

## Chapter 5 Electricity reform

Given the origins of the European Union in coal, and given the inclusion of energy in the first treaties, it is somewhat surprising that a common policy on energy did not emerge until the mid-1990s (Andersen, 2000; Nugent, 1994:285). The energy industries were for quite some time able to exert considerable influence over national policies and resist reform (McGowan, 1996:134), yet in the end the liberalisation forces proved too strong to resist even in this sector.

This chapter will focus on the national implementation of electricity reform in the European Union as guided by the 1996 electricity directive. In part 1, the evolution and the content of the legal package will be described. In part 2, the broad variables will be made operational for the electricity sector, with the aim to measure the extent of national implementation of EU policy. Part 3 summarises the findings.

### **PART 1: NATIONAL AND EUROPEAN POLICY INITIATIVES**

#### **National policies**

Until 1988 *Denmark* formulated its own energy policy. After 1988 a gradual Europeanisation of energy policy set in (Dahl, et.al, 2001:11), because of Community directives regarding the energy sector. The central actor in energy policy is the Danish Energy Agency (*Energistyrelsen*), founded in 1976, and working under the responsibility of the ministry of economic affairs.

Energy in Denmark is a diverse sector that consisted of co-operative, private and public utilities<sup>1</sup>. Although there is a large number of players, the sector is, according to the *International Energy Agency*, quite homogeneous: “Although the industry is quite diffuse and only partially vertically integrated, the high degree of co-operation between the various companies, through co-ownership arrangements, ensures that the industry functions in practice much as if it were made up of two vertically integrated companies”<sup>2</sup>.

Energy policy, prior to the EU initiatives, aimed at energy conservation, in which, according to the Commission, the Danish government booked impressive results since 1973. Between 1973 and 1982, total energy use decreased with 14 per cent. Safety concerns were also high on the political agenda: nuclear energy was debated, and in 1985 the parliament decided that nuclear energy would not be included as generating capacity in the Danish energy planning<sup>3</sup>. Energy policy was also subject to considerations external to energy policy: in 1986 the Danish parliament decided to ban all imports of coal from South Africa<sup>4</sup>, as part of the international economic boycott to end apartheid.

In *France* the Ministry of Industry (Directorate General of Energy and Raw materials) co-ordinates energy policy<sup>5</sup>, while the Ministry of Finance is involved in matters of finance, pricing and investment (McGowan, 1996:138-9). The electricity sector is further dominated by *Electricité de France (EDF)*, the public company that since 1946 has monopolist rights over electricity imports and exports, nationwide transmission and distribution<sup>6</sup>.

Until 1973, energy was generated with various conventional sources that had to be imported because France has few coal and gas reserves of its own (McGowan, 1996:139). After the first oil shock (1973) the government wanted to become less dependent on international energy markets, and it established a new policy aiming at nuclear energy generation and diversification of energy supply. Changing to nuclear

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<sup>1</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 186.

<sup>2</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 188.

<sup>3</sup> European Commission, 1988, *Review of the Member States' Energy Policies* (com(88)174), p. 42-3.

<sup>4</sup> European Commission, 1988, *Review of the Member States' Energy Policies* (com(88)174), p. 44.

<sup>5</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 200.

generating capacity was an absolute priority<sup>7</sup>. Twenty years later nuclear energy generation accounted for some 75 per cent of total generation, and it had the broad support of the French people. As Claude Mandil, director general of the Ministry of Industry, said on *Frontline* on the decision to build a new nuclear power plant: “There was a fight between several sites, not to avoid the plant, but to have it. There were a lot of members of parliament who came to see the minister. ‘I want the plant’. French people like big industrial projects and nuclear plants are one of the most often visited plants in France. During summer it’s the place where you go to bring family, you see?”<sup>8</sup>

The nuclear energy production created a surplus of electricity, which was sold as exports<sup>9</sup>. This brought the French government in conflict with the European Commission, which claims that the monopoly of *EDF* over exports restricts the free movement of goods and violates the Treaty of Rome. In 1993, the European Commission threatened to bring the matter before the Court of Justice<sup>10</sup>. In spite of this pressure, and in spite of the Mandil report<sup>11</sup> which recommended the removal of *EDF*’s monopoly<sup>12</sup> the government held its ground and refused to open up the French energy market<sup>13</sup>. In the end the Court of Justice sided with the government, on a formal ground. The Commission had offered only legal arguments and had failed to show empirically that rules on exclusive imports and exports in energy had a negative effect on Community trade<sup>14</sup>. A feat in the “successful resistance of the French energy sector to pressures from those seeking to introduce greater competition” (McGowan, 1996:139). The environment did not play a major role in French decision making on energy (McGowan, 1996:139).

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<sup>6</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 200.

<sup>7</sup> European Commission, 1988, *Review of the Member States’ Energy Policies* (com(88)174), p. 82.

<sup>8</sup> *Frontline* show #1511; Air date: April 22, 1997. Transcript available on line (<http://www.pbs.org>).

<sup>9</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 201.

<sup>10</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 201.

<sup>11</sup> This is the same Claude Mandil who almost lovingly recounted on *Frontline* how visits to nuclear plants were part of the French family vacation program, and who held a core position in the French energy complex. One wonders if his report was not to some extent a case of window dressing.

<sup>12</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 203.

<sup>13</sup> “EDF refuse d’ouvrir son réseau à des tiers”, *Le Monde*, 30-05-1995.

<sup>14</sup> Case 159/94, *Commission v France*. A funny argument, indicating that the Court is a policy maker in legal clothes. Compare: Stone, 1995.

*Germany's* energy policy was a shared responsibility. The Federal Government, the *Länder*, municipal governments, and industry partners all play a role in what seems a typical corporatist arrangement aiming at consensus. From 1935 on, when the major players agreed on the Energy Act, security of supply and low prices were traded for monopoly rights, and the consensus has remained long after the Second World War. All major players were committed to nuclear energy since the 1960s<sup>15</sup> (McGowan, 1996:140). The electricity system consists of a large hierarchy of national, regional and local distribution companies, some 1000 in total, while a limited number of public or mixed supraregional utility companies control transmission and generation<sup>16</sup>.

The consensus of the German energy complex came under fire after the nuclear near-meltdown at Chernobyl<sup>17</sup> which caused the withdrawal of support for nuclear energy from the social democrats. The national consensus received further blows when the *Länder* and municipal governments, because of concerns over acid rain and the greenhouse effect, started to develop their own energy policies and aimed at energy conservation and clean energy. The consensus has not been restored during the 1990s (McGowan, 1996:140).

There were, in the early 1990s, some attempts at privatisation. To rationalise the outdated and underfunded energy companies in the former German Democratic Republic, which became part of the German energy complex after reunification, these utilities were privatised to raise money to restructure them (EIA, 1994:208).

*Spain*, in order to restructure the energy sector, and anticipating membership of the Community in 1986, formulated a National Energy Plan (*Plan Energético Nacional*) in 1984. Its main goals were to reduce the dependency and vulnerability of the energy supply by expanding national production and diversifying foreign energy sources, to improve efficiency in consumption and production, and to optimise the energy infrastructure. The plan also contained institutional reform. Responsibility for the high-voltage transmission grid was transferred to a publicly owned company *RESEDA* (*Red Eléctrica de España*) which has a monopoly over long-distance electricity transmission. Generation and distribution is dispersed over a large number of companies, although one generation company, *ENDESA*, has significant marketshare

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<sup>15</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 208.

<sup>16</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 209.

(it accounted for 25 per cent of total generation in the early 1990s). Further changes concerned the setting up of a new organisation to co-ordinate nuclear energy generation<sup>18</sup>.

The main actor in the Spanish energy policy in this period is the central government. Regional governments implement national priorities at lower levels, and are responsible for the licensing of regional generation, transmission and distribution companies. The focus of policy in the early 1990s was on typical public service goals, such as maintaining unified tariffs nationwide, supply obligations and joint generation planning<sup>19</sup>.

The 1980s have been a period of profound change for the *British* energy sector. In the postwar years, the energy sector had been nationalised and it aimed at securing supply and broader objectives of economic and welfare policy, meaning that energy prices should not be set too high because this would hurt low income groups and that in major decisions effects on for instance employment were taken into account. By the early 1980s, the sector was, unique in Europe, self-sufficient, although the efficiency of the industry was low (McGowan, 1996:136-8).

The Thatcher government, committed to the new right ideology and favouring swift and extensive deregulation and privatisation, undid most of the Attlee nationalisations (Hennessy, 2001:425), including those of the energy sector, privatising *Britoil* in 1982, *Enterprise Oil* in 1983, *British Gas* in 1986 and *BP* in 1987. The most complicated privatisation, that of the electricity sector, was the last in 1990/1<sup>20</sup>. Nuclear energy, for which there was some support<sup>21</sup>, was not included in privatisations.

