



A Comparative Overview of the Progress Achieved to Date in the Construction of the EC Internal Energy Market

A Report prepared by

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CHAPTER I – INTRODUCTION

This Report attempts to provide an overview of recent practices by the different Competition Authorities and by the Commission, with regard to market definition, competition assessment and remedies in relation to mergers and restrictive practices in energy markets. It also attempts to contribute to the establishment of a set of common views on competition policy and on investigation methodologies to be employed when analyzing competition issues in energy markets, with a view towards the construction of the internal EU energy market. It is the result of a collaborative effort between the Portuguese and Spanish Competition Authorities and the Commission.

The period under analysis corresponds to the first stage of the energy markets' opening process, which started with the publication of the first Council Directives on Energy Markets in 1996 and 1998.

Gas and electricity markets share some common characteristics, such as the fact that both are network industries. However they also exhibit some significant differences, in what concerns market design and the regulatory framework. Hence, some differentiation will be required when analyzing each of them. Nevertheless, in both gas and electricity, we observe the coexistence of natural monopolies at the transmission and distribution levels, with potentially competitive market structures at the wholesale and retail levels. The unbundling of these competitive activities from the natural monopoly activities, thereby making possible non-discriminatory access to networks, is a necessary step in introducing competition in energy markets. With this requirement fulfilled, free entry makes competition workable at both the wholesale and retail level.

This Report therefore is divided into three main chapters, namely, Chapter II on Access to Networks, Chapter III on Wholesale Competition and Chapter IV on Retail Competition. Chapter V concludes the report and outlines some areas for future investigation.

CHAPTER II – ACCESS TO NETWORKS

Energy networks are regarded as natural monopolies. Networks are organized according to the different energy transmission levels (high and low voltage or pressure), and comprise different types of infrastructures with different roles with regard to system functioning. They represent essential facilities when considering the development of competition in energy markets. In the past, they were built in the context of vertically integrated monopolies. However, without non-discriminatory, transparent and fairly priced access to networks, new entrants cannot contest the incumbents' market positions, which they inherited from the framework prior to market opening.

Non-discriminatory access to networks has been an essential aim pursued by the internal markets Directives. According to these Directives, Transmission System Operators (TSO's) were required to guarantee third party access (TPA) to networks. In vertically integrated utilities, the establishment of minimum levels of unbundling for network activities was also required. Nevertheless, network access was a major competition problem during the first stage of the opening of energy markets, especially where the rules established for TPA were less strict, allowing network operators to negotiate with other third parties the terms on which access would be granted.

The complex nature of the physical rules that govern the functioning of networks provides vertically integrated incumbents with the opportunities and incentives for price discrimination and other sorts of discriminatory behaviour¹. In order to retain their position in upstream and/or downstream markets, incumbents may have an incentive to foreclose network access to competitors. Such types of behaviour may be observed in different forms, as illustrated by the recent competition case history.

The competition law enforcement experience on network access shows the importance of promoting a close interaction between competition law with sector specific regulation. In fact, the compliance with a pro-competitive TPA framework has encountered greater difficulties in cases where regulation was not strict enough. Proper ex-ante regulation can alleviate the need for ex-post measures pursuant to competition law enforcement. The way some of the cases were settled, with the imposition of remedies concerning new TPA rules, brings up important examples of how fruitful the interaction between competition law enforcement and specific sector regulation can be when dealing with energy markets.

¹ See Cave, Martin (2005): “*Co-ordinating Regulation and Competition Law – ex ante and ex post*”, presentation at the Portuguese Competition Authority, March 2005.

Finally, the existing competition law enforcement experience on network access also brings up numerous examples of how the restructuring of the energy markets has required the consideration of network ownership, both at the distribution level and at the transmission level. In several countries, local distribution network operators, previously owned by municipalities, are being merged into large vertically integrated utilities. Other examples exist, like in the UK, where the gas TSO and electricity TSO merged, with proper safeguards concerning ring fencing of activities.

II.1. Interconnectors and import capacity

Electricity interconnection has an important role to accomplish in the construction of the internal energy market. In the past, the planning of electricity interconnection capacity responded essentially to “domestic security of supply” objectives. The main goal was to guarantee the availability of foreign production capacity, in order to secure a stable supply of energy. Access to foreign production, in view of the internal energy market, is now seen as a means to increase competition in each domestic market.

This new objective raises several challenges. One such challenge results from the fact that current levels of interconnection capacity are insufficient to cope with all the cross-border trade opportunities that can be derived from market opening. As can be observed in several cases, congested lines have shown to be a major issue, highlighting the need to secure increases in interconnection. Another challenge results from the usage rights structure that has remained active in several interconnections. According to the Commission², by 2001, approximately 40% to 60% of interconnection capacity within the EU was reserved for long-term import contracts concluded by former monopolists, before market opening became effective.

Such contracts can have harmful effects on competition. On the one hand, they place restrictions on the ability of other market players to use interconnectors. Thus, such contracts can be viewed as “agreements” in the sense of Article 81 of the EC Treaty. On the other hand, dominant domestic players can use reservation capacity on interconnectors to restrain competitive pressure from abroad. Such contracts can then be viewed as “abusive behaviour” by a dominant player, in the sense of Article 82 of the EC Treaty. The recent ruling of the European Court of Justice on the case C-17/03 - *Vereniging voor Energie, Milieu en Water and Others v. Directeur van de Dienst*

² Commission Memo/01/76, “*Role of interconnectors in the electricity market: A competition perspective*,” 2001.

*uitvoering en toezicht energie*³, over the issue of long term reservation of capacity on electricity interconnectors, illustrates this point. In the ruling the ECJ considered that «*The grant of preferential access to the cross-border electricity transmission network to an undertaking which previously held a monopoly, because of contracts concluded prior to the liberalisation of the market, amounts to discrimination prohibited by the second electricity Directive*».

The Commission has dealt with several restrictive practices cases regarding long-term reservation agreements over interconnectors. The case *Statkraft+I/SElsam+18*⁴ involved a combination of agreements affecting transmission capacity on the Norwegian/Danish border and the Danish/German border. These agreements involved market players with very strong positions in their respective domestic markets, and led to distortions in electricity trade between Norway, Western Denmark and Germany, thereby raising doubts about their compatibility with competition law. The case was settled with the parties terminating the previous reservations agreements.

Another similar case involved the UK/France submarine interconnector⁵. The agreement governing the operation of the interconnector attributed EDF full capacity reservation for its exports to the UK. This agreement was signed in 1986 and expired in 2001. In 2001, the owners of the interconnector, i.e., the neighbouring TSO's, sought the Commission's views before agreeing on new rules for managing and allocating interconnector capacity. The case was settled with the parties deciding to open up access to the interconnector through annual capacity auctions.

In the gas industry, agreements of this nature are also quite common. The development of gas interconnectors, or upstream pipeline networks, is very costly. Hence, investment recovery has been pointed out as a justification for the existence of agreements that attribute exclusivity usage rights to the investors, which are typically the former monopolists. Some of these agreements are still in force. Therefore, they ought to be analysed and justified. Moreover, such agreements may have an even more restrictive effect on competition, especially for non-producing countries, when compared to the case of access to electricity interconnectors. Access to upstream gas import capacity is essential for any competitor to be able to sell downstream. As long as these agreements exist, contestability of domestic markets will be significantly restrained.

³ Case dated 7 June 2005.

⁴ See COMP/37.125 *Statkraft+I/S Elsam+18*.

⁵ See COMP/38.015 *PO/Interconnector France-UK+3*.

The Italian Competition Authority in *Blugas-Snam*⁶ investigated this type of agreements pursuant to Article 82 of the EC Treaty. The investigation concerned the conduct of *Snam*, the gas TSO in Italy, regarding the assignment of transport capacity to entry points in the national network of gas pipelines, in the period 2001-2002. During the investigation, *Snam*, which controlled 97% of the gas transmission network, merged with its controlling company, ENI Spa, which was responsible for the sale of 87% of the natural gas sold in Italy in 2001. The investigation was then undertaken with respect to the new merged company, EDGP. The practices undertaken by EDGP ensured that the largest percentage of gas transported on the national network and sold in the country was either directly or indirectly owned by that company. This contravened the Italian law, which had transposed the Directive 98/30/EC and which defined ceilings for the dominant supplier's market share in the market for gas sold to final consumers and for the gas injected into the national gas network. The Italian Competition Authority deemed that EDGP had abused its dominant position in the market for the sale of natural gas by impeding the entry of competitors.

Nowadays, new LNG re-gasification terminals represent an important opportunity to reduce existing entry barriers, and to geographically diversify the sources of natural gas supply. The Directive 2003/55/EC allows for certain exemptions on TPA to new facilities. However, exclusivity agreements governing the use of such facilities must be appropriately justified. In this respect, it was the understanding of the Italian Competition Authority, as expressed in an inquiry ran by the Italian Electricity and Gas Authority, that it was necessary to make an exception to the system of regulated access instituted by the Legislative Decree no. 164/00. This exception allowed the majority of the new re-gasification capacity of the new LNG terminals to be reserved for the owner of the natural gas terminal, with only a residual part being subject to compulsory third-party access at regulated conditions. Moreover, in order to balance the legitimate need to safeguard the investment of the firms building the new LNG terminals, and with the objective of promoting competition in the natural gas market, the Italian Authority agreed that the quota of new re-gasification capacity, initially set aside for the owner of the terminal, should be gradually reduced, so as to reflect the parallel and gradual elimination of the exceptional lack of market entry capacity not controlled by the incumbent.

In Spain, a similar understanding was adopted by the *Servicio de Defensa de la Competencia* (SDC) in the merger between Union Fenosa Gas, Iberdrola Gas and Endesa Generación (2002), concerning the joint control of the *Planta de Regasificación de Sagunto*, a LNG re-gasification terminal on the Mediterranean coast. The SDC

⁶ Italian CA Case A 329 – *Blugas/Snam*.

considered that the project would open up the access to gas entry points to operators constituting an alternative to the (market) leader in gas infrastructures in Spain (Gas Natural – Enagás), and would ease the entry of a new player in the market. The Spanish energy regulator, *Comisión Nacional de Energía* (CNE), held that the new plant would represent a small percentage of the whole gas import infrastructure, and did not encourage collusion among its owners, namely the three major Spanish electricity generating companies, due to the strict regulation and monitoring exercised by the System Operator and the CNE and to the legal prohibition to discriminate against operators in terms of access to regasification infrastructures. Following the CNE’s view, the *Servicio* cleared the proposed merger, except for the agreements related to the maximum use of the regasification infrastructure by each shareholder, which were not accepted as ancillary restrictions.

II.2. Transmission and distribution networks

Discriminatory behaviour by vertically integrated incumbents over the access to the networks has appeared in many forms, as can be seen from the cases dealt with by the Commission and the different national competition authorities (NCA's). Such behaviour, when adopted by a dominant vertically integrated utility, is deemed to be abuse of a dominant position.

Denying access to networks is a clear example of such type of behaviour and has been identified in several countries. The *Marathon*⁷ case shows how discriminatory behaviour over network access can be detrimental to the internal energy market construction. The case concerned the refusal by the German companies *Ruhrgas*, *Thyssen* and *BEB*, the Dutch company *Gasunie* and the French company *Gaz de France* to grant access to their gas networks to the Norwegian subsidiary of the US oil and gas producer *Marathon*. *Marathon* was refused access to the continental pipelines owned by the above-mentioned companies several times during the nineties. This case involved the market for the long-distance transport of natural gas through high-pressure pipes. The geographic scope of the market was identified in relation to each specific request of transport services made by *Marathon* to the five above-mentioned companies. Apart from considering that conduct as an infringement of article 82, the Commission argued that the refusal to grant access could also be considered as an agreement, or concerted practice, infringing article 81 EC, as many refusals were jointly agreed by the five companies (joint boycott).

⁷ See Commission case COMP/36.246 *Marathon/Ruhrgas/GDF* et alia.

After withdrawal of the complaint, following an arbitration procedure between Marathon and the other companies, the Commission services decided *ex officio* to continue the investigation of the case with a view to preventing similar abuses in the future. The cases were settled between November 2001 (Thyssengas) and April 2004 (Gaz de France and Ruhrgas), following the acceptance of remedies concerning the implementation of TPA rules that would prevent discrimination, improve transparency and promote fair pricing.

