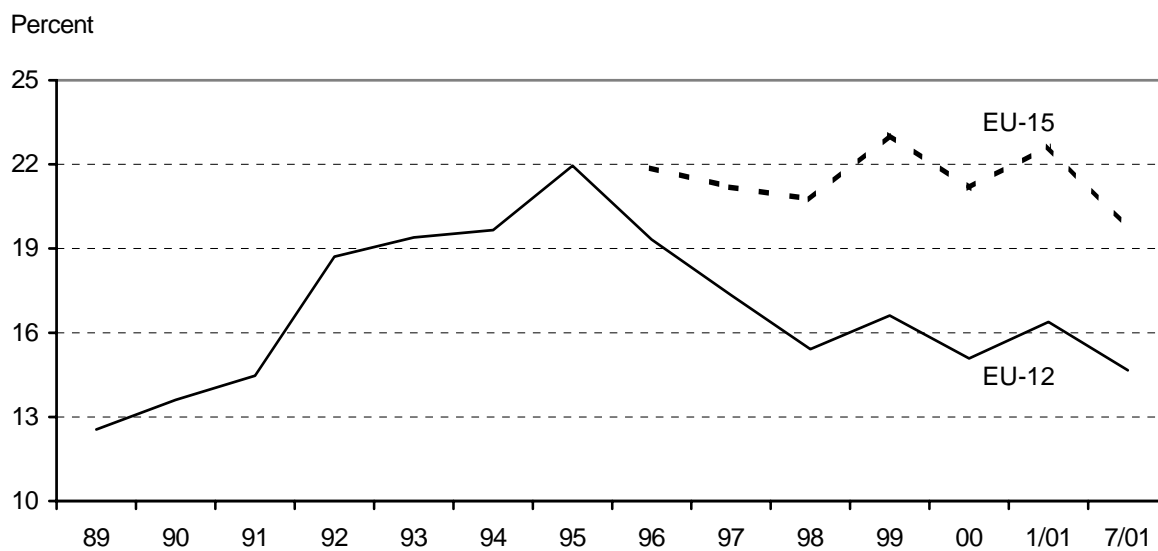
Figure 4: Price Developments for Household Consumers in Selected EU Member States



Note: Standard household consumers according to the Eurostat code Dc with 3,500 kWh annual consumption, without taxes and levies; 1989–2000: January values.

Source: Eurostat, *Electricity Prices* (various issues); *Statistics in Focus - Environment and Energy, Theme 8* (various issues); own calculations; missing values were extrapolated.

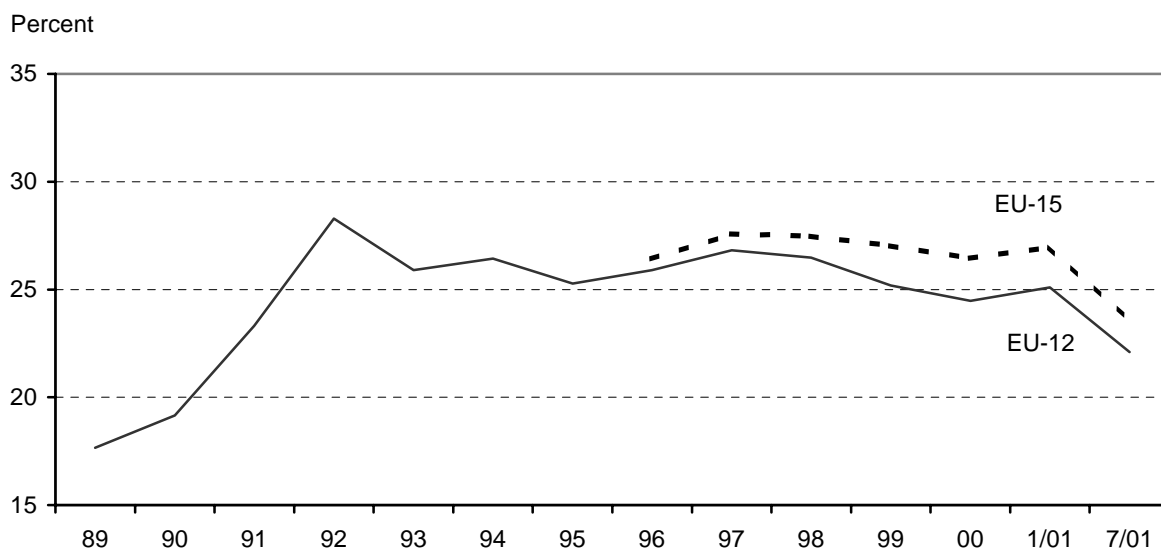
Figure 5: Deviations of the Electricity Prices for Industrial Consumers in the EU (coefficients of variation)



Note: Standard industrial consumers according to the Eurostat code Id with 1,250,000 kWh annual consumption, without taxes and levies; 1989–2000: January values.

Source: Eurostat, *Electricity Prices* (various issues); *Statistics in Focus - Environment and Energy, Theme 8* (various issues); own calculations; missing values were extrapolated.

Figure 6: Deviations of the Electricity Prices for Households in the EU (coefficients of variation)



Note: Standard household consumers according to the Eurostat code Dc with 3,500 kWh annual consumption, without taxes and levies; 1989–2000: January values.

Source: Eurostat, *Electricity Prices* (various issues); *Statistics in Focus - Environment and Energy, Theme 8* (various issues); own calculations; missing values were extrapolated.

2.5 Is the European Electricity Market an Integrated Market?

The data for cross-border electricity trade and for price developments indicate the emergence of an internal European market for electricity following the implementation of the Directive. The data do not support the hypothesis that the present strategy of a “light-handed regulation” at the European level is ineffective. In this context, the tendency towards more Europe-wide electricity companies must also be considered.¹³ Examples are the international expansion of the French EdF, vehemently bemoaned by some commentators, or the linkages between German and Scandinavian electricity companies.