The regulation of the electricity sector is the responsibility of the Director General of Electricity Supply and *the Office of Electricity Regulation (OFFER)*, the latter being

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<sup>17</sup> European Commission, 1988, *Review of the Member States' Energy Policies* (com(88)174), p. 52.

<sup>18</sup> European Commission, 1988, *Review of the Member States' Energy Policies* (com(88)174), p. 72-3, and: IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 276-7.

<sup>19</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 275.

<sup>20</sup> European Commission, 1988, *Review of the Member States' Energy Policies* (com(88)174), p. 136, and IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 295.

<sup>21</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 297.

responsible for security of supply, maintaining fair competition, compliance to licences and protection of consumer interests<sup>22</sup>.

Long-distance transmission is the responsibility of the *National Grid Company (NGC)* which connects generating companies, concentrated in the north and Midlands with distribution companies, concentrated in the heavy demand areas in the south<sup>23</sup>.

*The nature of national, pre community policy*

**Table 5-1: National energy policies in the 1990s.**

	Co-ordination mechanism / institution	Policy priorities	Attitude towards nuclear energy
Denmark	Government ( <i>Danish Energy Agency</i> )	Energy conservation	Rejection
France	Government (Ministry of Industry)	Independence	Enthusiastic support
Germany	Shared (Federal government, Länder, Municipal government, Industry)	Security of supply, low prices	Declining support
Spain	Central government	Rationalisation, improvement	Support
UK	Market	Liberalisation	Careful support

Andersen (2000) noted that national policies diverge. Looking at the policy priorities and the attitudes towards nuclear energy there is indeed considerable variety. As far as the economic order of the industry is concerned, there is more convergence however. The continental member states essentially saw the energy sector as a public sector driven by public goals whereas the UK was already on the track of deregulation during the 1980s (it had privatised its electricity sector by 1991). The UK is clearly the forerunner; only in Germany some small-scale privatisations to restructure the industry in the former German Democratic Republic existed. However, in Germany, as in the other member states, the central government was the core actor in the energy sector and public goals, and public institutions the driving force.

<sup>22</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 295.

<sup>23</sup> IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 297.

## **The European initiative**

Energy has been one of the driving forces behind the integration of Europe. Hoping to create regular and certain supplies of the raw materials for industrial production, coal among them, the European Coal and Steel Community (Treaty of Paris, 1951) was intended to solve the energy supply problems of the member states. After 1957, energy policy became less important, because of the flow of cheap imported oil. By the time energy became a problem again with the first oil shock in 1973, the member states wished, but failed, to establish a common energy policy again (Nugent, 1994:39; Andersen, 2000), likely because, as shown above, national interests and divergent national policies stood in the way of finding common ground. If the Commission was not able to formulate a common policy, it did gain a position in energy policy making, mainly through information gathering and R&D, activities that formed the springboard for further initiatives (McGowan, 1996:145).

The Single European Act (1987), the 1992 initiative and the preparations for the Maastricht Treaty (1993) revitalised the European integration process, and strengthened the Commission's position as a policy maker in a number of areas (Andersen, 2000), market liberalisation and the environment being important among them (McGowan, 1996:145), and it is against this background that the Commission renewed its interest in energy policy.

In 1988, the Commission published a Working Paper<sup>24</sup> applying the principles of the Rome Treaty on the energy market. This resulted in limited liberalising measures, introducing price transparency and transit rights for gas and electricity, but only after long and difficult negotiations and strong opposition from the member states and the industry (Midttun, 1997:264). During the early 1990s it became clear that the strong liberalisation the Commission proposed would not be acceptable for countries whose energy policies rested on national planning and public service ideas, including France and Spain, and the Commission retreated to a position that would satisfy all. The Commission had wanted to introduce a common-carrier principle, in which every electricity company would have full access to the grid, but this was forced to a weakened position, negotiated third-party access. Further, public service obligations were introduced (Midttun, 1997:266-7).

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<sup>24</sup> European Commission, 1988, *The Internal Energy Market* (COM(88)238final).

The eventual package consists of the following eight measures and ideas<sup>25</sup>:

- (1) Introduction of competitive forces to increase efficiency,
- (2) Introduction of a single market to end varying electricity tariffs across Europe and create a level playing field,
- (3) Acknowledgement of the idea that energy is an essential public service, but at the same time acknowledgement that this service can be achieved in a competitive single market,
- (4) The introduction of interconnection to improve efficiency,
- (5) The acknowledgement that competition will force producers to make better use of resources which avoids wasteful production,
- (6) Introduction of choice for consumers, which will enable them to choose (the nearest, cleanest, cheapest, best service) producer,
- (7) The acknowledgement that companies will have to improve their service to maintain their customers,
- (8) The acknowledgement that lower prices for electricity will result in lower production cost for the European industry, which will be translated into lower prices for products.

As is clear, the Commission defends the liberalisation with a rather classic series of benefits of the free market. In a competitive market companies will want to charge the lowest possible rates to increase the number of consumers. Driving down prices can be done by weeding out unnecessary cost, which helps to improve efficiency (1 and 5, with possible benefit for the environment). Interconnection will extend the physical size of the electricity grid, creating network effects that will further drive down tariffs (4, also see Appendix). The largest possible interconnected physical grid is a European electricity network, so a single market with identical market conditions is the final goal (2) Because consumers have a choice companies will have to improve their service to prevent customers from going to more client-oriented firms (7) Although electricity is usually considered to be a bulk good, there is room for product differentiation, mainly on the basis of production technique: consumers willing to pay more for green or eco electricity will get that choice (that is the only reasonable choice covered by 6). Lower prices for electricity will potentially drive down prices

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<sup>25</sup> European Commission, 1999, *Opening up to choice, The single energy market*, p. 4.



of all goods in which electricity is a production factor, which will improve international competitiveness of European industry (8)

Point 3, which argues that essential services can be achieved in a competitive single market, is more a free-market mantra than a solid prediction. Essential public services, ensuring access to the electricity grid at a reasonable tariff to everyone, including low-income families, are best carried out by public companies who have a legal obligation to serve every customer, and whose tariffs are fixed and based on a cross subsidy principle. Competition and universal service may well be at odds because firms could try to improve their efficiency by no longer serving uneconomical customers (see Appendix). The Commission is not too certain of this point itself, it seems, because it carefully adds: “competition can improve these services if appropriate measures are taken”<sup>26</sup>. Directive 96/92/EC specifies the general goals and describes specific arrangements for changing the electricity sector.

Directive 96/92/EC concerning common rules of the internal market in electricity is the legislative instrument for changing the electricity sectors, and it organises the reform along four main lines.

First, the scope of markets should change. The European Commission is very clear about its intent to create a European market instead of the existing 15 national markets. A European-level electricity market, with even tariffs across the whole union, and cross-border trade in electricity is a main objective. The preamble states, after a reference to the importance of the common market in general, that “the completion of a competitive electricity market is an important step towards completion of the internal energy market”<sup>27</sup>. Second, the introduction of competition is an important means to reach the goals set out above. The directive unequivocally states that “Member states shall ensure the working of electricity markets and operation of undertakings therein in accordance with the principles of competitive markets”<sup>28</sup>. Third, as with other utilities, the Commission wants to separate the “layers” (generation, transport or transmission and distribution of electricity) that jointly form the electricity market. Whereas the traditional state electricity company usually performed all the main functions, the European Commission envisions a functionally specialised industry, and has created separate rules for generation, transmission and distribu-

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<sup>26</sup> European Commission, 1999, *Opening up to choice, The single energy market*, p. 4.

<sup>27</sup> 96/92/EC, preamble, paragraph (2).

tion<sup>29</sup>. Fourth, the liberalisation will be carried out in phases in which markets open consecutively for certain activities or consumer groups<sup>30</sup>.

The main issues the directive addresses will now be dealt with in more detail.

### *The generation of electricity*

One clear objective of the EU is to increase the supply of electricity to force down prices: "Generation is one of the main components in the cost of electricity. This cost needs to be significantly reduced if EU prices are to fall to those of some of its main competitors. The directive introduces full and complete competition across the EU for all new generating capacity. Thus, from February 1999, any producer will be able to build a new power plant and generate electricity anywhere in the Community"<sup>31</sup>.

To regulate the building of new generating capacity the directive offers two procedures from which the member states must choose:

(1) Authorisation procedure<sup>32</sup>. The member state lays down (public, published, objective, and non-discriminatory) criteria for the construction of generating capacity. Through the criteria<sup>33</sup> the kind of installation, its safety, its location, its efficiency, its land use and the technical, financial and economic capacities of the applicants can be controlled.

(2) Tendering procedure<sup>34</sup>. The member state (or a competent body designated by the member state) draws up an inventory of the means of production needed, and allocates the requisite capacity based on a tendering procedure, overseen by a body independent of any electricity undertaking<sup>35</sup>.

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<sup>28</sup> 96/92/EC, article 3-2.

<sup>29</sup> 96/92/EC, article 7-6, and article 14-3.