The modifications introduced to the previous access regimes varied between TSO's, and comprised several aspects, including balancing charges, special tariffs schemes, capacity reservations regimes and capacity rights secondary markets, congestion management, transparency and handling of access requests.

All these commitments were intended to contribute to a better functioning of the gas transmission markets in continental Europe, and to improve the conditions of competition in the gas supply markets, by facilitating TPA and, thus, domestic and cross-border trade.

Cases dealt with by the NCA's, namely in the Netherlands and in Germany, showed also how TPA rules, implemented in the first stages of market opening, allowed for discriminatory and unfair access to networks.

Investigations undertaken by the Netherlands Competition Authority (NMa⁸) showed the existence of abusive behaviour concerning both the electricity and the gas networks. The first case goes back to 1999 and relates to a framework established prior to the opening of the electricity market, which was characterized by a set of agreements between the power producers and grid operators. The investigation undertaken concerned the refusal by SEP⁹, which owns the electricity transmission network, to provide transmission of electricity, within the Netherlands, to Hydro Energy, a company who wished to import electricity for its own consumption¹⁰. In this case, SEP refusal was deemed to constitute an abusive conduct, since the SEP grid was considered "*the only realistic way to transmit (or provide for the transmission of) imported electricity, with regard to both cross-border transmission and transmission within the*

⁸ NMa stands for "Nederlandse Mededingingsautoriteit".

⁹ SEP (*Samenwerkende Electriciteitsproductiebedrijven*) is the Dutch combined power producers.

¹⁰ See the Netherlands Competition Authority (NMa) Case 650, *Norks Hydro Energy B.V. vs. N.V. Samenwerkende Electriciteitsproductiebedrijven*.

*Netherlands*¹¹. It was also found that SEP had previously granted access to another importer of electricity for its own consumption, subject to the condition that transmission services could be halted if that importer supplied the imported electricity to third parties. As a result of the findings, the Director General of the NMa decided to impose a fine of NLG¹² 14 million on SEP. This decision was appealed.

The NMa also investigated the TPA rules implemented by Gasunie, the vertically integrated gas incumbent in the Netherlands, following complaints filed by EnTrade, Compass Energy and Kuwait Petroleum Europoort, companies active in the supply of gas¹³. The complaints concerned the discriminatory effects induced by the *Commodity Diensten Systeem* (CDS), the tariff system used by Gasunie for large consumers with an annual consumption exceeding 10 million m³.

The NMa found that pursuant to the CDS, Gasunie customers were charged transmission tariffs lower than the tariffs charged to customers of other gas suppliers. It considered also that the balancing regime applied by Gasunie discriminated against other gas suppliers, through high penalty charges in case of deviations from their nominations of gas consumption. Although the NMa showed the existence of discriminatory effects on the TPA regime implemented by Gasunie, which were deemed to constitute an abuse of dominance, a fine was considered inopportune. On the one hand, at the time the case was decided, the tariff system had already been replaced by one approved by the Dutch sector regulator, which solved the previously observed discriminatory effects. On the other hand, the energy regulator had not raised objections to the former tariff system in the past.

In Germany, a number of cases dealt with by the Bundeskartellamt showed the difficulties in granting non-discriminatory and fairly priced access to networks, under a framework based on market self-regulation and the absence of a formal sector regulator. Negotiated third party network access relied on a set of so-called Association Agreements between energy producers and consumers. These cases were analysed under Section 19 (1) (4) no. 1, 4, and Section 20 (German) Act against Restraints of Competition (ARC), which was amended in 1999, including the refusal to grant access to the network as a restrictive practice.

¹¹ See NMa Annual Report, 1999.

¹² NLG stands for Netherlands guilders.

¹³ NMa Cases 1119, 1719, and 2487, *EnTrade, Compass Energy and Kuwait Petroleum Europoort vs. Gasunie*.

Evidence showed the existence of different kinds of abusive behaviour concerning network access undertaken by vertically integrated distribution network operators. In the case RWE AG (RWE) against Bewag¹⁴, decided in 1999, abusive behaviour came in the form of access denial for a competing firm in the unbundled supply activities. Bewag, a regional electricity company active in generation, distribution and supply in East and West Berlin, refused access to RWE on the basis of capacity restrictions in its network (at the time the transmission capacity between East and West Berlin was constrained) and its own need to use the existing capacity in its unbundled supply activities.

According to the Bundeskartellamt, the reasons given by Bewag did not constitute objective and reasonable grounds for refusing access to the network. In particular, the Bundeskartellamt considered that Bewag, as a network operator, was not entitled to accord itself prior use of the network in order to cover the needs related to its unbundled supply activities. After taking into consideration various interests of the parties, the Bundeskartellamt did not find any circumstances that could lead to any solution other than equal allocation of the existing capacity. The Bundeskartellamt finally decided to order Bewag to allow the use of the network by “scaling” existing capacity. Bewag filed an appeal against this decision. During the proceedings, the connection of the Eastern and Western energy grids was completed, which removed the capacity constraints claimed by Bewag. As a consequence, all involved parties agreed to settle the proceedings.

Access denial was also found in the case against Mainova¹⁵, a German electricity utility, which refused connection to its medium-voltage network to GETEC, a company active in the planning, construction and operation of site networks, and EVO, a local supplier of electricity, gas and heat in the city of Offenbach. The refused connections concerned two specific network sites operated by the complainants, on premises used for commercial or residential purposes, and to supply end customers located there with electricity generated by the companies themselves, or by third suppliers.

The Bundeskartellamt considered that the grounds given by Mainova to justify its connection refusal were invalid and decided that both site network operators GETEC and EVO were entitled to have access to Mainova’s medium-voltage network. In particular, the Bundeskartellamt took into consideration the fact that the case concerned

¹⁴ Bundeskartellamt case B 8 – 99/99 *BEWAG/RWE*.

¹⁵ Bundeskartellamt case B 11 – 12/03 *Mainova AG*.

newly developed sites or sites already operated by third parties¹⁶. Consequently, additional network costs did not accrue to Mainova nor was its existing customer portfolio negatively affected. In addition, energy law provisions, such as the general obligation to connect and supply under Section 10 of the Energy Industry Act (EIA), provided no legal basis for Mainova to claim each new site for itself either. Moreover, if necessary, the site network operator could have become a general supplier pursuant to Section 10 of EIA. The Bundeskartellamt ordered Mainova to connect GETEC and EVO to the network. This decision was eventually appealed by Mainova.

In the cases against Thüringer Energie AG (TEAG, a subsidiary of E.ON)¹⁷ and Stadtwerke Mainz¹⁸, filed *ex officio*, the Bundeskartellamt investigated the fees charged for network use, pursuant to the price calculation guidelines set in the Association Agreement between energy producers and industrial consumers (Verbändevereinbarung VV II Plus). In both cases, the fees charged by network operators were investigated on the grounds of being abusive. As high fees for network use were considered the main obstacle to efficient application of TPA rules, their prohibition was an important step towards a functioning electricity market.

In both cases, the Bundeskartellamt ordered price reductions of 10% in the case against TEAG and of just under 20% in the case against Stadtwerke Mainz AG. After appeals to the Düsseldorf Higher Regional Court and finally to the Federal Supreme Court, the Bundeskartellamt's decision in the Stadtwerke Mainz case was generally confirmed by the Federal Supreme Court and is now referred back to the Düsseldorf Higher Regional Court for a reassessment of the case.

Merger control has also proved to be another means to achieve a better framework for TPA to networks. The number of merger cases concerning network operators and gas storage operators seems to demonstrate this point.

Gas storage facilities are essential for both system and market functioning. Storage has an important role in dealing with fluctuations in both gas supply and demand and the associated movement in prices. Domestic customers have particularly pronounced variations in their demand for gas (as it happens also in electricity). In order to deal with fluctuations in both their customers' demand level and in upstream supplies, market

¹⁶ The Bundeskartellamt considered the establishment and operation of site networks a newly emerging market, downstream from the operation of distribution networks. This opinion was approved by the Düsseldorf Higher Regional Court in its decision of 11 June 2003.

¹⁷ Bundeskartellamt case B 11 – 45/01 *TEAG*.

¹⁸ Bundeskartellamt case B 11 – 38/01 *Stadtwerke Mainz*.

operators need to secure access to storage. In energy markets, storage facilities are a means to support the so-called flexibility services, essential for proper gas market functioning.

In the merger case Dynegy Europe Limited/BG Storage Limited, which was dealt with by OFT in 2001¹⁹, the proposed deal involved the acquisition by Dynegy of storage facilities owned by BG Storage, amounting to over 80% of the total storage capacity in the UK. At the time of the transaction, the storage facilities in question were managed under means of assurances offered by BG Storage, which required the auctioning of storage capacity, and the separation of the storage business from BG's other commercial activities. With the proposed merger, the assurances offered by BG would no longer apply, since this company would no longer be the owner of those facilities. Dynegy, the acquiring company, was an active player in the gas wholesale market. The proposed merger, in the absence of proper regulation, raised concerns about the possibility of Dynegy exploiting its market position, e.g., by withholding storage capacity from the market, and/or offering storage capacity on unduly discriminatory terms. The raised concerns included also the potential ability of Dynegy to use relevant information about other parties, acquired as the operator of the storage facilities, in its trading activities. In order to solve the different problems raised by the proposed transaction, Dynegy submitted commitments that were subsequently approved by the OFT.

The same storage facilities were later involved in another transaction, namely in the merger between Centrica PLC/Dynegi Storage/Dynegy Onshore Processing²⁰. As in the first case, the proposed merger was approved after a second stage inquiry by the Competition Commission subject to conditions on information disclosure.

In Denmark, the merger between DONG Naturgas, the Danish incumbent, active in the transmission, distribution and storage of natural gas, and Naturgas Sjælland, a local gas distributor in western Zealand²¹, also raised concerns about TPA to networks and storage. The competition assessment in this case showed that the proposed merger could reduce competition in the long run, namely by reducing the possibilities for entry into the gas market by third parties. In order to remedy such anti-competitive effects, DONG made a commitment to offer transmission services at published standardised tariffs and under standardised rules for TPA, as well as offer a certain amount of available storage

¹⁹ OFT: *Proposed acquisition by Dynegy Europe Limited of BG Storage Limited.*

²⁰ OFT: *Completed acquisition by Centrica PLC of Dynegi Storage and Dynegy Onshore Processing.*

²¹ Danish CA, merger between *DONG Naturgas and Naturgas Sjælland*, journal no. 3/1120-0401-0005.

capacity to competitors and customers. The merger was approved on the basis of those commitments.

CHAPTER III – WHOLESALE COMPETITION

III.1. Electricity markets

Unilateral market power in electricity markets has given rise to a considerable debate. Several authors defend that the concentration levels that may be considered sufficiently low in most industries might be sufficiently high to have damaging effects on competition in the electricity industry. The electricity industry has all the ingredients identified in economic literature that make possible the existence of market power, namely:

- Demand is quite inelastic, giving ample opportunities for dominant producers to adopt abusive behaviour;
- Electricity is non storable, requiring real time production and a perfect balance between production and demand;
- Production capacity is limited and, depending on the market structure, sometimes only a few producers have the ability to satisfy the residual demand;
- Electricity transmission limitations imply that some part of its demand has to be met by domestic production, either national or local, thereby precluding the development of competition in a wider geographic scope.

Table 1: Generation Market Structure in 2004 in the EU plus Norway.

<i>Country</i>	<i>Largest producer by capacity</i>	<i>Top 3 producers by capacity</i>	<i>Country</i>	<i>Largest producer by capacity</i>	<i>Top 3 producers by capacity</i>
<i>Austria</i>	45%	75%	<i>Portugal</i>	65%	80%
<i>Germany</i>	30%	70%	<i>Spain</i>	40%	80%
<i>Belgium</i>	85%	95%	<i>UK</i>	20%	40%
<i>Neth.*</i>	n.k.	67%	<i>Estonia</i>	90%	100%
<i>Lux</i>	n.a.	n.a.	<i>Latvia</i>	95%	100%
<i>Denmark*</i>	37%	76%	<i>Lithuania</i>	50%	80%
<i>Finland*</i>	26%	44%	<i>Poland</i>	15%	35%
<i>Sweden*</i>	45%	79%	<i>Czech R</i>	65%	75%
<i>Norway*</i>	30%	42%	<i>Slovakia</i>	75%	85%
<i>France</i>	85%	95%	<i>Hungary</i>	30%	65%
<i>Greece</i>	100%	100%	<i>Slovenia</i>	70%	95%
<i>Ireland</i>	85%	90%	<i>Malta</i>	100%	100%
<i>Italy</i>	55%	75%	<i>Cyprus</i>	100%	100%

Source: Fourth Benchmarking Report on the implementation of the internal electricity and gas market, Commission, 2005. (n.a. stands for “not available” and n.k. stands for “not known”)

(*) The data is from 2003 and comes from the Third Benchmarking Report on the implementation of the internal electricity and gas market.