A completely integrated European electricity market does not yet exist. Regarding the mere three years that have passed since the start of the European market opening, this comes at no surprise. The European Commission ostensibly frustrated by the rather small cross-border trade volume (compared with the trade volume of other sectors such as telecommunications, financial services or industrial goods), takes these figures as evidence of a high degree of defectiveness of the internal market (EC 2001c: 9). This argument must be called into question. After all, significant location- and distance-dependent transport costs exist, which do not compare to the distance costs of financial or telecommunications services. Hence, even in a completely integrated market, clear limits to import and export ratios do exist that are determined in the long term mainly by transport costs and the differentials in production costs.¹⁴

The liberalization of the electricity markets, indeed initiated in most member states only by

the Electricity Directive, gained political momentum that would hardly have been obtained by pure national decision-making.¹⁵ This triggered evolution no longer seems stoppable. The present degree of quantitative market opening, which is far greater than prescribed by the Directive and anticipated by most observers at the time of passage of the Directive, supports this argument. The Electricity Directive of 1996 is, thus, unambiguously a history of success on the way to competition in the European electricity industry. Will this history of success continue or will it be endangered by misguided political decisions?

¹³See Sioshansi (2001) for a survey of the current state of mergers and acquisitions in Europe.

¹⁴A comparison of empirical import ratios may illustrate this argument: the import ratio of Finland in 2000 (2001) amounts to 15.35 (14.35) percent, of Norway to 1.06 (9.78) percent and of Sweden to 12.65 (6.61) percent. These three Scandinavian markets can be referred to as being highly integrated; furthermore, the three national markets are relatively small; they should show rather high import and/or export ratios. Measured by this benchmark, the all-European (EU-15) import ratio of 9.79 (8.45) percent is not exceptionally low.

¹⁵For an analysis of the political economy aspects of the Electricity Directive, see Bonde (2001).

3 The Commission's Proposals—The Future of the Electricity Market Regulation in Europe?

Against the background of the ongoing evolutions, and despite the achieved success, the European Commission was requested to submit proposals for a further acceleration of the integration process by the Council of Lisbon in 2000. The European Commission complied with this request at the Stockholm summit in March 2001. On March 13, 2001, the Commission put forward two documents (EC 2001c). The first document proposes modifications to the existing Internal Market Directives for Electricity and Gas. The second document is a proposal for a Regulation on conditions for access to the network for cross-border exchanges in electricity.

In their entirety, the proposals on the one hand aim at an acceleration of the quantitative market opening. The Directive of 1996 envisioned a review of options for a further market opening by the European Parliament and the Council in 2007. The Commission now proposes a definitely sped up procedure. According to its proposal, the European electricity market should be opened for industrial and commercial consumers in 2003 and for all consumers at the latest in 2005 (EC 2001c: 35).¹⁶ On the other hand, the proposals contain a far-reaching revision of the existing Electricity Directive: the proposals would lead to a regulation of the electricity markets more strongly dominated by the EU both with regard to the substantive as well as institutional issues.

¹⁶The Commission apparently supposes (EC 2001c: 35) that the market opening for smaller consumers will occur with the aid of load-profiling, without taking the potential disadvantages of this method into account. Disadvantages, for example, are to be seen in the externalities which are associated with load-profiling. These externalities can cause a significant reduction in short-run demand elasticity (compared with using real-time meters). Even if these problems were of small relevancy in Europe as yet (taken into account the present excess capacities), the artificially reduced demand elasticity could gain importance in the case of shrinking reserve capacities, as the Californian example highlights (see footnote 36).

3.1 Modification of the Electricity Directive

3.1.1 Substantive Provisions Concerning Regulation of Investments into Generation Facilities and Regarding the Network-Use Model

The Commission's proposal for investments in power stations provide for the abolition of the tendering procedure mentioned in the existing Directive. This abolition is relatively unproblematic, because this model was only available for power stations with the aim of delivering electricity to non-eligible customers. An analogous assessment applies to a particular modification of the network-use model: the Commission proposes to delete the single-buyer model. Recognizing the practical irrelevance of the single-buyer model, this modification seems to be of no importance.¹⁷

Other provisions concerning the network-use model are, however, not without problems. The Commission does not only propose the abolition of the single-buyer model, but also of the negotiated access model. The Commission justifies this far-reaching measure with the following statement: "It is generally acknowledged that third party access based on published and non-discriminatory tariffs, and a high level of unbundling, are not only conducive but necessary to ensure effective competition" (EC 2001c: 34). Regardless of the question whether and by whom this hypothesis is generally acknowledged, it provides the foundation for two planned modifications of network-use regulation.

First: The European Commission now wants to allow only the regulated access procedure as a model for network-use regulation. This encompasses ex ante published transport prices (Article 16 of the proposal for the new Directive).

¹⁷The suggested abolition (EC 2001c: 34) of the largely ineffective (Kumkar and Neu 1997: 81 f.) Transit Directive of 1990 is unproblematic, too.

There are considerable problems to be associated with ex ante regulated and published network-use prices: optimal network-use prices often cannot be determined ex ante, but must be calculated ex post. This is of particular relevance if significant bottlenecks exist (or have to be anticipated). In general, the issue of a proper structure of network-use prices has as yet been answered unsatisfactorily, both in practice and in theory; the adequate solution always depends in a very sensitive manner on the actual institutional and technical circumstances. Here, it should be sufficient to mention the close relationships between the balancing market and the network-use prices.¹⁸ This is one major argument for the necessity of a search process for price structures in electricity transport. The appropriate role of the regulator in such a process is necessarily restricted. The process should be interpreted and designed as an open search process for which a negotiated access procedure can provide important information. This argument implies that the regulated access model only makes sense if it is based on a negotiation process to a considerable degree, if it allows experiments, and if it allows flexibility, in other words, if it comes close to the negotiated access model.