<sup>30</sup> 96/92/EC, preamble, paragraph (5).

<sup>31</sup> European Commission, 1999, *Opening up to choice, The single energy market*, p. 6. The unnamed competitors are likely the US and the Asia-Pacific region, as they always are in the competing nations "theory" (a big word for a vague notion) of international trade. This underlying theory, apparently ever popular in politics, has few followers, if any, in academic economics. See: Krugman, 1994b.

<sup>32</sup> 96/92/EC, article 5.

<sup>33</sup> 96/92/EC, article 5-1, (a)-(h).

<sup>34</sup> 96/92/EC, article 6.

<sup>35</sup> Overwhelmingly the member states, including all states in the sample, have opted for the authorisation procedure.

### *The transmission of electricity*

Transmission is the transport of electricity on the intermediate high-voltage systems that connect the generation installations with distribution networks. In these systems the transmission system operators (TSOs) are of particular importance. A member state designates (by any method) one transmission system operator in an area to be responsible for the operation, maintenance, and if necessary, the development of the transmission networks in a given area<sup>36</sup>. This TSO ensures that there is capacity to transport electricity, with the help of other transmission companies in its area, with whom it negotiates interconnections transparently and non discriminatory<sup>37</sup>.

The TSO is also responsible for dispatching generating capacity, also in transparent and non-discriminatory fashion, and the TSO is forbidden to favour generating companies or units belonging to the same holding or group of shareholders<sup>38</sup>. At the management level the TSO must be a separate entity, which does not control distribution or generating capacity.

What the Commission does here is simply putting an existing situation into law: there were companies (state companies, newly-privatised companies or units of such companies) solely responsible for the transmission of electricity in certain areas, and from February 1999, they became TSOs. Yet, and this is new, their positions on markets can be challenged by competitors.

### *The distribution of electricity*

Distribution is the transport of electricity to the end users on medium and low-voltage interconnected systems. The system with the transmission service operator is replicated: in one area, an operator will be designated as responsible for the smooth functioning and extension and interconnection of the network, with the familiar safeguards. The transmission service operator in a distribution network, like its counterpart in a transmission network, can dispatch generating capacity<sup>39</sup>.

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<sup>36</sup> 96/92/EC, article 7-1.

<sup>37</sup> 96/92/EC, article 7-2/5.

<sup>38</sup> 96/92/EC, article 8.

<sup>39</sup> 96/92/EC, article 10 and 11.

### *Unbundling and transparency*

The public electricity companies are often vertically-integrated enterprises combining all or some of the main functions of the electricity industry: generation, transmission and distribution. In a liberalised market strong connections between the “layers” of activity are unwanted, first because they could lead to favouritism (a transmission service operator dispatching generating capacity could be inclined to go to its sister or parent company instead of to the cheapest company), and second because a company could cross-subsidise its activities, or finance less-profitable elements of the whole cycle with extra income generated by more profitable activities. Since competition is to take place between companies with identical functions (so: generation companies competing against other generating companies, transmission companies against other generating companies, and so on) cross-subsidies lead to unfair competition. A transmission company that loses marketshare because a competing transmission company is better and cheaper should not be saved by successes in distribution or generation, so in *another* activity, but should be forced to improve its transmission activities. Fair competition should thus lead to an overall improvement of efficiency.

Hence, whatever the actual company form, in their accounting and management the generating, transmission and distribution companies are to behave as if they were separate limited companies<sup>40</sup>. This discourages favouritism because there is hardly a climate for it, and more important, it rules out cross-subsidies.

### *Network access*

Consumers need to be connected to the network in order to get their electricity from a generating company. If a direct line is available there is no problem, but in most cases an intermediate network connection (or a series thereof) with a transmission or distribution operator will be necessary. The member state must choose between the following procedures (and lay down rules for objective, transparent and non-discriminatory operation):

(1) Negotiated Third Party Access<sup>41</sup>. In this system, producers and consumers with a contract for electricity delivery negotiate access to the network with its operator. The

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<sup>40</sup> 96/62/EC, article 14-3.

<sup>41</sup> 96/62/EC, article 17-1/3.

member state sets up a framework under which undertakings can voluntarily enter commercial agreements. System operators are forced to publish indicative access tariff ranges ahead (based on negotiated tariffs in the past twelve months) to promote transparency.

(2) Regulated Third Party Access<sup>42</sup>. Producers and consumers contract directly with each other, but the prices of use of transmission and/or distribution systems are regulated. Eligible customers have a right of access based on published tariffs. In case a member state chooses for regulated access, a competent dispute-settlement body must be established.

(3) Single buyer<sup>43</sup>. The member state designates, per area, a legal person to be responsible for unified management of the grid and for centralised electricity purchase and selling. Normally (but not necessarily) this would be the transmission system operator. Single buyer activities are to be kept (managerially and financially) from other activities.

The single buyer procedure is closest to putting the existing situation into law: in most areas where energy transmission/distribution companies are active, in fact they are the single buyers. Third-party access goes further to real market opening, because producers and consumers can directly negotiate contracts.

### *Market conditions*

The directive obliges the member states to create a system of regulation, control and transparency to avoid the abuse of dominant position and predatory behaviour normally forbidden under European competition law<sup>44</sup>. The directive places no further obligation than this result on the member states, so the members are free to choose whether they create special competition law for electricity companies, create a special regulatory office, or simply leave the enforcement of competitive behaviour and standards to the existing institutions and instruments of general competition law. They must however designate a competent body, independent of the parties, to settle disputes<sup>45</sup>, and they ensure fair negotiating conditions. So, by whatever means, the

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<sup>42</sup> 96/62/EC, article 17-4/5.

<sup>43</sup> 96/62/EC, article 18.

<sup>44</sup> 96/62/EC, article 22.

<sup>45</sup> 96/62/EC, article 20-3.

member states are obliged to make the electricity market a normal, open, competitive market.

### *Market opening*

The market will be opened gradually, and the members are left a considerable degree of freedom to implement changes in their own respective tempo. However, the commission has defined minimum criteria that should be reached at least at a given date<sup>46</sup>. They are:

(1) Step 1: on 19 February 1999 the share of the total consumption of final consumers with an annual consumption exceeding 40 gigawatt<sup>47</sup> hours must be liberalised. This is about 26.48 per cent of each national market.

(2) Step 2: on 19 February 2000 the share of the total consumption of final consumers with an annual consumption exceeding 20 gigawatt<sup>48</sup> hours must be liberalised. This is about 28 per cent of each national market.

(3) Step 3: on 19 February 2003 the share of the total consumption of final consumers with an annual consumption exceeding nine gigawatt<sup>49</sup> hours must be liberalised. This is about 33 per cent of each national market.

### **Reactions of the member states**

In *Denmark*, as far as energy is concerned, a process of Europeanisation has set in: “The development of several energy-related EU directives in the late 1980s and early 1990s contributed to a Europeanisation of Danish energy policy. However, it was not until negotiations on the Electricity and Gas directives started in the early 1990s that the Danish energy administration got heavily involved in the EU decision-making process. From then on high priority was given to EU energy policy issues, and throughout the 1990s the EU process of developing a common energy policy has had decisive effects on the liberalisation of Danish energy policy and triggered far-

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<sup>46</sup> European Commission, 1999, *Opening up to choice, The single energy market*.

<sup>47</sup> As example the commission mentions a big shipyard. In: European Commission, 1999, *Opening up to choice. The single electricity market*, p. 8.

<sup>48</sup> As example the commission mentions a glass factory or chemical industry. In: European Commission, 1999, *Opening up to choice. The single electricity market*, p. 8.

<sup>49</sup> As example the commission mentions a big hotel or hospital. In: European Commission, 1999, *Opening up to choice. The single electricity market*, p. 8.

reaching reform” (Dahl. et al, 2001:11)<sup>50</sup>. The involvement in European energy policy stemmed from Denmark’s strong commitment to environmental protection<sup>51</sup>. It was keen on influencing European policy in that direction. So, in *Energy 21*, the 1996 national energy plan, the Danish government pledged support to the general line of European policy, but “in connection with drafting the rules for liberalising the European electricity markets, the Government has taken active steps to ensure the necessary prioritisation of environmentally-benign energy technologies such as electricity supply on the basis of combined heat and power (CHP) and renewable energy”<sup>52</sup>. Support, and active lobbying to create environmental awareness sums up the Danish reaction.