The Table above presents some information on market shares in electricity generation across the EU plus Norway, for the year 2005.

Furthermore, electricity markets exhibit some particular features that make it difficult to define the relevant product and geographic markets in a ‘liberalized framework’. In the former regulated framework, as long as markets were closed to competition, either under the single buyer model, or under other models with similar effects, relevant market definition was an easier task. Cross border trade was only meant to secure a stable supply and markets could be defined as national in scope.

The establishment of wholesale competition has changed the way electricity and other related services are traded. One major feature of organized electricity markets, which can be seen in all the different market designs, is that wholesale electricity trade is organized on an hourly (or half hourly) basis, in order to cope with intra-day fluctuations in the demand for electricity. From base load to peak load, intra-daily prices change according to the interaction between the different market players and the type of electricity generating technologies used to satisfy the residual demand.

Another feature of today’s electricity markets is the so-called ‘market for balancing power and ancillary services’. This market is usually conducted by the grid area TSO’s and includes the trade of electricity and other related services required to have a real time adjustment between electricity supply and demand. This market usually requires participants to have a high degree of production flexibility, in order to cope with the minute-by-minute fluctuations in demand.

Electricity is also traded through bilateral contracts, based on over-the-counter (OTC) negotiations between the parties, or through clearing houses where standardized contracts are negotiated, like in the Nordpool²² and in England & Wales.

Market players participate in these different markets according to the specific features of market design (e.g., mandatory pools *versus* voluntary pools), the characteristics of their generation mix and their market strategies regarding the assembly of optimal contract portfolios.

Although electricity is a homogeneous product, assessment of market shares is not a trivial topic. Nominal installed capacity in MW may not be the correct way to estimate market shares. It might be reasonable to take into account the differences between

²² Nordpool is the Nordic electricity market, comprising Norway, Sweden, Denmark and Finland.

technologies by considering, for example, the average number of hours per year of effective production.

The ‘cost merit order’ of power plants has a significant influence on the way competition develops in the formal markets, in the time period between off-peak and peak demand hours. Differences in generation mix between market players may have as a result that whether a market player has a dominant position might change during a same trading day. For example, a nuclear power plant typically competes for base load demand and its management criteria are mainly based on security issues. As for a gas power plant, it competes for mid or peak demand.

On the other hand, hydropower generation, due to the complexity of its management, has some particular features that should be addressed when estimating market shares. For example, in Norway, where this form of electricity production accounts for almost all installed generation capacity, the NCA has distinguished between three types of generation capacity: (1) the installed effect, which corresponds to installed capacity in MW; (2) energy capacity which corresponds to the system’s ability to produce over a given time period; and (3) magazine capacity, which is a measure of the size of the water magazine, providing a proxy for storable energy that can be used across time periods. As stated by the Norwegian CA, all these measures are relevant for analysing how the electricity generation market works.

Copenhagen Economics²³ has analysed the performance in both the Nordpool spot and ancillary services markets, and concluded that there is some correlation between prices in both these markets, and that supply substitutability between them is also possible. However, since the more flexible technologies, like hydroelectric power, have a competitive advantage over other forms of production in providing ancillary services, special attention should be taken when analysing such markets in regard to the players who have such resources.

III.1.1. Market power and geographic market definition

The emergence of market power on a wide national scope depends on industry concentration and cross-ownership levels, and on trade openness provided by interconnection capacity. Locally, its emergence depends on domestic transmission limits, and on the way production capacity is distributed within the network transmission system. In electricity systems, it’s common to identify grid areas in which

²³ *Relevant markets in the Nordic area – Main Report – Market power on the Nordic Power Market, Sub-Project 1, 21 October, 2002, Copenhagen Economics.*

there are only a few producers that can satisfy local residual demand. Evidence of local market power has appeared under different market designs, as in ‘single zone spot markets’²⁴, like in Spain and in England & Wales, or in zonal pricing systems, like the Nordpool.

The design of electricity markets is not enough to guarantee that abuse of dominance will not occur. However, in what concerns the way cross-border trade is dealt with, and the extent to which it allows for arbitraging short-term price differences between domestic systems, market design has a significant role to play in reducing the likelihood of such abuse. At present, the technical operation of interconnected systems across several borders lacks transparency. In this respect, work is underway in the Florence Forum.

To which extent energy markets can be defined as wider than national, is one of the major questions that competition authorities have been dealing with in the recent past. The move towards an internal energy market has been argued by market players as a reason for competition authorities to consider relevant markets as being wider than national in scope. Still, the main conclusions that can be drawn from competition law enforcement shows that, as long as interconnector capacity remains at the current levels, and regulatory differences between the different domestic markets persist most electricity markets, if not all, may not be considered to be wider than national. In fact, the way relevant markets are defined depends significantly on how access to networks and both physical and trade flows are defined within the regulatory and market design framework.

Regulatory framework

Many regulatory barriers still persist, preventing geographic markets from having a definition wider than national. A wider definition means that competition can develop on a wider market. Hence, the regulatory framework is quite important, in particular in what concerns access to networks and trade between different electricity regional/national systems.

In the merger case EDP/ENI/GDP²⁵ in 2004, the investigation showed that wholesale and retail electricity markets were clearly Portuguese in scope and would remain so in the foreseeable future, despite of the creation of electricity Iberian market (MIBEL). In

²⁴ ‘Single zone spot markets’ are markets where a single price is set for the whole transmission grid.

²⁵ See the Commission case M.3440 - *ENI / EDP / GDP*.

particular, the Commission did not accept the parties' argument that an Iberian market was developing due to the establishment of the MIBEL. The Commission noted in particular that many important regulatory barriers had still to be removed for the purpose of the establishment of the MIBEL, that the competitive conditions between Spain and Portugal were likely to remain significantly different even after the launch of the MIBEL and that the projected level of interconnections between Spain and Portugal was not likely to allow effective integration of both markets in the foreseeable future.

Market design

The way transmission bottlenecks are managed in the wholesale market constitutes an important feature of market design. There are several market mechanisms to deal with congestion through trade. In this respect, it is worth mentioning the functioning of the Nordpool, which represents the first pan-European experience in power markets, complying with the objectives underlined for the internal electricity market construction.

The interest on Nordpool relies on the relations between the implemented price mechanism, market definition and market power. The congestion protocol implemented in this market is the so-called 'market splitting' mechanism. One of the major features of this pricing mechanism is that the market operator has full control over the interconnectors in the Nordpool region. The market operator, taking into account the bidding process in the Nordpool, can decide on the trade flows between the interconnected systems, in order to achieve the most efficient market outcome. Through that mechanism, cross border trade is used as a means to arbitrage the potential price differences between the different pre-established grid zones that are identified in the Nordpool. According to this mechanism, a unified price zone is identified when interconnector capacity is not fully used. If congestion occurs in one or several interconnectors, markets are split, according to pre-established grid areas, which are then settled (i.e., reach equilibrium) with different prices. The zonal prices reflect the specific supply and demand conditions, and the potential arbitrage derived from the full use of interconnectors between grid zones.

Norpool market performance data clearly shows that some particular regions are more prone to be split. Levels of interconnection capacity and differences in production technologies have a stringent effect on how markets perform, and on how zonal price areas are defined. The different regions of Norway and Denmark are more likely to split than e.g., Finland and Sweden, which very seldom are split from each other.

Table 2: Trade openness in the Nordpool countries

	<i>Denmark</i>	<i>Finland</i>	<i>Norway</i>	<i>Sweden</i>
<i>Export openness</i>	0.29%	0.11%	0.21%	0.28%
<i>Import openness</i>	0.29%	0.13%	0.19%	0.29%

Source: Copenhagen Economics (2002) cited in the Report from the Nordic Competition Authorities, no. 1/2003. These percentages denote the ratios between the permissible export (import) capacity divided by the total generation capacity.

Table 3: Most encountered constellations of price areas in 2001 and the percentage of time in which they occur (The figures vary between different years)

<i>Price Areas (Zones)</i>	<i>Time %</i>
<i>The Nordic region</i>	51,80%
<i>Denmark West</i>	19,10%
<i>Norway Middle/Norway North</i>	18,50%
<i>Norway South</i>	8,90%
<i>Norway Middle</i>	8,20%
<i>Denmark West/Norway South</i>	6,30%
<i>Denmark East</i>	5,40%
<i>Norway North</i>	5,30%
<i>Finland, Denmark East, Sweden</i>	5,30%

Source: Report from the Nordic Competition Authorities, no. 1/2003

In the Nordpool, market design and market definition are clearly linked. The principles for market definition devised for this specific market, under the market splitting pricing mechanism, were stated in a report made by the Nordic CA's²⁶. These authorities, as well as the Commission, have taken such definition into account in their competition law enforcement intervention in this region.

Although a common market design framework exists in the Nordic region, the relevant geographic market cannot be identified with the whole Nordpool region. This conclusion clearly follows from the economic principles underlying the market splitting pricing mechanism. As long as markets are split, the equilibrium prices in each zone reflect the supply and demand conditions, and the trade flow with other zones. From a competition point of view, split markets mean that the residual demand faced by dominant producers located in the net importing zone becomes less elastic.

²⁶ See Report from the Nordic Competition Authorities 1/2003, "A Powerful Competition Policy - Towards a more coherent competition policy in the Nordic market for electric power", Copenhagen, Oslo, Stockholm, 20 June 2003.

The Nordic CA's report states that geographic market definition depends on both space and time. In fact, in any particular day, and during some hours, markets can be defined as the whole Nordpool region, whereas for some other period, markets can be defined as regional, depending on the way market splitting is defined. It all depends of the interconnector usage status.

These theoretical findings about electricity market functioning have been empirically observed, as illustrated in the case against Elsam A/S and Energi E2 A/S²⁷ undertaken by the Danish Competition Authority. This case concerned the behaviour of these dominant producers on the Elspot market²⁸ in both 2000 and 2001, and was opened by the Danish CA following complaints by other parties.

Denmark is the region in the Nordpool area exhibiting the highest concentration level in electricity generation. Despite the fact that the existing interconnector capacity provides one of the highest trade openness levels among Nordpool countries, abusive behaviour by dominant producers has been observed. The collected evidence consisted on the very high prices charged during the hours when the two grid zones of Denmark were split from the rest of Nordpool, due to interconnector bottlenecks. Using econometric analysis, it was shown that during bottleneck periods, the investigated companies changed their bidding behaviour, taking advantage of their dominant position in their respective grid zones.

The Nordpool market definition has been applied to other cases, showing how such definition is crucial for the type of outcome obtained in the different merger cases. In fact, based on Nordpool market definition, the Norwegian CA decided to prohibit the merger between Statkraft Holding AS and Agder Energi AS²⁹, based on the strong effects that would arise from this merger on the South Norway grid zone. Statkraft Holding AS controlled 30% of production capacity in Norway, through the so-called "Statkraft Alliance", and planned to take control of Agder Energi AS, which controlled 6% of Norway's production capacity. The competitive assessment of the case took into account the effects on competition in the different price zones of Norway, especially in South Norway. This grid zone had been an isolated price area in 36% of the time between 1996 and 2001 (21% of the time as a low price-area and in 15% of the time as a high price area). The analysis of the case showed that the proposed merger would

²⁷ Danish CA case Elsam A/S and Energi E2 A/S; conduct on the Elspot market in 2000 and 2001.

²⁸ The "Elspot market" is the Nordpool electricity spot market.

²⁹ Norwegian CA ca Statkraft Holding AS' acquisition of 45.525 percent of the shares of Agder Energi AS.

increase Statkraft Alliance’s production share in South Norway from 38% to 47%, of ‘installed effect’ from 42% to 50%, and of magazine capacity from 43% to 52%. In addition, Statkraft owned 20% of E-CO Vannkraft, which had 11% of the magazine capacity in South Norway. The acquisition of Agder Energi would reduce the number of competitors and their production capacity, which indicated that Statkraft would face a less elastic residual demand.