That does not mean that mandating published transport prices is inappropriate in any circumstance. One should be very cautious, however,

¹⁸The deliveries contracted ex ante in bilateral contracts and/or in electricity exchanges will never exactly correspond to the actual deliveries. Some examples may illustrate this point: (i) Technical breakdowns can induce unexpected bottlenecks in generation and transportation; (ii) demand is not perfectly predictable, (iii) individual agents may, for whatever reason, change their plans in short term. Hence, the existence of a balancing market is an inevitable feature of electricity markets (Kumkar 2000a: in particular 208f., 284-291). In most cases, the network operator is in charge of the organization of the balancing market. An example of the interdependence between network-use prices and balancing market may be mentioned: supposing network-use prices are structured as low postage-stamp rates. In this case, the probability of network bottlenecks is rather high. This in turn implies the rationing of scarce network resources by other means than prices. If this rationing is not, or cannot be, announced in an early stage, hence, cannot lead to a revision of the deliveries agreed in the supply contracts, the volume at the balancing market increases in order to be able to satisfy the demand. The relevance of the balancing market for the emergence of effective competition has been only recently acknowledged by the Commission (for its benchmark study, see EC 2001e: 5).

about requiring mandatory publication of transport prices in an undifferentiated manner.¹⁹

Second: The Commission now advocates the adoption of a legal unbundling provision and the formation of subsidiary companies for the transmission business as a minimum standard, instead of the present functional unbundling (EC 2001c: 36).²⁰

At first glance, a stricter unbundling provision sounds good. In any case, a legal separation of the transport business from generation and supply facilitates the monitoring by regulatory authorities. However, this very separation hinders, at least potentially, the exploitation of cost complementarities between electricity transport and other stages of the electricity industry (in the coordination of operation and investment planning). In a small electricity system, for example, the costs most probably outweigh the benefits. Hence, a “one size fits all” regulation seems not to be indicated at the current state of knowledge about appropriate electricity regulation. A more cautious approach is warranted.

One last item should be mentioned: Oddly, the European Commission, by definition of the unbundling rules (Article 7(6)), forecloses the formation of Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs). Such (American-style) ISOs or RTOs are characterized by joint operation of transport facilities of several owners. For example, an ISO typically has full control over the operation of all connected network facilities in the short run, but neither decides on expansion of the facilities nor owns them. This leaves scope for competition between several providers of new facilities.²¹ The Commission’s wording “the system operator must exercise full control over all assets neces-

¹⁹In this respect, a trade-off seems to exist between non-discriminating and optimal prices: a postage-stamp rate appears as non-discriminating, but it is seldom optimal in the meaning of an optimal resource allocation, and in addition it must be complemented by other rationing mechanisms (if significant and lasting overcapacities do not exist); and in this case, another form of discrimination is to be expected.

²⁰The Commission furthermore strongly favors unbundling in ownership terms (EC 2001e: 9).

²¹For a discussion of the fundamental problems to be associated with this concept of competition in electricity transport, see Kumkar (2000a: 163-177).

sary to maintain and develop the network” precludes, at least in my understanding, the formation of ISOs and RTOs. This in turn implies that the proposal would significantly limit the scope for competition between different (actual and potential) European transport-facility owners.²²

3.1.2 Substantive Provisions Concerning Public Service Objectives

It is worth remembering that the initial Commission’s proposals for the present European Electricity Directive did not envision an explicit role of public service obligations of electricity companies. The main target of the first proposal in 1992 provided for a competition-oriented restructuring of the European electricity industry, not for the definition of new public service goals at the European level. Accordingly, the provisions concerning public service obligations were only inserted after negotiations with the Parliament and the Council.

Meanwhile the atmosphere has changed. Now the Commission attaches great weight to the definition and enforcement of public service obligations. It is remarkable that the Commission itself concedes that the “creation of liberalized gas and electricity markets has not resulted in any decrease in public service standards. On the contrary, with appropriate regulatory control, liberalization has in fact focused attention on the importance of the level of service provided, leading to improvements” (EC 2001c: 20, see also the benchmark study EC 2001e: 24ff.). Nevertheless, the European Commission finds it appropriate to oblige the member states to take further measures in the public interest.²³ In striking contrast to the present Directive, which gives the member states the *right* to define and enforce

public service obligations, the Commission’s proposal now wants to *oblige* the member states to do so (EC 2001c: 40).

A bundle of goals to be pursued have been provided by the Commission. The bundle consists of:

- the guarantee of supply for poor and/or small customers, i.e., the definition of a *universal service*,
- the diminution of regional disparities in the interest of social and economical cohesion, for example, and in the extreme the guarantee of *price uniformity in space*,
- the security of supply in the sense of *system stability*,
- the *protection of civil rights* of the customers through sector-specific monitoring of the contractual terms, the guarantee of transparency, and the establishment of low-cost dispute settlement mechanisms,
- the protection of the *environment*.

It should be noted that, under the banner of an increasing liberalization, the European Commission now wants to support the very goals which in the past provided solid arguments against a liberalization in its entirety. It is also worth remembering the fact, mentioned above, that the Commission’s proposal provides for the abolition of the tendering procedure for new power stations. At the same time, the Commission regards, however, the re-introduction of this very tendering procedure a reasonable and necessary measure. Indeed, all member states should be instructed to (re-)activate this procedure in case of risks concerning supply security (EC 2001c: 39 and Article 6(1)).

To sum up, the Commission’s proposals go far in the direction of a European *ex ante* harmonization and centralization of substantive regulatory issues. This holds both for the network-use model and for public service objectives. If the proposals were implemented, there would be less scope for competition between different regulatory approaches, which indeed could lead to a harmonization as well.