*France* wants to keep the *EDF* monopoly intact but at the same time it needs access to markets in Europe to sell its excess electricity . Therefore, in the 1980s it supported liberalisation to ease access, but it realised that subjecting the electricity sector (read: *EDF*) to the regime of European competition law could very well end the monopoly. So, it retreated from its position, now aiming at closer co-operation between European utilities rather than full liberalisation, and supported Council policy to prevent the Court from taking action under the heading of competition law (Héritier, 2001:20). This “strategic support” for electricity policy, combined with a strong defence of *EDF*<sup>53</sup>, also necessary because of trade union actions to protect employment<sup>54</sup>, has been the French line since. France does not openly oppose the directive but simply ignores its terms, with the result that the Commission has had to take action against France twice. First France failed to transpose the directive by its deadline, to which the Commission reacted in 1999 with an infringement proceeding, which reached the Reasoned Opinion stage<sup>55</sup>. Then, in 2000, the Commission opened

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<sup>50</sup> Dahl et.al. even found that Denmark had successfully influenced European policy making: “The Euro-associations and the permanent representatives have been important in representing national views that contribute to a more balanced input of political opinion to the EU Commission and Council.” (2001:29).

<sup>51</sup> IEA (International Energy Agency), 1998, *Energy Policies of IEA Countries. Denmark 1998 Review*.

<sup>52</sup> Energistyrelsen, 1996, *Energy 21. The Danish Government’s Action Plan for Energy*, p. 3.

<sup>53</sup> The defence of *EDS* also led to strong lobbying for, and eventual introduction of, the single buyer model instead of third party access, a market co-ordination mechanism that keeps state planning intact and which was first called “an import monopoly by another name” by the Commission. It had to swallow it nonetheless (Midttun, 1997:268).

<sup>54</sup> “Face aux grèves, M. Juppé maintient son calendrier de réformes”, *Le Monde*, 01-12-1995.

<sup>55</sup> *EC Inform-Energy 84*, 13-07-2000.

infringement proceedings for failing to implement properly<sup>56</sup>. Still, France has not opened its electricity market<sup>57</sup>. At the Stockholm European Council in March 2001, the UK and Spain accused France of allowing *EDF* to invade their markets while refusing to end the monopoly of *EDF* at home<sup>58</sup>. At the European Council in Barcelona, in March 2002, France still refused to open or reform its electricity market, using the public service principle and reasonable and stable prices it created as a main line of defence<sup>59</sup>.

After some initial hesitation by local suppliers and the Social Democratic/Green majority in the Federal Council, mainly over public service aspects (Héritier, 2001:20) the EU electricity directive ended the indecisiveness of *Germany's* political system towards energy and it became an enthusiastic supporter of electricity deregulation. Germany did not just implement the directive but went far beyond what was necessary. Where the directive calls for a gradual opening of markets, Germany opened its whole energy market at once<sup>60</sup>. The speed with which Germany moved is surprising, all the more because the Kohl government was, at the time of the implementation, under political attack for doing too little to restructure the economy<sup>61</sup>, although that could also be the explanation for the speed: with elections coming up in 1998 the Kohl government needed successes to show the seriousness of its intentions.

*Spain* without problems or delays implemented the directive and now aims at an opening of the market ahead of schedule, so the country is generally supportive of the European policy. Yet, there might be an intention to protect the national electricity industry and to favour, to a certain extent, a national champion<sup>62</sup>. This is not at odds with the general political climate. Spain has not been hostile towards liberalisation, but the González government saw a clear role for the public sector to foster growth (Boix, 1997:260), and along with other (southern) member states it favours a public service notion (Héritier, 2001:8).

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<sup>56</sup> France imposed a minimum time limit of three years on contractual arrangements, which, according to the Commission is a barrier to entry, *EC Inform-Energy 84*, 13-07-2000.

<sup>57</sup> "Generating distrust", *The Economist*, 24-01-2002

<sup>58</sup> "The row over the EU's market isn't over", *The Economist*, 29-03-2001.

<sup>59</sup> "Bataille à l'arraché à Barcelone sur la libéralisation de l'énergie", *Le Monde*, 16-03-2002

<sup>60</sup> "Germany's electrical storm", *The Economist*, 11-11-1999.

<sup>61</sup> "Germany makes haste slowly", *The Economist*, 10-07-1997.

<sup>62</sup> "Into the European market", *The Economist*, 23-11-2000



The UK was the first European country to reform its electricity sector, so superficially it would seem that the European Union reform, broadly having the same thrust, would not pose any particular problems for the UK. The European Commission however intervened in the British liberalisation process. The UK government had withdrawn nuclear power from privatisation (Thomas, 1997:61) to which the European Commission objected, leading to a change in the position of the UK on this point. In addition, the Commission intervened in the matters of subsidies and joint ventures with EDF (McGowan, 1996:148).

All in all reactions vary, reflecting the variety in existing national policies and interests before the European policy was introduced. In the following part, the actual changes in national legislation and the industry will be analysed.

## **PART 2: ASSESSMENT OF THE EXTENT OF IMPLEMENTATION**

### **Variables and indicators**

The choice of indicators is generally based on the specific goals the European Commission has put forward in the directive and on the intent to measure actual changes in regulation. It will be difficult to assess the change on energy markets in a way comparable with the telecommunications and broadcasting, and to a lesser extent, the rail transport markets, because electricity deregulation is a recent and ongoing event. The market has in all probability not progressed very far on the road to full competition, and many of the changes currently observed may be temporary turmoil and false starts. Further: the Commission is still working on the development of indicators to measure the actual liberalisation of electricity markets<sup>63</sup>. There is still much uncertainty, and the dust has not settled on the energy market, so the findings presented below must be regarded with some caution, not as to their veracity but as to their meaning in the long run.

*Regulatory renewal* is measured by four indicators. *Implementation of core directive* asserts whether the electricity directive has been transposed into national law. *Or-*

*organisation of regulation* is based on the assumption that markets with market failure need an effective and independent regulator, and so the organisation of regulation has been assessed, mainly by looking at the independence of the regulator. *Unbundling* is the indicator that assesses whether or not integrated power industries have been broken up effectively, for it is precisely the strong integration of generation, transmission and distribution of electricity that created impenetrable monopolies in the past.

**Table 5-2: Overview of variables measuring liberalisation in electricity.**

Main variables	Indicators
<b>Regulatory renewal</b> The extent to which an effective competition framework is implemented	<ol style="list-style-type: none"> <li>1. <i>Implementation of core directives</i></li> <li>2. <i>Organisation of regulation</i></li> <li>3. <i>Unbundling</i></li> <li>4. <i>Minimum or maximum solutions</i></li> </ol>
<b>Market renewal</b> The extent to which the market becomes competitive	<ol style="list-style-type: none"> <li>5. <i>Concentration</i></li> <li>6. <i>Real market opening</i></li> </ol>
<b>Efficiency and innovation</b> The extent to which the market is more efficient and innovative	<ol style="list-style-type: none"> <li>7. <i>Efficiency</i></li> </ol>
<b>Price development</b> The extent to which prices decline	<ol style="list-style-type: none"> <li>8. <i>Industrial prices</i></li> <li>9. <i>Small business prices</i></li> <li>10. <i>Household prices</i></li> </ol>

*Minimum or maximum solutions* is a measure of intent. On a number of issues the directive gives member states a choice to implement a more or a less strict regime; the less powerful measures had to be included to make the directive acceptable for certain member states. This, however, gives an excellent opportunity to test the member states' intent in deregulation: choosing the less powerful options in legislation, although not forbidden under EU law of course, gives away the position of the member states on certain points. Together these four indicators assess the implementation and the effectiveness of the national electricity frameworks.

*Market renewal*, the variable establishing the impact of regulation on the behaviour of market participants will be measured by two indicators. *Concentration* measures to what extent energy generation is still dominated by a few large companies, by looking at the marketshares of the largest three generators. The lower this percent-

<sup>63</sup> European Commission, 2001, *Electricity Liberalisation Indicators in Europe*.

age, the more inroads smaller companies have made, an important sign that deregulation is changing the market structure. *Real market opening* measures the extent to which the member states have removed obstacles for free trade in electricity. In the previous chapters, real market changes have been measured by looking at the number of new operators or the change of market share, on the assumption that there were new, private entrants challenging the position of a former state monopoly. The changes in the electricity sector are, however, too fresh to see much change in that respect.

Of *efficiency and innovation*, supposed to be the result of more competition, only changes in *efficiency* have been measured. It is assumed that the retreat of the state and the opening of markets and the anticipation on competition will have some effect on the short-term activities of electricity operators. *Innovation* has not been measured. Although there are data available to establish innovation (in particular data on CO<sub>2</sub>-emissions are indicative of improvements of electricity generating capacity) a choice was made not to include this indicator because reduction of polluting emissions, and installing technology that has that effect, has in fact been a policy of Western European governments for the past two decades, and electricity generation-related CO<sub>2</sub> emissions have gone down as a result of that policy<sup>64</sup>. Since that is an effect of long-term policy and of large investments in infrastructures the effect of liberalisation or consumer freedom (to choose for “green electricity”) will not be measurable in the relatively short period since the directive has become effective. In addition, renewables are still less than one per cent of energy supply worldwide<sup>65</sup> so any effect will be small. Another technical innovation, the rise of distributed or micro-power generation is too recent to examine in the light of liberalisation, because there was hardly any measurable micro-power generation going on in the early and mid-1990s, so a trend cannot be established<sup>66</sup>.