In other merger cases, the potential concerns raised by the possible strengthening of market dominance in specific grid areas, were mitigated by a possible definition of geographic markets wider than those specific grid areas. That was the case in the merger between Sydkraft and Graninge³⁰, analysed by the Commission, with both companies active in electricity production in Sweden and in Finland. In this case the definition of geographic market was left open. As implied by market data, Finland and Sweden could belong to the same geographic market. In 2000 for example, Swedish and Finnish wholesale markets were settled, i.e., reached an equilibrium, in different price zones only 5,5% during that year. However, in both 2001 and 2002, they were almost always settled in the same price zone.

Regional, or local, market power is not exclusively associated with market designs that apply congestion management mechanisms based on zonal prices. As stated by Wolak³¹, *“in single-price markets, zone-pricing markets and nodal-pricing markets, local market power arises because the existing transmission network does not provide the supplier with sufficient competition to discipline its bidding behaviour into the wholesale market”*. For instance, in Spain, although a single price zone market is implemented, there exists evidence that market players took advantage of bottlenecks in certain grid areas to profit from abusively high prices. Differently from the Nordpool, the market design implemented in Spain overcomes internal transmission congestions through the ancillary services markets. These findings are part of a case dealt by the Tribunal de Defensa de la Competencia (TDC)³² against the three major power producers, following very significant price increases that occur in the Spanish pool during the 19th, 20th and the 21st of the month of November 2001.

³⁰ Commission Case M.3268 -SYDKRAFT /GRANINGE.

³¹ Wolak, Frank: “Managing unilateral market power in electricity”, in The Pros and Cons of Competition Policy, Swedish Competition Authority, 2004.

³² Servicio de Defensa de la Competencia/Tribunal de Defensa de la Competencia Case 552/02 *Empresas Eléctricas*.

In this case, it was shown that those three major electricity producers bid power plants at high prices in the ‘day ahead market’ with the aim of not selling electricity to the pool, but with the certainty that they would be needed because of technical restrictions, being then paid their bid price and not the pool price. That action resulted on a pool price higher than what would be expected in a competitive framework. The plants that were bid at high prices were located in grid areas prone to transmission congestion. It was also assessed that in each of those grid areas, each company was dominant in production and distribution. Their vertical integration allowed the companies to know in advance the demand forecasts, information which was essential to determine the likelihood of bottlenecks. It was also shown that their bidding behaviour during bottleneck periods was different from their past bidding behaviour.

The merger control and restrictive practices intervention cases presented in this chapter show that market power can exist within many different geographic scopes. In Europe, as regards to wholesale dominance, this problem has risen partly because interconnector capacity planning in the past did not respond to competition objectives, being also the result of excessive concentration levels in domestic markets, in an industry that exhibits all the ingredients that make possible the abuse of dominance.

Dealing with local market power can be quite complicated, because reducing concentration, in itself, may not be sufficient, since the underlying relevant geographic market can be quite limited. In this sense, overall market shares provide a weak measure to assess the competitive position of the undertakings, since when transmission congestions occur, some operators acquire – during such congestions – additional market power in some areas. In such cases, because power generation market shares during normal periods (congestion free periods) give a limited picture of the extent to which market power can be exercised, one ought to supplement such information with other economic indicators.

Appropriate remedies are required to deal with local market power. In the case Elsam A/S and Energi E2 A/S³³ analysed by the Danish CA, a settlement was reached involving an agreement by the parties on a number of conditions that would restrict the bidding behaviour during the hours of potential dominance (i.e., during congestion periods). These remedies reveal one type of approach that is similar to the one used in the United States when local market power is addressed through regulatory intervention, with the use of the so-called ‘bid caps’, ‘bid thresholds’ and ‘contracts’. Actually, in the USA, this type of remedies has been deemed necessary since «(...) *There is no market*

³³ See Danish CA case Elsam A/S and Energi E2 A/S; conduct on the Elspot market in 2000 and 2001.

yet reviewed by the Commission [FERC] that does not have at least some generators with persistent locational market power.»³⁴

This kind of intervention clearly shows the possible links that can be identified between restrictive practices intervention and regulatory intervention.

III.1.2. Entry, market domination and competition: the England and Wales experience

The first European experience in opening up competition in the electricity wholesale markets took place in the UK, more particularly in England and Wales (E&W). Being the first European market to be liberalized, in a context where limited interconnection did not put enough competitive pressure from abroad, it faced several constraints in setting up a competitive electricity wholesale market. Together with the Nordpool, which was set up, in its initial configuration, at approximately the same time, the UK wholesale market has been one of the most studied electricity markets in the world.

Throughout the nineties, market monitoring of E&W pool showed a succession of episodes of abusive behaviour by dominant players. Interventions by the Office of Electricity Regulation (later Ofgem), which has concurrent power with the Office of Fair Trading (OFT) under of the UK's competition law, provide a glance on the type of solutions that have been adopted to mitigate market power in electricity markets, some of them later implemented in other markets.

In the E&W pool, existence of market power has allowed extensive manipulation of the System Marginal Price and of the capacity (payment) element, as observed in different occasions, eventually providing the basis for changing market design, from a mandatory pool to a power exchange, under the so called New Electricity Trading Arrangements (NETA).

The first inquiry on such type of behaviour goes back to 1991, when the first signs of abuse by the two major generators were detected. These signs concerned mainly the increase in pool prices, particularly in its capacity element. The features of the E&W pool capacity element provided the means to manipulate its value through the so-called Value of Lost Load (VOLL), which was meant to provide price signals to new capacity investment. By putting aside some producing capacity, the major power producers could

³⁴ See the Federal Energy Regulatory Commission (FERC) Staff Paper on Regional Choices for Implementing the Elements of the White Paper, July 2003.

induce an artificial increase in the capacity element. In order to prevent this kind of behaviour, a new licence condition was then introduced, which required all plants technically available to be offered in the pool.

Throughout the successive investigations of pool prices by OFFER, it was eventually found that regulatory intervention would not suffice to solve the lack of competition detected in the pool price setting behaviour. In late 1993, OFFER concluded that, unless some steps were taken to increase competition, a reference to the UK's Monopoly and Mergers Commission (MMC) would be necessary. The threat of MMC intervention led the two major power producers, National Power and PowerGen, to sell 4000 MW and 2000 MW, respectively, of coal fired plants to direct competitors. By June 1996, Eastern, an independent producer, purchased the disposed of 6000 MW of capacity production.

Although the divestiture resulted in a decrease in the overall ability of the two major power producers to be price setters in the pool, in the OFFER report to the Pool Price Increases in Winter 1997/98³⁵ it was shown that they still possessed plenty of opportunities to engage in abusive behaviour. For instance, in the period under study, National Power and PowerGen still managed to set the System Marginal Price during 70% of time. Eastern, due to the purchased capacity referred above, increased its participation in price setting, but in a limited time span.

The strategy underlined by the two companies in setting higher pool prices in the winter of 1997/98, aimed at compensating the decreasing financial importance of capacity payments due to the significant entry in production of gas fired plants (CCGT's). This entry decreased their ability to manipulate that capacity payment.

Some features of abusive behaviour in power markets were also demonstrated in this OFFER report. First, in order to set higher prices, the two major power producers were conceding market share to other competitors. Market data clearly showed that the dominant players' production from coal fired power plants decreased during that period when compared to other similar time periods. Secondly, since a uniform price was paid to all players who were settled to produce in the pool market, dominant players were securing higher prices for the other plants they controlled. This action came also to the benefit of other independent power producers, who were the major beneficiaries from such high prices, since, while major producers' market shares decreased, those independent producers could increase their production levels.

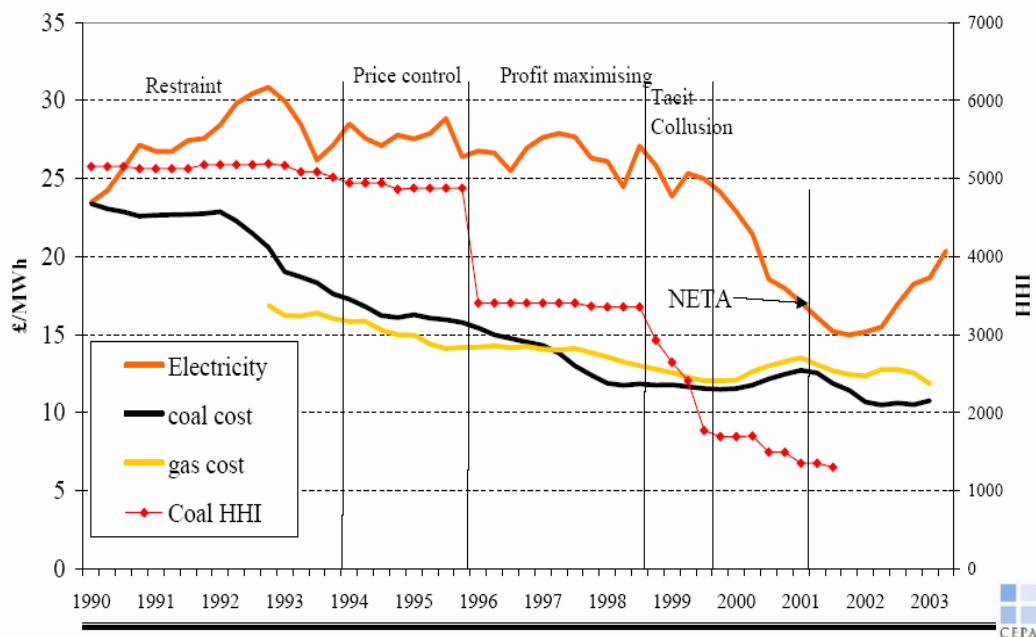
³⁵ See Report on Pool Price Increases in winter 1997/98, OFFER, June 1998.

As stated in the OFFER 1997/98 winter prices report, the features of the trading arrangements existing at the time, could have facilitated the exercise of market power, by enabling all generators to receive a uniform price which, in practice, was set by a few of them. This line of thinking eventually influenced the change in the market rules to a pay-as-bid market, which was introduced in March 2001.

The lack of competition in price setting also came as a result of the fact that new entrants only very seldom competed at the margin. Therefore, entrants were rarely price setters. This behaviour resulted from the fact that the vast majority of new entrants were secured by long-term ‘contracts for differences’, which offered them the incentive to maximize their production in the pool, through very competitive biddings. As a result, while wholesale market concentration levels were decreasing, due to entry and divestiture (between 1990 and 1999 the number of generators selling through the pool increased from 8 to 38), prices were not coming down.

Following the OFFER 1997/98 winter prices report, and after another threat of a MMC reference, National Power and PowerGen were each required to further divest 4000 MW capacity of coal-fired plants.

After these consecutive interventions, together with the impact of entry in power generation, and the change of trading arrangements, the E&W wholesale electricity market became more competitive. The Figure below shows the evolution of electricity wholesale prices and the correlation with HHI concentration levels for coal fired plants, previously the price setters in the pool.



The E&W experience shows three important features of competition enhancing intervention in electricity markets, namely, (i) the need to properly assess market power by taking into account the generation mix of the different market players, (ii) the difficulties that can arise in assessing the proper remedies to mitigate market power, and (iii) the important impacts that entry into the market can have in achieving a workable competition framework, even though such entry is likely to be slow.

III.1.3. Concentration and cross-ownership in merger control

Concentration

Internal energy market construction represents a major impulse for the restructuring of energy markets. A profound reshaping of the electricity industry (in the EU) is currently underway, with cross-border mergers being a clear example of this trend.

Dealing with market concentration and cross-ownership in the energy sector has been a major challenge for competition authorities across Europe, as shown by the recent merger control and restrictive practices intervention experiences. Appropriate remedies have been imposed both by the Commission and the different NCA's in several merger cases, ranging from divestiture to virtual power plants.

The most relevant merger cases in the electricity markets that have been analysed, involved the acquisition of a close competitor, thus reinforcing the acquirer's share in the electricity market. In fact, when mergers involve power generating companies operating in the same geographic market, they may raise serious concerns about their effects on competition when market shares are sufficiently high, unless appropriate remedies are imposed.