²²The Parliamentary Committee on Industry, External Trade, Research and Energy in its report on the Commission’s proposal for the regulation adopted on February 26, 2002 recognizes this problem and accordingly proposes a new Article 12a as an amendment of the Commission’s proposal (ITRE 2002a).

²³The Commission would always have to be informed of any measures under the heading of public service obligations. This contrasts with the present Directive that demands official information only in the case of an exemption from the competition rules contained in the Directive.

3.1.3 Institutional Provisions Concerning Regulation

The conclusion about an impending centralization also applies to the institutional design of regulation. In the Commission's wording, it is evident that "independent national regulatory authorities play a pivotal role in ensuring non-discriminatory access to the network, as they have the power to fix or approve transmission and distribution tariffs prior to their entry into force" (EC 2001c: 38). Since the Commission evaluates the *ex ante* function of regulatory agencies as essential for effective regulation, the member states would be obliged by the new Directive to establish independent regulatory authorities. In Germany, for example, this could result in a sector-specific regulation authority for electricity in addition to the already existing telecommunications authority and the competition authorities. The statements of the Commission clearly suggest this interpretation.²⁴

In order to avoid misunderstandings: an independent regulation authority, endowed with sufficient competences and resources is indicated in the case of Germany as an example (for details see Kumkar 2000b). However, this does not imply that this authority should fix or approve every network-use price, i.e., should practice a comprehensive *ex ante* regulation.²⁵ Nor does it

imply that this regulation authority should be separated from competition authorities or another regulation authority. Indeed, there is a lot to be said for either a broadening of the competences of the Bundeskartellamt (by more effective and immediately executable instruments and more resources)²⁶ or an allocation of the regulatory tasks to the already existing telecommunications regulation authority. In addition, to advocate an independent regulation authority in the case of Germany does not imply that this is an appropriate solution for every member state (for instance, for Luxembourg).

Some concluding words on this topic: To advocate an independent regulation authority in the case of one particular member state should not be confused with supporting the establishment of such authorities mandated at the European level. The decision on the horizontal allocation of regulatory tasks should rest with the member states if convincing counter-arguments do not exist in the case under consideration. Of course, if there were compelling arguments in favor of an independent German regulation authority, would not the German decision-making entities in the end go the way demanded by the Commission? Considering the present observable intrinsic dynamics in the member states, induced by the Directive from 1996, more patience with the national decision processes is indicated. Three

²⁴See the presentation by the Commission's vice-president: "Regulation of tariffs will take place in all countries through a *specific and independent energy regulator*." [Italics added.] (de Palacio 2001a). Even more clearly was the recommendation of the Commission for the 2001 Broad Guidelines of the Economic Policies of the Member States and the Community (EC 2001d: 27; Italics added.): "In view of the above, the priorities for Germany should be to: (...) iii. (...) create a *sector-specific regulatory authority for energy*" (in this regard not adopted by the Council at the Gothenburg summit on June 15, 2001 (Council 2001)).

²⁵Hence, it is a common misunderstanding to equate the existence of an independent regulation authority with the existence of a comprehensive *ex ante* regulation. See, for instance, the statement of the Member of the European Parliament, Mombaur: "The solution consisting in negotiations and subsequent control via cartel law, followed only in Germany, can indeed prevent extremely bad contracts, but cannot create good contracts, as it is necessary" (Mombaur 2001: 90; own translation). It is highly questionable whether a regulation authority—whoever that may be—can in fact unilaterally write and enforce detailed network-use contracts in an appropriate manner.

²⁶See also *Handelsblatt* (April 25, 2001: 4): "Böge demands more personnel for supervision—Bundeskartellamt proceeds more severely against network operators" (own translation) and the underlying report of a German working group "Network-Use Electricity" (consisting of members of the competition authorities of Bund and Länder (BKartA 2001)). According to the report, a comprehensive supervision of the network-use conditions of the approximately 800 network operators is not possible with the present personnel resources of the Bundeskartellamt and of the competition authorities of the Länder (states). Without staff expansion, the supervision must be restricted to few cases. The situation would deteriorate still further if effective cost-based regulation (albeit in an *ex post* manner) became inevitable. Provided the German legislature does not fundamentally modify the institutional design of regulation (for instance, the assignment of the regulatory competences onto another regulation authority), the position of the competition authorities is to be supported following Kumkar (2000). A similar argument holds for the desire of the Bundeskartellamt to get improved and immediately executable instruments (not included in the 6th GWB (Federal Competition Act) amendment (BKart 2001: 48)).

years after implementation of the Directive, it seems premature to discard the so-called negotiated access model and/or the regulation by competition authorities, at least considering the empirical evidence available so far.²⁷ It follows: As long as it cannot be circumstantiated that cross-border trade is significantly impeded by the institutional design of regulation in the member states, no action at the European level is warranted.

3.2 Regulation of Cross-Border Exchanges in Electricity

The above-mentioned provisions are part of the Commission's proposal for a modified Electricity Directive. In addition, the Commission has submitted a proposal for a regulation of cross-border exchanges in electricity.²⁸ This proposal is based on the Commission's observation that "for many eligible customers it still remains organizationally and economically difficult to choose a supplier in another member state" (EC 2001c: 66). This would provide the foundation of a "currently underdeveloped" cross-border trade, which is still relatively modest in volume when compared to other sectors of the economy (EC 2001c: 66).

According to the Commission, the difficulties are based on two present features of the European market for electricity: first, the heterogeneous national price structures for electricity trans-

portation would hinder the development of international trade; second, the limited capacity of the interconnections between national transmission systems would lead to significant congestion and hence erect significant barriers to trade.

The Commission based its proposal on research projects it had commissioned (e.g., Haubrich and Fritz 1999) and on the groundwork furnished within the so-called Florence Forum. The Florence Forum consists of representatives of the Commission, of the member states, of the European Parliament, of the association of European Transmission System Operators (ETSO), and of representatives of producers and consumers. Although the Commission states the Forum has proven to be a highly efficient tool in developing consensus on some of the issues in question, it finds, however, several disadvantages in the present approach. In order to reach decisions on the outstanding issues, a legislative decision about cross-border tariffication and congestion management would be required today.