With respect to the variable *prices*, the effect of liberalisation, and the effect of (anticipation on) competition could be established on three categories of customers (industrial customers, small businesses and households) by using Eurostat data.

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<sup>64</sup> European Commission, 1999, *Annual Energy Review*, p. 71.

<sup>65</sup> “Renewing faith”, *The Economist*, 08-02-2001.

## Establishing regulatory renewal

### *Implementation of core directives*

The first, and simplest, test of implementation is to see whether legislative action has been taken by the Member States and if that has resulted in legal implementation or transposition of directive 96/92/EC. Table 5-3 gives an overview of implementation dates and implementing devices.

**Table 5-3: Dates of implementing measures transposing liberalising directive.**

	96/92/EC implementation date: 01-02- 1999	Assessment score
Denmark	<b>On time</b> <ul style="list-style-type: none"> <li>• 02-06-1999 (law)</li> </ul>	4
France	<b>Late</b> <ul style="list-style-type: none"> <li>• 11-02-2000 (law, Art. 226 infringement procedures opened)</li> </ul>	2
Germany	<b>On time</b> <ul style="list-style-type: none"> <li>• 29-04-1998 (law)</li> <li>• 01-01-1999 (amendment of existing law)</li> </ul>	4
Spain	<b>On time</b> <ul style="list-style-type: none"> <li>• 01-01-1998 (law)</li> </ul>	4
UK	<b>On time</b> <sup>67</sup> <ul style="list-style-type: none"> <li>• (law)</li> </ul>	4

Source: CELEX database.

Except for France the transposition of the directive has not been a problem. Regarding the UK, where the implementing statute precedes the directive, The Electricity Act of 1989 (which entered into force in 1990) was obviously not intended to implement the directive, but since it aimed at a complete market opening by 1999 it is

<sup>66</sup> “Here and now”, *The Economist*, 08-02-2001.

<sup>67</sup> The Electricity Act of 1989 was obviously not intended to implement the directive, but since it aimed at a complete market opening by 1999 it is largely seen as implementing device. Some amendments have been made to the Act in mid 2000 to fully comply with the directive. See: DTI (Department of Trade and Industry), 1998, *Consultation Paper: Implementation of Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 Concerning Common Rules for the Internal Market in Electricity*.

largely seen as implementing device. Some amendments have been made to the Act in 2000 to fully comply with the directive<sup>68</sup>.

The reluctance of France to support the EU's electricity policy has already been noted above, and the late implementation of the directive should not come as a surprise, and is most likely a result of that reluctance, and not of legislative or technical difficulties in getting the directive transposed. EDF is well connected to the political elites in France (Fenby, 1998:151) and it seems that EDF is a typical government monopoly that is captured (compare Denkhaus and Schneider, 1997:72) by politicians and trade unions, which, in return for political protection, receive employment and low prices.

#### *Organisation of regulation.*

An independent regulator is of utmost importance for the working of a market, in particular during the liberalisation. The directive does not oblige the member state to establish one but given the fact that the separation of policy, production and regulation is an important theoretical notion in itself in utility economics (e.g. Melody, 1997:22) it would be reasonable to expect that an independent regulator is part of the structure of liberalised electricity markets.

In table 5-4 an overview of the organisation of regulation is given. Most member states, except for Germany, have a regulator overseeing competition and related issues. There are, however, some differences in status between the regulatory offices.

The British and Danish regulatory offices are independent, although there is some question regarding the independence of the Spanish and the French regulator. In Spain, the regulator, *CNE*, has a more than superficial relation with the main policy maker in the energy sector. The ministry oversees the efficiency of *CNE*, and, although he has no vote, the minister or a representative can participate in board meetings of the board of *CNE*. In France, the relation between the government and the regulator, *CRE*, is even closer: the government formally appoints a government

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<sup>68</sup> DTI (Department of Trade and Industry), 1998, *Consultation Paper: Implementation of Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 Concerning Common Rules for the Internal Market in Electricity*.

commissioner who has the authority to influence the daily activities of the board of *CRE*<sup>69</sup>.

**Table 5-4: Organisation of regulation.**

	Regulator	Position vs. sector ministry	Assessment score
Denmark	Yes ( <i>Energy Supply Board</i> )	“Not subject to the instructions of the Minister for Environment and Energy” <sup>70</sup>	4
France	Yes ( <i>Commission de la Régulation de l'Électricité</i> )	Formally appointed government commissioner brings governmental policy under attention of regulator <sup>71</sup> .	2
Germany	No	-	1
Spain	Yes ( <i>Comisión Nacional del Sistema Eléctrico</i> )	Attached to Ministry of Economy which also monitors the efficiency of its activities; economic and financial control by the State Comptroller's Office <sup>72</sup>	3
UK	Yes ( <i>Independent Gas and Electricity Markets Authority</i> delegates regulation to <i>Office of Gas and Electricity Markets</i> )	Independent <i>Gas and Electricity Markets Authority</i> acts on behalf of the Crown <sup>73</sup>	4

Source: *EU-Japan Centre*<sup>74</sup>.

How exactly the dealings between the government and the regulator in Spain and France work out will depend in large part on the personalities of the board members and the government representative and the wider pattern of administrative culture. However, the idea of independent regulation is that the personalities do not matter, and that responsibilities, functions and outcomes of decisions are clear and predictable.

<sup>69</sup> “Il peut faire inscrire à l'ordre du jour de la commission toute question intéressant la politique énergétique ou la sécurité et la sûreté des réseaux publics de transport et de distribution d'électricité ou entrant dans les compétences de la commission. L'examen de cette question ne peut être refusé”. Loi relative à la modernisation et au développement du service public de l'électricité.

<sup>70</sup> Electricity Supply Act, Art. 78-2.

<sup>71</sup> Loi relative à la modernisation et au développement du service public de l'électricité, Art. 28.

<sup>72</sup> Ley 34/1998 del Sector de Hidrocarburos, October 7 1998 and Real Decreto 1339/1999 .

<sup>73</sup> Gas Act 1986, the Electricity Act 1989 and Utilities Act 2000.

<sup>74</sup> EU-Japan Centre for Industrial Cooperation, 2000, *Analysis of the Electricity Sector Liberalisation in European Union Member States pursuant to Directive 96/92/EC on the Internal Market in Electricity*, p 8-9.

As far as the assessment of the quality of this aspect of the regulatory framework is concerned Germany, having no independent regulator at all, receives one point. There is some indication that the framework does not work: “Germany has no power regulator. The big utilities like this, because they are left to regulate themselves, albeit under the watchful eye of the Federal Cartel Office. Smaller local utilities complain that self regulation lets the big generators tie them into loss-making long-term contracts. And new entrants say that they need a strong local partner to gain fair access to the electrical grid”<sup>75</sup>. As *The Economist* noted: “liberalising at breakneck speed carries risks”<sup>76</sup>.

The uncertainty about the influence of the responsible ministries in France and Spain must lead to a lower score. The situation in France is assessed to be more harmful because there is a formal influence over the activities of the board of the *CRE*.

### *Unbundling*

The directive orders member states to separate management and accounting of the generation, transmission and distribution activities of integrated electricity utilities<sup>77</sup>. The goal is to disaggregate, at least at the level of accounts, the integrated utilities and to create at least the legal fiction of separate transmission, generation and distribution companies, even if the utilities are still integrated at higher (corporate, holding) level. It is in particular the transmission network that plays a core role: “In Europe, the transmission network is largely owned by a vertically integrated electricity company that generates, transports and sells electricity. These companies own an “essential service”, the transmission network, which, under the new rules, it must offer on equal terms to its own company, and to its competitors. However, there is in reality a clear risk that such companies will be tempted to discriminate in favour of their own group companies when granting access to the network”<sup>78</sup>. By unbundling the companies at management level the day-to-day operation of the network becomes

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<sup>75</sup> “Germany’s electrical storm”, *The Economist*, 11-11-1999.

<sup>76</sup> “Germany’s electrical storm”, *The Economist*, 11-11-1999.

<sup>77</sup> 96/92/EC, Art. 14-4: “Integrated utilities shall, in their internal accounting, keep separate accounts for their generation, transmission and distribution activities, and, where appropriate, consolidated accounts for other, non-electricity activities, as they would be required to do if the activities in question were carried out by separate undertakings”.

<sup>78</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 9, see also: European Commission, 2001, *Completing the internal market* SEC(2001)438, p. 7.

independent from the interests of the vertically integrated company because decisions will be made - at least that is what the directive hopes to accomplish - based on fully transparent cost and price calculations, which would mean that e.g. a distributor will also buy electricity from a company outside the group if that company generates at lower cost. Transparency thus leads to non discrimination. “Unbundling of the TSO<sup>79</sup> should guarantee that the TSO acts in the interests of the network and regards all market players as its clients, and not as its competitors”<sup>80</sup>.