Merger policy in the electricity markets in Spain has taken into account the fact that the existing highly concentrated wholesale production market and the vertical relations between distribution activities and the major power producers. For instance, in the *Unión Fenosa / Hidroeléctrica Del Cantábrico* merger case (2000)³⁶, the *Tribunal de Defensa de la Competencia* (TDC) proposed the prohibition of the merger between the third and fourth electricity operators in Spain, and the Spanish government acted accordingly. This decision was adopted on the basis that it could distort the structure of

³⁶ Servicio de Defensa de la Competencia/Tribunal de Defensa de la Competencia Case N-061 *Unión Fenosa / Hidroeléctrica Del Cantábrico*.

the generation and retail electricity markets in Spain by encouraging collusive practices. In particular, they considered that the proposed merger could:

- increase concentration in an oligopolistic market with four vertically integrated operators (namely, Endesa, Iberdrola, Unión Fenosa and Hidrocarbónico);
- create new barriers to entry in the electricity generation market and consequently increase the possibilities of collective dominance in a liberalising market;
- reinforce barriers to entry in the retail market, as a result of vertical integration, through the disappearance of the most forceful competitor of Unión Fenosa.

The Spanish Authorities followed the recommendation of TDC and declared the merger incompatible with the Spanish law.

In the Endesa/Iberdrola case³⁷, notified in October 2000, and involving the acquisition by Endesa of Iberdrola, the TDC recommended forbidding this merger between the two major Spanish electricity operators, since it would create a dominant position that would significantly impede effective competition in the Spanish electricity market. Endesa and Iberdrola held joint market shares close to 70% in electricity generation and 85% in retail markets. At the same time, other competition concerns were raised in the regulated markets for electricity transport and distribution, since the merged entity would acquire a dominant position in the latter, at a national level, with a market share above 80%.

The TDC argued that only with the imposition of the following restrictive remedies, which would have profoundly reshaped the Spanish electricity markets, would the merger be declared compatible: (i) post merger joint generation capacity would be limited to Endesa's pre-merger generation capacity, ensuring that the generation portfolio mix followed the average national structure (portfolio mix); (ii) the imposition of limits on distribution and retail shares; and (iii) divestiture of all transport infrastructures. The Spanish Council of Ministers agreed with the TDC's conditions, with some slight modifications on distribution shares. However, in view of the conditions imposed by the Spanish government, which followed TDC's proposals, the parties withdrew the notification, and the case was closed.

³⁷ Servicio de Defensa de la Competencia/Tribunal de Defensa de la Competencia Case N-114 *Endesa/Iberdrola*.

A number of merger cases have shown how market concentration can be tackled with through the imposition of remedies, in a way that is acceptable to the parties and, at the same time, increasing liquidity in the wholesale electricity markets. Virtual power plants are an example of such remedies. In virtual power plants, the incumbent sells contracts, covering different time horizons, giving independent producers an option to use production capacity for themselves in wholesale markets. Once production concentration is reduced, fears of market dominance, when setting the wholesale prices, can be solved. As long as virtual power plants' contract prices reflect forward expectations of future prices, incumbents are protected from losses. This type of remedy is also being considered as part of the competition policy for energy markets in several countries. For instance, in the latest agreement between Portugal and Spain on the creation of the Iberian Electricity Market (MIBEL), the use of virtual power plants was regarded as an appropriate measure to deal with the concentration problems identified in each of the two domestic electricity markets.

Virtual power plants rely on the increasing trade sophistication that characterizes the recent development of electricity power markets. The first case in which virtual power plants were used was analysed by the Commission in 2001, in the merger between EDF and EnBW³⁸. This case concerned the acquisition of joint control of the German electricity company Energie Baden-Württemberg AG (EnBW) by Electricité de France (EDF) and Zweckverband Oberschwäbische Elektrizitätswerke (OEW), an association of nine Southwest German districts. EDF is a state-owned French company active in all fields of supply and transport of electricity in France. EDF was already active in a number of Member States, including Austria, Italy, Sweden and the United Kingdom. Following the proposed merger, EDF would have had a strong foothold also in Germany, and would have been in a unique position to offer truly Pan-European services to industrial and commercial customers. EnBW was, at the time of the acquisition of control, a vertically integrated electricity utility active in all fields of supply and transport of electricity, mainly in the Southwest of Germany.

The investigation concluded that EDF enjoyed a dominant position in the French market for the supply of electricity to eligible customers, with a market share of approximately 90%. The operation, as initially notified, would have led to the strengthening of this dominant position. The Commission based this conclusion on the assessment that (i) EnBW was one of the most likely potential competitors in the French market and would have been one of the strategically best placed companies to enter the market for the supply to eligible customers and (ii), by acquiring EnBW, EDF would have also increased its potential for retaliation in Germany and would thus become less exposed

³⁸ See the Commission case M.1853 - *EDF / ENBW*.

to competition in France. The Commission also came to the conclusion that through its shareholding in EnBW, EDF would also considerably strengthen its foothold in Switzerland and would eliminate WATT (a Swiss electricity company) as a potential competitor on the French market.

In order to solve the competition concerns identified by the Commission, EDF submitted a number of commitments regarding access to generation capacity in France, its involvement in the French electricity generator Compagnie du Rhône (CNR) and EnBW's participation in WATT. In particular, EDF made available to competitors, via auctions, 6.000 MW of generation capacity located in France, which corresponded to around 30% of the market for eligible customers, thus enabling foreign suppliers to have access to a large share of this market. This commitment was to be in place for a period of five years, in order to allow alternative supply sources to develop and to reach sufficient liquidity in France. The remedy sought to counterbalance the loss of EnBW as a potential competitor.

Since the EDF /EnBW case, virtual power plants have been implemented as a solution to market dominance in other merger cases. This was the case in the Dutch and Danish electricity markets in recent merger control cases.

In 2003, the Netherlands CA used this type of remedy in the takeover of Reliant by NUON³⁹, after the assessment of the potential detrimental effects on competition in the Dutch electricity markets resulting from the proposed takeover. Supported by econometric studies, the potential for an increase in unilateral market power was identified. On the one hand, a small independent player would be eliminated, hence contributing to reduced competition, particularly during peak demand hours. On the other hand, the use of simulation models showed the potential for price increases between 6% and 13%, due to the exercise of market power following the proposed merger.

Since the electricity production market remained national in scope, as previously assessed in other cases dealt with by the Netherlands CA, the proposed merger raised serious concerns about its effects on competition in the electricity wholesale market. To solve the identified problems the parties accepted to have virtual power plants for 900 MW of production capacity for a period of 5 years, which could be extended for a further period of 5 years, depending on an evaluation at the end of the first period.

³⁹ NMa Case 3386.NUON/Reliant.

In Denmark, the use of virtual power plants on an indefinitely time horizon, complemented by other remedies, was considered as appropriate to solve the competition concerns that were raised in the merger between Elsam A/S and NES A/S (2004)⁴⁰. Assessment of this case by the Danish CA showed that, by acquiring NES A/S, Elsam A/S, the dominant player in Western Denmark, would obtain a minority shareholding position in Energi E2, a dominant producer in Eastern Denmark.

At the time of the merger there was no interconnection between East and West Denmark, although plans existed for the creation of such interconnection, the so-called Great Bell interconnector. Foreseeing the creation of the Great Bell interconnector, it was determined that future competition would be inhibited. In order to mitigate the identified concerns, a virtual power plant was designed for 600 MW, which would be equivalent to the capacity of the Great Bell interconnector. Elsam undertook also to dispose of all Elsam's and NES A/S's decentralized combined electricity power and heat plants (230 MW capacity), and not to buy or manage decentralized combined electricity power and heat plants for the next twelve and a half years. Commitments were also given to improve infrastructure by Elsam, among others, to establish the Great Bell interconnector, and to improve the functioning of the retail market.

Cross ownership

Cross ownership between players in concentrated markets may pose serious restrictions on the development of competition. In particular, it is important to re-evaluate concentration levels (HHI) by taking into account cross-ownerships between the different energy companies (see the 2000 paper by Amundsen & Bergman, and the Nordic CA's 2003 Report)⁴¹.

Undertakings may be reluctant to compete aggressively among themselves if they take into account the effects on each other's profits. Tacit collusion can also result from cross ownership. These problems have been identified, in different degrees, in several markets across Europe. They showed to be quite serious in Germany and in the Netherlands at the first stage of their market opening processes.

⁴⁰ Danish CA Case: The merger between *ELSAM A/S* and *NES A/S*.

⁴¹ When taking into account cross-ownerships in the Norwegian electricity generation market, the HHI has been shown to increase around 103% - see "A Powerful Competition Policy: Towards a more coherent competition policy in the Nordic market for electric power", a Nordic Competition Authorities 2003 Report.

Merger control has provided an opportunity to deal with this type of problems by means of the commitments offered by the companies involved. In Germany, the mergers between RWE/VEW⁴², dealt with by the Bundeskartellamt, and Veba/Viag⁴³, dealt with by the Commission, led to a dramatic reshaping of the German electricity markets. These mergers were cleared, subject to far-reaching obligations, which were developed by both the Bundeskartellamt and the European Commission under close coordination.

In fact both mergers would have led to the development of a duopoly in the German electricity industry, composed of both RWE/VEW and Veba/Viag. As a result of these mergers, and considering the shareholdings of both groups in regional distributors and municipal utilities, the joint market share of the two groups in the supply of big industrial customers would have been approximately around [65% to 75%] and approximately [50% to 60%] in the market for small customers, in 1999. The share of RWE/VEW and Veba/Viag in the market for supplies to regional distributors would have accounted for around [80% to 90%] of the market.

The aim of the obligations, jointly developed by the Bundeskartellamt and the EC, was to secure the preconditions for effective competition in the electricity and gas markets. Roughly speaking, these obligations involved the selling of joint shares owned by the four companies (RWE, VEW, Vega and Viag) in other companies, hence allowing the entry of new competitors in the German energy market. In combination with other conditions, the creation of an effective external competition on the energy markets was meant to prevent an oligopolistic parallel conduct, which would have been likely by the largely symmetrical duopoly consisting of RWE/VEW on the one hand and Veba/Viag on the other. The imposition of such obligations led, in the end, to the entry of Vattenfall Europe as an important competitor in the German energy market. Remedies included also improvements in network TPA rules in both electricity and gas, as well as improvements on the functioning of the electricity balancing market.

In the case PNEM/MEGA – EDON⁴⁴, dealt with by the Netherlands CA, similar divestment remedies were adopted. The merging parties were dominant electricity suppliers, active in the markets of electricity production, electricity supply for eligible customers and also in the market of composting plants. At the time, imports accounted for only approximately 14% of total production, with the Netherlands being a net importer. The market was therefore defined as national in scope.

⁴² Bundeskartellamt case B 8 – 3009/99 *RWE/VEW*.

⁴³ See the Commission case M.1673 – *VEBA / VIAG*.

⁴⁴ NMa case 1331, *PNEM/MEGA – EDON*.

The competitive assessment of the case concluded that, as a result of the proposed merger, a dominant position would be created in the electricity production and supply markets, with a market share ranging from 40% to 50% in electricity production. Dominance would also be created in the market for composting plants. It was also observed that the merging parties would have joint control with NUON-ENW of EPON, which was active in electricity production. NUON-ENW was another dominant market player in the market for electricity production. Therefore, serious concerns were raised about the possibilities for the creation of a collective dominant position in the production and supply of electricity. These concerns were mitigated following the commitment by the parties, to divest from EPON and from at least one composting plant.

III.1.4. Vertical relations between gas and electricity

In the Commission's practice, gas and electricity are considered as belonging to different product markets. From a demand side point of view, the Commission has argued that electricity is substitutable with other sources of energy only in certain uses, such as the production of heat. From a supply side point of view, gas and electricity ought to be distinguished from one another and from other sources of energy.

Nevertheless, vertical relations between gas and electricity are clearly developing, since natural gas is an increasingly important source of energy for electricity production. In fact, new entrants in electricity production often choose natural gas as a production input. The convergence between gas and electricity dictates the development of multi-utilities strategies, both at the wholesale and retail levels. Gas suppliers might use their competitive advantage in reaching gas sources to become electricity producers. Similarly, power producers might use their gas contracts to satisfy the needs of final consumers of gas, so as to better comply with the electricity production variability in their gas fired power plants. These developments in both industries have been seen as beneficial for competition.

At the same time, from this convergence between both industries, market players have identified merging opportunities to vertically integrate gas and electricity businesses. Recent merger case history shows clearly the type of competition problems that can arise from this vertical integration process, especially when undertaken between dominant players in each of the two industries.