Once again, the principles of the proposed regulation can be distinguished into substantive and institutional issues. The *substantive* issues encompass the provision that international electricity transport should primarily lead to payments between the transmission system operators: the transit²⁹ through the network of one operator is supposed to be financially compensated through payments of the operators "causing" these transit flows.³⁰ This proposal is based on the Commission's hypothesis that specific transit flows could not be assigned unambiguously (up to now) to individual exporters or importers. Hence, the appropriate mechanism for internal-

²⁷Note that the Bundeskartellamt has recently initiated abuse proceedings against 10 network operators on account of excessive fees for network use, and in 2001 initiated abuse proceedings against 4 network operators on account of inappropriate charges for balancing energy (http://www.bundeskartellamt.de/29_01_2002.html, http://www.bundeskartellamt.de/30_10_2001_englisch.html). One of the four network operators has reacted with a modification of its balancing mechanism so that this proceeding has been stopped (*VWD Energiemärkte Aktuell*, February 22, 2002). Altogether, the competition authorities of Bund and Länder have initiated over 200 proceedings (Interview with the President of the Bundeskartellamt, *Tagesspiegel*, January 5, 2002). In addition, on August 1, 2001 the Bundeskartellamt set up a new decision division, solely responsible for regulating network use conditions in the energy sector.

²⁸It should be noted that a European "Regulation" is law directly in force and does not need a conversion into national rules (as a directive).

²⁹A "transit" is defined as a flow of electricity through a network of a transmission system operator if the concerned electricity flow stems from neither the production nor the consumption in this particular network area. If, for example, a contracted delivery from France to Germany leads to flows on the Belgian network, a transit through the Belgian network does exist.

³⁰In fact, the transit flows obviously are not caused by decisions made by the network operators, but by decisions made by electricity traders. In addition and remarkably, the proposal of the Commission does not answer the question of who actually has to effect the corresponding compensation payments. It mentions as a possibility both the network operators in whose systems export volumes start, and the network operators whose systems pick up import flows.

izing the externalities would be an aggregated settlement process among the network operators, whereas importers and exporters are not supposed to effect any explicit payments for the transit. This obviously would be in conflict with efficient pricing because different transactions generate different costs for the system. Hence, the proposed “socialization” of transports costs in fact implies discrimination and cross-subsidization among network users.

In addition, Article 4 of the regulation proposal prescribes a surprisingly comprehensive harmonization of the network-use conditions for actual network users; “surprisingly”, because the title of the regulation proposal only suggests a more or less comprehensive harmonization of the prices for cross-border electricity transportation. Instead, e.g., distance-dependent rates are generally forbidden also for pure internal transactions (Article 4 (1)). Moreover, importers and exporters are supposed to effect not only no payments for a transit, but generally to pay nothing for cross-border transportation in any specific way. Instead, the costs of cross-border transportation are supposed to be financed by all network-users in a system (EC 2001c: 71).³¹ In addition, it is prescribed that in general the consumers should pay the transportation costs, not the feeders.³² Therefore, not only a harmonization of the network-use price structures of cross-border electricity trade is at stake (as suggested by the title of the regulation proposal), but a harmonization of the network-use conditions for electricity deliveries in general.

Finally, the regulation proposal provides for rationing mechanisms for scarce network resources in cross-border electricity transportation. It must be pointed out in this respect that, ac-

ording to the proposal, additional profit for the organizers (presumably the network operators) must not arise through the bottleneck management (Article 6 (6)). The associated disincentives and the corresponding role of a detailed regulation will not be explored here.

The *institutional* issues encompass in particular the explicit and comprehensive assignment of regulatory competences onto the European Commission. First, the Commission is supposed to define the level of the compensations among the network operators (Article 3(3)). Second, the Commission would have the right to define detailed guidelines for the electricity transport (network-use) prices as well as for the bottleneck management.³³ This clearly exceeds the existing competences, which up to now only provide for an ex post monitoring of improper behavior. Ultimately, the proposal envisions detailed guidelines for all network-use conditions in all member states (see, e.g., EC 2001c: 72–73). In the extreme, the national electricity regulation authorities, just formed upon the order of Brussels, would become bare executive branches of the Commission as the European electricity regulator.

³¹Therefore, the expected degree of regional differentiation of transportation prices would be small. Thus, the development of efficiency-oriented price structures might be hindered significantly.

³²The last provision is meant to avoid inconsistencies between the national systems. For example, if an exporter delivers electricity from a system that finances the transport costs exclusively through payments by the feeders to another system which finances the transport costs exclusively through payments by the consumers, this export may be burdened with double network charges while the reverse electricity delivery would be free of charge.

³³The recent communication of the Commission (EC 2001f: especially 18–20) provides a first impression of the character of the envisioned guidelines.

4 Is the Commission on the Right Path?

Following this survey of the present results of the electricity market liberalization on the one hand and the description of the Commission's new proposals on the other hand, it is time to reflect on appropriate principles of the further regulation policies in the EU and to contrast these principles with the proposed policies of the European Commission.

The following considerations are grouped into two categories. First, the technical essentials of the electricity industry are reviewed in order to elaborate general implications for regulation (Kumkar 2000a for details). Second, it will be discussed which implications can be derived for the appropriate vertical allocation of regulatory competences, i.e., which powers should be assigned to the EU and which ones should remain with the member states.