The member states can go beyond management unbundling. Some member states have chosen legal unbundling, meaning that the transmission system is a completely and legally separated entity. One step further is ownership unbundling, in which case a transmission company that is completely separated from all other interests owns the transmission system<sup>81</sup>. The three measures differ in the extent to which they can ensure transparency<sup>82</sup>. Generally, the less contact at whatever level, the better. Table 5-5 presents the degree of unbundling the member states have implemented.

**Table 5-5: Unbundling.**

	Organisation of unbundling	Assessment score
Denmark	Legal	3
France	Management	2
Germany	Management	2
Spain	Ownership	4
UK	Ownership	4

Source: European Commission<sup>83</sup>.

France and Germany comply to the directive at management and accounting level, but do not in any way restrict companies to combine the transmission of electricity with generation and/or distribution, as long as they are separated at accounting and management level. This option is the least effective; third companies seeking access to the transmission grid will be treated as competitors rather than as customers (assessment score of 2). Denmark has legally separated the transmission network, so the transmission company is a legally separate entity, but, in principle, it is possible for

<sup>79</sup> Transmission System Operator

<sup>80</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets.* (COM(99)198final), p. 8.

<sup>81</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets.* (COM(99)198final), p. 8.

<sup>82</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets.* (COM(99)198final), p. 10.



holding companies to be active in transmission and generation and/or distribution, meaning that there could be a conflict of interest in granting third-party access (at holding level). This is a better, but not an ideal solution (assessment score of 3).

Spain and the UK both opt for unbundling at ownership level, meaning that transmission operators are fully separate companies, not owned by companies or holdings active in any other form of electricity activity (assessment score of 4).

#### *Minimum or maximum solutions*

On three issues the directive leaves member states a choice to implement a stronger or weaker regime. The choices have been inserted in the directive because of political compromise on these issues. From the viewpoint of research, they do however present an opportunity to examine the seriousness or the strength of the intent of the member state to liberalise. The issues on which member states had to decide are:

(1) Building of new generating capacity. A member state can regulate the building of new generating capacity by two procedures. The member states must opt for one of both. Whichever procedure is chosen, it must be applied objectively, transparently and non-discriminatory<sup>84</sup>.

Under what is called the authorisation procedure the member state lays down criteria<sup>85</sup> to which parties wishing to invest in generating capacity must comply. If no criteria are violated, a generating plant can be built by the investor. Lack of demand cannot be a valid criterion for refusal of an authorisation.

Under the tendering procedure<sup>86</sup> the member state first draws up an inventory of the needs for generating capacity, and then allocates the capacity with a tendering procedure, of which the specific rules are published in the Official Journal of the European Communities.

Either way, the government is an influential actor in the decision making on generating capacity, but there is an important difference between the two with respect to the competitiveness of the eventual market. The authorisation procedure puts no limit on the amount of generating capacity. Therefore, if a company complies with all

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<sup>83</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 8.

<sup>84</sup> 96/92/EC, Art. 4.

<sup>85</sup> The criteria are, amongst others, the safety of the electricity system, the protection of the environment, land use and siting, energy efficiency, and energy efficiency (96/92/EC, Art. 5).

<sup>86</sup> 96/92/EC, Art. 6.

rules, it can build a new power plant, *irrespective of the total capacity*. Under the tendering procedure, it is the government (or a competent body) that decides what the total capacity should be. In a sense, the tendering procedure allows governments to decide on the size of the electricity market, and it explicitly grants the state the right to plan the electricity need. Midttun (1997:266-7) considers the introduction of the tender system as a clear weakening of the internal market policy for energy, in response to pressures from France, Spain and Italy.

(2) Access regulation. Since all customers potentially have to be connected with all producers and distributors without adding technically unnecessary infrastructure, a system of interconnection with access to networks not owned by, but *needed* by a party is of utmost importance. The directive gives member states a choice between three systems of access: negotiated third-party access, regulated single-party access and the single-buyer procedure<sup>87</sup>.

Under negotiated third-party access,<sup>88</sup> interested parties negotiate directly with each other in a framework set up by the member state. To ensure transparency operators must publish indicative price ranges. Under regulated third-party access,<sup>89</sup> interested parties have a right of access. Prices cannot be negotiated (the price is “regulated” hence the name of this procedure). The third access system is the single-buyer procedure<sup>90</sup>, in which, as the directive stipulates, a legal person responsible for the unified management of the transmission system, and maybe also responsible for distribution, is set up. The use of the transmission system conforms to fair competition rules, and the single buyer applies fair competition rules when buying generated electricity, to ensure that all generators have a fair chance of winning contracts. The procedure was favoured or even pushed by France, with support of Greece and Ireland, in order to protect their own monopolistic state companies (Midttun, 1997: 268).

From the viewpoint of regulation of industries in which the infrastructure and the size of investments lead to market failure (and eventually, if unregulated, to monopoly; Wolf, 1990:23) negotiated third-party access is the lesser option because in the end it does not give interested parties a right to access - and access to the grid equals access to the market. The regulated third-party access procedure, giving interested

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<sup>87</sup> 96/92/EC, Art. 16.

<sup>88</sup> 96/92/EC, Art. 17-1, 17-2, 17-3.

<sup>89</sup> 96/92/EC, Art. 17-4, 17-5.

<sup>90</sup> 96/92/EC, Art. 18.

parties both a right to access, and a certainty that prices cannot be used to unfairly deny access is better equipped to prevent the abuse of market power that always looms in a grid-bound industry. Negotiated access is, again according to Midttun, a weaker option (Midttun, 1997: 267).

(3) Transposition of reciprocity clause. The directive allows the member states to introduce a form of protectionism in their national legislation. The reciprocity clause<sup>91</sup> gives member states the right to refuse electricity imports to eligible customers that are not considered eligible customers in the exporting member state, for a period of nine years. The clause is meant to prevent “unfair, unbalanced market access and competition”<sup>92</sup>, that different levels of market opening may cause. In other words: member states who fear that electricity companies in other member states will be able to supply electricity at lower cost may protect their own industry. Protectionism generally leads to higher prices on both sides of the border (Swann, 2000:99-126). In utilities it also erodes the network effects. Liberalised, free markets in a common-market system like the EU have little to gain by protectionism<sup>93</sup>.

Table 5-6 presents the choices member states have made on the three issues in the form of minimum (corrupting liberalisation) and maximum (supporting liberalisation) choices. Each implemented minimum choice leads to a subtraction of one from the possible maximum score of 4.

Three member states, Denmark, France and the UK, have implemented maximum options only and receive four points. Germany fares worst; access is minimally addressed and the country opts for the possibility of protectionism. In this case, the low score need not automatically be indicative of the protection of a state monopoly. The German energy sector is diverse and consists of a large number of companies, furthermore it is a typical corporatist arrangement in which many social groups have a say. Both aspects imply that one strong government protecting one strong monopoly is not the case. The choice for minimum options may be more a sign of a speedy liberalisation not thought through. A spokesperson for Southern Energy assessed the

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<sup>91</sup> 96/92/EC, Art. 19-5.

<sup>92</sup> European Commission, 1999, *Opening up to choice, The single energy market*, p. 16.

<sup>93</sup> Even the “new international economics” associated with people like Elhanan Helpman, Barbara Spencer and Paul Krugman, while arguing that government intervention in the form of “strategic trade policy” is not always a bad thing, rejects protectionism in favour of limited industrial policy in the form of subsidies to support some starting, usually high tech, industries (See: Krugman, 1994c:130-135).

German electricity liberalisation as follows: “Almost overnight it has gone from pure monopoly to pure anarchy. It has the vital signs of a liberalised market, but not the structures”<sup>94</sup>.

**Table 5-6: Minimum / maximum choice.**

	Allocation of generating capacity	Access regulation	Transposition of reciprocity clause	
Denmark	Authorisation <sup>95</sup> (maximum)	Regulated tpa (maximum)	no (maximum)	4
France	Authorisation <sup>96</sup> (maximum)	Regulated tpa (maximum)	no (maximum)	4
Germany	Authorisation (maximum)	Negotiated tpa (minimum)	yes (minimum)	2
Spain	Authorisation (maximum)	Regulated tpa (maximum)	yes (minimum)	3
UK	Authorisation (maximum)	Regulated tpa (maximum)	no (maximum)	4

Source: *European Commission*<sup>97</sup>.

Spain has a mildly lower score because it has implemented the reciprocity clause. It may well have done so to protect itself from the aggressive invasion of its market by *EDF*, the French monopolist. It is still, and so far in vain, trying to close a reciprocity deal with France<sup>98</sup>.

This brings in sight the hidden surprise of table 5-6: France. Its position in the negotiations on the electricity directive has been one of the main reasons for the retreat to the weaker position of the Commission on electricity deregulation (Midttun, 1997:266), and yet it has implemented the better solutions in all three cases. This should however not be taken as a change of policy, only as “strategic” or even “pseudo” implementation to acquiesce the EU for now. The actual energy policy of France still consists of protecting *EDF* (for example, it refuses to grant Spain access to the French market, while *EDF* has accessed the Spanish market, see above). Apparently, France has chosen to comply legally at least.