The first competition problem results from the fact that the merging parties will no longer compete with each other in each of the two sectors. The second problem results from the potential incentives for foreclosure in the gas and electricity markets, e.g., the foreclosure of access to gas supplies by third parties in the electricity generation market, especially if the merged entity has a dominant position in electricity generation and supply. The third problem concerns the strategic use by an undertaking of privileged information about its competitors' gas needs, as well as its costs, in the production of electricity.

When these vertical integration concerns are properly mitigated, the merger may not pose significant competition problems. This was the case in the merger Finland Neste/IVO⁴⁵ (decision in 1998), involving a Finnish company active in the natural gas sector (Neste), and the largest Finnish company in the energy sector, particularly in electricity generation (IVO). As IVO was active in the generation, wholesale and distribution of electricity and Neste, through its subsidiary Gasum, was the only importer, supplier and seller of natural gas, used as a primary fuel for electricity generation, the Commission considered that Neste and IVO had a vertical relationship in the field of electricity generation. Taking into consideration the expected increase in electricity demand, as well as the strategic importance of natural gas, the fact that Gasum had a *de facto* monopoly in the gas market and that IVO had a very strong position in the electricity wholesale market, together with the possible adoption by the merged entity of market strategies not possible prior to the merger, the Commission concluded that the merged entity would have enjoyed a stronger competitive position in the Finnish electricity market.

The parties proposed to relinquish Neste's control over Gasum by the divestiture of 50% of the company's shares, reducing Neste's interest in Gasum to 25%. The Finnish Government made a commitment to ensure that the merged entity would not have a controlling position in Gasum and that it would remain a minority shareowner. It also undertook to exercise its rights associated with its ownership of Gasum shares, in order to secure that the balance between the various owners' interests would be preserved and that the interests of new shareholders would be taken into account. The Commission considered these remedies as sufficient to solve the competition problems raised by the merger.

⁴⁵ See the Commission case M.931 - *NESTE / IVO*.

The mergers between E.ON/Ruhrgas⁴⁶, dealt with by the Bundeskartellamt in 2002, and EDP/ENI/GDP⁴⁷, dealt with by the Commission in 2004, clearly showed that without appropriate remedies, the vertical integration between gas and electricity could pose several constraints to competition.

The case E.ON/Ruhrgas involved two operations that would have given E.ON, the second largest German vertically integrated supplier of both gas and electricity, the control of Ruhrgas, the largest German gas company. The competitive assessment of the case showed that the proposed merger would have strengthened a dominant in several markets. Firstly, both companies would no longer compete in the markets in which they were both present. Secondly, the synergies obtained from the merger would place other competitors at a competitive disadvantage, both in the electricity and in the gas markets.

In face of the identified competition concerns, the remedies offered by the parties were very limited in scope. Therefore, the Bundeskartellamt considered that the proposed commitments were inappropriate and of little significance so as to prevent the strengthening of dominance in the gas and electricity markets. After the adoption of the prohibition decision, the merging companies appealed to the German Minister for Economy and Technology. After the imposition of remedies, permission for the merger to go ahead was granted, on the grounds that overall economic advantages stemming from the merger had been demonstrated. Subsequently, the ministerial approval was appealed to the Düsseldorf Higher Regional Court. However, the complainants withdrew their appeal after out-of-court settlement negotiations. E.ON later purchased all shares in Gelsenberg and Bergmann. Subsequently, E.ON acquired all the remaining shares in Ruhrgas from Deutsche Shell AG and Schunert Beteiligungs GmbH and became, directly or indirectly, the owner of all shares in Ruhrgas.

The Case EDP/ENI/GDP concerned the proposed acquisition by Energias de Portugal (EDP) and ENI of joint control over Gás de Portugal (GDP). GDP is the incumbent gas operator in Portugal, active in all levels of the gas chain, having exclusive rights for imports, storage, transportation as well as wholesale supply of natural gas. GDP controls five of the six Portuguese local gas distribution companies (the sixth, Portgás, being controlled by EDP). EDP is the incumbent electricity operator in Portugal and is

⁴⁶ Bundeskartellamt B 8 – 109/01 *E.ON./Gelsenberg*. The case, decided in January and February 2002, concerned two operations aiming at the acquisition of a majority stake in Gelsenberg AG, Essen (Gelsenberg) and at the acquisition of Bergemann GmbH, Essen (Bergemann) by E.ON AG, Düsseldorf (E.ON), which would have given E.ON the control of Ruhrgas.

⁴⁷ See the Commission case M.3440 - *ENI / EDP / GDP*.

active in the generation, distribution and supply of electricity in Portugal. Through its Spanish affiliates (Hidrocantabrico and Naturcorp), EDP also has substantial electricity and gas activities in Spain. ENI is an Italian company active internationally at all levels of the energy supply and distribution chain. The notified merger was part of a wider operation including the transfer of the gas transmission network, owned by GDP, to REN, the Portuguese electricity grid operator. The transfer of the network constituted a different merger, which fell under the competence of the Portuguese Competition Authority.

In what regards non-horizontal effects, the Commission concluded that the proposed merger would have given EDP privileged access to the Portuguese gas resources and infrastructures to the detriment of its competitors and the ability and incentive to control gas prices and raise its rivals' costs. Moreover, the proposed merger would have given EDP access to information about its competitors' gas needs and costs. With the merger, GDP would be in a position to foreclose all the challengeable existing gas demand of power producers, in that EDP would not demand gas for its CCGT power plants from gas suppliers other than GDP. Furthermore, since GDP was deemed a likely new entrant into the electricity production and retail markets, EDP's already dominant position would be strengthened as a result of their merger.

The remedies proposed by the parties were not considered sufficient to solve all the competition problems raised by the proposed operation. Hence, the Commission prohibited the operation. The parties appealed the case to the Court of First Instance of the European Communities. On September 21st, 2005, the Court of First Instance upheld the Commission's decision on this case.

Vertical relations between gas and electricity were also dealt with in several restrictive practices intervention cases. The case against Synergen⁴⁸, settled in 2002, concerned a joint venture, between Ireland's dominant electricity company, ESB, and the Norwegian gas company Statoil, relating to the construction and operation of the so-called Synergen power plant, a 400 MW gas fired plant located in Dublin, Ireland. According to the agreement setting up the Synergen joint venture, ESB would hold a 70% stake in the joint venture with Statoil holding the remaining 30%. Another agreement, the so-called "Supply Agreement", established that a subsidiary of the ESB, namely the ESB Independent Energy Limited (ESBIE), would market the power generated by Synergen for 15 years.

⁴⁸ Commission case COMP/37.732 Synergen.

As in above merger cases, it was considered that Statoil would be a likely competitor of the Irish dominant producer, both in electricity production and in the market for eligible customers. The ESB controlled 97% of the electricity production in Ireland and more than 60% of the supply market for eligible customers. The vertical agreement was considered as violating Article 4 of Regulation No. 17 of 6 February 1962, First Regulation implementing Articles 85 [81] and 86 [82] of the Treaty. The Commission services closed the case following a settlement, after having received from the ESB and Synergen the following commitments:

- to make available 600 MW, under an auction system, of electricity per year until additional sources of electricity of 400 MW become available, of which 300 MW should be produced by a single new plant;
- to delete the obligation imposed on Statoil not to participate in competing power projects.

III.2. Natural gas markets

The European Union imports more than 50% of its gas needs annually. Domestic production is seldom significant, with the few exceptions of Denmark, UK, Netherlands (and Norway in the EEA). Most gas is imported from Russia and North Africa. LNG re-gasification terminals are becoming an important way of importing gas, contributing to the diversification of geographical sources and diminishing the territorial dependence of upstream producers, as can be observed in the case of the Iberian Peninsula. Imported gas flows through Europe's network of gas pipelines, mainly from North to South, and East to West. Although transit flows across Europe are a major feature of the gas industry, liquid wholesale markets have not yet developed on an EU-wide level.

The construction of the internal market has challenged the previous structure of productions cartels, upstream import and downstream contracts, and the existence of monopolized vertical utilities.

From a competition point of view, market power in the gas industry can be analysed at two levels. The upstream level comprises the relationships between producers, domestic or not, and both importers and suppliers. The contractual structure of these relationships, inherited from the previous framework (i.e., before market opening), have included a variety of provisions which foresaw the recovery of the investments made in order to make gas delivery possible. Long-term duration, take-or-pay clauses and exclusive reservation rights over up-stream pipelines, are still active in the contractual

relations that make available most of the supply of gas, although short-term trade through gas hubs is being developed.

The internal gas market directives have accepted some of the structural features of the gas industry, namely through the derogations to network access regimes when considering new infrastructures, the pre-existing take-or-pay contracts and upstream pipelines.

The existence of few producing countries goes hand in hand with an oligopolistic structure at the upstream level. Upstream network configuration may also enhance an exporter's market power in some importing countries. The downstream level comprises all the relationships established between importers, distributors and high quantities consumers, like power plants and large industrial units.

Before market opening, a vertically monopolised structure was usually observed at the downstream level. In several countries market structure in supply activities is still highly concentrated, as result of the various constraints observed in market opening. On the one hand, upstream and downstream levels are interrelated, especially in what concerns long-term gas imports contracts and the awarded reservation transmission capacity on entry points. In order to promote competition in the downstream level, incumbents have been required to make gas release programs, together with the imposition of ceilings on their market shares at the downstream level.

Although physical congestion does not yet appear to be a serious issue, reservation agreements may preclude entry by third parties in import activities. Vertical relationships between gas producers and gas suppliers also pose restrictions on the amount of gas available to third parties. On the other hand, the structure of long term contracts between importers, distributors and big industrial consumers that still exists, has been regarded as having significant foreclosure effects in the gas market. Finally, the TPA rules initially established, especially under the negotiated regime, allowed for several kinds of discrimination in third party treatment, especially when the incumbents were vertically integrated. Access to storage, as well as the so-called "flexibility services" also posed other kinds of restrictions, namely through uneven balancing charges and other kinds of discrimination.

III.2.1. Cartelization in gas production and vertical relations

The creation of a competitive internal gas market implies the existence of competition both at the production and import levels. Hence, the different forms of cartelization in gas production are to be regarded as (potentially) hampering it.

The Commission case GFU⁴⁹, settled in 2002, concerned joint sales of Norwegian natural gas through a single seller, GFU (a Gas Negotiation Committee), since at least 1989. GFU was comprised of two permanent members, Statoil and Norsk Hydro - Norway's largest gas producers - and was occasionally extended to other Norwegian gas producers. GFU's main task was to negotiate the terms of all supply contracts with buyers in the EU, as well as other buyers, on behalf of all natural gas producers in Norway. The Commission services considered that the joint sale system used by the Norwegian gas producers was a cartel and infringed article 81 EC. The Commission proceedings involved around 30 of those gas producers.

DG Competition has also investigated the joint marketing of North Sea gas by the parties to DUC (the Danish Underground Consortium)⁵⁰. DUC accounts for 90% of Danish gas production and is composed of Shell, A.P. Møller and Chevron Texaco. Following on the example of the GFU case, the DUC partners agreed to cease their joint marketing arrangements and to market their gas individually in the future. The investigation by DG Competition also concerned certain aspects of the supply relationship between each of the DUC's partners and the Danish gas supplier DONG, as established in successive gas sales agreements, according to which DUC's partners were obliged to offer all their gas first to DONG. By means of these contracts, enough gas was sold to DONG so as to satisfy the entire Danish demand and to supply additional volumes to Sweden and Germany. The final outcome of this case resulted in an agreement by DONG to release DUC's partners from their obligation and a commitment by DUC's members to market their production individually.

III.2.2. Territorial sales restrictions

Upstream contracts between importers and producers typically contained provisions impeding importers from selling the gas outside the Member State in which they are traditionally located. Without the ability to resell imported gas to neighbouring

⁴⁹ Commission case COMP/36.072 PO/GFU - *Norwegian Gas Negotiation Committee*.

⁵⁰ Commission case COMP/38.187 PO/DUC-DONG.

countries, importers were prevented from practicing cross-border arbitrage in the face of price discriminatory policies taken by the producing exporting companies. These so-called territorial restriction clauses were a major obstacle for the internal market construction, directly affecting the internal trade of gas. The “territorial restriction clauses” restrict the territory on which the buyers can use the gas and, therefore, have the effect of partitioning national markets. Therefore, they constitute a restriction of competition within the meaning of article 81 EC. Moreover, they prevent cross border trade and are a major obstacle to the creation of a genuinely competitive and integrated gas market in Europe.