4.1 Technical Peculiarities, Uncertainties, and Fundamental Implications for Regulation

The complex horizontal and vertical coordination requirements in the electricity industry exclude pure market coordination at least for some subset of transactions. These coordination problems result from the interaction of asset specificity, capital longevity, and considerable transaction complexity, as well as from the short-term and long-term uncertainties under which the agents act. One example of such coordination problems is the real-time character of the electricity demand in connection with short-run path dependencies of production costs. Both factors lead to the conclusion that coordination of the electric power production is more economical via hybrid or hierarchical governance structures than via pure market coordination (spot transactions or other complete contracts) in some parts of the electricity industry. In addition, there are significant coordination requirements of a vertical kind, i.e., a close coordination between the agents in the generation and in the transportation stage is required.

The same peculiarities lead to the presumption that electricity industry needs public regulation in the foreseeable time. The European Electricity Directive of 1996 is—to avoid misunderstandings—a regulation directive, not a deregulation directive. This becomes immediately clear if the mandatory network-use rights of the Directive are taken into account.

It is important to recognize that under the specific characteristics of the electricity industry a general insight from regulation theory is of utmost relevance: an optimal regulation depends in a quite sensitive manner on a great number of factors. These factors encompass the technical and natural circumstances under which the transactions between private agents happen. For example, the scope and quality of the transmission and distribution network and the corresponding relevant market size, the available primary energy basis, and the existing mix of power stations affect the optimal regulatory policy. These factors must be considered as exogenous to some extent (reflecting longevity of facilities and path dependencies in generation and transport).

In addition, the existing private governance structures as internal institutions belong to these factors. Their design is influenced by the technical and natural circumstances. In any case, they possess very different efficiency characteristics. The internal institutions also show a certain degree of path dependency and can only be changed with considerable (switching) costs.

Finally, the existing external institutions in the meaning of the institutional environment are important factors, too. Both the regulator and the private agents operate within the institutional environment, i.e., the basic political, legal, and social rules of the game that define the context in which economic activity takes place. Examples are the fundamental definition of property rights, the design of contract law, the administrative law as well as the general tradition of competition and regulation politics in a given jurisdiction.

Considering the complexity of the regulatory tasks, it should not be surprising that the search

for appropriate regulatory approaches is a particular difficult business in the case of the electricity industry. The dependence of the “optimal” regulation on the respective circumstances explain—at least partially—why different countries pursue different approaches.³⁴ The fundamental difficulties and complexities of the regulatory tasks might deliver another argument as to why countries within the EU and outside the EU pursue different approaches: it is a searching and learning process in which regulators and researchers are still at the beginning.

Of course, present experience with power market reforms gives rise to doubts about the philosopher’s stone having been already found, and that it can be found in the future. The English model, for example, is currently in a fundamental modification process, providing for a dramatically changed institutional design of the electricity market.³⁵ The Scandinavian reforms, which are in a continuous development process, are also to be mentioned. From my point of view, the Scandinavian reforms took a positive direction, because, for instance, the Finnish electricity market was integrated no more than four years ago into the Swedish/Norwegian market. Therefore, the separate Finnish experience could be used in the advancement of the common Nordic market. In a similar manner, the separate Swedish and Norwegian experiences before 1996 (Nord Pool already started its operation in Norway in 1991) had facilitated an optimization in the course of the successive integration of the former separated markets. The diversity of the initially chosen approaches has been helpful during the successive determination of the design of the common Nordic market.

³⁴In their expert opinion commissioned by the Commission, Haubrich and Fritz (1999: 26) argue in a similar manner: “...it is obvious that a generally optimal approach to network pricing cannot exist, not even within a single country.”

³⁵The English/Welsh example has shown that necessary reforms and product evolution could meet considerable resistance in the case of a legally protected monopoly of an electricity exchange (Electricity Pool). The resistance was used by the regulator as the main argument for the abolition of the monopoly, a straight reversal of previous policies (Offer 1998; Ofgem 1999, 2000). See Ofgem (2001) for the implementation of the new system.

Finally, the Californian debacle is to be mentioned in this respect. The observable irritations, political faults, and risks for the liberalization approach as a whole make clear how many pitfalls might exist in the transition to a competition-oriented electricity industry. The Californian transition experiment has failed, despite its *prima facie* attractiveness also for the many economists positively and constructively accompanying the reforms since 1995/1996. Only very few observers had anticipated the developments on the Californian wholesale markets and the links to the still regulated retail markets. The view on the envisioned long-term regulatory policy blurred the view to the possible risks associated with the short-term measures.³⁶

These examples strongly argue against a search of a “one size fits all” approach for the further development of the European electricity market. Every electricity market reform is an experiment with an uncertain end. This might explain at least partly why in the United States up

³⁶The high electricity demand in California since spring 2000 has implied high requirements on the existing power stations and the transport networks. The existing power stations are not only outdated by far, but also generally not sufficient to satisfy the demand growth. The regulatory policies of the past have contributed to this investment gap. In addition, the significantly risen natural gas prices and the exploding emission costs have been responsible for considerable short-run cost increases. The Californian electricity market of course was no deregulated market. The implemented transition model for the first years had featured three decisive shortcomings: First, the transactions and conditions on the short-run wholesale markets were deregulated to a large extent without at the same time creating favorable conditions for investments in new power stations and transport facilities which might have countered high prices on the wholesale market. Second, the large electricity companies have been restricted to trade on a short-run electricity market organized by the monopolistic Californian Power Exchange (CalPX). If the reselling electricity companies had signed more long-term purchase contracts, the effects of the high short-run prices would have been much smaller. At the same time, the high short-run electricity prices could have provided correct signals for electricity consumers and for investments in new power stations. Third, the dramatically risen wholesale prices, which have to be paid by the reselling electricity companies, were not allowed to be translated into higher retail prices. This reduced the incentives for end users to reduce their power consumption particularly in peak load periods and therefore intensified the scarcity problems. The problems of the Californian electricity industry do not rest within a market failure, but largely within a regulation failure. (Brennan 2001; Joskow 2001; Kumkar 2001).

to now (in spite of demands for it) still no far-reaching centralization of regulatory competences has taken place. Presumably, the citizens of Oregon are quite pleased that the highly praised Californian experiment was not transferred to Oregon. The often-scolded coexistence of several regulatory regimes in the United States and the accompanied transparency about success and failure of alternative regulatory approaches justify hopes for improvements, help to regionally restrict inappropriate developments, and offer prospects for observers in other states and countries to learn from the mistakes in other jurisdictions. This process definitely evidences the nature of a competition of regulators and a competition of the regulatory approaches.