<sup>94</sup> “Germany’s electrical storm”, *The Economist*, 11-11-1999.

<sup>95</sup> Tendering procedure for off shore wind parks.

<sup>96</sup> Tendering procedure if not enough capacity is built on the basis of authorisation.

<sup>97</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 5-7.

## Overview

**Table 5-7: Overview of regulatory renewal scores. Maximum = 16.**

	Implementation of core directive	Organisation of regulation	Unbundling	Minimum or maximum solutions	Variable: Regulatory renewal
Denmark	4	4	3	4	<b>15</b>
France	2	2	2	4	<b>10</b>
Germany	4	1	2	2	<b>9</b>
Spain	4	3	4	3	<b>14</b>
UK	4	4	4	4	<b>16</b>

## Establishing market renewal

### Concentration

The prevention of concentration, bringing with it the opportunity to influence prices upward and to ban more innovative competitors, is the cornerstone of competition law, and industry regulation is the application of general competition law principles on network sectors. Unbundling is meant to break the power of integrated energy companies, and one of the effects the directive aims at is more variety in both generation and distribution capacity<sup>99</sup>.

Data on the concentration of generation capacity have been gathered by the Commission<sup>100</sup>, and they can be used to assess the competitiveness of generation markets after liberalisation.

What table 5-8 below indicates is that in most member states there is concentration of generating capacity. According to the Commission this concentration is one of the serious barriers to competition<sup>101</sup>. However, given the fact that generating capacity was once concentrated in state hands, the deconcentration is at least significant, ex-

<sup>98</sup> “The row over the EU’s market isn’t over”, *The Economist*, 29-05-2001.

<sup>99</sup> 96/92/EC, preamble.

<sup>100</sup> Similar data exist for retail markets (“biggest three retail supplier share”) which give a similar picture for the member states, except for Denmark, which has a very low concentration in retail sales of electricity. So, adding these data would change the position of Denmark in this table, and leave the other countries with the same scores. However, with some 100 municipal companies and rural co-operatives active in local distribution of electricity Denmark was already heavily de concentrated before the liberalisation (see: IEA (International Energy Agency), 1994, *Electricity Supply Industry: Structure, Ownership and Regulation in OECD Countries*, p. 188). Hence these data have not been included because for the only country for which they would make a difference they would present a falsely positive image.

<sup>101</sup> European Commission, 2001, *First report on the implementation of the internal electricity and gas market* SEC(2001)1957, I.

cept for France, where 98 per cent of the marketshare is still concentrated, which lends empirical support to the image of France presented so far. That the UK has the lowest concentration is consistent with its longer period of deregulation.

**Table 5-8: Concentration of generating capacity: marketshare of biggest three generators (end 2001).**

	Marketshare (%) of biggest three generating companies	Assessment score
Denmark	75	3
France	98	1
Germany	63	4
Spain	79	3
UK	44	4

*4=63 1 71.75, 3 = 71.75 1 80.5, 2 =80.5 1 89.25, 1 = 89.25 1 98. Since the UK has had a free electricity market for most of the 1990s it has not been used to calculate assessment scores although it has been awarded the highest score.*

*Source: European Commission<sup>102</sup>.*

### *Real market opening.*

The opening of electricity markets should, as is stipulated in the directive, proceed gradually: “the internal market in electricity needs to be established gradually, in order to enable the industry to adjust in a flexible and ordered manner”<sup>103</sup>. The market opening criteria are defined in size categories (applying to organisations consuming more than 40 GWh in 1999, to those consuming more than 20 GWh in 2000, and to those consuming more than 9 GWh in 2003)<sup>104</sup>, yet these categories correspond to percentages of demand being opened, and it is in those terms that progress is generally measured. In 1999 the European Commission<sup>105</sup> set the percentages of market opening at 26 per cent, 28 per cent and 33 per cent for 1999, 2000 and 2003 respectively<sup>106</sup>. The schedule for market opening proposed by the Commission is a minimum standard to which all member states must comply, but all member states are free to choose for a speedier market opening.

<sup>102</sup> European Commission, 2001, *First report on the implementation of the internal electricity and gas market* SEC(2001)1957, II.

<sup>103</sup> 96/92/EC, preamble.

<sup>104</sup> 96/92/EC, Art. 19.

<sup>105</sup> European Commission, 1999, *Opening up to choice, The single energy market*, p. 8.

<sup>106</sup> Because the actual percentages depend on total demand in the EU the percentages presented in various years can diverge up to some two percent. The data used for the calculation in table 5-9 come from a later report: European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 5. They are higher because they are calculated at a later time.

**Table 5-9: Real market opening in 2000. Percentage over percentage of market opening required by the Electricity Directive.**

	Expected market opening (2000): > 40 GWh or 30%	Assessment score
Denmark	60%	4
France	0%	1
Germany	70%	4
Spain	24%	2
UK	70%	4

4=70 I 52.5, 3 = 52.5 I 35, 2 =35 I 17.5, 1 = 17.5 I 0. Since the UK has had a free electricity market for most of the 1990s it has not been used to calculate assessment scores although it has been awarded the highest score.

Source: European Commission<sup>107</sup>.

As table 5-9 indicates, member states have opened their markets ahead of schedule. Since all member states are technically in compliance with the directive, all member states could be awarded the maximum assessment score. However, the differences between Denmark, Germany and the UK on one hand and France and Spain on the other hand are too large to dismiss. All member states (EU 15) have exceeded the minimum percentage the directive obliges them to open (on average with 36 per cent<sup>108</sup>) so the scores of France and Spain versus the other member states in the sample become meaningful, and indicative of intent and capacity.

Why member states open their markets ahead, and sometimes far ahead of schedule remains a bit misty, and in the case of electricity different political science explanations must be applied to individual countries or clusters of countries that do justice to the diversity of electricity and energy policies that existed before the reform process started and to the political dynamics at national level (see: Mez and Midttun, 1997:307-31). It seems however likely that electricity reform confronts all participants with perceived benefits, whether cleaner or greener energy and lower prices (consumers)<sup>109</sup>, large revenues from the sale of state companies (governments) or expected profits (industry and financial markets)<sup>110</sup>.

<sup>107</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 5.

<sup>108</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 5.

<sup>109</sup> Ironically, these were the perceived benefits of Californian customers that gave political support to the speedy electricity liberalisation in 1996, long before the famous California energy crisis. See: "Notes from a banana republic", *The Economist*, 08-02-2001.

<sup>110</sup> Energy technology shares became fashionable on the Nasdaq around mid 1999, a signal that energy, from a somewhat sleepy business has become a "hot" sector. See: "Beyond the Bubble", *The Economist*, 19-04-2001.

## Overview

**Table 5-10: Overview of market renewal scores. Maximum = 8.**

	Concentration	Real market opening	Variable: market renewal
Denmark	2	4	6
France	1	1	2
Germany	4	4	8
Spain	3	2	5
UK	4	4	8

### Establishing efficiency

Efficiency gains are among the stated expectations of the European electricity deregulation: “(the) establishment of the internal market in electricity is particularly important in order to increase efficiency in the production, transmission and distribution of this product”<sup>111</sup>.

The changes in efficiency of the sector have been tracked and measured, so whether this goal has been reached can be established. In 1992 the European project on energy efficiency indicators started, supported amongst others by the SAVE programme of the European Commission and 15 national Efficiency Agencies within the European network of energy efficiency agencies. To continuously review national energy efficiency and CO<sub>2</sub> emissions, two goals have been set: to harmonise data definition and to store all data and indicators in a common database called ODYSSEE<sup>112</sup>.

These data can be used directly to see if electricity efficiency has improved after liberalisation. If the liberalisation has had effect on energy efficiency the efficiency after 1997 (the year the directive became effective) should be significantly higher than before.

Changes seem rather minimal. Even after a  $\chi^2$  test was performed on these data, to see whether the changes over the years are statistically significant, neither at the one per cent nor at the five per cent level. This leads to the conclusion that efficiency was constant over the years 1995-1998. Since no member state changed its electricity efficiency significantly all states will be awarded an assessment score of 1.

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<sup>111</sup> 96/92/EC, preamble.



**Table 5-11: Efficiency of the electricity energy sector.**

	1995	1996	1997	1998	Assessment score
Denmark	56,79	53,17	58,39	63,1	1
France	36,77	36,5	36,49	36,49	1
Germany	35,41	36,11	35,78	36,54	1
Spain	35,81	39,7	39,52	40,25	1
UK	35,54	36,44	37,11	37,42	1

Source: Enerdata<sup>113</sup>.

This is somewhat hard to explain because the anticipation of free markets should already be enough to force producers to increase efficiency: that would be a normal reaction to the anticipation of lower prices, a consequence of increased competition. However, power plants are big investments, and changing the inventory of plants in Europe takes years, so the full fruits of liberalisation for efficiency may take years to produce.