A series of cases dealt with by the Commission and based on *ex officio* procedures, investigated such vertical agreements⁵¹. The parties involved in these cases were the Nigerian producer NLNG and Gazprom, the Russian gas producer. The latter was involved in gas importing contracts signed with the Austrian Company OMV and the Italian company ENI.

In the context of these investigations, the Commission services have also examined the so-called ‘profit-splitting mechanisms’, i.e., clauses allowing importers to resell gas outside the territory of their Member States on the condition that a part of the profit is passed on to the exporters. The Commission services also determined that, in certain circumstances, profit-splitting mechanisms would have the same object and effect as territorial restriction clauses, hence constituting a restriction of competition within the meaning of article 81 EC.

The Commission services came to a settlement with three of the companies involved in the case, namely NLNG (in 2002), ENI (as far its contracts with Gazprom are concerned, in 2003) and OMV (in 2005).

The reached settlements included the deletion of such clauses, the commitment not to introduce this clauses in future contracts and also, where existed, the scrapping of such profit-splitting mechanisms. In the cases where OMV and ENI were involved, both companies made commitments to increase the capacity of the Trans-Austria Gasleitung (TAG) pipeline, where both companies are shareholders, as well as to improve the TPA regime in this pipeline (e.g., through the introduction of one-month transport contracts, an effective congestion management system, the introduction of a secondary market and the regular publication of the available capacity).

⁵¹ Commission cases COMP/37.811 *PO/Territorial Restriction–Italy* and COMP/38.085 *PO/Territorial restrictions – Austria*.

The cases against GDF, ENI and ENEL⁵², opened *ex officio*, also referred to territorial restriction clauses, showing how widespread this kind of practice was before market opening. Both cases regard transport service contracts, which included clauses imposing that ENI and ENEL could not market the transported gas in France. In the case GDF/ENI the gas was transported from North Europe to Italy and the clause specified that the gas would be marketed exclusively "downstream of the redelivery point", i.e. after leaving France. In the case GDF/ENEL, the contract concerned the swap of liquefied natural gas purchased by ENEL in Nigeria and contained a clause which required ENEL to use the gas only in Italy.

The Commission considered that the territorial restriction clauses at stake in this case prohibited ENI and ENEL from selling in France the natural gas, which GDF transported on their behalf. The clauses prevented French consumers from obtaining their supplies from the two Italian operators and constituted a sizeable obstacle to the creation of a genuinely competitive and integrated gas market in Europe.

As they restrict the territory on which the buyers can use the gas and have the effect of partitioning national markets, they constitute a restriction of competition within the meaning of article 81 EC.

Two formal decisions, one concerning the GDF-ENEL contract and the other concerning the GDF-ENI contract, were issued by the Commission, even if the infringements had been terminated, as the Commission wanted to clarify the law not only to the benefit of the parties but also to the benefit of all the undertakings active in the sector.

Nevertheless, the Commission decided not to impose fines. Among other factors, it took into consideration that this stage of the liberalisation process, which ended with the entry into force of the Second Gas Directive in August 2004, has involved a profound change in the commercial practices of the operators present on the market.

The structure of contracts inherited from the framework before market opening suggests the existence of a comprehensive list of clauses that may pose significant problems for the establishment of a pro-competitive framework. Territorial restriction clauses are by far the more constraining clauses in the promotion of cross-border trade. Other types of clauses, like the so-called 'reduction clause' have been also identified in other cases as having detrimental effects on competition and cross-border trade. The reduction clause, allows the supplier to reduce the contracted upon quantities if the buyer resells the gas

⁵² See COMP/38.662 – *PO/GDF*.

in direct competition with supplier. Such clause inhibits the buyers to market contracted gas in excess of their needs. In the case EDF Trading / WINGAS⁵³ (2002), such clause was identified and following the Commission objections it was deleted by the parties.

⁵³ See the Commission case COMP/36.559 - *British Gas+Wingas+I*.

CHAPTER IV – RETAIL COMPETITION

A customer's ability to choose between energy suppliers is one of the most important goals to be achieved in the construction of the internal energy market. Retail competition can be regarded as the last stage of market opening. In reality, where network access or wholesale competition fails, retail competition also fails.

Energy retail markets can be further divided between large and small customers. This distinction is based on energy requirements and the contract provisions that differentiate these groups.

Competition in retail markets requires proper TPA rules. The problems identified at this level of competition in the first stage of market opening were closely related with unreliable TPA regimes, as referred to in chapters II. However, a proper TPA framework does not suffice to allow competition to develop, as a number of other requirements at both the wholesale and retail levels, as identified below, need to be addressed.

IV.1. Large customers

A number of cases dealt with by the different NCA's and the Commission show that incumbents, in order to retain customers, might engage in anti-competitive agreements with their customers.

The Bundeskartellamt⁵⁴ has conducted a thorough analysis of the detrimental competition effects of long-term contracts between gas importers and distributors in Germany. The long term nature of a gas supply contract is, in itself, not considered to be anti-competitive, but it may have such an effect if it involves key customers and if it forecloses other suppliers in the downstream market.

Under the current framework in Germany, most gas sold by importers or domestic producers to regional or local distributors is based on long-term contracts, which cover a substantial quantity of their gas requirements. As long as such a framework exists, such distributors are tied to their current suppliers, thereby restraining the development of supply competition. The Bundeskartellamt deemed this foreclosure of the market to

⁵⁴ The Bundeskartellamt, 8th Decision Division, *Principles of Evaluation of Long-term Gas Supply Contracts under Competition Law*.

be incompatible with Article 81(1) of the EC Treaty. The Bundeskartellamt also considered these vertical agreements were not exempt under Article 81(3) of the EC Treaty. The agreements could not be justified in order to allow the recovery of investment on production site or pipelines as such a justification is not applicable in this particular context. Moreover, the take-or-pay provisions in long-term import contracts do not justify downstream supplies to be governed by long-term contracts. Firstly, it was the Bundeskartellamt understanding that the gas purchased by importers is then sold at their own risk, as is the case with other businesses where traders have to sell the goods they purchase at their own risk. Secondly, the Bundeskartellamt also noted that long-term import contracts may entail advantages to the importers themselves by securing them long-term procurement sources and achieving planning security as regards their purchased prices. Thirdly, take-or-pay provisions can be renegotiated between these importers and foreign gas producers.

Following two civil law proceedings concerning long-term contracts, the Bundeskartellamt determined that gas supply contracts are considered to be inadmissible if they involve:

- Requirement satisfaction of more than 80 per cent and a contract period of more than two years, or
- Requirement satisfaction of more than 50 per cent up to and inclusive 80 per cent and a contract period of more than four years.

Another example of the foreclosure effects of long-term contracts is provided by the Commission's investigation about the long-term contract between Gas Natural, the dominant gas importer and supplier in Spain, and Endesa, a dominant electricity producer, for the supply of a new power plant using gas as the primary source of energy⁵⁵. Through this contract Endesa would have covered all its gas requirements for its new power plant for a period of 18 years. The contract also included some clauses, which would have given Endesa better conditions than other future clients. Such vertical agreement could constitute an infringement of Article 82 of the Treaty, since, by foreclosing a key customer from other suppliers, it could have contributed to reinforce the Gas Natural dominant position. The case was settled with the parties amending the contract, reducing its duration, gas volumes and discriminatory clauses.

Also in electricity markets, the energy supply contracts for large consumers may be subject to certain provisions that might envisage tying large customers. This happened

⁵⁵ See the Commission Case COMP/37.542 PO / Gas Natural + Endesa.

in Italy in the case *Unapace-Enel (1999)*⁵⁶. The Italian CA investigation of Enel Spa activities came as a result of a report by the *Unione Nazionale Aziende Produttrici e Consumatrici di Energia Elettrica (Unapace)*. Enel was said, in particular, to stipulate contracts with clients with high annual consumption levels, containing two clauses with the potential to restrict competition. The first concerned the extension from one to three years of the sole electricity provider agreement; the second gave Enel pre-emptive rights in cases where its clients received more advantageous offers from competitors (the so-called "English clause"). The extension of the sole provider relationship to a minimum of three years allowed Enel to tie so-called eligible clients into longer contracts (under the effects of Directive 96/92/EC eligible clients can contract their supplies freely with producers other than Enel). Furthermore, by creating a disincentive to the formulation of more advantageous offers, the pre-emptive right that Enel enjoyed, all offers being equal, had the potential to obstruct and limit the entry of new competitors into the national electricity market.

During the procedure Enel changed the conditions under which each client can withdraw from the supply contract. After establishing a unilateral right of withdrawal lasting for one year from the date of acquiring eligible client status, it then eliminated the pre-emptive clause. These changes to the contractual conditions were considered to be sufficient to remove the distortions to competition arising from the previous formulation.

IV.2. Small customers

The level of consumers' switching between energy suppliers might be regarded as one indicator of a properly functioning retail market⁵⁷. However, several drawbacks have been identified in making such customer's ability to choose suppliers (i.e., customer switching) become a reality, even where energy wholesale competition is well established. For instance, several years after deregulation in the UK, energy markets' incumbents seem to have been able to maintain substantial mark-ups in the tariffs they charge, while retaining high market shares, with incumbents charging higher prices than entrants in retail electricity markets.

⁵⁶ The Italian CA Case A 263 – *UNAPACE/ENEL*.

⁵⁷ Of course, there is always the theoretical possibility that consumers' switching does not occur simply because the market rapidly becomes highly competitive after its opening. However, this possibility would be hardly compatible with the maintenance of the incumbents' market shares following market opening, together with the maintenance of prices higher than its competitors.

In fact, evidence suggests that customer switching between retail suppliers seems to be a relatively weak competitive constraint on the incumbents' market power. There are several reasons for why this has been so, whether it has to do with search costs, transaction costs, or with the so-called uncertainty and psychological costs. These costs don't even have to be real, but simply 'perceived' by the different customers. For the case of British energy markets (in both gas and electricity), Giulietti et al. (2003)⁵⁸ found that perceived (rather than actual) switching costs were the main barriers to "more active consumers", i.e., consumers more willing to switch between suppliers.

The so-called "debt blocking" strategy, whereby suppliers are entitled to object to a customer transferring to another supplier on the grounds that the customer was in debt, can be regarded as an example of those transaction costs, that can be used by suppliers as a "customer retention strategy", thereby diluting competition in the retail electricity market.

Furthermore, making appropriate pricing information available to customers, as a way to stimulate competition in the market, raises concerns over the improvement of conditions for tacit collusion between retail energy suppliers. The final outcome of this trade-off, between a pro-competitive effect, from reducing search costs, and an anti-competitive effect, is far from being settled in general terms, having to be dealt with on a case-by-case basis.

In this sense, Harker & Price (2004)⁵⁹ state that: «(...) *Retaining sector regulatory institutions for jurisdiction in these [energy] deregulated markets may protect, rather than address, anti-competitive behaviour within the sector. (...) there are dangers that they may both protect monopoly power and facilitate coordinated effects within the market*».

The prevalence of regulated trade activities at the retail level has also been regarded as detrimental for promoting switching of suppliers. For instance, in Spain, despite the fact that all electricity and gas consumers have been free to choose their supplier since January 1st 2003, it has been found that offers made by traders and distributors (namely at a regulated tariff or at a market price) do not exhibit 'enough substitutability' between them (for some customer groups, in some periods, retail market prices have not fallen below regulated tariffs). Hence, regulation has led to segmentation between both

⁵⁸ Giulietti et al. (2003): "Consumer Choice and Industrial Policy – A Study of UK Energy Markets", Working Paper, 112, Centre for the Study of Electricity Markets, University of California.

⁵⁹ See Harker & Price (2004), "Consumers and antitrust in British deregulated energy markets", in The Pros and Cons of Competition Policy, Swedish Competition Authority, 2004.

markets (i.e., between the regulated market and the liberalized one). This type of segmentation was adopted in the 2003 merger case *Iberdrola/Distribuidora del Ayuntamiento de Villatoya*, which involved the purchase of a distribution company owned by the Council of Villatoya in Spain⁶⁰. The main affected markets were the regulated market for electricity distribution⁶¹, of local scope, although a view was taken on the liberalised market for electricity retail, namely retail sales at market prices. This market segmentation stemmed from the still modest switch by consumers from a regulated price to a market price contract, despite the legal possibility opened up in the liberalisation process.