4.2 Implications for the Appropriate Vertical-Federal Assignment of Regulatory Competences

What are the implications for the appropriate vertical-federal assignment of regulatory competences in the European Union?³⁷

Both the centralization of the regulation competences and the fast harmonization of the national regulations envisioned by the Commission could promise *advantages* if, first, they helped to solve reform blockades in the member states. However, the Electricity Directive of 1996 has already generated a significant political momentum, further liberalization has become a goal in the member states to a large extent, and in the meantime, the evolution does not seem stoppable. Although a further impetus from Brussels could speed up the processes, it must be doubted whether this is necessary. If held necessary, this could also be reached by speeding up the quantitative market opening alone³⁸ in combination

³⁷See, for example, Begg et al. (1993) and Crémer et al. (1996) for contract theoretical/institutional economic analyses of federal systems and/or the assignment of competences onto different regulatory authorities. See for a selective survey of the theoretical literature also Bickenbach (2000) and Bickenbach et al. (2002).

³⁸However, even during this sped-up quantitative market opening a credibility problem of the EU as a regulator emerges, so that increased regulatory risk may become relevant. After all, the Electricity Directive of 1996 planned

with the anyhow indicated supervision of the national implementation strategies through the Commission and the European Court of Justice. In other words: A rule-of-reason approach within an “ex post regulation of the national regulators” seems more appropriate than a far-reaching ex ante regulation of national regulatory policies.

Second, centralization could promise advantages based on a better reputation and efficiency of European regulators than national regulators. This would assume, however, that the national regulators have bigger capturing problems or are less independent from day-to-day politics. This seems hardly be the case in general, at least from my point of view.

Third, the envisioned centralization might be indicated if otherwise no compatibility of the national regulatory models seems attainable at all. In this case, the regulation of just these transactions at the European level indeed would be indicated. Lacking compatibility may be a reality and hence may provide an argument for a more active regulation at the European level. However, this regulation of cross-border electricity transportation should not automatically be accompanied by a centrally imposed harmonization of the regulatory rules for purely internal transactions, as proposed by the Commission.

Generally, there is still considerable need for research into the issue of which regulatory competences should be assigned to the European level and which should rest with the national level, all the more because of the (actual or hypothetical) disadvantages of centralization. These *disadvantages* again can be distinguished into three areas:

First, centralization restricts the scope for experiments with alternative regulatory and competition policy approaches. In contrast, more decentralized systems allow regionally restricted experiments. Therefore, decentralization under the current conditions of intensifying locational competition supports competition of regulatory models, which cannot be expected under centralized regulatory competences. Ultimately, this might result in a complete harmonization of the nationally chosen approaches, without the need

a further market opening after nine years in 2006, and not in 2003 and/or 2005.

for strict and detailed rules *ex ante* defined at the European level. The regulatory competition thus could be used as an instrument for finding appropriate solutions and presumably for enforcing the good solutions in several jurisdictions. This is of particular importance, because only very limited experiences with liberalized electricity markets have existed and the evidence is rather mixed, as was stressed above. Centralization will not help to resolve this problem. Recognizing risks for the European economy as a whole provides an additional argument in favor of a more cautious and less ambitious procedure.

A second disadvantage of centralized competences lies in their limited scope for consideration of regional differences. It is reasonable to assume that the national decision-makers have better information, and particularly better motivation for considering this information in their regulatory decisions, for example, concerning differing national preferences for public services, or concerning regional bottlenecks. Hence, these regional differences are better considered if the regulatory competences lie in the member states, and not in Brussels.

Third, the proposed centralization of regulation competences can contribute to an increase in regulatory risk, *i.e.*, in regulatory opportunism. This argument is based on the assumption that regulators are self-interested individuals, independent of the question whether they are members or employees of the European Commission or of national competition/regulatory authorities. These individuals act according to their incentives. These incentives may be structured in such a way that the members or employees of the European Commission as regulators are subjected to rather small efficiency incentives: it has to be asked which sanctions threaten the Commission if it defines and enforces false solutions in electricity regulation. National regulators, whose competences normally are far more restricted than in the case of the Commission, can be more easily monitored through politics, the public and the companies: the goals are relatively unambiguous and restricted to the protection of competition and/or the limiting of monopoly rents. This is complemented by the transparency allowed with regard to the success

and failure of alternative regulation designs. The competences and the goals of the Commission are defined rather widely and are in part contradictory, complicating the supervision significantly. In other words, the Commission is a political instance rather than an independent agency. In addition, the proposed competences of the Commission as a political instance contradict the Commission's own approach to create independent agencies at national level.

The creation of an independent European regulatory authority, separated from the Commission, might solve this problem. However, this new regulatory authority would feature a monopolistic position to a much larger extent than national regulators. The latter authorities are more restricted in their decisions: first, through locational competition and, second, by the allowed comparison with neighboring regulators. Finally, the European Commission today controls the national regulators, acting as a "regulator of regulators," which may help to keep at bay the hazards of opportunistic behavior by the national regulators.³⁹ This positive effect of a staggered system of regulatory authorities is eliminated if, as proposed by the Commission, the European level receives wider competences for the ongoing regulations and is not restricted to individual cases and the supervision of national policies.