#### Overview

**Table 5-12: Overview of efficiency and innovation scores. Maximum = 4.**

	Efficiency	Variable: efficiency
Denmark	1	1
France	1	1
Germany	1	1
Spain	1	1
UK	1	1

#### Establishing price development

Eurostat data supplied by the European Commission<sup>114</sup> permit a comparison of the price trend before and after liberalisation for industrial consumers, small enterprises and households. In the years directly preceding liberalisation prices were generally decreasing, so the effect liberalisation should have is an *extra* decrease of prices<sup>115</sup>.

<sup>112</sup> Enerdata, 2000, *SAVE - Odyssee project on Energy Efficiency Indicators, Energy Efficiency in the European Union 1990-1990* and Enerdata, 2000, *Aggregate energy efficiency indicators on ODYSSEE for industry*.

<sup>113</sup> Enerdata, 2000, *SAVE - Odyssee project on Energy Efficiency Indicators, Energy Efficiency in the European Union 1990-1990*, p. 97. Indicator methodology is explained in: Enerdata (2000b), *Aggregate energy efficiency indicators on ODYSSEE for industry*.

<sup>114</sup> European Commission, 1999, *Second report from the Commission to the Council and the European parliament on the state of liberalisation of the energy markets*. (COM(99)198final), p. 18-23.

<sup>115</sup> The original Eurostat data divide the 1990s in three periods (1990-1995, 1995-1998 and 1998-2000). In the analysis a comparison between the period directly preceding and directly following the

### *Industrial prices*

In table 5-13 the price development is mapped for industrial consumers. The period 1995-1998 is the period before the liberalisation, and if the liberalisation has had consequences on price development there should (ceteris paribus) be an increase of the price decline in the 1998-2000 period.

**Table 5-13: Industrial consumers. Price development in percentage changes in 1995-1998 and 1998-2000, or before and after liberalisation.**

	1995-1998	1998-2000	Extra price change	Assessment score
Denmark	12,2	-8,2	-20,4	4
France	-10,7	-10,9	-0,2	2
Germany	-11	-21,1	-10,1	3
Spain	-19,9	-2,4	17,5	1
UK	-15,5	-21,3	-5,8	3

4 = -10.61 / -20.4, 3 = -0.9 / -10.61, 2 = 8.55 / -0.9, 1 = 17.5 / 8.55.

Source: European Commission<sup>116</sup>.

### *Small business prices*

**Table 5-14: Small business. Price development in percentage changes in 1995-1998 and 1998-2000, or before and after liberalisation<sup>117</sup>.**

	1995-1998	1998-2000	Extra price decline	Assessment score
Denmark	5,6	-1,4	-7	3
France	-12,1	-7,6	4,5	2
Germany	-9,5	-16,5	-7	3
Spain	-19,6	-7,1	12,5	1
UK	-4,5	-22,2	-17,7	4

4 = -17.7 / -10.5, 3 = -10.5 / -2.6, 2 = -2.6 / 4.95, 1 = 4.95 / 12.5.

Source: European Commission<sup>118</sup>.

In table 5-14 the price development is mapped for small business. The period 1995-1998 is the period before the liberalisation, and if the liberalisation has had consequences on price development there should (ceteris paribus) be an increase of the price decline in the 1998-2000 period.

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liberalisation has been made, so between 1995-1998 and 1998-2000. The possibility to calculate an average price development for the period 1990-1998 and to compare that to the period after liberalisation has been contemplated, but rejected. A comparison against a fairly short period before liberalisation seemed more appropriate to exclude, as far as possible, the effect of structural changes (the building of new capacity, innovation) on prices.

<sup>116</sup> Calculated from: European Commission, 2001, *First report on the implementation of the internal electricity and gas market. Commission staff working paper (03.12.2000/ SEC(2001)1957)*, p 18-23.

<sup>117</sup> Because the UK has liberalised its electricity market far ahead of other European member states the comparison is made between 1990-1995 and 1995-1998 figures.

<sup>118</sup> Calculated from: European Commission, 2001, *First report on the implementation of the internal electricity and gas market. Commission staff working paper (03.12.2000/ SEC(2001)1957)*, p 18-23.

### Consumer prices

In table 5-15 the price development is mapped for households. The period 1995-1998 is the period before the liberalisation, and if the liberalisation has had consequences on price development there should (ceteris paribus) be an increase of the price decline in the 1998-2000 period.

**Table 5-15: Households. Price development in percentage changes in 1995-1998 and 1998-2000 or before and after liberalisation<sup>119</sup>.**

	1995-1998	1998-2000	extra price decline	Assessment score
Denmark	4,5	-2,6	-7,1	2
France	-7,6	-8	-0,4	1
Germany	-3,2	-10,1	-6,9	2
Spain	-16,4	-11,9	4,5	1
UK	3,3	-15,6	-18,9	4

4 = -18.9 I -13.5, 3 = -13.5 I -7.2, 2 = -7.2 I -1.35, 1 = -1.35 I 4.5.

Source: European Commission<sup>120</sup>.

Generally, energy prices are declining for all groups of customers, which is consistent with the deregulation.

**Table 5-16: Overview of price development scores. Maximum = 12.**

	Industrial prices	Small business prices	Household prices	Variable: prices
Denmark	4	3	2	9
France	2	2	1	5
Germany	3	3	2	8
Spain	1	1	1	3
UK	3	4	4	11

Also generally, Spain and France are the exception to this rule. For France this is consistent with its attitude towards deregulation and its lower scores on the effectiveness of the regulatory framework. That however cannot explain Spain's price developments. It does however score low on real market opening, so a lack of competition could well account for the lack of downward movement of prices.

<sup>119</sup> Because the UK has liberalised its electricity market far ahead of other European member states the comparison is made between 1990-1995 and 1995-1998 figures.

<sup>120</sup> Calculated from: European Commission, 2001, *First report on the implementation of the internal electricity and gas market. Commission staff working paper (03.12.2000/ SEC(2001)1957)*, p 18-23.

### PART 3: FINDINGS ON THE EXTENT OF IMPLEMENTATION

#### The general picture

Table 5-17 gives the overall results, and thus answers the question to what extent the European directive has created results in the member states. An average score of 26.8 out of a possible maximum of 40 is not a very good result, but given the fact that energy deregulation is a recent event and much policy implementation is currently going on the prospect is not bad. Focussing on the individual member states, there are problems however. The Commission, in the first assessment of the deregulation of energy concluded that “there are considerable asymmetries in the implementation of the current directives<sup>121</sup>. These are leading to considerable distortions of the internal market in that some Member States’ energy markets are more open to competitors and new entrants than others”<sup>122</sup>. This research supports the asymmetry; France is a case in point.

**Table 5-17: Variable and overall scores for extent of implementation in electricity. Maximum score = 40, Mean = 26.8, Standard deviation = 6.98.**

	Extent of implementation	Regulatory renewal	Market renewal	Efficiency and innovation	Prices
Possible maximum	40	16	8	4	12
Denmark	31	15	6	1	9
France	18	10	2	1	5
Germany	26	9	8	1	8
Spain	23	14	5	1	3
UK	36	16	8	1	11

Table 5-18 charts the weak areas of the member states by listing all indicators on which a member state has received a score of one or 2.

The surprising case is Spain. That France has a long list of deficient areas is hardly surprising given its scores. Germany, with a much shorter list, is also not quite surprising: its rush to deregulation has given it a weak regulatory framework, so problems on the market are to be expected.

<sup>121</sup> The Commission also assessed the Gas directive.

<sup>122</sup> European Commission, 2001, *First report on the implementation of the internal electricity and gas market* SEC(2001)1957, VI.

**Table 5-18: The weak areas of the member states. Based on indicators with a assessment score of 1 and 2.**

Member state	Low score on:	Rank
Denmark	Efficiency Household prices	2
France	Implementation of core directive Organisation of regulation Unbundling Minimum or maximum solutions Concentration Real market opening Efficiency Industrial prices Small business prices Household prices	5
Germany	Organisation of regulation Unbundling Minimum or maximum solutions Efficiency Household prices	3
Spain	Real market opening Efficiency Industrial prices Small business prices Household prices	4
UK	Efficiency	1

Spain, however, has a regulatory framework of good quality; it has implemented the directive, and none of the weak areas refers to the national electricity legislation or regulatory framework, but they all refer to the actual working of the market. In other words: it has a sound structure (in any case, there are no obvious deficiencies), but it does not work out. The weak areas are, however, mainly in the price developments, which could indicate low competition (but there is actually competition from France's *EDF!*). This means that there is at least a possibility that Spain is keeping its electricity prices consciously high and that the sound implementation of the regulatory framework has aspects of pseudo implementation.

All in all the liberalisation is not hugely successful *at this moment*, italicised because the process is still ongoing. It is now time to take the results of the four case studies and analyse them in the light of the process of European integration.