On the other hand, deregulation of energy markets in the UK might have had adverse effects on low income energy customers, since in the previous regulated framework (regime) they benefited from cross-subsidies, that were abandoned with the deregulation of energy markets (because their maintenance was not in the interest of the firms themselves).

Despite the fact that the existing framework does not seem to be favourable for customer switching, the use of some practices by the dominant players have also been found as having detrimental effects on retail competition.

In fact, there is theoretical and empirical evidence that energy retail markets are not only prone to both abuse of dominance by incumbents who retain very high market shares, but also to coordinated effects among similar firms which interact repeatedly in several closely related markets.

This theoretical evidence results from the fact that many of the factors which facilitate collusion are present in energy markets, namely: (i) homogeneous products (either gas or electricity); (ii) significantly high market concentration for firms to be aware of each other's actions; (iii) an ability to change prices quickly so deviant behaviour can be punished; (iv) weak competitive constraints from entrants (e.g. importance of brand name) or fringe players outside the core group of firms; (v) repeated interaction between the firms in the different energy markets, making it easier to punish deviators; (vi) price transparency, promoted by the regulator as a way to facilitate price comparisons by the consumers, but which can make deviations by any firm more easily detected by the others.

⁶⁰ Servicio de Defensa de la Competencia/Tribunal de Defensa de la Competencia Case N-03039 *Iberdrola/Distribuidora del Ayuntamiento de Villatoya*.

⁶¹ This included retail sales under a regulated price.

In the UK⁶², between March 2000 (when the substantive provisions of the Competition Act of 1998 came into force⁶³) and February 2004, Ofgem⁶⁴ received a total of 44 complaints under the Act on issues that can be grouped into the six categories identified above: Non-price discrimination, price discrimination, predation (predatory pricing), excessive pricing, anti-competitive agreements (e.g. collusion), and others⁶⁵.

With regard to price discrimination, Ofgem received a complaint in July 2002 about a “win-back” offer made by London Electricity (LE) to its former domestic electricity customers, who had switched supplier. It was alleged this offer amounted to an abuse of dominance (London and the SWEB region were the former LE’s incumbent regions), on two grounds: first, that the financial incentive to return to LE was significantly greater than any savings that most suppliers could offer to new customers, and second, the requirement to remain with LE for 13 months was a form of “consumer lock-in”. Due to the severely limited take up of the win-back offer, the Gas and Electricity Markets Authority (body which governs Ofgem) considered there was no anti-competitive effect as a result of price discrimination, and therefore concluded that there was no abuse of dominance.

⁶² The British residential energy markets were opened fully to competition between 1996 and 1999.

⁶³ In the UK, the Competition Act of 1998 represented a fundamental change in the general competition law of the UK, both in terms of its content and its administration. Its Chapters I and II are modelled on Articles 81 and 82 of the EC Treaty respectively. The reform of Competition Law coincided with the move away from prescriptive ex ante regulation to ex post policing of emergent competition in regulated markets (see Harker & Price, op. cit.).

⁶⁴ Ofgem: “*Complaints considered by Ofgem under the Competition Act 1998: 1 March 2000 to 29 February 2004*”.

⁶⁵ As stated in the cited Ofgem document, «*a significant number of complaints made by Ofgem under the Act result in the file being closed due to the poor quality of information supplied*».

CHAPTER V – CONCLUSION

The experience gained to date in constructing the internal energy market has revealed the long term nature of this project. Many outstanding issues have to be addressed in order to put in place a well functioning internal energy market. Among them are the regulatory and market designs (spot market, market for balancing power and ancillary services, bilateral contracts and forward markets), the levels of interconnection capacity between European states and the rules governing the use of such capacity.

Recent competition law enforcement experience also shows that many competition issues have yet to be solved. The existing market structure of both the gas and electricity industries in most EU states, which are characterized by vertically integrated utilities holding dominant positions in various markets, places several constraints on the achievement of the level playing field necessary for competition to develop. These constraints are particularly noticeable at the domestic level.

The proper unbundling of network activities, as well as non-discriminatory TPA regimes and pro-competitive market structures, constitute necessary requirements to overcome some of the competition problems identified in this first stage of market opening. These problems have been addressed in a number of merger control and restrictive practices cases. Many of these cases were settled with the imposition of remedies, in what has proven to be one way of achieving lower concentration levels and better TPA rules.

Network access

The first EU Directives on the electricity internal market (1996) and the gas internal market (1998) allowed for different standards concerning network access. One of the prescribed standards in this first stage of the liberalization process, namely “*negotiated third party access*”, placed a number of constraints on achieving the aim of non-discriminatory access, particularly where network unbundling only went as far as the minimum level of accounting separation. Cases dealt with by both the Commission and the different NCA’s have demonstrated that the imposition of NTPA was an insufficient measure, thereby leading to the necessary introduction of several amendments. This led to the adoption of a second liberalization package in 2003.

It is worth mentioning the UK experience in the opening up of its domestic gas markets. From the beginning of the liberalization process in the mid-eighties, discriminatory network access was observed. Two inquiries, conducted in 1988 and 1993 by the UK Monopolies and Merger Commission (MMC), showed that negotiated network access rules were not enough to ensure non-discriminatory behaviour and fair pricing. As stated by the MMC in the 1993 inquiry, «*ownership separation of network activities would be the only measure that could fully remedy the adverse effects identified*». Although the new Directives did not require the unbundling of ownership for network operation at the transmission level, this type of measure has already been implemented in several EU countries, such as Denmark and UK in gas, and Finland, the Netherlands, Portugal, Spain, Sweden, UK, (Norway in the EEA) in electricity⁶⁶.

The case history regarding network access illustrates how competition law enforcement and sector specific regulation can closely interact. In the Marathon cases, the settlement concerning TPA rules provides one example of how restrictive practices intervention can be a way to create an improved regulatory framework for network access. In the Netherlands, the Gasunie case shows the importance of competition law enforcement and sector specific regulation adopting a coherent approach. In Germany, case history shows the limits of restrictive practices intervention in the pursuit of goals that fall within the domain of regulatory intervention.

Wholesale competition

European case history has until now regarded energy markets as no wider than national. Competitive assessment has therefore placed an emphasis on domestic energy markets, which, in most countries, remain highly concentrated. Moreover, when measuring market concentration one should address the question of cross-ownership between the different undertakings. Moreover, aside from horizontal concentration, the impact on competition resulting from vertical relationships between gas and electricity should be analysed in view of the multi-utility strategies developed by energy incumbents. In fact, the vertical integration of the gas and electricity businesses, as proposed in several merger cases, may have a significant negative impact on competition.

Wholesale electricity markets exhibit certain characteristics that increase the likelihood of market power being exercised, namely, (i) low elasticity of demand, (ii) the requirement of real time production and a perfect balance between demand and

⁶⁶ See DG TREN Draft Working Paper, *Third benchmarking report on the implementation of the internal electricity and gas market*, Brussels, March 2004.

production, given that electricity is non-storable, (iii) limited production capacity and (iv) electricity transmission constraints. The combination of some, or all, of these characteristics makes it possible for a (profitable) abuse of dominance to occur in a wide variety of situations, such as during peak demand hours and in certain grid areas during bottlenecks. This conclusion results from the competition law enforcement experience in the different energy markets.

The construction of the internal energy gas market has challenged the previous structure of production cartels, upstream import and downstream contracts and monopolized vertical utilities. Competition law enforcement experience in the gas wholesale market shows that the current contractual structure of the gas industry possesses a wide range of competition restrictions. In order to construct a pro-competitive framework the contract structure of the gas industry should be appropriately analysed.

Retail competition

A consumer's ability to choose between energy suppliers is one of the most important goals in the construction of the internal energy market. Retail competition can be regarded as the last stage of market opening since retail competition also fails where network access or wholesale competition fails.⁶⁷

Most complaints in relation to anti-competitive practices in retail energy markets, can be classified into six categories, namely: (1) non-price discrimination, (2) price discrimination, (3) predation (predatory pricing); (4) excessive pricing, (5) anti-competitive agreements, and (6) others.

Several drawbacks have been identified in making a customer's ability to choose suppliers (i.e., customer switching) become a reality, even where energy wholesale competition is well established. Evidence suggests that customer switching between retail suppliers is a relatively weak competitive constraint on the incumbents' market power. There are several reasons for why this is the case, namely search costs, transaction costs, or the so-called uncertainty and psychological costs. The prevalence of regulated trade activities at retail level can be regarded as detrimental to promoting

⁶⁷ Ownership unbundling for network operation at the distribution level has been implemented in the UK in the case of gas - see DG TREN Draft Working Paper, *Third benchmarking report on the implementation of the internal electricity and gas market*, Brussels, March 2004.

the switching of suppliers, especially when regulated tariffs cannot be undercut by market prices.

Despite the fact that the existing framework does not seem to favour customer switching, the use of some practices by the dominant players has also been found to have detrimental effects on retail competition. In fact, there is both theoretical and empirical evidence which suggests that energy retail markets are not only prone to abuse of dominance by incumbents who retain very high market shares, but also to coordinated effects among similar firms which interact repeatedly in several closely related markets.

Furthermore, making appropriate pricing information available to customers, as a means of stimulating competition in the market, raises concerns over the facilitation of conditions for tacit collusion between retail energy suppliers. The final outcome of this trade-off, between a pro-competitive and an anti-competitive effect is far from settled in general terms, and must be dealt with on a case-by-case basis.

Towards an Internal Energy Market in the EU

Notwithstanding the unique characteristics of energy markets (e.g. the need to guarantee security of supply and its long term sustainability, or the impossibility of electricity storage that set them somewhat apart from other markets), competition at the wholesale and retail levels should be promoted both in the gas and electricity markets. Sector specific regulation and competition policy (restrictive practices intervention and merger control) play a crucial and complementary role, in the establishment of a competitive internal (EU wide) energy market.

The imposition of structural remedies, as highlighted in Chapters II, III and IV, can foster the establishment of a competitive internal energy market.

As highlighted also in M. Monti's keynote speech at the 2004 Energy Day, three prerequisites should be addressed in order to kick-start competition in energy markets, namely: (i) ensuring an effective [*open and non-discriminatory*] access to [*gas and electricity*] networks; (ii) ensuring supply competition at the wholesale level [*gas production/import and electricity generation*]; and (iii) guaranteeing a realistic ability for customers [*industrial and others*] to switch [*energy*] suppliers. Moreover, the Commission has a number of specific powers which are not available to national competition authorities, which can be employed to tackle distortions in energy markets.

For example, the Commission ensures the compatibility with the EC Treaty of State aid, which could otherwise create significant distortions in the energy markets. The Commission uses its powers to ensure that Member States and other national authorities do not distort competition through State measures that are incompatible with Article 86 EC by adopting the necessary decisions or, if appropriate, directives. The Commission has also used its powers under Article 86 in other liberalising markets, including markets in the telecommunications, postal and transport sectors.

The EU forerunners in the liberalization/regionalization of energy markets, namely the UK and the Nordic countries, present us with two somewhat different approaches to the construction of an internal energy market. Nevertheless, these two approaches can be seen as complementary, in that the integration/regionalization of previously national energy markets (Nordic case) can go hand in hand with the establishment of competitive markets at the national level (UK case).

This process at the national level can be regarded as a pre-condition for establishing a single European energy market (internal energy market), as the fostering of a level-playing field at the different national levels, accelerates the integration process.

Outline of proposed areas for investigation

This Report has identified the following five areas for future investigation, in view of the construction of the internal energy market.

The first area concerns the relationship between competition law enforcement and sector specific regulation, specifically how to coordinate *ex ante* regulation with *ex post* competition law enforcement.

The second area of investigation concerns the current structure of agreements on the use of upstream networks and interconnector capacity in cross-border trade, and their potential anti-competitive effects.

The third area of investigation concerns the value of simulation models in restrictive practices intervention and merger control in energy markets, including the assessment of possible remedies.

The fourth area of investigation concerns the types of remedies in restrictive practices intervention and merger control that are best suited to promote consumer switching between suppliers at the retail level.

The fifth area of investigation would analyse the different possible paths for energy market integration, in particular through a comparison between the UK and the Nordic experiences and the way these experiences could be generalized to other EU countries.