Hence, several arguments exist in favor of a cautionary approach and against a broad shift of competences onto the European level. A reassignment of specific competences should take place only if there are rather unambiguous and convincing arguments against leaving these competences at national level. Today, this only seems valid in the case of cross-border electricity transportation, whereas a shift of competences motivated by a pure desire to accelerate a harmonized internal market seems at least premature. In case of doubt and recognizing risk aspects, the message is clear: Quality is more important than speed, not least because an "upward" shift of competences onto the European level is difficult to reverse.

³⁹Compare also Henisz and Zellner (1999) and the literature quoted therein.

5 Conclusion

The aim of this paper was to provide a survey of the status quo of the European Electricity Market and the recent Commission's proposals for a modification of the Electricity Directive of 1996 and a new regulation of cross-border exchanges. Particular attention was dedicated to the issue of whether the emerging centralization of regulatory competences is currently an appropriate response to the problems, for instance, in the field of cross-border electricity deliveries.

It was shown that since the 1996 Electricity Directive almost dramatic changes have taken place on the European Electricity Market. Even if it is highly questionable whether a completely integrated internal market exists yet, the observable evolution against more competition and market integration no longer seems stoppable. The European level and its Electricity Directive have taken an important first step to eliminate the long-standing monopolies in the national markets. Without doubt, the Electricity Directive has to be evaluated as a success. Its quick results in the form of lowering prices and further market opening far surpassed even the expectations of the European Commission (de Palacio 2001).

A great advantage of the existing Electricity Directive lies in the fact that in essence it demands only a defined quantitative market opening, and largely leaves it to the member states to define the exact design of network-use rights. The national implementation policies of course are subject to supervision by the European Commission. However, the Directive has given national decision-makers wide discretionary power and no precise substantive or institutional provisions.

Faced with the remarkable success of this European strategy, it might be surprising at first normative sight that the European Commission now wants to accelerate the restructuring speed still further, and moreover wants to change the nature of the restructuring process as a whole. The previous course of a "light-handed regulation" at European level would be changed quite dramatically if the proposals of the Commissions were adopted.

At second sight, leaving the normative point of view, the proposals are not surprising: both the suggested changes of the Electricity Directive and the new European Regulation for cross-border exchanges would lead to a regulation of the electricity industry dominated by the European Commission. The proposals would induce a Europe-wide harmonization of the substantive as well as the institutional design of regulatory policies. With respect to the substantive provisions, this holds for the network-use model to be established and, e.g., for the public services obligations to be imposed upon the electricity companies. The ideas of the Commission concerning public service obligations even bear the risk of limiting further liberalization and might provoke an increase in the regulation intensity of member states, which up to now has given little weight onto a regulated supply of services in the public interest. The European level in this case might paradoxically restrict the liberalization momentum just generated in the member states. The comprehensive harmonization of the network-use regulation envisioned in the proposal for a European regulation for cross-border exchanges reinforces the impression. This regulation would affect not only cross-border deliveries, but also network-use conditions in purely internal electricity deliveries, even if the title of the regulation proposal suggests something else.

A similar, indeed explicable centralization tendency, which from a normative point of view goes too far, emerges with respect to the institutional design of regulatory policy in the member states. The establishment of a sector-specific electricity authority might be a proper decision in a specific case; maybe it is even a proper decision in most cases. This however does not justify a uniform commandment at the European level. And the authorization of the Commission to define and enforce detailed guidelines for all network-use conditions in all member states, provided for in the proposals, allow the possibility that the (partly yet to be established) national electricity regulatory authorities will become

more or less directly subordinate “auxiliary persons” to the Commission.

Consideration of the technical characteristics of the electricity industry on the one hand, and of the present experiences with electricity market liberalization on the other hand, leads to a quite simple conclusion: the competence assignment should give maximum leeway for competition between different regulatory approaches, and, therefore, for more or less spatially restricted experiments. This provides a strong argument against the noticeable competence reassignment from the member states to the European level as proposed by the Commission. Note that this argument even holds in the hypothetical case of identical national electricity industries. It is even stronger if the differences between the member states are considered, for example, with regard to resource endowment, network size and quality, market size and preferences for public services.

This by no means implies that a medium-term or long-term harmonization of the regulatory policies should be barred. Quite the contrary, a harmonization of numerous regulations can be expected under a competition of regulatory approaches, at least in the long term. The difference of the centralization course of the Commission to the approach suggested here consists in the way this harmonization will be reached. Under a competition of regulatory approaches, a harmonization will be reached in a decentralized manner, and the present Electricity Directive should be complemented only with an intensified European regulation of the cross-border electricity transportation. From this point of view, fewer objections exist against a European network-use regulation that confines itself to the transactions mentioned in the title. This regulation, however, should allow scope for experi-

ments with alternative designs for regulatory policies concerning cross-border transactions.

Thus, one need not regret that the Council of Gothenborg in 2001 and the Council of Barcelona in 2002 did not reach definitive decisions on the Commission’s proposals of March 2001. The “reprieve” allowed by that should rather be used for an intensive discussion about the issue of a proper competence assignment between the EU and the member states. Unfortunately, the European Parliament on March 13, 2002 in its first reading of the Commission’s proposals largely ignored institutional questions and instead essentially supported, actually reinforced (concerning public service objectives and renewable energy) the proposed measures.

It would be a disappointing development if in the present situation, in which a debate over the fundamental competences allocation within the EU at last is started, facts are created concerning assignment of regulatory competences for some of the biggest European industries, without an intensive discussion about the appropriate role of the different federal layers. Yet the discussion of the fundamental institutional strategy for the further liberalization of the European electricity industry seems to be of much more medium-term and long-term importance than the question which has up to now dominated in public of whether the European market should be completely opened up in 2005 or in 2007. It seems also to be of greater long-term importance than the question of which detailed model for network-use seems superior to another model. We know that every model is imperfect. The goal must be to choose regulation institutions, which allow ongoing improvements and which provide for competition between alternative approaches.

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